Issues Paper

Inquiry into Pricing of Recycled Water in Western Australia

1 August 2008

Economic Regulation Authority
WESTERN AUSTRALIA

A full copy of this document is available from the Economic Regulation Authority web site at www.era.wa.gov.au.

For further information, contact:

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Perth, Western Australia
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Foreword

The State Government of Western Australia has requested the Economic Regulation Authority to undertake an inquiry into, and make recommendations on, pricing and other relevant factors affecting the adoption of recycled water and other alternative water supplies.

In accordance with the Terms of Reference, the Authority will conduct its inquiry focussing on:

- the circumstances in which recycled water prices should be regulated, and the recommended approach to any required regulation;
- the pricing recommendations of the State Water Recycling Strategy, including the appropriateness of faster adoption of cost-reflective prices for major industry; and
- other factors that the Authority considers relevant to the adoption of recycled water and other alternative water supplies.

The purpose of this Issues Paper is to provide background information and outline the issues to be investigated. It is intended to assist stakeholders to understand the nature of the issues under review and to facilitate public comment and debate. Throughout this Issues Paper questions are raised, highlighted in boxes that may be of particular interest to stakeholders.

Submissions on any matters, including those raised in this Issues Paper, should be submitted no later than 29 August 2008 to:

recycledwater@era.wa.gov.au

or addressed to:

Inquiry into Pricing of Recycled Water in WA
Economic Regulation Authority
PO Box 8469
Perth Business Centre
PERTH WA 6849

Section 1.4 of this Issues Paper provides further information regarding the process for making a submission.

Interested parties and stakeholders will have a further opportunity to make submissions following the release of the Authority's Draft Report in October 2008. The Final Report for the inquiry is scheduled to be delivered to the State Government by 6 February 2009, following which the Government will have 28 days to table the report in Parliament.

I encourage interested parties to consider the Terms of Reference and the matters raised in this Issues Paper and prepare a submission to the inquiry.

LYNDON ROWE
CHAIRMAN

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1 Introduction

On 8 July 2008, the Treasurer of Western Australia gave written notice to the Economic Regulation Authority (the **Authority**) to "undertake an inquiry into, and make recommendations on pricing and other relevant factors affecting the adoption of recycled water and other alternative water supplies".

1.1 Terms of Reference

The inquiry has been referred to the Authority under Section 32(1) of the *Economic Regulation Authority Act 2003* (**Act**), which provides for the Treasurer to refer to the Authority inquiries on matters related to regulated industries (i.e. water, gas, electricity and rail industries).

A full text of the Terms of Reference is provided in Appendix 1.

In accordance with the Terms of Reference, the Authority is to consider and develop findings on:

1) the circumstances in which recycled water prices should be regulated, and the recommended approach to any required regulation;
2) the pricing recommendations of the State Water Recycling Strategy, including the appropriateness of faster adoption of cost-reflective prices for major industry; and
3) other factors that the Authority considers relevant to the adoption of recycled water and other alternative water supplies.

In developing its recommendations the Authority must have regard to:

- the Government's social, economic and environmental policy objectives;
- distributional issues, such as those between customers of recycled water services and other services in the same scheme; and
- any relevant pricing principles arising from the 1994 Council of Australian Governments water reform agreement and the National Water Initiative.

In undertaking the inquiry, the Authority recognises section 26 of the Act which requires the Authority to have regard to:

- the need to promote regulatory outcomes that are in the public interest;
- the long-term interests of consumers in relation to price, quality and reliability of goods and services provided in the relevant markets;
- the need to encourage investments in relevant markets;
- the legitimate business interests of investors and service providers in relevant markets;
- the need to promote competitive and fair market conduct;
- the need to prevent abuse of monopoly or market power; and
- the need to promote transparent decision making processes that involve public consultation.

1.2 Structure of the Issues Paper

The structure of the Issues Paper is as follows:

- Chapter 2 defines water recycling and identifies the range of water recycling options that are either in use at present in Western Australia or evident elsewhere.
- Chapter 3 describes the current policy status, with reference to State policies such as the State Water Recycling Strategy. The chapter also describes the relevant national policies, such as the National Water Initiative.
- Chapter 4 addresses the first part of the Terms of Reference, which requires the Authority to consider the circumstances in which recycled water prices should be regulated. This chapter also discusses distributional considerations of pricing principles, as referred to in the Terms of Reference.
- Chapter 5 addresses the second part of the Terms of Reference, which requires the Authority to assess the pricing recommendations of the State Water Recycling Strategy.
- Chapter 6 addresses the third part of the Terms of Reference, which requires the Authority to consider any other factors that are relevant to the adoption of recycled water and other alternative water supplies.

1.3 Review Process

The Authority intends to follow the following timetable in undertaking this review.

- Submissions on the Issues Paper are due by 29 August 2008.
- A Draft Report is expected to be published in October 2008 and submissions invited.
- In accordance with the Terms of Reference, the Authority must present its Final Report to Government no later than seven months after receiving the Terms of Reference (by 6 February 2009).

The Authority will also be consulting with its Consumer Consultative Committee during the course of its inquiry.

In accordance with section 45 of the Act, the Authority is acting through the Chairman and Members in conducting this inquiry.

1.4 How to Make a Submission

Submissions on any matter raised in this Issues Paper or in response to any matters in the Terms of Reference should be in written form and electronic form (where possible) and addressed to:

Inquiry into Pricing of Recycled Water in Western Australia
Economic Regulation Authority
PO Box 8469
Perth Business Centre
PERTH WA 6849

Email: recycledwater@era.wa.gov.au
Fax: (08) 9213 1999

Submissions must be received by 29 August 2008.

Submissions made to the Authority will be treated as in the public domain and placed on the Authority's website unless confidentiality is claimed. The submission or parts of the submission in relation to which confidentiality is claimed should be clearly marked. Any claim of confidentiality will be dealt with in the same way as is provided for in section 55 of the Act.

The receipt and publication of a submission shall not be taken as indicating that the Authority has knowledge either actual or constructive of the contents of a particular submission and, in particular, where the submission in whole or part contains information of a confidential nature and no duty of confidence will arise for the Authority in these circumstances.

Further information regarding this inquiry can be obtained from:

Dr Ursula Kretzer
Manager Projects
Economic Regulation Authority
Ph (08) 9213 1900

Media enquiries should be directed to:

Mr Paul Byrne
Byrne and Byrne Corporate Communications
Ph (08) 9336 2081
Mb 0417 922 452

2 Water Recycling

2.1 Definitions

The State Water Recycling Strategy defines recycled water as:

> the multiple use of water, usually sourced from wastewater (also known as sewerage) or stormwater systems, after it has been treated to a standard appropriate for its intended use.[1]

The National Water Commission refers to water recycling as:

> water from a wastewater treatment plant or from collected stormwater that has been treated to an appropriate quality and is then used for some beneficial purpose.[2]

Recycled water can be produced on a commercial basis by a service provider or on-site by a household or business.

Examples of commercially-generated recycled water include:

- large scale wastewater recycling plants, such as the plant at Kwinana;
- collection of household wastewater and treatment by the service provider for non-potable re-use (e.g. irrigation of parks);
- provision of non-potable water by the service provider to industry or households for non-potable use via a third pipe system.

