

Water - Essential But Finite

Mumbai, the mega metropolis and India's business capital, is faced with an unprecedented water crisis. There is tremendous pressure on water resources due to rapid increase in demand, increased development, expanding population, and increasing pollution. Against a demand of 4250 MLD Mumbai gets 3470 MLD, with a demand supply gap of 780 MLD. Further, it is reported that 20% water is lost due to theft and leakages. By 2025 Mumbai's population will be 26.4 million and water demand an alarming 5400 MLD. Finding new sources, augmenting the supply side and controlling the demand side equation of water supply will continue to pose major challenges.

Ion Exchange (India) Ltd., headquartered in Mumbai, pioneered water treatment in India and is regarded as Asia's largest environment solutions provider, with a strong global presence.

Solutions to augment & conserve water

Mumbai and Navi Mumbai depend on the monsoons which are becoming increasingly erratic, resulting in depleting lake water supplies. Sewage recycle and seawater desalination are sustainable, drought-proof, environmentally sound alternative sources of water supply. Rainwater harvesting is will also increase seep-

age and storage to augment supplies from groundwater (wells) and supplement municipal water supplies.

Sewage water recycle: Sludge, sewage and industrial effluent can become sources of water, with



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technologies available to enable recycle and recovery of as much as 99% water - moving to zero discharge. Of the 2770 MLD distributed, 80% gets converted into sewage and the city has a mere 15% sewage treatment capacity with only 60% sewerage coverage.

A Case Study to illustrate the cost efficacy of a sewage recycle facility in a typical Mumbai high rise society: Let us take a housing complex with about 480 flats with water re-

quirement for secondary purposes -150 m³/day. The average cost of a water tanker is Rs. 7500/day, which would mean an annual bill of Rs. 27 lacs. If a sewage treatment plant, at the cost of Rs. 40 lacs were to be installed, incurring an annual operating cost of Rs. 6 lacs the savings would be Rs 21 lacs per annum (Rs. 27 L - 6 L). This would mean that the capital expenditure of Rs. 40 lacs to put up the plant can be recovered in less than 2 years apart from reducing dependence on unreliable and expensive tanker water supplies.

Some key Sewage Treatment plants implemented by Ion Exchange:

ANSAL - Gurgaon, 240 Transit Camp - Guwahati, Millanz Mall - Meerut, IIT - Kanpur, Ginger Hotel - Pune & Bhubaneswar, MES Colony - Nagpur, Rawalkot Hotel - Jaisalmer, Welcome Hotel - New Delhi, Taj Ummed - Ahmedabad

Sea Water Desalination: Being a coastal city with access to a large coastline makes Mumbai an ideal location to capitalise on sea water desalination as an alternate source of water. Desalination, a process that removes dissolved minerals from sea water or brackish water, is a proven technology used extensively abroad and also increasingly in India.