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BEYOND EXPECTATIONS

SMART WATER & WASTE WORLD

BE SMART WITH WATER

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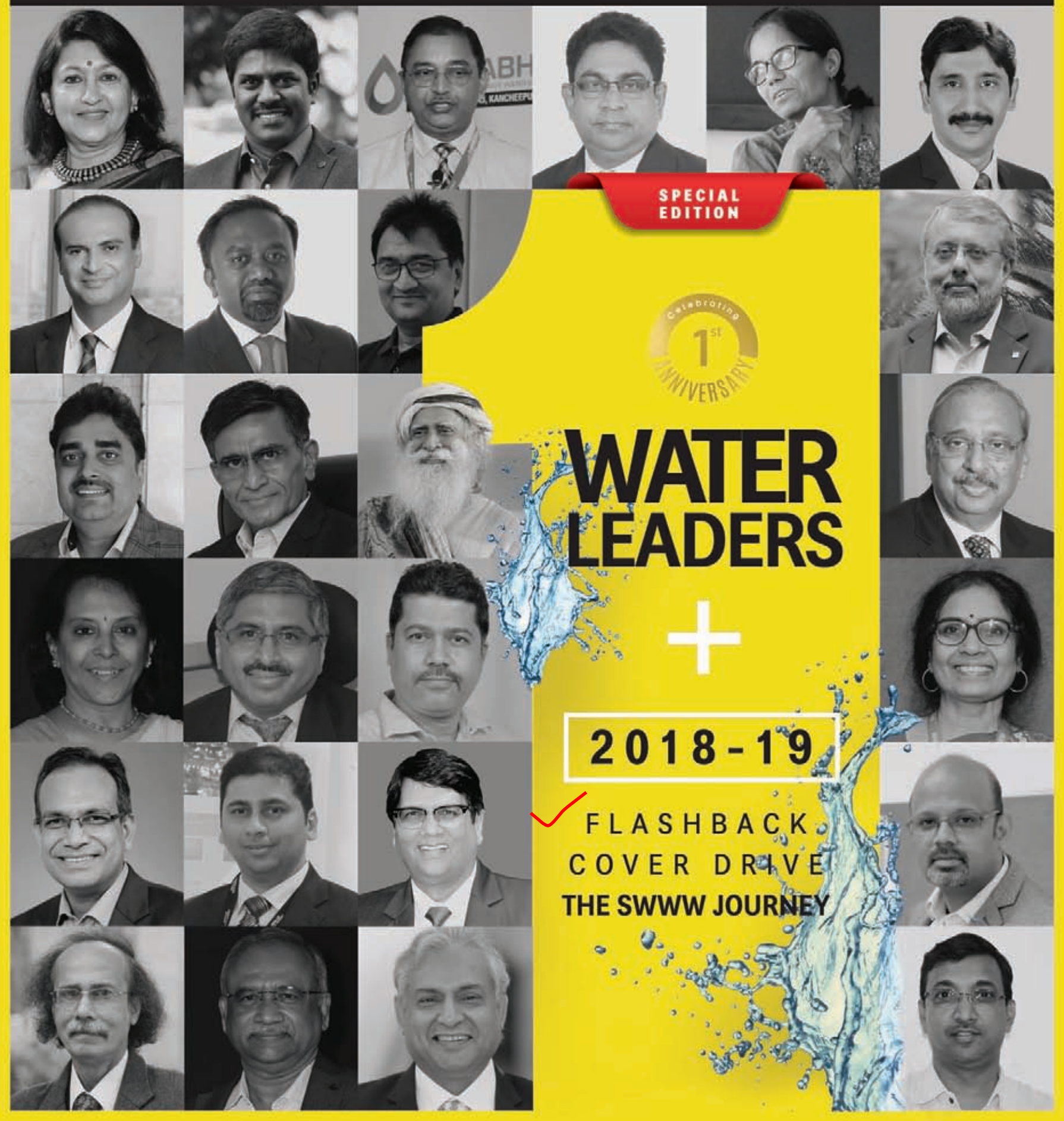


SPECIAL EDITION

Celebrating 1st ANNIVERSARY

WATER LEADERS

+

2018-19

FLASHBACK

COVER DRIVE

THE SWWW JOURNEY

SUBHASH SETHI

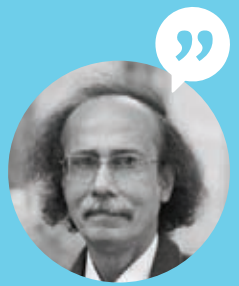
Chairman,
SPML Infra Limited

"I have been reading the SWWW magazine and continue to receive good information about the latest development in water sector in India and from around the world. Oriented by the requirement of sustainable water management, it continues to provide diverse information on various aspects of water and wastewater that are innovatively intelligent, exceptional and of excellent quality. Through its diversified articles and innovative case studies, I am sure the magazine is widely read and trusted by water professionals."