On-site recycled water generally refers to greywater recycling. Greywater is household water that has not come into contact with toilet waste. Generally, this includes water from the laundry and bathroom (greywater from the kitchen is generally not used due to the high nature of organic materials, oils and fats).

There are two broad categories of greywater:

- greywater diversion whereby the water is diverted for use without any further treatment; and
- greywater treatment where the water is treated to a quality that allows other uses for the water such as flushing toilets or sprinkler irrigation.

Greywater recycling does however pose potential health risks and must either be treated accordingly or used for sub-surface irrigation if untreated.

In addition, there are “other alternative water supplies” (referring to the term used in the Terms of Reference) which, under the definition above, cannot be considered recycling, because they do not involve multiple use. These substitutes for scheme water include:

- rainwater tanks; and

[1] State Water Recycling Strategy, June 2008.

[2] National Water Commission, *Using Recycled Water for Drinking*, *An Introduction*, Waterlines Occasional Paper No 2, June 2007.

- bores that tap into the superficial aquifer, such as garden bores and bores used by horticulturalists, local governments and industry.

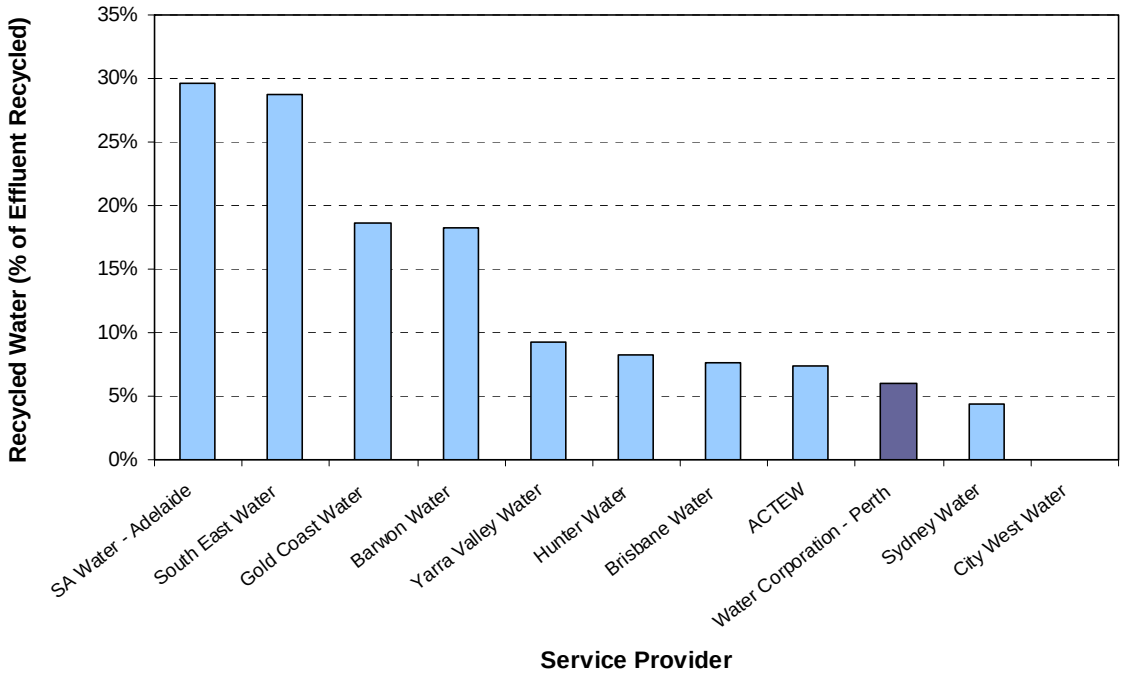
2.2 What is the Current Extent of Recycling and Other Alternative Supply?

This section provides an indication of the current extent of recycling and discusses the range of recycling activities that are currently underway in Western Australia.

The State Water Recycling Strategy identifies that currently 17 gigalitres (**GL**) or 12.5 per cent of wastewater is recycled in the State, an increase from 11.6 per cent in 2006.[3]

Figure 2.1 shows the Water Corporation's (**Corporation**) rate of recycling in the Perth metropolitan area compared to that of other large metropolitan service providers.

Figure 2.1 Comparison of Percentage of Effluent Recycled for Largest Service Providers (More than 100,000 Customers)[4]



Source: National Water Commission and Water Services Association (2008), National Performance Report 2006-07 – Urban Water Utilities, pg 14.

Table 2.1 shows the extent of wastewater reuse by wastewater service providers in Western Australia.

[3] Source: State Water Recycling Strategy, June 2008. A gigalitre (GL) is one billion litres of water.

[4] These figures include only the volume recycled within the service provider's area of operation. Inland service providers often treat water before returning it to the environment for use downstream.

Table 2.1 Wastewater Reuse by Wastewater Service Providers in WA[5]

Service Provider	Volume of wastewater receiving treatment (ML)[6]	Volume of wastewater reused (ML)	Per cent of wastewater reused
Shire of East Pilbara	222	222	100
Shire of Dalwallinu	189	189	100
Shire of Morawa	65	65	100
Shire of Dowerin	11	11	100
Shire of Wickepin	6	6	100
WC – Albany[7]	1873	1873	100
WC – Australind/Eaton	920	920	100
WC – Broome	1051	1051	100
WC – Manjimup	286	286	100
WC – South Hedland	466	466	100
WC – Merredin	105	103	98
WC – Karratha	1059	985	93
WC – Dunsborough	404	303	75
Shire of Dumbleyung	33	22	67
Shire of Moora	72	45	63
City of Kalgoorlie/Boulder	2693	1158	43
WC – Narrogin	336	131	39
WC – Northam	371	130	35
WC – Katanning	337	91	27
WC – Esperance	588	153	26
WC – Geraldton	1171	281	24
Shire of Lake Grace	13	3	23
WC – Busselton	1232	234	19
Pilbara Iron	524	38	7
WC – Perth	115,967	6958	6

Source: Economic Regulation Authority, *Water Licensing - Licence Statistics, 2006-07*.

[5] The other wastewater service providers that either do not or have not reported wastewater reuse include the shires of Yilgarn-Southern Cross, Yilgarn-Marvel Loch, Victoria Plains, Ravensthorpe, Jerramungup, Koorda, Kent, Goomalling, Gnowangerup, Coolgardie and Brookton; Water Corporation's schemes in Bunbury, Collie, Jurien, Kununurra, Mandurah and Newman; and Rottnest Island Authority.

[6] A megalitre (**ML**) is one million litres of water.

[7] WC refers to the Water Corporation.

2.2.1 Current Recycling Schemes

This section provides examples of current recycling schemes in Western Australia.

The Authority is seeking additional examples of recycling schemes.

