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### Delhi Jal Board

Revenue management system

The Delhi Jal Board (DJB) was constituted in April 1998 under the Delhi Water Board Act, 1996 to provide water supply, sewage disposal and stormwater drainage facilities within the National Capital Territory of Delhi. At present, the board serves about 1.9 million customers and is responsible for the production and distribution of potable water to all parts of the city except the areas under the New Delhi Municipal Council (NDMC) and the Cantonment Board, where it supplies bulk water. DJB is also responsible for the collection, treatment and disposal of wastewater in all parts of the city including the NDMC and Cantonment areas.

**Water supply**  
Delhi's current water demand is estimated at 1,100 million gallons per day (mgd). Against this, DJB supplies about 835 mgd of potable water. Its distribution network spans over 16,000 km of water pipelines. DJB taps water from both groundwater and

surface water sources. The surface water sources include the Yamuna river, Bhakra canal storage, and Upper Ganges canal. The total installed water treatment capacity stands at about 747 mgd. About 75 per cent of households have piped water connections with installed meters, while the remaining are catered to through bore wells and tankers. However, given that the majority of these meters are non-functional, non-revenue water (NRW) accounts for about 40 per cent of the total supply.

**Treatment and disposal of wastewater**  
DJB is responsible for the treatment and disposal of wastewater through a network of about 5,600 km of internal, peripheral and trunk sewer lines. At present, wastewater generation in Delhi is estimated to be over 700 mgd, while the treatment capacity stands at about 545 mgd. The capacity utilisation is estimated to be around 65 per cent (or 360 mgd). DJB plans to augment the treatment

capacity to 614 mgd by the end of 2012 and also to achieve a capacity utilisation rate of over 80 per cent.

#### Revenue management system

DJB has been implementing various initiatives to reduce the NRW component and improve revenue collection. These initiatives include metering, constitution of a separate leak detection cell, consumer harvesting and replacement of faulty pipelines.

Currently, it is developing a revenue management system with technical assistance from Tata Consultancy Services (TCS). The primary objective of implementing the system is to replace the manual billing process with advanced digitised metering, billing and bill collection processes. The software application for the system is being developed by TCS along with a data centre for collating information related to outstanding bills, payment receipts, consumer complaints, etc.

The project is being implemented at an



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estimated cost of Rs 530 million, which includes a capital investment of Rs 215 million, and operations and maintenance expenses of Rs 320 million.

Moreover, DJB is developing a database of consumers, which will contain information such as zone and area name, water connection number and meter reader number. The revenue management system is being implemented in phases. The system will provide a wide range of services to consumers, including online application for a new water or sewerage connection, bill details, payment services, and registration of mutation requests and grievances. Further, it will also provide value-added services such as SMS alerts, payment receipts and automated notice generation for late payment and defaulters.

The system will have a separate module for collating data on the number of water and sewerage connections, and metering status. For accuracy, the number of electricity connections in the city will be taken into account while feeding data into the system. Also, to reduce losses owing to leakages and theft, the board will utilise the geographic information system maps prepared by the Delhi government and the Survey of India for a proper analysis of leakage points and identifying illegal connections.

Consumers will be sent monthly bills on the basis of their last meter reading. For instance, if there is a difference of 20 kilolitres (kl) from the last bill, then the consumer will be charged for only 20 kl. The latest meter reading will have to be submitted to the specific zonal revenue office for bill payment. Consumers can pay their water bills at DJB's collection centres (33), automated bill payment machines installed at different locations across Delhi, and Janvan Centres (31). DJB has also authorised 315 payment centres partnering with ICICI Bank, Corporation Bank and Allahabad Bank. Further, consumers will also have the option of making payments online through debit or credit cards.

#### Progress so far

Recently, the board launched the first phase of the revenue management project. Around 1.2

million bills generated under the new system have been distributed to consumers for payment. In the next phase, DJB is planning to provide hand-held meter reading machines to meter readers, which will enable them to generate on-the-spot bills with minimum possibility of human error.

#### Key advantages

The revenue management system will provide several benefits in the future. It is expected to enhance service delivery by improving the information base of the board, ensure timely completion of the billing process as per DJB's billing cycle, increase billing and collection efficiency, generate management information system reports for better monitoring and decision-making and enhance the consumer base.

#### Other initiatives

Besides these, DJB has undertaken several initiatives to improve its service delivery mechanism and upgrade water supply infrastructure. The recent initiatives undertaken by the board include:

- Installation of water meters: DJB is installing water meters in two phases to reduce theft and leakages in the water supply system. Under Phase I, it has installed around 350,000 meters across the city and plans to install 600,000 meters in the next phase, of which 300,000 will be automatic and the remaining will be regular magnetic meters.
- Water audits: To curb wastage of water, the board has installed flow meters at critical points in the transmission system to generate data on physical losses due to leakages and faulty pipelines.
- REWater pilot project: In June 2012, DJB signed an agreement with the Singapore Cooperation Enterprise for treating and recycling wastewater at the Coronation Pillar sewage treatment plant to help meet the city's water demand. Under the agreement, the Singapore government will provide technical assistance for setting up a 40 mgd plant based on the REWater technology at the Coronation Pillar plant. About 70 per cent of the total project cost will be provided

by Singapore-based Temasek Foundation.

• Tanker management system: DJB has awarded a contract for tanker management services to three private companies – City Link Water Transport, VSK Technologies, and Ramky Erwin Engineers. These companies have been allotted the task of deploying 385 water tankers in five zones for a period of 10 years. Each tanker operator has been provided a smart card that will be swiped at water filling stations to record the quantum of water being supplied. Further, global positioning system devices have been installed to track the movement of these tankers. This is expected to significantly improve services provided by tankers by curbing wastage, limiting diversion of water and tracking tanker movement.

• 24x7 water supply projects: The board is implementing 24x7 water supply pilot projects on a public-private partnership basis in Vasant Vihar, Mehrauli, Malviya Nagar and Nangla to improve the continuity of supply, reduce contamination risks and water losses, and upgrade the distribution network.

• Development of recycling plants: DJB has set up recycling facilities at the Haderpur, Wazirpur and Bhagpur water treatment plants (WTPs) to utilise raw water wasted during the treatment process. It is also constructing a recycling plant at the Chandra wal WTP. About 45 mgd of additional water is expected to be supplied through these recycling plants.

#### Conclusion

Going forward, DJB aims to reduce the proportion of NRW to 8-10 per cent by introducing 100 per cent metering and upgrading the distribution network. Efforts are also being undertaken to introduce 24x7 water supply in all parts of the city. That said, given the increasing urban population along with the depletion of groundwater resources, technological initiatives have to be undertaken to plug leakages and thefts in the supply network as well as to develop alternative water supply sources like treated or recycled water. ■

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