K. ASHOK NATARAJAN

CEO,
Tamilnadu Water Investment Company (TWIC) Ltd.

"We find them to be professional, especially their focus on the cutting-edge of technology and being able to benchmark case studies across the world. Keep up the good work. Also, they run a unique Jalsabha program where different aspects of smart management are discussed and what is relevant to India is recommended. Wish you all the best in your future endeavors and continue to provide your readers with valuable information regarding smart water and wastewater."



SYAMAL SARKAR

Distinguished Fellow & Senior Director,
Natural Resources and Climate Programme
TERI

"I am very happy to learn that the Smart Water & Waste World (SWWW) is completing one year of its publication and a special issue is being contemplated on the occasion. This magazine publishes various issues on water and waste which are often inclusive, balanced, deeply analyzed, and handled - such contemporary issues are having policy implications at the center and state levels. I wish all the success for this endeavor."

HEMANT JOSHI

Head - Water & Waste Solutions
Thermax Ltd.

"We have been subscribing to the magazine for 8-10 months now. And personally, one copy comes to me. I make it a point to read it. The articles are very interesting, it's very informative. I think a lot of things that are happening in the industry which we might not be aware of - we get to know from SWWW magazine. The content covers the whole spectrum of water & wastewater."

RAJNEESH CHOPRA

Global Head - Business Development
VA TECH WABAG Ltd.

"I wish to congratulate SWWW on its first anniversary. It has been a pleasure to be associated with a magazine that has made an impressive start in such a short span. Kudos to the entire team for creating such a wonderful platform that provides latest updates in the water sector and acts as a melting pot for ideas from thought leaders in the government as well as the private sector to address water-related challenges. Wishing you more success in the years to come and in all your future endeavors."

SMART WATER & WASTE WORLD Celebrating 1st ANNIVERSARY

LEADERS FROM DIFFERENT SEGMENTS OF WATER COMMUNITY IN INDIA SHARE THEIR THOUGHTS ON THE 'AGENDA FOR THE INDIAN WATER SECTOR' IN THIS SPECIAL ANNIVERSARY EDITION.

WATER LEADERS

AFFLICTING INDIA'S WATER SECTOR

Political will and public pressure are critical resources in ensuring a sustainable water management.

SUBHASH SETHI, CHAIRMAN | SPML INFRA LIMITED

India's changing landscape and declining water pattern, shifts in usage behavior are fundamentally altering the dynamics of policy implementation. For a large population, it is still available in abundance that they have only to turn a tap to receive a torrent of potable clean water. But the buzz is getting around that the world is hurtling toward a future with dwindling water resources and the future seems not very bright. The number of lives threatened by the lack of clean water is staggering and the available resources becoming limited. We need to think big on the sustainability of water and creating a lasting solution for the remaining resources.

India's water crisis gets visibly worse in every summer in some of our large cities and stakeholders are not thinking earnestly to find for long-term solutions. NITI Aayog in its recent report on water management has flagged the distressing situation concerning water. The report has suggested that almost 70 percent of our water is contaminated. It has also identified that 600 million people face high-to-extreme water stress in the country and 75 percent of households do not have drinking water on the premises. By next year only, 100 million people will be affected by the shortage of groundwater in 21 Indian cities including Delhi, Bengaluru, Chennai and Hyderabad and about 40 percent of India's population will have no access to drinking water by 2030. About 2,00,000 people die every year in India due to inadequate access to safe water.

India ranks among the countries which are likely to face the most due to climate change and extreme weather conditions. More extreme weather conditions resulting from climate change including cyclones, disastrous flooding, and prolonged drought could make it even harder for the people to access clean water. Even as people struggle to find the water they need for drinking, cooking, washing, and farming, many more face inundation as climate extremes batter their homes with storms and floods.

With well-endowed states such as Himachal Pradesh and Kerala facing water scarcity, it is clear that the current apathy towards water practices cannot continue. The World Resources Institute estimates that by 2030, the number of people exposed to floods due to climate change and socio-economic development will more than double to 54 million. In recent years, floods have devastated parts of India killing hundreds and affecting millions with great financial losses and damage to infrastructure.