Industrial applications

- The Kwinana Water Reclamation Plant (**KWRP**), which is owned by the Water Corporation, is the largest single recycler of wastewater in Western Australia, recycling approximately 6 GL annually. The KWRP adopts a process using microfiltration and reverse osmosis. The KWRP is located in the Kwinana industrial area and supplies recycled water to a number of companies for industrial purposes.[8]

Public open spaces

- Recycled water has been used in Western Australia for the last 50 years to irrigate public open spaces. This occurs primarily in regional WA, where about 40 per cent of treated wastewater is recycled.[9] Recycling is often the least cost method of disposal. An estimated 70 GL of water, or three per cent of all water in WA, was used for public open spaces in 2005.[10] This includes the irrigation of golf courses, sporting ovals and parks.
- In the Perth metropolitan area there has been some limited examples of recycled water use on public open spaces. However, most have been demonstration projects. McGillivray Oval located at the University of Western Australia (**UWA**) was established as a demonstration project in 2004, using treated wastewater from the Subiaco Wastewater Treatment Plant (**WWTP**). The project includes filtration and chlorination of secondary treated wastewater from the plant. This treated water is piped 800 metres in a new (300 mm diameter) pipeline under Brockway Road to the UWA Sports Park where it connects to the existing reticulation system in the Park.[11]

Forestry

- The largest recycled water project for forestry use in Western Australia is the Albany Tree Farm. Treated wastewater from the Albany WWTP has been used to water over 300 hectares of gum trees in Albany for more than ten years. Some trees were harvested in 2003 with more harvested in 2006. Plans are underway to increase the size of the tree farm. The harvested trees are used for wood chips and making paper.[12]

Residential third pipe schemes

- United Utilities Australia has won a LandCorp tender to be the recycled water provider to Gracetown. Sewage from homes will be treated to Class A+ standard

[8] For more information, see www.watercorporation.com.au/_files/PublicationsRegister/7/kwrp-brochure.pdf

[9] Source: State Water Recycling Strategy, June 2008.

[10] Source: Water Corporation, http://www.thinking50.com.au/index.cfm?objectid=6363FA43-1708-51EB-A67C6EE570623C18

[11] Water Corporation (2006), Integrated Water Supply Scheme, Security through Diversity, 2005 – 2050, Water Recycling.

[12] Ibid, p5.

and delivered into homes for non-potable use (toilet flushing, washing machines). Drinking water will continue to be provided by rainwater tanks (supplemented by trucking water as required). As a result of this scheme, household demand for drinking water supplies is expected to reduce from 439 l/day to 272 l/day. Septic tanks will also be dismantled. The scheme will be operational by 2010 and will be powered by a 60kW wind turbine.[13]

- Moama Lifestyle Villages is currently seeking a licence from the Authority to construct a wastewater recycling scheme for a residential development in North Baldivis, comprising 415 park homes and other recreational facilities, which will recycle treated effluent via a specially designed irrigation system.[14]

Groundwater management

- The Halls Head WWTP in Mandurah is an example of using recycled water to manage groundwater. Treated wastewater from the plant is used to recharge the superficial aquifer through the use of infiltration basins on site. The wastewater is treated to a secondary level to reduce nitrates before passive sand filtration. The water is filtered through fractured limestone to the superficial aquifer which further reduces pathogens, nitrogen and phosphorous. The water is later extracted for use on parks and other open spaces.

Greywater reuse

- The Australian Bureau of Statistics estimated in 2006 that 26 per cent of Perth households re-used greywater on the garden. However, according to the Department of Water, only 123 households have obtained rebates for greywater systems. It is likely that most households that are using greywater are transferring it onto their gardens without using the type of greywater diversion systems that attract a rebate. The cost of the plumbing adjustments to separate greywater from toilet and kitchen waste may be limiting the uptake of greywater reuse systems.
- The Bridgewater residential village development in Mandurah will make use of on-site greywater recycling for private garden irrigation.

Issues

1) What other recycling projects are currently underway that the Authority should be aware of?

2.2.2 Current Use of Alternative Supplies

In addition to recycling schemes, there are a number of examples of customers making use of alternative supplies. These examples are discussed in this section.

The Authority is seeking additional examples of alternative supplies currently being used in Western Australia.

[13] For further information, see http://internet.landcorp.com.au/portal/page/portal/grace/sustain/water

[14] For further information, see the Authority's web site.

Garden bores

- Around 25 per cent of Perth households have a domestic bore (155,000 bores out of approximately 600,000 connections).[15]
- According to the Department of Water, 20,000 rebates have been provided for domestic bores.

Rainwater tanks

- Around 5 per cent of Perth households have a rainwater tank (29,500 tanks out of approximately 600,000 connections).[16]
- According to the Department of Water, 14,000 rebates have been provided for rainwater tanks.

Third pipe schemes using groundwater

- The Brighton residential estate, developed by the Satterley Property Group in the northern suburb of Butler, provides a reticulated, non-potable water supply through a third pipe system. Community bores are used to supply water from a shallow groundwater aquifer for use on public open spaces and also private gardens. The Corporation provides the water services to Brighton, and applies a lower service charge for the scheme than for other residential customers.[17] The Brighton estate scheme can be viewed as an alternative source scheme rather than a recycling scheme.
- The Wungong Urban Water Project, by the Armadale Redevelopment Authority, will develop a third pipe system to deliver non-potable water, harvested from roof drainage, stormwater drainage and groundwater, to an urban development of up to 40,000 homes.

Issues

2) What other significant alternative sources are currently being used that the Authority should be aware of?

2.3 What is the Scope for Additional Recycling and Other Alternative Supply?

The large volume of wastewater discharged every year provides an indication of the potential for additional recycling, if it is cost effective.

- Approximately 115 gigalitres of wastewater is treated each year by the Corporation, predominantly in the metropolitan area. The wastewater is largely concentrated at the Woodman Point (50 GL), Beenyup (43 GL) and Subiaco

[15] Source: Department of Water

[16] Source: Department of Water

[17] For 2008/09, the annual service charge for Brighton residential lots less than 400 m^2 is $65.15 and for lots greater than 400 m^2 is $130.30. The standard annual service charge for residential customers in 2008/09 is $180.50.

(22 GL) WWTPs, which are owned and operated by the Corporation.[18] These plants generally treat the wastewater to a level suitable for discharge into the ocean. However, some of the treated wastewater is reused.

- In Western Australia, the average person produces 200 litres of wastewater every day. Wastewater is 99.97 per cent water because by far the greatest volume comes from showers, baths and washing machines. The rest is dissolved and suspended matter.[19]
- In 2005, an estimated 864 GL of water, or 37 per cent of all water usage in Western Australia, was used by the agricultural sector.[20] Almost all of this water was used in the high value irrigation sector, which includes irrigated pasture, turf farms and horticulture. However, currently in Western Australia, there is very little use of recycled water for agricultural purposes.

Studies currently being undertaken for the Department of Water estimate that the median annual discharge of stormwater from the Perth and Peel Metropolitan regions is 120 GL. It may be feasible to use some of this water without adverse impacts on waterways. However, the Corporation has estimated that less than 10 per cent of Perth's stormwater is transported by constructed drains to rivers, local waterways, wetlands and the ocean, which is significantly less than in other Australian cities.[21]

- A project by the Town of Cottesloe will filter stormwater that will then be used to replenish the Cottesloe groundwater aquifer. It will involve removing 10 stormwater ocean outfalls and installing underground stormwater treatment, storage and recharge tanks. Stormwater will also replenish the aquifer through 280 roadside soak pits.[22]

2.3.1 Potential Recycling Schemes

The following discussion identifies the recycling projects that are either currently under consideration in Western Australia or are operating elsewhere.

