

a new approach to managing water

"In the middle of difficulty lies opportunity." Albert Einstein.

Australia's water crisis presents us with the opportunity to become more independent from the vagaries of nature. Efficient use of water, also known as demand management, is part of the solution to the water shortage. The other aspect is supply management. Re•sourcing focuses on supply side - turning a potential source into a resource through recycling.

HydroScience Consulting is an Australian company that developed, and is strongly advocating, the concept of re•sourcing.

"Nature has been recycling water for eons. Humans have been recycling water for centuries," says Gidi Azar, HydroScience managing director. "We specialise in developing the best combination of natural and technology-based recycling systems."

The foundation of the re•sourcing concept is the integrated planning phase. "Integrated water management is not a new concept," continues Azar. "We are just approaching it in an innovative way. We are using systematic planning to optimise demand management and supply management. On the supply side, we consider all available and potential water sources. The outcome is the right balance between natural and recycled water. Re•sourcing planning is the best strategy for urban, industrial and rural water users."

The level of treatment required for recycling water depends on the source of water and intended use. Reverse osmosis is often mentioned in the same breath as recycling water, but this is an expensive, energy-hungry process with a hard-to-manage brine stream. One advanced treatment process that provides high level treatment is the immersed membrane

bioreactor (MBR). MBR treatment plants are smaller and often more economical than conventional secondary plants with tertiary filters. "Designing MBR plants requires specialist knowledge and experience," says Azar. "Our affiliated companies in California have designed and are operating a number of these plants. By sharing this knowledge we are able to design MBR plants for our clients in Australia."

"MBR plants are an emerging wastewater treatment technology.

They treat wastewater to a very high level suitable for a wide range of non-potable uses," says George Harris, a director of HydroScience Consulting and president of the California based HydroScience Engineers. "We have designed these plants for municipal and private clients including resorts and are keen to share our experience with Australian water users."

Treatment plants and recycling facilities need to be operated safely, employing environmentally sensitive practices. HydroScience Operations is a company specialising in operating advanced treatment plants.



Azar and Harris say that the availability of experienced operators to work with designers, and with clients, ensures that plant owners maximise the benefits from their facilities.

"The current water crisis presents an opportunity for Australia to take control of the water cycle," concludes Azar. "Water sources that have been non-viable or marginal look a lot more attractive now. Through the re•sourcing process we are recycling these sources into resources."

"Demand is projected to exceed supply from existing water sources in nearly all major Australian cities within 20 years."

National Water Commission, July 2006

solution: re•source

Recycling water into a resource, or re•sourcing, is a safe, sustainable practice that will help water leaders of the future cope with increasingly scarce water supplies.

By planning and designing advanced water recycling systems, **HydroScience Consulting (HSc)** helps clients re•source water for agricultural, industrial and urban uses.

Learn more at www.hydrosience.net.au.



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