

Marmore Infrastructure Report

2013

Kuwait Water

Containing consumption and spurring investments

Research Highlights

Examining and analyzing the status of Kuwait Water sector highlighting the demand, supply and investment trends. The report also presents growth drivers and key learning points.

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1. Executive Summary

Globally fresh water presence is about 3% of the the total water present on Earth. Water is not evenly distributed over the globe. Fewer than 10 countries possess 60% of the total fresh water available and definitely GCC would be the other extreme, with countries like Kuwait possessing almost nill internal renewable water resources.

Kuwait recorded the highest water consumption per capita per day and the value was 500 litres.

Kuwait recorded the highest water consumption per capita per day and the value was 500 litres, which is very much indicative of its demand range. Kuwait in terms of its water withdrawal seems to be low at 374 m³ per year per capita, but the availability of renewable water resources stands at 7 m³ per year per capita, which is also very low compared to its GCC peers.

Potable water is mainly consumed by Municipalities, as Potable water finds its use among residential places. Potable water consumption in 2011 stood at 128,236 MIG (Million Imperial Gallons). Municipalities are mainly urban cities and the urban population in Kuwait has increased by 35% from 1990 to 2011. With increasing population and changing usage trends the consumption of potable water is estimated to be 142,230 MIG in 2015. This value along with percentage of withdrawal of Potable water to availability of renewable resources (2,465%), highlights the heat of demand for fresh water in near future.

Agriculture is also a major sector that withdraws substantial amount of water. Sulaibha farms are government owned farms, which are supplied with Brackish water. Brackish water is highly saline, which is not suitable for municipal consumption. Brackish water consumed in 2011 stands at 19,265 MIG. Though the arable land in hectares has decreased from 12 to 11 from 2002 to 2008, the crop produce has been exhibiting increasing trend. The crop production index, which is produce by keeping cultivated land area constant, has been increasing from 109.4 in 2008 to 155.3 in 2011. These all indicate the possibilities for an increase in withdrawal of water by agriculture sector.

Of other two sectors Industrial sector is a much smaller consumer of water. Water finds its use in refineries and water is lost in sludge and evaporation.

The number of residential consumers is highest with a percentage of 93.3%, and most of the residential consumers are private.

The refinery capacity has increased from 889.2 thousand barrels per day in 2009 to 936 thousand barrels per day in 2010. This sudden increase would really increase industry's demand for water.

On supply side there is very little or almost nil internal renewable water resources. The annual precipitation stands at 121 cm which is very meager when compared to the prevailing demand. Desalination and Sewage treatment plants are the alternative sources of water. Total desalination capacity as of 2010 is around 423.1 MIGD (Million Imperial Gallons per day). Sewage treatment plants are taken care by Ministry of public works. Sulaibha facility is the only plant producing RO treated wastewater as of 2011 and its output is 3,40,000 cm/day.

The total investment in water sector between 2005 to 2014 stands at 5279 million USD.

The number of residential consumers is highest with a percentage of 93.3%, and most of the residential consumers are private. Other consumers who belong to industrial, commercial, agriculture and service sectors form 6.7%. So a sudden depletion in the fresh water supply will affect the residential consumers by a much greater magnitude than other consumers.

MEW (Ministry of Electricity & Water) owns and operates all existing power and water production facilities, transmission networks and distribution systems in Kuwait and sells electricity and water. Water tariffs are categorized based on type of consumer. It is just 0.02 Kuwait Dinar (KD) per 1000 gallons for Sulaiba farms and it is 0.85 KD for state facilities and companies.

The total investment in water sector between 2005 to 2014 stands at 5279 million USD. Of all water sector investments, water treatment plants saw highest investment at 3402 million USD. In 2010 many projects were undertaken and finished. The Construction of Sabiya Distillation Plants Projects Stage I & Stage II, Shuaiba North Distillation Plants and Shuwaikh Reverse Osmosis Desalination Plant took place.

The Construction of Az-Zour North Distillation Plant Project is a huge and much awaited project in Kuwait. The purpose of this project is to supply & erect 15 multi stages Flash Distillation Units each of 17 MIGPD capacity with Recarbonation Plant, in addition to one Reverse Osmosis Desalination

Plant having 25 MIGPD capacity i.e. having total capacity of 280 MIGPD for the plant.

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