Groundwater management

- One of the options being given further consideration by the Corporation is increased use of groundwater replenishment using recycled water. Groundwater replenishment is often also referred to as Managed Aquifer Recharge (**MAR**). MAR is a process where water from wastewater treatment plants is treated using reverse osmosis and then pumped into the ground.
- Because groundwater is very slow moving, the treated water would remain in the ground for decades (up to 50 years) before it reaches existing bores that are used for public water supply. During that time, the water would mix with existing groundwater as it travels through the underground aquifer, until the two are indistinguishable.
- Recycled water for groundwater replenishment is a source that does not rely on rainfall, and has the potential to increase as Perth's population increases.

[18] Source: State Water Recycling Strategy, June 2008.

[19] http://www.watercorporation.com.au/W/water_recycling_faq.cfm

[20] Source: State Water Recycling Strategy, June 2008.

[21] For more information on stormwater recycling, see the following information on the Corporation's web site http://www.thinking50.com.au/index.cfm?objectid=087686A9-1708-51EB-A68F4DC10450094A

[22] For more information see, http://www.nwc.gov.au/agwf/wsa/project.cfm?projectID=47&ref=2

- Recycled water for groundwater replenishment has the potential to contribute an additional 25-35 GL per year to drinking water supplies by 2015, which could supply up to 100,000 households. This volume and timeframe assumes that water can be extracted now in anticipation of sufficient recharge over coming decades.
- The Gnangara Groundwater Replenishment Trial, due to be completed in 2012, is currently under development with both the State and Federal Governments contributing $15 million each to the cost of the trial.[23]

Agriculture

- In South Australia, large scale recycling schemes supply recycled water to agricultural areas. The Virginia Plains Scheme[24] involves a network of pipelines of more than 100 kilometres supplying 15 GL per year (with a long-term capacity of 40 GL) of Class A reclaimed water from Adelaide's Bolivar WWTP to farms 35 kilometres north on the Northern Adelaide Plains. Approximately 250 growers covering an area of 200 square kilometres use the recycled water for horticulture irrigation.

Larger residential third pipe schemes

- Perhaps the largest example of recycled water for domestic use in Australia is the Rouse Hill development in Western Sydney. Approximately 17,000 households now use recycled water through the use of dual reticulation, commonly referred to as a "third pipe" system. The third pipe system supplies recycled water for flushing toilets, watering gardens, washing cars and other outdoor purposes via a separate purple water pipe.

Large scale water recycling for domestic consumption

- Queensland is currently constructing the Western Corridor Recycled Water Project, which will be Australia's largest water recycling project and the first to use recycled water for drinking purposes. Recycled water will be supplied to power stations, industry, agriculture and the Wivenhoe public water supply dam, where it will be used to supplement the potable water supply. The project is expected to supply approximately 85 GL of recycled water per annum when the project is completed. The dam will act as an environmental buffer and the recycled water will be subject to further treatment such as ultra violet filtration and blending with existing non-recycled water.
- There are other large scale schemes in the world that recycle water for reuse as drinking water, including NEWater in Singapore, Water Factory 21 in California and the Goreangab Water Reclamation plant in Namibia. With the exception of Namibia, these schemes make use of an environmental buffer.

Industrial applications

- The Government indicated in the State Water Recycling Strategy that it supported the expansion of the Kwinana Water Reclamation Plant to 9.6 GL (from 6 GL at present).

[23] For further information see, http://www.thinking50.com.au/index.cfm?objectid=63630285-1708-51EB-A6841B0D43457275

[24] The Virginia Plains Scheme cost $55 million and was shared between the Commonwealth Government, which contributed $10.8 million from the Building Better Cities Fund, $574,000 from Landcare, $7 million from private investors, $7 million from the South Australian Government and the rest from SA Water.

Issues

3) What is the scope for additional water recycling in Western Australia?

3 Current Policy Settings and Directions

3.1 State Initiatives

Water recycling emerged as an important issue for Western Australia in 2001 in response to the drought. A water forum and symposium was held in 2002, partly to explore opportunities for water recycling in Western Australia. The outcome of these events informed the *State Water Strategy* released in Western Australia in February 2003. The *State Water Strategy* set a target to recycle 20 per cent of treated wastewater by 2012.

The most significant development since the State Water Strategy was released was the commissioning of the Kwinana Water Reclamation Plant in 2004, which uses wastewater from the Woodman Point wastewater treatment plant.

In addition, rebates for greywater reuse were introduced and a code of practice for reuse of greywater has been published by the Department of Health.[25]

Further to the State Water Strategy, the State Water Plan 2007 increased the recycling target to 30 per cent of treated wastewater by 2030.

The State Water Recycling Strategy was published in June 2008. The following initiatives were included in the Strategy as ways to increase the level of water recycling in Western Australia in order to reach the 30 per cent target.

- Government supports the expansion of the existing Kwinana Water Reclamation Plant by 2010.
- Government will investigate the establishment of an industrial tariff to promote the efficient use of water and the use of recycled water by industry.
- Due to increasing pressure on our groundwater resources, the state government is currently investigating the viability of horticultural precincts. Water from the new Alkimos Wastewater Treatment Plant has some potential for future use in horticulture and may be reserved for this purpose.
- A three-year trial of groundwater replenishment is being planned to commence in 2009….water from the Beenyup Wastewater Treatment Plant will be reserved for this purpose.
- … an online Waterwise communities toolkit is being developed … [which will provide information on] the availability of shallow groundwater, the availability of sources for recycled water, key land planning considerations, alternative water solutions including rainwater tanks, community bores, greywater and landscaping, streamlined application and approval processes. It is expected that the toolkit will be online by 2010.
- A review of Water Corporation charges for extending water infrastructure to new urban areas will be undertaken, with consideration given to reflecting the contribution of alternative water supplies.[26]

[25] Department of Health (July 2002), *Draft Guidelines for the Reuse of Greywater in Western Australia*. See http://www.health.wa.gov.au/publications/documents/HP8122%20Greywater%20Reuse%20Draft%20Guidelines.pdf

[26] State Water Recycling Strategy, June 2008.

3.2 National Initiatives

National agreements between the Federal and State Governments play a significant role in water policy in Australia. Recent reforms have placed increased importance on the development and use of recycled water as an alternative water source.

In 1994, in response to concern about the state of many of Australia's river systems, the Council of Australian Governments (**COAG**) developed a national policy for the efficient and sustainable reform of Australia's rural and urban water industries. The strategic framework agreed to by the Government embraced pricing reform based on the principles of consumption-based pricing and full-cost recovery, the reduction or elimination of cross-subsidies and making subsidies transparent. The framework also involved the clarification of property rights, the allocation of water to the environment, the adoption of trading arrangements in water, institutional reform and public consultation and participation.

Implementation of the strategic framework was expected to result in a restructuring of water tariffs and reduced or eliminated cross-subsidies for metropolitan and town water services with the impact on domestic consumers of water services being offset by cost reductions achieved by more efficient, customer-driven, service provision.

In the case of rural water services, the framework was intended to generate the financial resources to maintain supply systems, should users desire this, and through a system of tradeable entitlements to allow water to flow to higher value uses subject to social, physical and environmental constraints. Where they have not already done so, States are to give priority to formally determining allocations or entitlements to water, including allocations for the environment.

Environmental requirements were to be determined on the best scientific information available and to have regard to the inter-temporal and inter-spatial water needs required to maintain the health and viability of river systems and groundwater basins. COAG also agreed where significant future irrigation activity or dam construction is contemplated, that in addition to economic evaluations, assessments will be undertaken to ensure that the environmental requirements of river systems can be adequately met.

