



Submission by

The Alternative Technology Association

on the

Submission to the Draft National Water Initiative Pricing Principles

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1. Overview

Step change decreases in rainfall, dying river systems and record low storage inflows in many parts of Australia in recent years have made plain the challenge of achieving water security for the country. In recent weeks towns in southern Queensland have run out of mains water¹ while in Melbourne storages remain below 40% going into summer.² While many jurisdictions are imposing water usage targets and restrictions in an attempt to conserve vital water storages, Australians are still using an excessive amount of mains supplied water relative to our climate and to the rest of the world.³ At the same time, gigalitres of wastewater and stormwater - enough to satisfy the needs of

¹ See <http://www.abc.net.au/news/stories/2009/12/02/2759263.htm>

² See http://melbournewater.com.au/content/water_storages/water_report/water_report.asp

³ Australia's household daily usage sits at 800L compared to the United Kingdom's 150L and Africa's average of 20L (Oxfam 2009)

major cities - are unutilized.⁴ It has become apparent that Australia needs to systemically alter the manner in which it manages water.

For this reason, the Alternative Technology Association (ATA) appreciates the opportunity to comment on the National Water Initiative's Pricing Principles. The structure of water pricing plays an important role in directing water policy. **Of central importance is the need for pricing principles to support environmentally sustainable water management practices by consumers, retailers and policy makers alike.**

The ATA is a not-for-profit organisation established in 1980 to empower our community to develop and share sustainable solutions for the way we live and to promote the uptake of sustainable technologies in order to protect our environment. The organisation provides services to over 5,000 members nationally, who are actively promoting sustainability in their own homes by using good building design, energy and water efficiency and renewable energy technologies.

ATA advocates in both the government and industry arena for ease of access and continual improvement of these technologies, as well as the production and promotion of information and products needed to change the way we live. Our magazines *ReNew* and *Sanctuary* now reach a readership of more than 140,000.

2. National Water Initiative Objectives and Pricing Principles

The National Water Initiative advises that its overall objective is:

...to achieve a nationally compatible market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes.⁵

Subsequent objectives include commitments to achieve:

- statutory provision for environmental and other public benefit outcomes, and improved environmental management practices
- complete the return of all currently over-allocated or overused systems to environmentally-sustainable levels of extraction
- clarity around the assignment of risk arising from future changes in the availability of water for the consumptive pool
- policy settings which facilitate water use efficiency and innovation in urban and rural areas
- addressing future adjustment issues that may impact on water users and communities⁶

The National Water Initiative (NWI) is important as a national blueprint for water reform outlining, among other things, Government commitments to implement 'best

⁴ PMSEIC, 2007 in <http://www.environmentvictoria.org.au/library/water-security-healthy-rivers-our-vision-melbourne>

⁵ National Water Commission, National Water Initiative Objectives, online: <http://www.nwc.gov.au/www/html/672-objectives-key-elements.asp?intSiteID=1> (last updated 21 Sep 2009)

⁶ National Water Commission, National Water Initiative Objectives, online: <http://www.nwc.gov.au/www/html/672-objectives-key-elements.asp?intSiteID=1> (last updated 21 Sep 2009)

practice water pricing'. The recently released pricing principles provided under the NWI fail to outline strategies which can achieve sustainable water use in households; a key step in achieving 'environmentally-sustainable levels of extraction' and 'improved environmental management practices'. In order for the NWI to achieve objectives as outlined above, it will need to ensure that pricing principles assist in the achievement of environmental efficiency and sustainability objectives rather than acting as a barrier.

3. Two Part Tariff Pricing Structure

In urban situations where water trading is limited, the NWI pricing principles recommend using a two part tariff, comprising a fixed 'service availability charge' and variable 'water usage' charge. The pricing principles allow for an inclining block tariff system to be applied to water usage charges.

This pricing system represents common practice for industries operating under naturally monopolistic conditions. The NWI paper suggests that water usage prices be determined by the long run marginal cost of supply of additional water, and the service availability charge is the difference between the total revenue requirement and the usage revenue raised. The current service availability charge is effectively a flat charge applied to all households and used to recover capital expenditure.