Around the world, about 700 million people live without access to clean water and the vast majority of them live in rural areas. The rural inhabitants face challenges in gaining access to water due to remote locations, inadequate infrastructure, inaccessibility of water resources and lack of funding for creating required water distribution infrastructures. In India, around 68% of the country's population lives in rural areas and the majority of them are living without access to regular clean water.

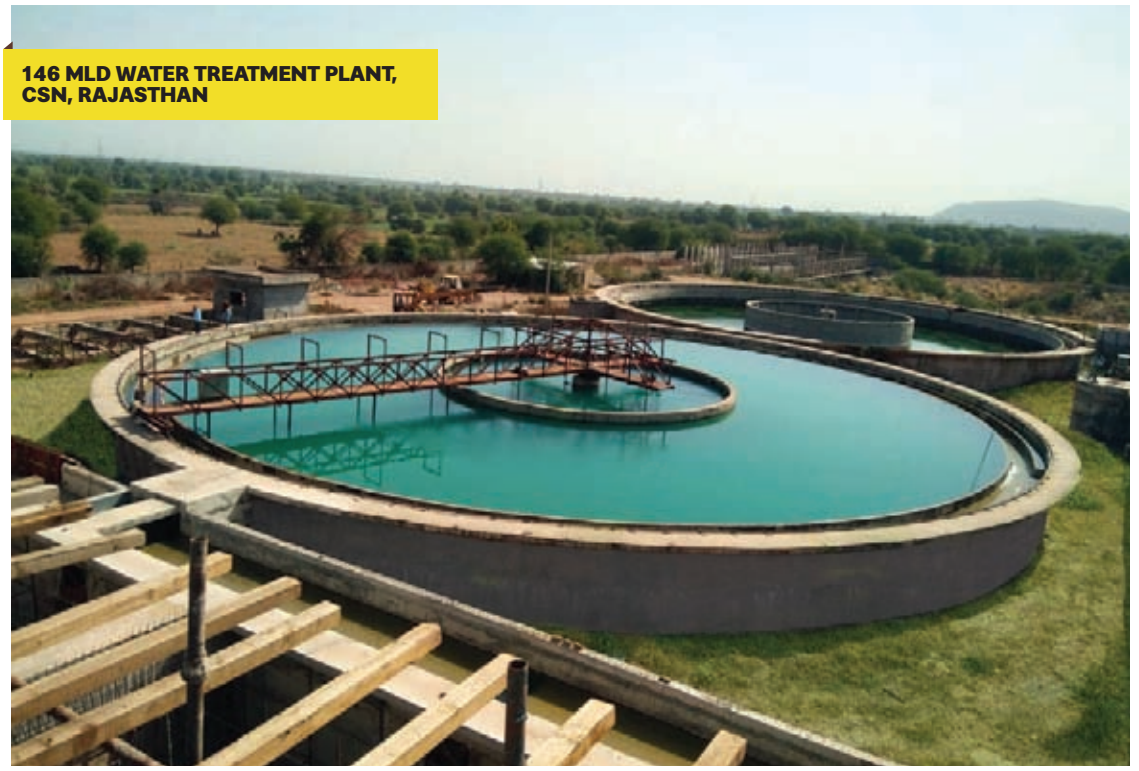
Water Aid's annual analysis of global water access examines the availability of safe drinking water in rural areas around the world and cautions that diseases such as cholera, blinding trachoma, malaria and dengue are expected to become more common and malnutrition more prevalent. Rural populations mostly dependent on farming to make a living will struggle to grow food and feed livestock amid soaring temperatures. The women may have to walk even greater distances in their daily struggle to access clean water. The continue increasing water demand of India's growing population, economic development and expanding industries combined with the impacts of climate change, are already making water scarcity a reality in many parts of the country. With our target to make India a 5 trillion dollar economy by 2024, we need to think very seriously about making water a priority as the current level of scarcity has already started affecting the livelihoods, human health, and economic development.

The water resources in India are under tremendous pressure as the rate of groundwater withdrawal is extremely high as compared to available resources. The current availability of safe drinking water is not sufficient to cater to the population demand. The effect of expanding cities will see the demand for freshwater supply rising exponentially and with limited resources; India may become a water-starved nation. Over-exploitation of groundwater, failure to recharge aquifers, reduction in catchment capacities due to uncontrolled urbanization and no reuse facility for treated wastewater are all causes for the precarious tilt in the water balance. If the present rate of groundwater depletion persists, India will have only 22% of the present daily per capita water available by 2050, possibly forcing the country to import water.

"Each year, an estimated 5 million deaths worldwide are caused by contaminated water."