The National Water Initiative (**NWI**) builds on the previous COAG framework for water reform.

The overall objective of the NWI 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. The multiple goals of the NWI are to:

- ensure healthy, safe and reliable water supplies;
- increase water use efficiency in domestic and commercial settings;
- encourage the re-use and recycling of wastewater;
- facilitate water trading between and within the urban and rural sectors;
- encourage innovation in water supply sourcing, treatment, storage and discharge; and
- achieve improved pricing for metropolitan water.

For metropolitan systems, the NWI (section 66(ii)) requires:

> 66(ii) development of pricing policies for recycled water and stormwater that are congruent with pricing policies for potable water, and stimulate efficient water use no matter what the source, by 2006.

The National Water Commission is in the process of developing pricing principles for recycled water and stormwater reuse to assist NWI parties to achieve their commitments under section 66(ii) of the NWI.

This inquiry is part of the State Government's implementation plan for the NWI in Western Australia, in which the Government committed to a review of pricing policies for recycled water and stormwater.[27]

In addition, the Environment Protection and Heritage Council is developing a set of Australian guidelines for water recycling. These guidelines are designed to:[28]

> provide an authoritative reference that can be used to support beneficial and sustainable recycling of waters generated from sewage, grey water and stormwater, which represent an underused resource. The guidelines describe and support a broad range of recycling options, without advocating particular choices. It is up to communities as a whole to make decisions on uses of recycled water at individual locations. The intent of these guidelines is simply to provide the scientific basis for implementing those decisions in a safe and sustainable manner.

The guidelines are being produced in two phases.

Phase 1 was released in November 2006 and provides a framework for the provision of safe and reliable recycled water. Phase 1 focuses on on-site greywater recycling and large-scale wastewater recycling for non-drinking purposes.

Phase 2 consists of three modules. Module I addresses recycled water for drinking and has been completed and issued. Modules II and III focus on stormwater reuse and managed aquifer recharge and are currently open for public comment.

Issues

4) What other State and National water recycling initiatives should the Authority be aware of?

[27] Government of Western Australia (April 2007), *Western Australia's Implementation Plan for the National Water Initiative*, p50.

[28] Environment Protection and Heritage Council, *National Water Quality Management Strategy: Australian guidelines for water recycling, Managing health and environmental risks (phase 2), Stormwater harvesting and reuse, Draft for public comment, May 2008, pg 1.*

4 Recycled Water Pricing

4.1 Why Regulate Prices for Water Recycling?

The Terms of Reference require the Authority to:

> consider and develop findings on the circumstances in which recycled water prices should be regulated…

In general, price regulation may be justified in situations where there is/are:

- market power by a service provider, which can lead to prices being higher than would be achieved in a competitive market;
- externalities, which are present when the well-being of third parties are impacted by the amount of a good or service that is produced;
- social objectives, which cannot be achieved through non-price measures (such as welfare payments).

If the price of recycled water is to be regulated, it would need to be justified on the basis of the situations referred to above as well as by demonstration that price regulation:

- is the best option for achieving the particular objective (that is, there may be alternatives other than through price regulation); and
- will actually achieve the objective.

Market Power

Market power generally exists where there are few, if any, substitutes for the good or service that is being produced and where it may not be feasible for alternative businesses to enter the market (for example, due to the scale of the investment required).

In the case of recycled water that is purchased from a service provider, the substitutes may include:

- scheme water, although if this is available it is likely to be provided by the service provider that is supplying the recycled water; and
- groundwater, depending on location and licensing requirements.

In addition, large customers may have the option of self-supply if they can get access to the wastewater that is controlled by the service provider (e.g. by 'mining' the sewer if any regulatory barriers to doing so are minimised). Depending on their circumstances, they may also be able to capture and recycle their own wastewater.

The presence of market power by the service provider is therefore likely to vary depending on the circumstances and will be influenced by the broader regulatory settings, such as whether there is an effective third party access regime (providing access to wastewater). The matter of third party access is discussed further in Chapter 6.

The consequence of market power in the provision of recycled water is likely to be a higher price than would otherwise occur. As part of this inquiry, the Authority is intending

to investigate the circumstances whereby service providers may be able to exert market power.

However, a high price does not necessarily imply an abuse of market power. For example, the Authority understands that recycled water from the KWRP is of a more consistent high quality than scheme water. As a result, the recycled water is preferred by some industry processes. In addition, recycled water could be provided with greater security (i.e. not subject to the wider restrictions regime) which may attract a premium.

In situations where recycled water has already been treated at a wastewater treatment plant, the cost of supplying it to customers instead of discharging it in the typical way could be very low, and in some cases negative (i.e. it may actually be cheaper to supply it to a customer than to dispose of the wastewater in some other way).

In situations where the cost of the recycled water is low and there are few alternatives, the profits to the service provider, which would have an incentive to price the water as high as customers could bear, could be significant.

However, in the case of the Corporation, the Authority has a role in providing advice to the State Government on the level of their regulated tariffs (which currently excludes recycled water). In undertaking this role, the Authority assesses the costs of the Corporation's operations and accounts for any revenue from non-regulated sources in calculating the tariffs for regulated customers. In other words, for a given level of costs, any additional revenue earned from non-regulated customers benefits regulated customers. The Corporation would therefore not retain any excessive profits that may be earned from their recycling activities (however, the inefficient pricing would persist).

The Authority is aware of the pricing situation for the third pipe scheme at Rouse Hill in Sydney, whereby the Independent Pricing and Regulatory Tribunal (**IPART**) sets the recycled water price. Sydney Water provides 1.8 GL per annum of recycled water to over 17,000 customers in Rouse Hill. The recycled water price for Rouse Hill is set to fully recover the costs of the scheme, based on forecasts of recycled water sales, operating costs and capital expenditure related to the scheme.

Service providers may be able to use market power in the case of new developments that are designed to be water sensitive through their use of recycling schemes (for example, third pipe systems). The market power could theoretically be represented in a service provider not providing a discount to developers even though the recycling scheme lowers the cost of the water infrastructure required to service the development.

The Authority is aware that other jurisdictions, such as in Victoria and New South Wales, do have developer charges regulated in a way that provides for discounts where recycled water systems are installed in new developments. The Authority has recently undertaken an inquiry into the Corporation's developer charges, and considered the issue of discounts off developer charges for water sensitive urban design. This report has been tabled in Parliament and is available on the Authority's web site.

Issues

5) To what extent do service providers have market power in the provision of water recycling services?

6) If providers of water recycling services have market power, should their prices be regulated, and if so, how?

Externalities

Recycling schemes will generally reduce the amount of treated wastewater that is discharged into the ocean. In addition, household schemes such as grey water recycling may also reduce the overall amount of treatment required given reduced volumes at major WWTPs. If this reduction in discharge and/or treatment has a positive impact on the well-being of others, such as recreational users of the ocean, residents surrounding wastewater treatment plants, or members of society who value the environmental improvement, there may be a case for reducing the price of recycled water to reflect this positive impact.

In considering the case for adjusting prices, interested parties are invited to comment on:

- the nature and magnitude of any externalities associated with water recycling;
- whether a price adjustment is the most effective means of accounting for any externalities; and
- the size of the price adjustment that would be required to reflect the value of any externalities.