3.1 Issues for current pricing principles

The current pricing system may prove to be problematic in light of NWI objectives mentioned in section 2 which surround environmental protection and resource sustainability. The following section highlights some of the issues for these pricing principles.

3.1(a) Sharing the cost of water infrastructure

An increasing number of households are taking up voluntary methods to reduce their mains water use by considerable amounts. This often expensive infrastructure, such as water tanks and greywater systems, is primarily funded by the concerned private citizen.⁷ The current system means that these households are not just paying for these in-house usage reduction methods but paying an equal portion of investment in future mains water supplies. In order to promote the equitable distribution of capital investment amongst citizens, alternate methods of capital expenditure recovery should be examined.

While the current pricing system places an inequitable burden on water-sensitive households, it also fails to encourage dramatic water usage reductions or the voluntary adoption measures by other households. There is little financial motivation to take up such measures when a household will be paying the same service availability charge as heavy water users. If anything, the pricing system discourages households taking up such voluntary measures as these households pay not just for the installation and maintenance of their private water saving devices but are forced to contribute equally to mains water supply assets.

⁷ A Marsden and Jacobs Report states that the average 10 kilolitre costs approximately \$3,700.00 to install (see *National Water Commission; The cost-effectiveness of rainwater tanks in urban Australia*, Marsden and Jacobs 2007).. Rebates provide some financial support to the householder yet many households are ineligible to receive a rebate

In fact, rainwater tanks may actually reduce the need for investment in infrastructure. As the Commissioner for Environmental Sustainability recently noted:

The cost efficiency of rainwater tanks improves where the installation of major water supply infrastructure can be deferred and stormwater volumes can be reduced, deferring upgrades to drainage infrastructure and reducing investment in water quality improvement works.⁸

The current system creates an equity problem: by not pegging the cost of mains supply infrastructure to water usage, all water users – whether very heavy users or very light – become equally responsible for both current and future water supply assets, whether they use them or not.

Recommendation:

...that the NWI take into account the role of household efficiency measures in deferring the need for infrastructure development and the inability of the draft pricing principles to support and encourage these efficiency measures.

3.1(b) Fixed costs and the disincentive to reduce use

Currently, the service availability charge comprises a large portion of the average household water bill. In low mains water use households, this pricing structure results in the bulk of the household water costs being taken up by the service availability charge with very little actual water usage charge. By contrast, due to the fixed cost element, a heavy water user's bill will not be proportionally larger. There is little financial incentive here for households to take active measures to reduce usage.

Recommendation:

...that the NWI recognise the need for water usage charges to be a significant proportion of the household water bill in order to encourage efficiency.

3.1(c) The Value of Water

Another issue with the current method of calculating the variable price of water is that it does not adequately reflect the inherent value of water and the full costs associated with water supply. Given changing climate patterns, the need to substantially alter household usage patterns and behaviours to prevent further ecosystem damage (as per NWI objectives) becomes imperative. Using price may be an effective tool to enhance the general public perception of the value of water, and the need to reduce use. For

⁸ Commissioner for Environmental Sustainability, State of the Environment Report, Office of the Commissioner for Environmental Sustainability, Melbourne, 2008, p. 123

example, the water supplied by Yarra Valley Water to the urban areas of Melbourne is charged at \$1.2532 per kilolitre for the first tier (0 – 440 litres per day), \$1.4702 per kilolitre for the second tier (441 – 880 litres per day) and \$2.1721 per kilolitre for the highest tier (more than 880 litres per day). It is questionable that the dollar amount associated with these tiers sufficiently reflects the value of that water. As water costs are such a minimal proportion of overall household bills, demand response to pricing increases are unlikely if they remain minimal as in the tiers shown above.

Recommendation:

...that if pricing principles recommend block tariffs than the pricing used between tiers are sufficiently steep to provide a reasonable disincentive for higher consumption.