NAL SE JAL

The government has placed a well-thought plan of providing drinking water facilities to every household of the country that will



146 MLD WATER TREATMENT PLANT, CSN, RAJASTHAN

help to cater to the urgent need to develop adequate water infrastructure. With the announcement of Nal Se Jal scheme, reports suggest that the water and sanitation sector is likely to attract investment worth Rs. 6.3 trillion in next five years. This ambitious scheme by the Government of India will help in addressing the issues of drinking water supply. The government is planning an aggressive target of providing piped water to all households by 2024. This indeed is a huge challenge given the massive number of connecting about 140 million remaining rural and urban households in five years' time.

With the execution plan in mind, the government has created a single ministry as 'Jal Shakti' by merging drinking water & sanitation and the river development, Ganga rejuvenation, and water resources ministries. The single water ministry would look into the departments of groundwater, surface water and the executing departments under one ministry that could make a big difference in the execution of 'Nal Se Jal' scheme.

THE CHALLENGES

India is facing a huge challenge of shrinking water resources and increasing water demand. Currently, just about 40 percent population has access to wastewater management systems. Almost 63 percent of municipal wastewater and 40 percent of industrial wastewater is left untreated and discharged into water bodies further worsening the groundwater sources. Untreated water also has dire consequences on health as water-borne diseases affect almost 40 million people annually.

I believe that we need to find sustainable solutions for the following 5 major challenges being faced by the water sector in India in a definite manner:

Limited Water Resource

India has a highly variable climate and vastly seasonal pattern of rainfall. On an average, India receives about 118 cm of rainfall. Estimated 50% of rainfall happens in just 15 days and 90% of river flows during three to four months of the monsoon period only. A large proportion of the water resources in India is located in those regions which have limited annual rainfall, the major source for recharging underground aquifers.

India's water harvesting and storage capacity from the rainfall is inadequate due to conventionally limited investments in large-scale water infrastructure development. By all international comparisons, the country remains extremely short with such infrastructure as compared to other countries as the United States and Australia where they have built over 5,000 cubic meters of water storage per capita; China can store about 1,000 cubic meters per capita whereas India's dams have limited capacity to store only about 200 cubic meters per person. Moreover, India can store only about 30 days of rainfall, compared to 90 days in major river basins in developed countries. We need to recognize water as a stimulus for growth by combining major water infrastructure with modern management approach. India needs to grow the capacity of its water storage from the existing levels which is more critical because of global climate change is going to have a major impact on India and there is likely to be rapid glacial melting in the coming decades in the western Himalayas and increased variability of rainfall in large parts of the country.

42 MLD SEWAGE REATMENT PLANT, KANPUR

Poor Infrastructure

This is the most obvious issue with the water supply system in the country. Aging infrastructure is at the root of them all. In particular, urbanization and population growth contribute to water scarcity and intensify the strain caused by ageing infrastructure. India is faced with the need to address all these challenges and revamping of infrastructure on priority for social, economic and environmental implications. Water needs to be transported around in vast networks of pipes and sewer systems and dealt with at treatment plants, pumping stations and these take a lot of maintenance and investment. In most of the cities, the water infrastructure is quite old and already surpassed their working life cycle which results in losing billions of liters of water each year to leaking pipes. Built infrastructure is particularly expensive to install and repair and in the absence of funds, most of the utilities across the country ignore growing infrastructure issues until disaster strikes. Global non-revenue water estimates range from 30 to 40% of the water produced, whereas it is as high as 50 to 60% in several cities in India mainly due to aging and debilitated water infrastructure. The huge investments are needed not only to develop the new and robust but also to repair and maintain the aging water infrastructure.

Groundwater Depletion

Around a third of earth's freshwater lies deep underground in aquifers, while these are not visible, they are vital to maintaining our drinking water, agriculture and industry needs. The water from such aquifers is extracted daily for farming, drinking, and industrial purposes, often at dangerously unsustainable rates. A large number of India's groundwater wells are depleting and water is used faster than it is able to replenish. Unless we change our usage patterns, India's aquifers will be in critical condition and water supplies are susceptible to this hidden and growing threat.

Water Pollution

Water pollution is an enormous challenge, as it encompasses everything from sewage entering drinking water to the endless plastic waste pouring into our river and water bodies. Despite all the developments, around 80 percent of wastewater, containing anything from human waste to industrial discharges still goes untreated and released to major rivers around the country. Some of the pollutants, notably plastics, toxic chemicals, and pharmaceuticals have only in recent years emerged as major issues that need to be addressed. Municipal and construction waste is also frequently dumped into water sources. The range of potential pollutants is enormous, threatening the environment and human health, and their impacts are widespread. Excessive groundwater extraction increases soil salinity. Heavy metals and toxic compounds from industrial processes further contaminate drinking water sources.