A related issue is that recycling, by displacing the need for scheme water, can reduce the costs of achieving water security (e.g. by deferring the need for a significant additional source). This could be considered an externality because the decision of one person to recycle water can have an impact on the costs that all users will have to pay to maintain security of supply. However, water usage charges can be adjusted to reflect this externality (for example, by setting water usage charges in relation to the cost of future water supplies rather than the cost of current water supplies).[29] If usage charges are adjusted in this way, then there may be no need to also adjust the price of recycled water charges.

There may also be times when it is uncertain whether a major source augmentation is required (e.g. because of the uncertainty created by climate change for future inflows into dam storages). In this situation, even though usage charges are cost reflective, there may be value in reducing the price of recycled water to encourage the uptake of small schemes that help to defer the need to commit to a large source.

The Authority notes that some recycled water prices are currently adjusted as a result of the Government's Waterwise Rebate Scheme. Rebates are discussed in Chapter 6.

[29] This approach is referred to as 'long-run marginal cost pricing' and is currently being phased-in (over the period to 2013/14) for the Water Corporation's metropolitan water customers.

Issues

7) What is the nature and magnitude of any externalities associated with water recycling?

8) If there are significant externalities, should water recycling prices be regulated to account for these, and if so, how?

Social Objectives

The Terms of Reference refer generally to the Government's social policy objectives and specifically to:

> distributional issues, such as those between customers of recycled water services and other services in the same scheme.

The Terms of Reference appears to be referring to distributional transfers between recycled water customers and customers of other services. For example, pricing recycled water at marginal cost implies that recycled water customers make no contribution to the wider costs of the wastewater scheme. Paying a price above marginal cost increases the revenues from recycled water customers which allows prices for other services to be reduced. Such an approach 'redistributes' income from recycling customers to other customers.

As indicated above, it is likely that the service provider, if they had market power, would have an incentive to price the recycled water at above its marginal cost. In this case, recycled water customers would be making a contribution to the service provider's wider costs.

In the situation where the service provider did not have market power (i.e. where there were competitively priced alternatives to recycled water), the price of recycled water would be based on its marginal cost. The service provider would not be able to increase the price because they would risk losing their sale. In this situation, there would be no additional revenues to redistribute to other customers.

However, care must be taken when considering the appropriate extent of any redistribution. The risk with attempting to adjust prices to achieve distributional objectives is that it may lead to the inefficient use of recycled water.

The other social policies that are currently applied to water include the Uniform Tariff Policy and concessions to pensioners and seniors. It is not readily apparent that these policies are relevant to the pricing of water recycling. However, interested parties are invited to provide their views on this issue.

Issues

9) What is the nature of any distributional or other social policy issues associated with the pricing of water recycling?

10) If there are significant social issues, should water recycling prices be regulated to account for these, and if so, how?

4.2 If Regulation of Recycled Water is Appropriate, How Should it be Done?

The Terms of Reference require the Authority to consider and develop findings on:

> the recommended approach to any required regulation.

If it is concluded that market power is present in the provision of recycled water, there are externalities, or there are social objectives that can be achieved by price regulation, the Terms of Reference require the Authority to consider how such regulation could be undertaken.

As indicated above, price adjustment is already occurring for greywater technologies through the Waterwise Rebate Scheme.

The situations in which further price regulation of water recycling could conceivably be applied relate to:

- sales of recycled water from large recycling plants to industrial customers;
- sales of recycled water from wastewater treatment plants;
- sales of recycled water through sewer mining;
- sales of recycled water through third pipe schemes; and
- developer charges in situations where water sensitive developments involving recycled water are being proposed.

The licensed wastewater service providers either currently or could potentially provide water recycling services. These service providers include the Corporation, City of Kalgoorlie-Boulder, Rottnest Island Authority, Pilbara Iron and 19 Shires. However, other service providers could conceivably also provide recycling services in the future.

Currently, the Authority has a role in reviewing the regulated tariffs of the Corporation. The tariffs of the other licensed wastewater service providers are not regulated.

There are a number of practical difficulties associated with regulating recycled water prices. Such difficulties include:

- the wide range of water recycling services (typically, prices are regulated for services that are relatively homogenous within a scheme); and

- the cost of the water recycling service will vary depending on the particular circumstances that arise during the negotiation (typically, prices are regulated for services that have costs that can be established in advance).

Experience in New South Wales and Victoria suggests that regulators in those jurisdictions have limited their direct involvement in recycled water regulation to the regulation of developer charges and to setting prices for large third pipe schemes.

However, it is possible that some form of light-handed regulation could be applied to recycled water pricing, if it is warranted. For example, a set of principles could be developed to guide the setting of recycled water prices. There have been a number of reports released recently which provide pricing principles.

In a 2006 report on the pricing arrangements for recycled water and sewer mining for water service providers, IPART provided the following principles.[30]

- The Tribunal should regulate prices for recycled water services and sewer mining only if there is an opportunity for water agencies to exercise monopoly power and it is confident that price regulation would improve economic efficiency.
- Pricing arrangements should reflect the specific market and other characteristics of recycled water and sewer mining schemes.
- Pricing arrangements for recycled water and sewer mining must be consistent with maintaining the current framework for water and sewerage pricing.
- Pricing arrangements for recycled water should reflect the fact that the services form part of an integrated urban water system.
- Recycled water prices should recover the full direct cost of implementing the recycled water scheme concerned unless:
  - the scheme gives rise to avoided costs that benefit the water agencies and users other than the direct users of the recycled water, and/or
  - the scheme gives rise to broader external benefits for which external funding is received, and/or
  - the Government formally directs the Tribunal to allow a portion of recycled water costs to be passed on to a water agency's broader customer base.
- The structure of prices should ensure that appropriate signals are sent to recycled water users and should entail appropriate allocation of risk.

The Essential Services Commission (**ESC**) in Victoria in a 2005 review of water prices for metropolitan and regional water businesses noted in relation to recycled water pricing that:[31]

- Revenue should be maximised with reference to the price of substitutes and customers' willingness to pay.
- Prices should cover the full cost of providing the service unless there are identified public benefits or the service is required to meet government targets.
- Prices must include a variable component to provide appropriate signals for resource management.

[30] IPART (September 2006), *Pricing Arrangements for Recycled Water and Sewer Mining: Sydney Water Corporation, Gosford City Council and Wyong Shire Council – Final Determination.*

[31] ESC (2005), *Water Price Review – Metropolitan and Regional Businesses; Water Plans 2005-06 to 2007-08 – Final Decision.*

- Where costs associated with providing recycled water are not fully recovered, the ESC's decision requires that water businesses demonstrate that:
  - They have assessed the costs and benefits of the recycled water project.
  - They have identified how any revenue shortfall will be recovered.
  - If the revenue shortfall is to be recovered from customers, there has been consultation about willingness to pay for the benefits of recycled water.

