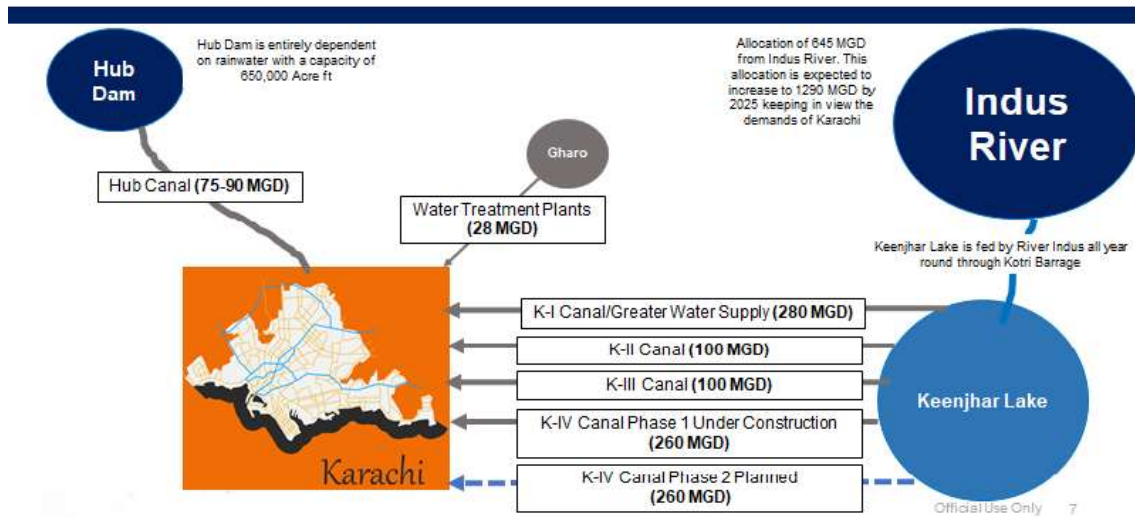


Water Sector PPPs

Karachi's Water Sector

Karachi is Pakistan's economic and financial hub as well as the provincial capital of Sindh. It generates 12-15% of the GDP, plus contributes around 53% of the overall federal tax collection and 5.5% to total domestic employment. With a population of over 16 million people and area covering 3,780 km², it is the 12th biggest city in the world by population. The Karachi Water and Sewerage Board (KW&SB) is primarily responsible for managing the city's water and sewerage needs and estimates the total water demand for the city as 1,200 MGD. The "Water supply and sewerage system in Karachi Report" prepared by JICA in 2008 proposed that 40 gallons per capita per day (GPCD) could be adopted for bulk water demand for the year 2025, that is the same as the 2008 demand, whereas water availability for domestic consumption will increase because of the reduction of water losses and the water-saving efforts of non-domestic consumers.

Karachi Water Sources



Demand v/s Supply

The demand for water in Karachi is 1,200 MGD, whereas the bulk water sources for Karachi are Keenjhar Lake with 550 MGD supply capacity, Hub Dam with 100 MGD while 15 MGD are obtained from other minor sources. Thus, there is an inherent 45% shortfall in the Karachi water supply, that is an overall 535 MGD. In addition, the city is getting less water resources from the Keenjhar Lake due to non-desilting of its water channel. The Hub Dam source is also affected by the seasonal and annual water level fluctuations in the dam, and this situation is

further aggravated due to losses attributed to leakages and water theft, and according to some estimates, 35-40% of the water supply in Karachi is being lost on this account.

Water Woes

Karachi Water Supply Situation

Inadequate Water Supply



- KWSB supplies approximately 665 MGD to Karachi against a demand of 1,200 MGD resulting in a shortfall of around 535 MGD.
- Approximately 210 MGD of water supplied is not filtered
- Regulated and unregulated hydrants are spread across the city
- Informal privately operated tankers also fulfill the demand gap

Excessive Water Losses



- Water supply of the city is at least 40-45 years old and an estimated 35% (232 MGD) of the water supplied is lost during transmission thus decreasing water availability to 433 MGD

Low Accessibility



- There is no metering for retail customers. Customers pay a fixed tariff independent of water consumption
- Only 25% of industrial and commercial customers have metered supply
- Almost 60% of the households are connected to the water supply network and water availability ranges from 2 hours after every 2 days to 2 to 4 hours per day

Primary Water Sources



- Surface water sources include Hub Dam, Keenjhar Lake and Haleji Lake
- Ground water source includes Dumlottee well fields. However, supply from these wells is negligible (1.4 MGD)

Furthermore, out of the total water supplied, 210 MGD is not filtered, and this fact, in addition to bacterial contamination from sewerage discharge flowing in pipelines laid parallel to water supply pipelines has significantly degraded the quality of water supplied. Another study conducted by PCRWR found that almost 86% of water supplied to Karachi is unfit for drink due to presence of E-coli. The water supply infrastructure is almost 40-45 years old, and poor maintenance and inadequate rehabilitation has led to the water losses in the distribution system. Namely, out of the 665 MGD supplied, 232 MGD gets lost due to leakages. This way, access to water through pipes, tube wells and pumps in Karachi has declined over the past 10 years, moving from a 90% coverage in 2006-07 to 86% in 2014-15. In poor neighborhoods and informal settlements, water shortages are severe with availability ranging from two hours every two days to four hours per day. The lack of alternatives has given rise to unregulated hydrants propping across the city and sale of water through private commercial tankers. The water stress gets worse with hot weather, and people in many areas (Lyari, Baldia, Orangi, Keamari, Shershah and parts of Gulistan-e-Johar) are compelled to drink contaminated water. A tanker of 1000 gallons with slightly brackish water sells in city for Rs 1,000 and water with better quality can be sold for up to Rs 2,000 for 1000 gallons, whereas citizens in many areas purchase canned and bottled water.

PPP Intervention

Given the lackluster state of water supply system within the city, a dire need was felt by the policy makers to intervene and make things right. While intervention through traditional procurement has always remained a quick way out, it needs to be highlighted that developing water projects involves work of intricate nature. A multitude of water projects have been introduced in the water sector under PPP mode wherein the concessionaire will be responsible for managing the development, operations and maintenance of the projects for the concession term. While details of such projects are given below, they can broadly be categorized into water and sewerage transportation, waste water recycling and filtration/desalination.

- Karachi Hub Water Canal Project

Project aims to rehabilitate 22.4 km stretch of Karachi Water Canal from head regulator to end point in Karachi West. The project includes upgradation/rehabilitation of pumping station, filtration plant, solar PV plant, rehabilitation of half the canal and replacement of remainder with a pipeline structure. IFC (World Bank) was appointed to act as transaction advisors for the project in mid-March. Subsequently, IFC appointed local and international consultants for the project including TYPISA, Halcrow Pakistan & HMCO.

- Municipal Wastewater Recycling Plant at TP – I

First of its kind vertically integrated Waste-to-industrial grade water Project in Pakistan. USP to supply industrial grade water of 35 MGD for industries in SITE Area where the private party will be required to provide end-to-end solution. Currently, SITE is using potable water through informal channels and facing acute water shortage, which has impacted industrial activity and restricted various planned expansions. ADB OPPP is assisting KW&SB as Transaction Advisor in this project.

- Municipal Wastewater Recycling Plant at TP – IV

The project is to establish, operate and maintain a new Treatment Plant in Korangi to cater to the flows from Shah Faisal, Landhi & Malir Town. ADB has been engaged as Transaction Advisor for undertaking the Feasibility Study for the project.