

under scrutiny as never before.

- With Australian state governments increasingly discussing the monetisation of infrastructure assets, the innovative use of a three-part multi-currency international project bond as part of the VDP refinancing marks a major step forward in terms of opening up an entirely new investor base for the funding of Australian water infrastructure.

WATER PROJECT OF THE YEAR

For the water treatment plant, commissioned during 2013, that shows the greatest innovation in terms of optimising its physical or environmental footprint.

Abuja water supply project, Nigeria

What is it?

Nigeria's capital Abuja typifies the trend towards rapid urbanisation; officials project that the population of the capital territory will double to ten million by 2018. The Nigerian government's response has been assertive, damming the Gurara river and financing two new water treatment plants to avert a potential water crisis. 2013 saw the commissioning of both these 240,000m³/d plants, breaking the city's reliance on unreliable and extortionate tankered water.

Who is responsible?

Biwater International undertook the design, construction and commissioning of both plants, as well as a sludge clarifier treatment facility. The feedwater is sourced from the Lower Usama Dam and the new Gurara Dam, and supplied to Abuja and surrounding districts. The Federal Capital Territory Water Board operates the facilities.

What makes it special?

- Biwater's efforts to minimise the plants' environmental footprint were nothing short of inspired. Literally building into an uninhabitable local hillside, the construction team worked with nature to eliminate the need for pumping, leaving the distribution of both raw and treated water to gravity. This had the added effect of slashing operational and maintenance costs.
- Using sludge blanket lamella clarifiers, with their unique inclined plates, was another important decision, cutting by two thirds the space traditionally occupied by clarifiers in the city's other two treatment plants.
- With many forecasts singling out the oil-rich state as a future economic giant,

Nigeria's infrastructure deficit offers huge opportunities for intrepid companies. By training locals at an onsite lecture theatre and using Nigerian labour, Biwater has demonstrated its commitment to the country and secured an enviable foothold in a market with vast future potential.

Rajasthan rural supply project, India

What is it?

In the parched deserts of Rajasthan, on India's tense militarised border with Pakistan, a former nuclear test site has been transformed by a remarkable new supply project. 100,000 residents, formerly dependent on walking up to eight kilometres to contaminated boreholes, are now connected to a modern piped system, courtesy of the Pokhran-Falsoond-Balotra-Siwana (PFBS) water supply project, which transfers and treats water from the Indira Gandhi Munak Canal.

Who is responsible?

SPML Infra secured an EPC and a ten-year O&M contract from the client, the Public Health Engineering Department of Rajasthan.

What makes it special?

- Although the project's chief objective was to bring water to remote communities, its proximity to the Pakistani border meant that the bulk demands of the defence forces also had to be met. Add to that a thirsty local textile industry and you have enough different clients to alarm even the most experienced of international contractors. SPML's unmatched expertise in the domestic market meant that it was able to step up to the challenge with ease.
- Involving 80km of piping, 125,000m³/d of capacity across three water treatment plants, and two raw water reservoirs holding a combined 600,000m³, this project was a massive logistical undertaking. SPML's astounding achievement in bringing water to the deepest desert interior has since led to two pipe extension contracts, which will bring the distribution system to almost 400km and supply a million people in 580 villages. Taking this project as the blueprint, Rajasthan's government has already awarded ten more regional water supply projects to SPML, with a total value of over \$350 million.
- Thundering industrial expansion and an ever-rising population are competing with growing desertification across India, meaning that water utilities must always keep one eye on the future. SPML has installed a classic example of prescient crisis

capacity, with raw water storage facilities prepared for up to 30 consecutive days of canal closure.

Riyadh water supply enhancement programme, Saudi Arabia

What is it?

The Riyadh water supply enhancement programme is proof that with the necessary funding and relentless political will, water infrastructure mega-projects can be delivered in a fraction of the usual time. The project encompasses a network of 43 groundwater wells, 27 brackish water desalination plants and 29 reservoirs spread across Saudi Arabia's capital city, built at breakneck speed to meet a 200,000m³/d potable supply shortage before the summer of 2013.

Who is responsible?

The water treatment elements of the contract were carried out by two contractors, Wetico and Suez Environnement subsidiary Degrémont, on behalf of the client National Water Company (NWC), the water utility serving the Kingdom's major cities.

What makes it special?

- A number of factors conspired to confront Riyadh with an unexpected and formidable water supply shortage in 2012. NWC brought this emergency project to the table at an unprecedented speed, squeezing two years of design, procurement and construction into just six months. This achievement has smashed the industry's efficiency records and cemented NWC's reputation as an outstanding performer.
- The political and organisational coherence that drove this project to a successful conclusion was simply stunning. NWC's prestigious public standing allowed it to call upon an array of contractors representing some of the most skilled companies in the global water sector. It also used its considerable clout to persuade customs officials to speed up the processing of the 450 separate shipments which came in from suppliers around the world.
- This project was never intended to be permanent. With this in mind, NWC ensured that as many parts as possible, including the reverse osmosis units, are modular, so as to enable easy transfer to other sites in future. It is this sort of vision which marks the company out as a regional pioneer at the forefront of developing an increasingly sustainable water resourcing strategy in a hugely challenging environmental and financial climate.