A report in 2005 by the Water Services Association of Australia (**WSAA**) recommended that:[32]

- Prices for recycled water should be set within a price band, with the (whole of system) incremental cost as the floor, and willingness to pay (as defined by the lesser of stand-alone cost or by-pass price of the alternative) as the ceiling.
- Commercial judgments should determine whether prices are set at the lower end of the efficient price band (i.e., just covering system incremental costs) or towards the higher end (where recycled water users make an increasing contribution to joint/common costs).
- Prices for recycled water should be set in a way that broadly tracks the prices of substitutes, but does not lock-in artificially low prices for an unnecessarily long time.
- Prices for recycled water should be set as part of a longer term pricing reform strategy that encompasses the suite of products provided by the water industry (rather than a short-term position based on current charges for potable water and other services).
- Where there are mandated targets for recycled water usage, any subsidies provided to recycled water projects at the expense of the broader (water) customer base should be fully and transparently costed. Preferably, these subsidies should be paid for from general revenue since they constitute a community service obligation (CSO).
- If uneconomic recycled water projects are implemented to meet mandated targets (without CSO funding), it would be appropriate for regulators to accept the costs of mandatory schemes (provided the projects undertaken are the most efficient way of meeting the targets) as a legitimate 'cost of doing business', recoverable from the broad customer base.
- While regulators have a legitimate interest in overseeing prices of recycled water and the efficiency of recycled water schemes, such regulation should be light-handed to provide appropriate flexibility in pricing (e.g. an approach where regulators require adherence to specified principles rather than prescribing specific prices or directly intervening in commercial arrangements), particularly where users have alternative sources of supply or considerable countervailing power as a buyer.
- In some cases, efficient pricing may require different prices for different users, reflecting factors such as the different qualities of recycled water and associated costs of supply (which may vary by user and/or location) and willingness to pay. Failure to allow differential pricing may result in viable recycling projects not proceeding.
- Policies that aim to encourage greater use of recycled water, competition and regulatory reform should be developed by governments and regulators in an integrated fashion.

[32] Water Services Association of Australia (2005), *Pricing for Recycled Water – Occasional Paper No.12/2005.*

Interested parties are invited to comment on the principles provided by IPART, ESC and WSAA.

Issues

11) If recycled water prices are to be regulated, what are the principles that should apply?

5 Assessment of Pricing Recommendations of State Water Recycling Strategy

The Terms of Reference require the Authority to:

> consider and develop findings on the pricing recommendations of the State Water Recycling Strategy, including the appropriateness of faster adoption of cost-reflective prices for major industry.

By "faster adoption of cost-reflective prices for major industry", the Terms of Reference is referring to the current Government policy of transitioning metropolitan commercial water usage charges to charges based on long run marginal cost by 2013/14.

Currently, the metropolitan commercial usage charge has three tiers:

- Usage from 1 to 600 kL is charged at $0.983 per kilolitre (**kL**).[33]
- Usage from 601 to 1,100,000 kL is charged at $1.043 per kL.
- Usage above 1,100,000 kL is charged at $1.028 per kL.

These three usage charges are to gradually converge to a single usage charge of $1.714 per KL (in real dollar values of 2009) by 2013/14.

The only pricing recommendation in the State Water Recycling Strategy was:

> A review of Water Corporation charges for extending water infrastructure to new urban areas will be undertaken, with consideration given to reflecting the contribution of alternative water supplies.
>
> Government will also investigate the establishment through the Economic Regulation Authority of an industrial tariff to promote the efficient use of water and the use of recycled water by industry.

The first recommendation was addressed by the inquiry into the Corporation's developer charges (see page 17).

On the basis of the Terms of Reference and the recommendation of the State Water Recycling Strategy, the Authority considers that the issue for this inquiry is whether major industry should be treated in a different way to other metropolitan commercial customers, by either:

- creating a separate tariff for major industry that has a faster transition to long run marginal cost; or
- having a faster transition in the existing tier 2 and tier 3 usage charges (tier 3 does not represent major industry as only two customers currently pay the tier 3 charge); or
- changing the thresholds for metropolitan commercial usage charges to better reflect the split between major industrial customers and other commercial customers, and having a faster transition for industrial customers.

[33] A kilolitre is one thousand litres.

In the event that industrial (or all commercial) customers are transitioned more quickly to water usage charges that are set in relation to long run marginal cost, the competitiveness of recycled water from projects such as the Kwinana Water Reclamation Plant is increased.

Interested parties may also be aware that usage charges for commercial customers are currently under review by the Authority as part of the Inquiry on the Tariffs of the Water Corporation, Aqwest and Busselton Water. Information on this inquiry is available on the Authority's web site.

Issues

12) Should major industry be treated in a different way to other metropolitan commercial customers for the purpose of setting water usage charges, and if so, how?

6 Other Factors that are Relevant to the Adoption of Water Recycling and Other Alternative Water Supplies

The Terms of Reference require the Authority to:

> consider and develop findings on other factors that the Authority considers relevant to the adoption of recycled water and other alternative water supplies.

The State Water Recycling Strategy highlighted a wide range of factors that are important to the adoption of water recycling and other alternative supplies.

The factors that the Authority is intending to investigate include:

- the appropriateness and effectiveness of the current recycling target;
- the role of rebates;
- the appropriateness of reserving water from wastewater treatment plants for specific purposes;
- the appropriateness of standards or regulations that mandate the installation of recycling systems; and
- the regulatory arrangements for third party access to wastewater and stormwater (which was considered in detail as part of the Inquiry into Competition in the Water and Wastewater Services Sector).

Interested parties are invited to direct the Authority's attention towards other factors that they consider are relevant to the adoption of recycled water and other alternative water supplies.

6.1 Recycling Targets

The State Water Recycling Strategy includes the target of 30 per cent water recycling by 2030. The target appears to be motivated by the premise that recycled water can be cost effective when compared to traditional water sources and that there needs to be a more intensive 'push' for recycling opportunities.

One of the major initiatives that will contribute to the 30 per cent recycling target is the expansion of the Kwinana Water Reclamation Plant, which will increase the rate of water recycling to 17.3 per cent. The other major initiative is the Gnangara Groundwater Replenishment Trial. By 2030, an additional 50 GL of recycled water will be required to meet the target.

Recycling targets can be an effective means of focussing attention on alternative water source options given the absence of a competitive market in the provision of water services. However, it would generally be inefficient to develop recycling options that have a per kL cost that is higher than traditional sources unless they were able to provide high degrees of flexibility, avoid investment in options for which utilisation would be uncertain, and/or provide external benefits to third parties.

Issues

13) What role should recycling targets play in the adoption of recycled water?

6.2 Rebates

The Authority is intending to consider the appropriateness of rebates as an instrument to encourage the cost effective adoption of recycling and other sources.

The rebate that is currently available for water recycling is the rebate for greywater reuse systems. This rebate provides up to $500 or 50 per cent of the purchase/installation cost (which ever is the lesser amount) for an approved system.

In addition, rebates are available for other alternative water supplies, such as:

- Domestic rainwater tanks – tanks with a capacity greater than 600 litres that are not plumbed in are eligible for a rebate of $50. Tanks with a capacity greater than 2,000 litres are eligible for a rebate of up to $600 or 50 per cent of the purchase and plumbing in cost (whichever is the lesser amount), if they are plumbed in by a licensed plumber for use in a toilet and/or washing machine when installed.
- Garden bores – for sites that are eligible, a rebate of $300, or 50 per cent of the installation cost for a new bore (whichever is the lesser amount), is available per residential property.

Rebates are also available for other demand management measures, such as for washing machines, irrigation systems, rain sensors, swimming pool covers and flow regulators.

The effectiveness of rebates depends on the cost per kL of the cost of the water source (inclusive of the rebate) in comparison to the cost of scheme water.

Issues

14) What role should rebates play in the adoption of recycled water?

