

Submission on Recycled Water Prices

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This submission is based on the premise that the long term goal of any pricing policy for recycled water is long term sustainability of total water supply. That is, the future supply of water (both fresh and recycled) will be adequate to meet the needs of a growing population.

The submission builds on the objective of sustainability first but it includes market forces, community cooperation and price signals in the mix of controls to achieve the desired outcomes.

Three ways water supplies can be made sustainable are:

1. Reduce demand.
2. Increase recycling
3. Continuing to increase primary supply through desalination

The third approach is not considered in this proposal because the environmental costs in terms of global warming are too high.

In summary the submission argues

- In most cases recycled water schemes cannot compete economically with mains water supply. However, the capital cost for recycling systems can come from mains water income. Subsidizing the capital cost of recycling from mains water income can make recycling economically self sustaining.
- Rather than allocate a certain amount of money from mains water income directly to recycling, allocate it first to users of water as a reward for not using water. Restrict the use of the water rewards to recycling projects.
- Rather than give control of the recycling system to water boards or government appointed bodies who may have conflicts of interest give control to a board elected by people who have received water rewards. The electors of the board are more likely to have sustainability as their first priority than the people who appoint boards.
- Bring market forces into play by giving reward recipients the opportunity of giving money to the "economically best recycling system". Make a free market for recycled water.

Reducing Demand

Demand can be reduced by water restrictions, by voluntary reduction in water use and by increasing the price of water.

For most households the demand for indoor household water is inelastic below a certain base level. That is, people will pay higher prices for essential indoor use of water rather than reduce their consumption. The price to make a significant difference to household use is very high. Price however does influence demand for gardens and outdoor use such as washing cars.

It is well known that communities by and large obey water restrictions and cooperate with such regimes. This is because the community sees water as a common resource and most will act for the common good whilst ever they see that everyone else acts in a similar manner.

The community as a whole sees the ordinary use of water as a right and will not tolerate restrictions of household water on the basis of price and this is also a reason for the tolerance to water restrictions. That is, people believe they have a right to water at a reasonable price and believe it unfair that rich people have privileged access because of their wealth.

Given these facts it is politically unacceptable to reduce demand for indoor essential household use by increasing prices. This leads to the first principle for any system of pricing.

(a) Every person is entitled to a reasonable amount of water for indoor essential household use at a fair price.

The community as a whole will respond to calls to reduce water consumption but they want recognition that they are doing their bit. This can be achieved through water restrictions but it is felt that in the long term this is not a good solution and should only be used in times of crisis. The continual use of restrictions, particularly if it is apparent that other solutions are available, will lead to people not obeying the restrictions and will reduce their effectiveness in times of crisis. A system of rewards for consumption reduction will give recognition and would be acceptable to the community. The second principle is

(b) Mandatory restrictions on consumption are not an effective long term solution to reduce demand. A public transparent rewards system will encourage many members of the community to voluntarily reduce consumption.

The question then becomes what form rewards should take and how they are allocated.

Recycling

Theoretically a household could be self sufficient in household water consumption through recycling and roof collection. Also the recycling of water from household consumption could meet much of the demand for outdoor water. The problem with recycling is that it costs money to build recycling systems and there is rarely any economic justification when compared to the cost of water from mains supply. However, for long term sustainability it is necessary to invest in recycling systems at an individual level but more importantly at a community level. The third principle is:

(c) Recycling is necessary for long term sustainability but is rarely economically justified in cost terms when compared to the cost of mains water.

A Proposal for Water Reduction

In marketing products other than water, rewards work better than discounts in changing consumer behaviour. The phenomena of 4 cents a liter off petrol is the latest example of the power of this approach. Frequent flyer points are another.

It is proposed that a rewards system be introduced in a water jurisdiction as a way of reducing consumption. Each person is given an allocation of water that they can purchase at a “reasonable” price. Water consumed over the allocation is charged at a higher price. It is

proposed that people who consume less than their allocated amount be given a “reward” of some form. The critical factor is not the reward but the recognition that the reward brings. The increase in price for water above the allocated amount will serve as a price signal and can fund the reward. This means the total amount collected from water consumption remains the same.

The size of the reasonable allocation and the increase in price are parameters that can be tuned to achieve the objective of encouraging a reduction in water consumption and as a replacement for water restrictions. By keeping the reasonable allocation at the sustainability level the system will self adjust through a feedback loop.

Rewards and Recycling

It is suggested that recycled water be priced at whatever the market dictates.

For recycling to work it is necessary to invest money. It is proposed that the money for recycling come from current consumers through the rewards system. That is rewards can only be spent on water recycling systems.

Thus rewards could be spent on household systems or on system wide or community systems. Rewards could also be transferred to others – that is sold.

Rewards will thus have a market and this along with the market price for recycled water will give an efficient economic outcome.

Sustainability

The system as proposed will provide some of the capital for recycling projects. A water authority can tailor the parameters of “reasonable” allocation and the price of water beyond reasonable so that enough investment will be made.

The pricing authority does not need to worry about these parameters and only need concern itself with what it is currently doing. That is, making sure that the monopoly powers of the water authorities are not abused and water pricing is not turned into another form of taxation.

Details

The authors have considered the details of how such a system could work. The logistics of determining allocation amounts, of rewards, of transfer of rewards, of payments to recycling have all been considered. The systems to handle these logistics would be paid for out of the rewards money and from private investment. In other words the rewards would fund the logistics rewards and allocation systems.

Finances

The system and its operation would be funded totally from rewards. There will be no need for any input of extra public funds although the \$30M allocated by the government for recycling projects could be channeled through the system and serve to prime the system. Private finance will also become available to seed recycling projects.

Implementation

The ideas require NO change to existing infrastructure. There is a relatively small change to billing systems to include a two tiered tariff. The system of rewards, allocation and distribution of monies is a completely separate system from existing systems. The effect would be to reduce costs of the water authority as they would no longer be responsible for allocation of monies for recycling.

The system would remove the need for the pricing authority to consider the price of recycled water as it would be determined by market forces.

It is suggested that a separate organization be set up to run recycling, to decide on the allocation amounts, to publicize the benefits of recycling and to select the recycling projects that are deemed suitable for funding. The reason for this is to allow the water authorities to bid for recycling projects, to keep the system independent and cost accountable. This organization could be a non profit cooperative. Its board would be elected by people who received rewards and it would be financed from the rewards monies. Its primary objective is to foster recycling for sustainability and to encourage this in the most economically efficient manner.