Global Desalination Report Ed 1 2011

Market Intelligence

The desalination market was still feeling the effects of the economic downturn in 2010 and many projects were put on hold. Following the election of the new government in Trinidad and Tobago all planned projects were shelved. Elsewhere, major markets were still Saudi Arabia, the USA, the UAE and Spain; with Saudi and the UAE continuing to be predominantly thermal markets, and Spain and the USA as membrane markets. Some projects were commissioned in new markets, such as the Beckton plant in the UK, but not nearly as many as expected.

Several mobile desalination plants were transported to Haiti and to New Zealand after earthquakes last year. A similar re-direction to Japan has not yet materialised. However, mobile desalination plants are becoming increasingly popular for remote communities and to meet immediate demand. Larger ship-based desalination plants have been developed. Although, not to a scale where these ships would be competitive with onshore medium and large desalination plants.

As in previous years, the general shift from energy demanding thermal desalination technologies, such as multi-stage flash (MSF) and multi effect distillation (MED), to membrane technologies, such as reverse osmosis (RO), is continuing apace. There are still some thermal projects. As in previous years, the general shift from energy demanding thermal desalination technologies, such as multi-stage flash (MSF) and multi effect distillation (MED), to membrane technologies, such as reverse osmosis (RO), is continuing apace. There are still some thermal projects. Notably Doosan's successful tender for the world's first 1 million m^3 plus desalination plant in Saudi Arabia. But not as many as the planned reverse osmosis plants, and, furthermore, the Doosan plant will be a hybrid composed of both MED and RO units.

On a smaller scale, interest in desalination plants powered by renewables has taken off. For example, Saudi Arabia set up the National Initiative for Solar Water Desalination (NISWD) at the start of last year, with the aim of developing large solar desalination plants for both the domestic and export markets. Also in 2010 the Iraqi government allocated USD 41 million to import solar-powered desalination plants. Over a two year period three hundred and fifty plants will be sent to rural regions in the country to meet domestic demand.

Along with the traditional desalination technologies forward osmosis and membrane distillation will become more commonplace. Both have low energy requirements than reverse osmosis, but are not as mature. Another promising area is of nanoparticles that change membrane properties and innovative technologies to minimise membrane fouling, which would reduce desalination costs further.

Overall the costs for desalination plants are continuing to decline. Energy recovery devices are fitted almost as standard to reverse osmosis plants. With plans to fit energy saving feed water intake systems, costs are expected to fall further. So that by 2015 desalinated water is expected to be cost competitive with water reuse and low quality water resources then with conventional sources twenty years later.

Despite this promising news, cost reductions have not been the same across the board. Large plants in Australia are particularly expensive as they have to comply with stringent environmental legislation. For example, plants may have to offset their carbon emissions by purchasing carbon credits or source electricity from renewables; and may also have to reduce the environmental impact of intake systems and produced concentrate in order to pass the permitting process.

As in previous years Veolia remained as the main supplier of desalination plants. Doosan reported strong growth due to its recent tender of the Ras Az Zawr and Yanbu 2 plants in Saudi Arabia. Thus highlights the importance of being awarded tenders for large desalination projects, especially in a weak market.

Highlights

For the next few years strong market growth is expected, as access to finance is more readily available. Along with existing major markets, growth is expected to be driven by China and India. Increased demand from mining industries in Chile and municipalities in the US are also expected to be strong. With demand from Australia, Algeria and Spain on the wane after all three countries have recently completed new build out programmes.

2011 is expected to be a good year for the sector compared to 2010. With more decision makers considering desalination as part of a water management strategy that includes the use of both conventional and unconventional water sources to meet demand.

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