



WATER IN ACTION

Partnerships

Knowledge

Solutions

Water from coal seam gas aids drought stricken communities in Queensland

Australia is the driest inhabited continent on earth, which puts enormous pressure on providing sufficient water for its population and agriculture. Queensland has been one of the worst hit areas and following several years of drought, many of its reservoirs are below 20% capacity, and therefore, new water sources are extremely welcome.

One new source being exploited is the use of water from the gas extracted from the underground coal seams in the state. This water which in the past was seen as a waste product, could now provide a valuable source of additional water. Pipelines are now being installed to deliver the water to the local communities and provide cooling water for the local power stations.



Changes in the weather pattern in Australia have brought several years of drought to much of the country. Queensland, in north eastern Australia, has been one of the worst hit areas, which has had a major financial and social impact on many local agricultural communities in the region. The State has undertaken a number of new initiatives to reduce water consumption and to reuse water from existing resources. New desalination plants have been built but these are expensive and consume considerable energy, so everyone is conscious of the value of any additional source of water.

Australians live on the driest inhabited continent on Earth and following 10 years of drought, nearly every Australian city will be forced to find new water supplies during the next decade, as climate change and population growth take their toll on the nation's already limited water supply. In the Murray-Darling Basin, which was Australia's prime food-growing region, the current drought is the worst in the country's recorded history. Many scientists believe that this signals a permanent climate shift that is challenging the country's capacity to feed itself. Overall, more than 60 per cent of Australia's agricultural land is declared as an exceptional area of drought by the federal government.

The annual report by the Water Services Association of Australia said authorities in all of Australia's mainland capital cities will need to find new ways to provide water, such as desalination and recycling, in the next five to 10 years. The west coast city of Perth has become the first in Australia to build a large-scale desalination plant, and other plants have been built in Queensland and New South Wales. In Brisbane, the Western Corridor Recycled Water Project is already supplying water to power stations in the area and the water will be used to top up the reservoirs when they fall to a critical level. The new infrastructure could cost up to US\$25 billion during the next decade, and this will have to be paid for by higher water charges to consumers.

Water from Queensland's coal seams

Australia's east coast is particularly badly affected, including Queensland in the north east of the country. However, some towns in the area could benefit from the utilisation of water from coal seam gas extraction plants. In the underground coal seams, the water, gas and coal are fully integrated, but once water is pumped from a well drilled into the seam, gas is also released. Water production is usually greatest in the early phases of mining, and as water production reduces, the flow of gas increases.

The gas production companies used to regard the water as a waste product and allow it to evaporate in open pools, but in the current situation, they realize this water could be valuable in alleviating some of the severe problems from the drought. The new water source could have a multiplicity of uses. In its raw form, it could be used to top up the reservoirs, or after treatment, it could be used for agricultural irrigation and human consumption.

New pipelines to revive communities

By 2010, the Queensland Department of Mines believes that 14,300 million litres of water per year will be available as a by-product of their operations. In seven to eight years, it is expected to be able to supply 100 to 125 million litres of water per day. Origin Energy, which is the largest coal seam mining company, estimates that it could supply more than 5,000 million litres of water per year, increasing to 25,000 million litres per year by 2015.

A 25km 450mm 12.5 bar water pipe is being constructed, which will take water to the local town of Miles as well as supplying cooling water to the local power station, which was built specifically to utilise the gas from the coal seams. The first pipes are now going in the ground – PE100 pipes produced from BorSafe HE3490-LS material and manufactured by local pipe producer PPI in Brisbane.

Although this new water source will not solve all the water problems in Australia, it will improve the quality of life for many of the citizens in this region for many years to come.



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