

05 water and waste water strategies

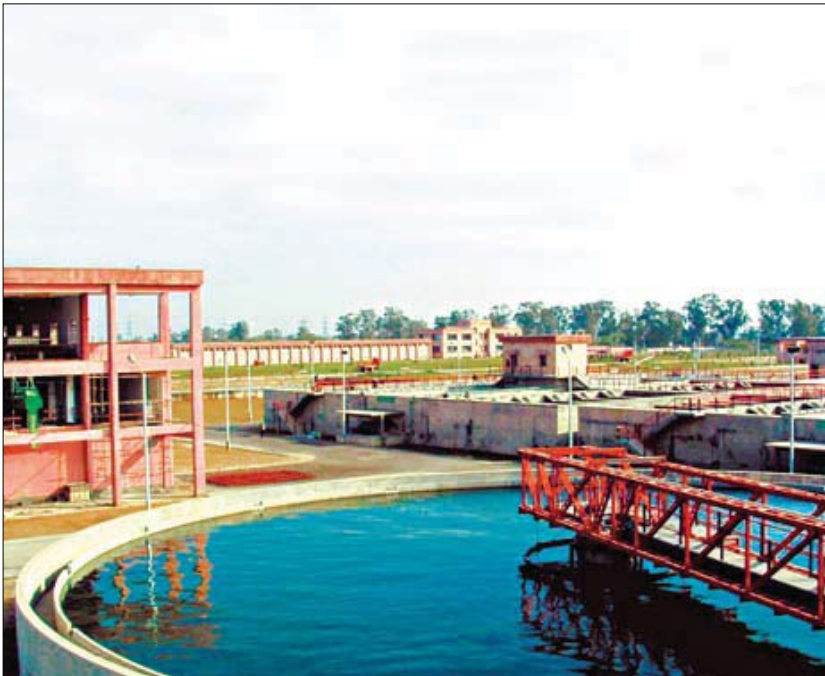
going beyond the conventional

Delhi's water policy works towards sustainable water use, balancing the needs of the community with the ability to tap more and more raw water and treat it in the most efficient manner. Energy consumption for water treatment has also been subjected to tight audits.

ADVANCED METHANE GAS RECOVERY SYSTEMS FROM WASTE WATER TREATMENT ARE USED TO MEET ENERGY REQUIREMENTS OF THE PLANTS.



In Sonia Vihar Treatment Plant, over 15% energy has been conserved by applying stringent energy audit mechanisms leading to reduction in GHG emissions.



Presently Water Treatment Plants of 810 MGD capacity is installed in Delhi. All Water Treatment Plants are equipped with advanced laboratories to ensure that the water treatment is of the highest international standards. The water distribution network is around 10,600 kms and approximately 3,000 kms of network has been laid in the last decade to check leakages and contamination.

To augment the availability of water, Delhi has started using treated waste water for different non-potable uses. Over 110 MGD of treated water is used for horticulture, industrial uses and power stations. The city has a sewer network of 6,150 kms of which 4,500 kms is internal, 1,500 is peripheral and 150 kms is trunk sewers. There are 17 STPs with a total capacity of 512 MGD. The major challenge is to desilt the trunk sewers and lay down the interceptor sewage network to ensure that no sewage is allowed to enter the Yamuna river by 2012

Steps have been taken to augment energy efficiency at the sewage processing and pumping terminals all across the city.

Advanced methane gas recovery systems today gather methane from waste water and the same is used to produce energy to meet the internal requirements of the plant. Delhi's Rithala waste water treatment plant runs exclusively on electricity derived from methane gas recovery from the waste water it treats. Back wash waste water is being treated and recycled after treatment in Wazirabad and Haiderpur water treatment plants.

Rainwater harvesting and water conservation is being promoted in a big way. Delhi Jal Board has set up a rain water harvesting cell to provide technical guidance and financial assistance to citizen groups taking up rainwater harvesting projects in their area. A Chief Minister's Rainwater Harvester Award has been instituted both in individual and institutional categories to encourage efforts in this direction. Eco-clubs in schools have also been sensitized for roof top rainwater harvesting and nearly 100 schools have installed such systems by now.

