A WATER GAME

The market for water and wastewater treatment is on the verge of a major expansion in the GCC as demand for water escalates.

Emerging challenges around water quality and quantity are compelling governments in the GCC to recalibrate their efforts in addressing growing water needs amid population growth and industrialisation.

Capital expenditure on advanced water reuse is expected grow at an annual rate of 19.5%, according to recent reports, as the need to become efficient rises up on the agendas of most governments and businesses. Over $40bn of government investments are slated for new treatment and collection systems in the region over the next eight years.

More than 70% of wastewater is reused across the GCC, and now these countries are aiming for 100% reuse of treated sewage effluent within the next few years. The idea is to guarantee proper treatment so that seawater and wastewater can be reused in normal applications such as drinking water, agriculture, landscape irrigation and industrial processes, enabling communities and countries to stretch limited freshwater supplies.

Frost & Sullivan research reveals that urban water supply in the Kingdom of Saudi Arabia (KSA) and the United Arab Emirates (UAE) is already above 90% coverage, with nearly 80% of this water sourced through desalination.

Investments in the water sector have been on the rise since 2010, with several projects under execution or bidding/tendering stage. These projects are covering all segments of the water sector, including desalination, independent water and power projects (IWPP), water transmission and distribution, repair and replacement of networks, wastewater treatment and produced water treatment.

Veolia, through its subsidiary Veolia Water Technologies, was recently awarded a contract by Dubai Municipality (DM) to engineer, procure, and construct a hazardous liquid waste treatment plant in the emirate.

"Water treatment is now considered the core of an integrated water management approach to save costs, recover materials and demonstrate environmental stewardship," says Zakia Bahjou, Dow Water & Process Solutions business leader, Middle East, Africa & Turkey, Dow Chemical.

"New equipment technology, such as membrane and thermal technology, are increasingly part of an integrated treatment solution. By using membrane technology in an industrial setting or municipal application, users can achieve levels of water quality that were not common 10 years ago," she says.

To meet growing demand, water solutions providers are scaling up their investments in technology and research, while putting on ground skilled personnel to execute and promote their latest technology offerings in the fields of water conservation and general efficiency.

"The key to the success of a wastewater treatment programme is tertiary filtration, capable of consistently producing a high quality effluent while enhancing the disinfection process - both chlorination and UV - and improving water quality," says Myron Van Ert, vice president GE Power and Water.

"The use of non-conventional water resources through recycling and reuse can support the provision of safe, available and affordable water, while decreasing energy needs, reclamation costs and environmental impacts. Hence, it is an essential component of sustainable water management," he adds.

Sustainability drives have also been seen among national water companies. An example is Haya Water, the wastewater company of Oman which is reducing methane emissions by aerobically composting sewage sludge.

The end products can be re-used efficiently

by the agriculture community as sewage biosolids or compost. In the medium to long-term, technology adoption/upgrade and compelling sustainability targets, together, can help the GCC reduce the demand-supply gap and aid preservation of resources for future.

Developments in 3D technology are enabling infrastructure engineers in the water and wastewater treatment industry to think and work differently in designing new plants. Bentley Systems is for example offering software solutions that allow tight integration with design and modelling, and provide capabilities for network modelling, operational modelling, GIS, asset performance, and asset lifecycle management.

"The process of multi-discipline plant design for example, offers a new potential of convergence between the reality of what we recognise in the physical state and the virtuality of the 3D environments of how engineers conceive and conceptioneer designs," says Aidan Mercer, industry marketing director, Utilities and Government, Bentley Systems.

According to Research and Markets, the water and wastewater treatment chemicals market in the GCC region will grow at average rate of 17.68% through 2020, driven by depleting water reserves and harsh climatic conditions.

Water and wastewater treatment chemicals are used to remove suspended solids, hazardous components and microorganisms from water. These chemicals are consumed in the treatment

of industrial process water and sewage and for production of drinking water, including as part of the desalination process.

During 2015-2020, desalination of seawater would be the sole source of potable drinking water in the region. The water should be at a suitable pH before desalination process. Also, the drinking water has a specific pH, thus pre-treatment and post treatment of water utilises pH and softeners, propelling the growth.

Increasing numbers of independent water and power projects IWPP's are utilising RO, thus driving the technology market. Several GCC countries have planned IWPPs with their construction scheduled to commence in 2012. These include 10 projects in the UAE worth $1.5bn; 15 projects in KSA worth $8.8 bn; and 19 projects in Kuwait worth $4.2bn.

Over the coming months, several contracts for wastewater treatment and transmission and distribution contracts are expected to be awarded. Growth is expected to remain steady with the industry looking to continue to adopt global best practices in the long term.

Moving forward, focus on improving efficiency and creating accountability could lead to the market opening up for integrated services and networks, with opportunities also arising in associated services such as smart metering, leak detection, and integrated solutions.