



DESALINATION IN AUSTRALIA: THE FACTS

By NCEDA CEO Neil Palmer

Desalination has an increasingly vital role to play in Australia's long term water security and the country's sound economic future. Seawater desalination is the only new and sustainable water source available to us. Desalination offers insurance for Australia's water supplies against drought, climate change and population growth.

Desalination of seawater can effectively quench our growing nation's rapidly expanding thirst for safe, reliable quality sources of public and industry water.

Australia's needs for clean drinking water continue to grow year-on-year with our population expected to expand 50% by 2050. In the absence of other sustainable water sources, seawater desalination and potable water reuse (which uses desalination as part of water treatment) are the two best options for the future.

Turning plentiful seawater into drinkable water with desalination is the best long term strategic investment Australia can make to sustain and supply projected populations over the next 100 years.

Desalination is an efficient and economical way of extracting freshwater from plentiful seawater using evaporation. Evaporation is also the source of most of Australia's rainwater, however climate change and cyclical droughts in the southern half of the country mean our rapidly expanding urban populations can no longer rely on rainfall alone for their growing water needs.

Desalination can alleviate over-reliance on fragile aquifers and waterways and doesn't impact on forest, river and wetland ecosystems, nor scar the landscape like huge dams.

The energy use and carbon footprint of desalinating water is considerably less than that of home air conditioning or water heating.

The energy used to desalinate water for a typical household and garden is about the same as that used by one appliance – the home refrigerator.




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The official carbon footprint for operating large desalination plants here in Australia is low as their energy use is 100% offset by purchase of renewable power such as wind energy in each state.

New research innovations by National Centre of Excellence in Desalination Australia members and partners will further reduce the start-up and maintenance costs of desalination, lowering energy requirements and reducing carbon emissions, for example using nanotechnology.

Well designed and managed desalination concentrate return to the sea has negligible impact of the marine environment, based on extensive University of Western Australia studies of the Kwinana plant in Cockburn Sound. Australia's desal plants continue to be extensively monitored by scientists.

Key statistics

By the end of 2012 up to half of Perth's drinking water in Western Australia, and Adelaide's water in South Australia will be supplied by desalination as their new desal plants reach full production capacity.

In 2012 over one third of Australia's capital city public water supplies will be able to be met by desalination from the six coastal desal plants in Sydney, Melbourne, Adelaide, Perth and on the Gold Coast.

Perth was Australia's first city reliant on desalination – since November 2006 the country's first desal plant at Kwinana has provided 17% of Perth's drinking water. WA's new Binningup desal plant was fast-tracked to come online in December 2011, raising desal supply to provide one third (34%) of Perth's water. Its immediate expansion will help increase Perth's total desal supply to 50% of its water needs by the end of 2012.

More than 300 million people in 150 nations already benefit from access to safe, quality water from desalination. Worldwide there are over 15,000 desal plants.

The total cost of desalinated water is far cheaper than the retail price of bottled water, the total cost of piping, pumping and treating water from the Kimberley to Perth, or the cost of water from a domestic rainwater tank (which is only seasonally available and able to supply a fraction of household demand).