

**Submission  
No 87**

**INQUIRY INTO ADEQUACY OF WATER STORAGES IN  
NSW**

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**Date received:** 23/08/2012

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# Submission to the Inquiry into the adequacy of water storages in NSW

By  
Brian Doherty

***That the Standing Committee on State Development inquire into and report on the adequacy of water storages in NSW and in particular:***

***a) the capacity of existing water storages to meet agricultural, urban, industrial and environmental needs,***

It is unclear what is implied by the term 'water storages' in the referred Terms of Reference for this inquiry. If it indicates an exclusive focus on water supplies from dam storages then the terms of reference preclude any logical discussion on the questions being asked.

I submit that the State Development Committee needs to interpret the term 'water storages' in a broader sense to include all available water sources - dams, ground water, oceans, domestic and industrial water tanks, sandbed supplies, recycled water, potable and non-potable - in order to gather evidence on the questions being asked.

Indeed it would be highly irresponsible to address the ***capacity of existing water storages to meet agricultural, urban, industrial and environmental needs*** without considering all water supply options, all distribution and demand side use conditions and all options for the efficient reuse of supplied water.

***b) models for determining water requirements for the agricultural, urban, industrial and environmental sectors,***

In line with the points made above it would be the usual practice to develop an **integrated water resource planning process** in order to develop a socially, economically and environmentally sustainable agricultural, urban and industrial water strategy.

There is great scope to use our existing water supplies more wisely in order to meet demand - more efficient distribution, onsite collection/storage, domestic and industrial water saving technologies, separating potable and non-potable supplies/use and options for reuse and reprocessing. It has been shown by the well publicised Michael Mobbs' sustainable house project in inner Sydney that it is possible to collect and process all the water required for a normal family's use without being connected to the city water supply or sewer.

There are big ticket items for policy development in the area of determining water requirements. The largest and most overlooked is moving towards an agreed population policy. Within the next 50 years it is desirable and likely that the Australian population will stabilise.

It also needs to be acknowledged that climate change modelling indicates some areas are likely to get wetter and some drier while others stay relatively unchanged. Dam construction uses rainfall data to estimate yield and these yield predictions are now in question. It would be prudent to develop more diversified supply and demand strategies that do not rely on precipitation.

Realistic estimates of risk need to be set along with flexible response strategies. For instance, Hunter Water has argued recently that there should be a policy of 'no possibility' of running out of water. This is irresponsible because it is statistically impossible to meet this objective and in trying to do so you run into the law of diminishing returns. Hunter Water went on to argue that a 1 in 10 million year possibility was too high a risk and therefore a new dam was needed. In reality their own modelling showed that there was a possibility of needing a small amount of water for a small amount of time 1 in 21 years. The correct design solution for this would be a flexible response strategy that could deliver fairly small amounts of water over short periods of time (in this case a few months) during exceptionally long droughts.

I submit that the following represents an acceptable and desirable approach:

The supply system has the capacity to maintain an adequate level of supply over most periods in the long term.

When drought periods occur, a drought response plan provides short-term protection against running out of water through the implementation of water restrictions.

In cases of extreme drought, a contingency or emergency plan exists that ensures that basic water needs for a community can be met for the duration of the emergency (Erlanger & Neal 2005 as quoted in '*An Independent Review Of Supply-Demand Planning In The Lower Hunter And The Need For Tillegra Dam - August 2009*', Institute for Sustainable Futures, University of Technology Sydney).

***c) storage management practices to optimise water supply to the agricultural, urban, industrial and environmental sectors,***

Open dam storages are inherently inefficient. The resource literally evaporates. Dams are also rainfall dependent which makes them a poor source of reliable supply especially when we are moving into a period of greater climatic uncertainty. Luckily most Australian cities are located close to the coast so urban supplies can benefit from desalination options. One of the drawbacks of current desalination installations is their lack of responsiveness to demand or indeed the lack of it.

I submit that there needs to be Government support for developing flexible desalination technologies that can respond to changing demand requirements.

***d) proposals for the construction and/or augmentation of water storages in NSW with regard to storage efficiency, engineering feasibility, safety, community support and cost benefit,***

I submit that ecological costs cannot be overlooked or isolated from the social and financial as ecological degradation will have social and financial impacts over time. Therefore any proposals for the construction and/or augmentation of water storages needs to address their environmental impact.

***e) water storages and management practices in other Australian and international jurisdictions,***

Because of the unacceptable social, financial and ecological costs associated with large dams the current trend is not to build them but to decommission them. According to The World Commission on Dams (Dams and Development: A New Framework for Decision-Making. The Report of the World Commission on Dams, 2000) since 1998, the decommissioning rate for large dams has overtaken the rate of construction in the United States and large dams have been at best only marginally economically viable. Dam costs cannot be compared to comparatively low cost water conservation and demand management strategies.