



Desalination

Desalination of sea water is being regularly considered as world supplies of fresh water dwindle and the increasing population requires more water for personal use, as well as for agriculture and industry.

Desalination refers to any processes that remove excess salt and other minerals from water to get potable water suitable for human and animal consumption, and for irrigation. Almost all the salt is removed, to make it acceptable for human use.

Desalination of sea water is practised in places that have little natural fresh water. It is widespread in the Middle East and is increasingly used in Singapore, parts of the United States and Europe. The process can produce table salt as a by-product. Desalination is used on many ships and submarines.

In Australia, debate about the value of desalination as a way of providing fresh water continues. Desalination requires large amounts of energy, as well as specialised, expensive services and facilities, making it costly compared to

taking fresh water from rivers or wells (bores). Where there are abundant supplies of energy, such as in many Middle Eastern countries with large oil reserves, desalination is cheaper. Saudi Arabia's desalination plants provide about a quarter of total world capacity from desalination plants. The world's largest desalination plant, in the United Arab Emirates, produces 300 million cubic metres of water per year.

Regardless of the method used, there is always a highly concentrated waste product, consisting of everything that was removed from the sea water. Coastal desalination plants may be able to return this to the sea without harm, if the concentrate does not exceed the normal ocean salinity. This point creates heated debate. Disposing of waste products inland runs the risk of contaminating fresh water in lakes, rivers and aquifers. Proper disposal of concentrates needs to be investigated before production starts.

Because of escalating costs and fears of environmental damage many people believe treatment of sewage water and stormwater run-off is a better solution.

Source: <http://en.wikipedia.org/wiki/Desalination>