

NSW Productivity Commission meeting on Water

The meeting was well attended with representative from Councils, Sydney Water, CSIRO, Universities and Water Industries.

I made some contributions to the forum on specific items. These are not in order of importance but in order in which they fitted into the programme.

1. Membrane-based water treatment provides a means of recycling of water using sewage waste water and storm water. Water recycling would be particularly attractive in regional areas. The main obstacle to its implementation is public resistance to recycling water for potable use.
2. One approach to the public resistance to re-use of RO treated water is to pump it into aquifers with the water subsequently pumped back up at distant locations for re-use. This is actually done on a very large scale in California.
3. Whilst Desalination provides a good pathway to increasing the supply of water for human use, the thermodynamics of the process is such that it is much cheaper in energy terms to process waste water using Reverse Osmosis membranes. This is not so much related to the engineering energy costs but more directly the energy costs related to the osmotic pressure of sea water.
4. Long term planning, should include an educational component that sets out to inform the public about water, water re-use and the water treatment using reverse osmosis membrane technology. In particular that should include the nature of the latter process and the relative purity of such product water compared to what is being consumed from traditional water supply sources.
5. Water, as available to the average Sydney sider is a product of high purity and is so cheap that it is undervalued by the customers. Some alternative sliding-scale pricing and education program is required to alter the public perception.
6. Long term planning of this kind has and continues to be done in places such as Singapore. This involves an extensive program to bring visitors to the water treatment plant at Bedok with a large exhibition hall set up with trained guides and videos etc. In particular, School children are brought here in bus loads to instill in them the value of water, water conservation and the membrane technology that brings them "New Water" – as it is called.
7. Better use of water for agricultural processes, in particular the commercial production of vegetables and other market garden products. At present there is too great a reliance on open-field agriculture. Experience in the Netherlands has shown that market garden production in high tech glasshouses requires only 10% of the water needed to grow these crops in the field. This experience is based on very large scale production; The Netherlands produces some 30% of the worlds market garden produce (it is only second to the USA in total production). Implementation along the Murray-Darling of this technology would require large investment but has the potential to almost eliminate the problem of water availability along this basin.
8. Recycling of water within individual apartment buildings for potable re-use is feasible and indeed has been implemented in Korea.
9. Large water catchment areas on large industrial estates in the Western regions of Sydney are largely unutilised. The amount of water is quite significant and of relatively good quality needing only minimal treatment. However, bureaucratic obstacle and lack of investment in

infrastructure means that this water generally ends up in the storm water system and flows out to sea.