6.3 Reservation of Water From Wastewater Treatment Plants

The State Water Recycling Strategy states:

- Due to increasing pressure on our groundwater resources, the state government is currently investigating the viability of horticultural precincts. Water from the new Alkimos Wastewater Treatment Plant has some potential for future use in horticulture, and may be reserved for this purpose.
- In recognition of the potential for water to be recycled for drinking purposes, water from the Beenyup Wastewater Treatment Plant will be reserved for this purpose. This will ensure that there is a source available should groundwater replenishment become an acceptable drinking water supply option in the future.

The Authority will consider the appropriateness of using reservation policies for resources that may have significant alternative uses.

Policies that reserve water for a specific purpose involve second-guessing that the use of the water for that purpose has a higher value than alternative uses. It would generally be appropriate to use a neutral auctioning process rather than a reservation policy to ensure that, where water from a wastewater treatment plant has significant value, that water is allocated on a commercial basis to customers who value it most.

In terms of auctioning water from the Alkimos and Beenyup plants, the value placed on the water by horticulturalists and the Corporation itself (in the case of future public drinking supplies made available through aquifer recharge) may be more or less than the value placed on the water by other potential users, such as a private service provider wanting to supply commercial users, third pipe schemes to new residential developments or other innovative applications.

Issues

15) What role should the reservation of recycling targets play in the adoption of recycled water?

6.4 Mandatory Standards

The State Wastewater Recycling Strategy states:

- The revision of building codes through 5 Star Plus will support the inclusion of complimentary water supplies to meet demand for external garden use, toilet flushing and clothes washing.
- In the future, new heavy and general industrial areas will be required to investigate the installation of a third pipe to distribute recycled water. Where feasible and cost effective, existing heavy industrial areas should be retrofitted to facilitate the use of recycled water.

The Authority will consider the appropriateness of using mandatory standards that require retrofitting of existing properties or water sensitive designs. The risk with such requirements is that the water savings may not be cost effective in comparison to other source options.

Issues

16) What role should mandatory standards play in the adoption of recycled water?

6.5 Third Party Access

Third party access regimes allow entities other than an infrastructure owner to use infrastructure to deliver services to customers. Third party access regimes:

- set out the terms and conditions of use; and
- outline prices (or how prices are to be determined) that may be charged by the infrastructure owner for access.

An effective access regime would allow businesses to access wastewater or stormwater from the service provider and recycle it for either their own purpose or for sale to customers.

Third party access regimes are common in the gas, electricity and telecommunications industries. However, they are less common in the water and wastewater industry.

There are no current institutional or legislative restrictions on seeking third party access to water and wastewater networks in Western Australia. Under current arrangements the process is as follows:

- A potential entrant seeking access to infrastructure of national significance can approach the infrastructure owner and attempt to negotiate access.
- If this fails, they can apply to the National Competition Council (**NCC**) to have the infrastructure declared under Part IIIA of the *Trade Practices Act 1974*.
- Should the approach to the NCC be unsuccessful or the findings of the NCC be rejected by the relevant Minister, who has the discretion to set aside the NCC findings, the access seeker can apply to the Australian Competition Tribunal for review of the decision not to grant access to the infrastructure.

However, this may be a long and expensive process. As an alternative to the national access regime under the Trade Practices Act 1974, the Competition Principles Agreement also provides for State-based regimes for third party access to infrastructure.

The Authority has provided advice to the Government on the appropriateness of a State-based regime for third party access as part of the Inquiry on Competition in the Water and Wastewater Services Sector. The Final Report for this inquiry has been tabled in Parliament and is available on the Authority's web site.

The Authority does not intend to revisit this issue in detail as part of this inquiry, unless particular issues are raised which warrant the Authority refining its advice to the Government.

Issues

17) What views do interested parties have on access regimes as a means for facilitating the adoption of recycled water?

Appendix 1 Terms of Reference

INQUIRY INTO PRICING OF RECYCLED WATER IN WESTERN AUSTRALIA

TERMS OF REFERENCE

I, ERIC RIPPER, Treasurer, pursuant to Section 32(1) of the *Economic Regulation Authority Act 2003* request that the Economic Regulation Authority (the Authority) undertake an inquiry into, and make recommendations on pricing and other relevant factors affecting the adoption of recycled water and other alternative water supplies.

In doing so, the Authority is expected to consider and develop findings on:

- the circumstances in which recycled water prices should be regulated, and the recommended approach to any required regulation;
- the pricing recommendations of the State Water Recycling Strategy, including the appropriateness of faster adoption of cost-reflective prices for major industry;
- other factors that the Authority considers relevant to the adoption of recycled water and other alternative water supplies.

In developing its recommendations the Authority will have regard to:

- the Government's social, economic and environmental policy objectives;
- distributional issues, such as those between customers of recycled water services and other services in the same scheme; and
- any relevant pricing principles arising from the 1994 Council of Australian Governments water reform agreement and the National Water Initiative.

The Authority will release an issues paper as soon as possible after receiving the reference. The paper is to facilitate public consultation on the basis of invitations for written submissions from industry, government and all other stakeholder groups, including the general community.

A draft report is to be available for further public consultation on the basis of invitations for written submissions.

The Authority will complete a final report no later than seven months after receiving the Terms of Reference.

ERIC RIPPER MLA
DEPUTY PREMIER; TREASURER;
MINISTER FOR STATE DEVELOPMENT

Appendix 2 Summary of Issues

1) What other recycling projects are currently underway that the Authority should be aware of?
2) What other significant alternative sources are currently being used that the Authority should be aware of?
3) What is the scope for additional water recycling in Western Australia?
4) What other State and National water recycling initiatives should the Authority be aware of?
5) To what extent do service providers have market power in the provision of water recycling services?
6) If providers of water recycling services have market power, should their prices be regulated, and if so, how?
7) What is the nature and magnitude of any externalities associated with water recycling?
8) If there are significant externalities, should water recycling prices be regulated to account for these, and if so, how?
9) What is the nature of any distributional or other social policy issues associated with the pricing of water recycling?
10) If there are significant social issues, should water recycling prices be regulated to account for these, and if so, how?
11) If recycled water prices are to be regulated, what are the principles that should apply?
12) Should major industry be treated in a different way to other metropolitan commercial customers for the purpose of setting water usage charges, and if so, how?
13) What role should recycling targets play in the adoption of recycled water?
14) What role should rebates play in the adoption of recycled water?
15) What role should the reservation of recycling targets play in the adoption of recycled water?
16) What role should mandatory standards play in the adoption of recycled water?
17) What views do interested parties have on access regimes as a means for facilitating the adoption of recycled water?

Appendix 3 Glossary

Term	Definition
Act	*Economic Regulation Authority Act 2003*
Authority	Economic Regulation Authority
COAG	Council of Australian Governments
Corporation	Water Corporation
ESC	Essential Services Commission (Victoria)
GL	Gigalitre (one billion litres)
IPART	Independent Pricing and Review Tribunal
kL	kilolitre (one thousand litres)
KWRP	Kwinana Water Recycling Plant
MAR	Managed Aquifer Recharge
ML	Megalitre (one million litres)
NCC	National Competition Council
NWI	National Water Initiative
UWA	University of Western Australia
WSAA	Water Services Association of Australia
WWTP	Wastewater Treatment Plant