4. Case Study

In order to demonstrate the point, we have included two case studies. One is an extremely low end water user and the other a heavier consumer. The first household consists of a family of four who have voluntarily introduced water saving methods so that mains water usage has been reduced to 1kL in a quarter. This household is located in Brunswick, Victoria and is supplied by Yarra Valley Water, meaning that the water usage charge averaged at \$1.23 for that kilolitre over the quarter. By contrast, the water availability charge for the quarter comes out to \$22.53. This means that the volumetric water usage takes up just 5.1% of the total charge. In a similar vein, the sewerage charges for this household consisted of just \$1.32 in variable costs, and \$74.10 in fixed sewerage service cost. Variable sewerage costs represent just 1.7% of the total sewerage costs. So of an overall water and sewerage charge of \$99.18, just \$2.55 is from actual water and sewerage consumption. Clearly, such water users are a very small burden on the mains system. It seems unreasonable to impose the same fixed cost on this type of water consumer as a very heavy water user.

By contrast, the second household of two people, located in Alphington, Victoria has a quarterly water usage of 23kL, with the total cost for water and sewerage coming to \$157.69. Also supplied by Yarra Valley Water, the breakdown of water costs is \$26.41 in water usage, and \$22.53 in water availability charge, meaning the volumetric water costs take up 54.0% of the overall water charge. Similarly, the volumetric element of sewerage costs is \$29.18 and the fixed cost \$79.57, meaning usage charge represent just 26.8% of the total sewerage charge. Despite the fact that the second household uses 23 times more mains water than its counterpart, its total water and sewerage costs are just 58.6 percent more.

Light – Heavier water users (bill comparison)

	Water usage	Cost of Bill
Brunswick	1Kl	\$99.18
Alphington	23Kl	\$157.69

5. Options

In order to consider other options for pricing structures, it is important to recognise several issues; that current urban water usage patterns are environmentally unsustainable, that the suggested pricing system leads to the inequitable distribution of costs and that price may be an effective tool to reduce water demand.

One option is to minimise the fixed service availability charge, and allow water providers to make up the revenue using higher usage charges. This may be particularly effective in reducing water consumption if the upper usage tiers were charged at a considerably higher rate. By increasing the gap between the various tiers, it would be more financially desirable for individual households to decrease water consumption to their minimum possible.

In order to accommodate any potential equity problems, a pricing system that uses a 'lifeline tariff' system may be an appropriate alternative. Under this regime, each household is given daily allowance of free water. The amount of this allowance would represent the minimum volume required for a prescribed range of necessary functions and may be funded by government subsidy. Above the lifeline amount, water is charged at market rate. This would allow all citizens access to water but still incentivise water reductions.⁹

Another possible option would be a direct 'user pays' system, where costs are borne directly by those reaping the benefits. This is the most direct and transparent method of financially rewarding those that take up voluntary water reductions. Put simply, heavy water consumers pay a proportionally greater burden of water costs than lighter users. This system would, of course, require thorough hardship policies so as not to disadvantage low-income, large households. Although regulation would also be increasingly important in this situation to avoid monopoly market prices, it would allow a pricing system without a fixed cost element.

6. Conclusion

It is imperative that the NWI consider how national pricing principles will impact desired policy objectives. In order to ensure optimal economic, environmental and social outcomes in coming years, water pricing must reflect the need for domestic water management characterised by reduced mains usage and increased use of alternate sources such as stormwater and recycled wastewater.

Many Australian households are voluntarily working towards objectives of water use efficiency and innovation in their homes. The NWI must support these households by ensuring that pricing systems do not penalise and discourage sustainability actions. In their current form, the NWI pricing principles fail to align with the necessary systemic changes required for water management in Australia. This need for change has been highlighted by the NWI itself through its objectives and must therefore be reflected in all policy actions taken by the NWI.

The ATA recommends that:

⁹ Sachs, Jeffrey, *Common Wealth: Economics for a Crowded Planet*, Allen Lane, 2008

- the NWI take into account the role of household efficiency measures in deferring the need for infrastructure development and the inability of the draft pricing principles to support and encourage these efficiency measures.
- the NWI recognise the need for water usage charges to be a significant proportion of the household water bill in order to encourage efficiency.
- if pricing principles recommend block tariffs than the pricing used between tiers are sufficiently steep to provide a reasonable disincentive for higher consumption.

The ATA thanks the National Water Commission and the Department of Environment, Water, Heritage and the Arts for the opportunity to comment on the proposed pricing principles.