Wastewater Reuse

The acute scarcity of water is forcing us to rethink the possibility to reuse treated


2420 MM MS PIPELINE FOR BULK WATER SUPPLY IN DELHI


2074 MILLION LITERS RAW WATER RESERVOIR, SINDHANUR, KARNATAKA

wastewaters. We cannot afford to continue using freshwater sources for agriculture and industrial purposes. The industry is more than ever before required to treat wastewater and then reuse it. There is an ardent need to think deeply and adopt a new perspective towards wastewater to counter the water scarcity and other challenges and work towards an enduring solution.

The challenge lies not only in channeling used water back into the waterways once it has been treated but also in processing it so that it can be reused for other applications. There has been a growing trend towards water reuse projects in China, Singapore, Australia, USA, and Israel to deliver high-quality treated water that can be used to augment the potable water supply. India needs to follow the best practices from these countries to make water reuse a productive affair. At the current rate of water consumption in India, we will only have half the water we require by the year 2030. Therefore, it is crucial that we work to be the solution, doing whatever we can with the time, talent, technology and tenacity that we have.

THE LAST WORD

Amidst all these challenges, there is a growing awareness among the communities, governments, businesses, and citizens towards water challenges, and actionable plans are being developed and put into action. There are new trends in terms of using technology for smart water solutions such as advanced leak detection and pressure management techniques to maintain and build water networks; information systems enabling the collection and interpretation of data, which can optimize capital expenditure management; and smarter water quality monitoring systems that include remote-controlled devices and sensors. Along with that, political will and public pressure are critical resources in ensuring sustainable water management. We need to take immediate measures - recharge our water bodies, reduce pollution by treatment of sewage and effluent, reuse treated water, improve the supply system, close the gaps, lessen water-intensive crop and industries, and bring water efficiency across the economy.

SPML CONNECT

SPML Infra Limited is one of the leading water management companies in India promoting sustainable solutions for water and wastewater. SPML has built a formidable reputation for itself, having executed no less than 600 infrastructure projects, in areas ranging from drinking water facilities, wastewater treatment, sewerage network, and better municipal waste management to smart cities, renewable energy and power transmission and distribution. The ISO 9001-2015 certified SPML Infra is one of the World's Top 50 Private Water Companies as per Global Water Intelligence, London. These achievements speak amply about the company's dedication to improving the lives of millions of Indians.

In each of its chosen areas, SPML Infra has its stamp on numerous completed and ongoing projects. In the area of sustainable water management, SPML is currently engaged in Phase III of the Saurashtra-Narmada Avtaran Irrigation Project (SAUNI Yojana), the ambitious large water supply and irrigation project envisages to provide drinking water facilities to around 39 million people across 132 towns and 11,456 villages and to irrigate 1.8 million hectare of land in Saurashtra, Kutch and north Gujarat benefiting millions of farmers. SPML Infra has earlier completed the Phase I and Phase II of this project which was inaugurated by Hon'ble Prime Minister of India in April 2017 and March 2019 respectively.

The company is also working on urban water supply projects, including one aimed at improving the water distribution network in Delhi; six urban water supply projects in Karnataka that would serve almost two million people. The water supply augmentation project in Bengaluru to reduce non-revenue water has helped in significantly reducing water losses from 56% to 27%, thus saving of 40 million liters' potable water per day. The saved water is being used to provide drinking water facilities to 110 extended colonies of Bengaluru.

SPML Infra has established a leading position in the treatment of wastewater from design to the application of technology, construction to management and operation of sewage treatment plants, effluent treatment plants, tertiary and water reuse treatment plants, sludge treatment, bio-gas & power generation.

It has constructed a number of Sewage Treatment Plants (STPs) including 240 MLD STP in Ahmadabad, 72 MLD STP in Delhi, 70 MLD STP in Nasik, and 115 MLD decentralized STPs and pumping stations as one of India's largest and first comprehensive underground sewerage system in Mira Bhayandar, Maharashtra. The 42 MLD STP with sewerage network in Kanpur will contribute to clean Ganga mission, an important task government is keenly following.

ABOUT THE AUTHOR

Subhash Sethi is the Chairman of SPML Infra Limited. Under his leadership, SPML Infra went on to establish itself as the leader in water domain and developed sustainable infrastructure to help water utilities to deliver safe and clean drinking water to over 50 million people in India. He has been bestowed with several prestigious awards including Economic Times Global Asian Business Leader for his valuable contributions.