All of Delhi, with 9 districts have been notified under Groundwater Regulation and Management notification issued on 12th July 2010 containing the directions issued

Permission to draw ground water shall be subject to the condition of installation of the rain water harvesting structure, and reuse of water in horticulture / cooling / toilet flushing, etc after appropriate treatment.



on 18.05.2010. The notification addresses all issues related to ground water drawal for domestic, commercial, agricultural and/or industrial uses and also violation/illegal abstraction of ground water.

In whole NCT-Delhi, ground water drawing through new as well as existing borewell/tube well for domestic, commercial & or industrial uses is not allowed without prior permission. If the plot size of the building is more than 200 sq. metres, the permission to draw ground water through new as well as existing borewell/tube well will be subject to the installation of rain water harvesting system in the respective building. Permission to draw ground water through new as well as existing commercial and or industrial use shall be subject to the condition of installation of the rain water harvesting structure, and reuse of water in horticulture / cooling/ toilet flushing, etc after proper treatment of waste water. An active Clean Yamuna River Program has been undertaken in association with four neighboring State Governments, the Central Government and active participation of all sections of civil society. During the drive, huge quantities of plastic bags, garbage,

water hyacinth and general litter from the river embankment are lifted and sent to the sanitary landfill sites.

11 Common Effluent Treatment Plants (CETP) cover 21 industrial areas and treat 165 MLD of industrial effluents. Several strategies have been planned to curb water pollution including environmentally cleared project of laying of interceptor sewers along the three major drains i.e. Najafgarh Drain, Shahdara drain and Supplementary drain as well as augmentation of existing capacity of the STPs at the mouth of Delhi Gate and Dr. Sen Nursing Home Nallah drain. Methane generation from sludge digestion process and utilization for generation is also included in the projects. Under the clean development mechanism, the Delhi Jal Board is working on a two stage plan of reducing 3.26 million tonnes of carbon dioxide between 2008-2012. In the second phase from 2012 to 2018, about 13 million tonnes of carbon dioxide will be cut short. These efforts are on account of energy efficient equipment like pumps, motors, transformers, optimal pumping and aeration processes, improved efficiency of treatment and sludge disposal operations

Delhi has implemented programmes to rejuvenate water bodies by recycling waste water from sewage treatment plants.



resulting in better methane recovery, and reduction in transmission losses through improved installations and networks.

Energy Efficiency in Water and Waste Water Operations

Delhi Jal Board's vision is to provide safe water supply and sewerage services in an equitable, efficient and sustainable manner to the people of Delhi. Maintaining good quality of water supply, reduction of non-revenue water, leakage control, augmentation of water treatment and supply, sustainability of surface and ground water resources, would be priority areas. In sewerage sector, optimum utilization of sewerage treatment capacity, rehabilitation of sewerage system, abatement of pollution of Yamuna River and extension of sewerage facilities to uncovered areas will be the priority areas. DJB has numerous water management programme aiming towards improving the efficient distribution and improving the energy efficiency in their operations. Some of them are as follows:

- Augmentation and Sustainability of Water Resources and Conservation of Water both ground and surface water resources.
- Efficient Leakage Management using latest Technology.

- Augmentation of Sewage Treatment Capacity.
- Modernization & Refurbishment of Sewage Treatment Plants (STP)/ Sewage Pumping Stations.
- Rehabilitation of Trunk Sewers.
- Utilization of Sludge using irradiation techniques.
- Leakages to be checked and high end users to be encouraged to use recycled water for toilet, gardens, washing and cooling. Detailed plan to be drawn up by DJB to achieve 20% efficiency of use by 2021/2031.
- Installation of water recharge systems in all building by providing technical & financial support & by providing appropriate fiscal incentives etc.
- Phased implementation of waste water treatment & reuse in institutional and in other buildings.
- Waste Water treatment through Interceptor sewers by 2017.
- Connection of all households to sewer system by 2021.
- Restoration of all Water Bodies by 2012 wherever possible.
- Treatment of all the Waste Water by setting up STPs and providing sewer networks by 2021/2031.