

Sydney Water Corporation ABN 49 776 225 038  
115-123 Bathurst Street NSW 2000 Australia PO Box A53 Sydney South NSW 1232 Australia  
Water Reform Project, Telephone (02) 9350 6434 Facsimile (02) 9350 6590 DX 14  
Sydney Internet www.sydneywater.com.au

Sydney  
**WATER**

18 July 2005



Mr James Cox  
CEO and full-time Member  
Independent Pricing and Regulatory Tribunal  
PO Box Q290  
QVB Post Office  
NSW 1230

Dear Mr Cox

Please find enclosed Sydney Water's Submission to the IPART Review of the Water and Wastewater Industry in the Greater Sydney Region.

Yours sincerely

A handwritten signature in cursive script that reads 'Chris Guest'.

Dr Chris Guest  
Director  
Water Reform Project  
Sydney Water Corporation

Enc:

**SUBMISSION TO THE  
INDEPENDENT PRICING AND  
REGULATORY TRIBUNAL REVIEW  
OF THE WATER AND  
WASTEWATER INDUSTRY IN THE  
GREATER SYDNEY REGION**

July 2005

© Sydney Water Corporation 2005

This work is copyright. It may be reproduced for study, research or training purposes subject to the inclusion of an acknowledgement of the source and no commercial usage or sale. Reproduction for purposes other than those listed requires permission from Sydney Water Corporation.

<b>EXECUTIVE SUMMARY</b>	4
<b>INTRODUCTION</b>	6
<b>1.0 CONTEXT</b>	7
<b>1.1 IPART SECTION 9 REVIEW</b>	7
1.1.1 Purpose of Review	7
1.1.2 Issues Paper	7
<b>1.2 POLICY OBJECTIVES</b>	8
1.2.1 Water Management	8
1.2.2 Economic and Financial Performance	9
1.2.3 Public Stewardship	10
<b>1.3 AN OUTLINE OF THE GREATER SYDNEY REGION             WATER AND WASTEWATER INDUSTRY</b>	12
<b>1.4 DESCRIPTION OF WATER AND WASTEWATER SERVICES</b>	14
1.4.1 Water Services	14
1.4.2 Wastewater Services	15
1.4.3 Stormwater Services	16
<b>1.5 REVENUE AND EXPENDITURE</b>	16
1.5.1 Revenue	16
1.5.2 Capital Expenditure	17
1.5.3 Operating Expenditure	17
<b>1.6 THE ECONOMICS OF THE WATER AND WASTEWATER             INDUSTRY</b>	18
<b>2.0 INDUSTRY STRUCTURE REFORM</b>	20
<b>2.1 INDUSTRY STRUCTURE MODELS</b>	20
2.1.1 Competition for Specific Services	20
2.1.2 Competition for the Market	21
2.1.3 Competition Within the Market	22
2.1.4 Yardstick Competition	24
<b>2.2 INDUSTRY STRUCTURE SCENARIOS</b>	24
2.2.1 Competitive Processes (competition for specific services)	25
2.2.2 Competition for the Market	26
2.2.3 Third Party Access (competition within the market)	27
2.2.4 Disaggregation (yardstick competition)	31
<b>3.0 CONCLUSION</b>	33
<b>GLOSSARY OF TERMS</b>	34
<b>ATTACHMENT A IPART Section 9 Review Terms of Reference</b>	35
<b>ATTACHMENT B Structure Model Option Identified by IPART</b>	38
<b>ATTACHMENT C The Metropolitan Water Plan</b>	30
<b>ATTACHMENT D Sydney Water Regulatory Environment</b>	41
<b>ATTACHMENT E Severn Trent</b>	44

## **EXECUTIVE SUMMARY**

Sydney Water provides drinking water, wastewater services and some stormwater services to nearly 4.2 million people in Sydney, the Blue Mountains and the Illawarra.

It is a vertically integrated service provider.

The challenge of meeting Sydney's projected population growth offers the opportunity to find new ways of providing water and wastewater services.

The aim of Sydney Water's Submission to IPART is to contribute to the consideration of the major ways forward for the water and wastewater industry in the Greater Sydney Region.

A number of issues arise under the current regulatory and legislative regime which impact on the way in which water and wastewater services could be provided under various models. Sydney Water does not seek in this Submission to identify the nature and scope of the regulatory and legislative changes that Government would need to make to implement any of the different models.

Four industry structure scenarios are presented. Each entails introducing greater competitive pressures to the industry.

### **Competition for Specific Services**

Competition for specific services occurs when outside firms compete for the provision of services through competitive tendering processes. Under this scenario, Sydney Water could continue with a process of competitive contracting, as determined by benchmarking exercises and the cost effectiveness of external compared with internal provision, subject to Government policy.

### **Competition for Market**

This model involves allowing firms to compete for the right to supply specified water and wastewater services. It may be of interest for the provision of services to the North East and South West Growth Sectors. The Growth Centres Commission could investigate this approach in the context of the desire to achieve efficient, innovative and equitable arrangements for the Growth Sectors.

### **Third Party Access**

Third party access entails competition within the market. It is most likely to occur through an access arrangement that allows a new entrant access to existing infrastructure, thereby avoiding uneconomic duplication. In some industries, entry by third parties provides a means by which the community could benefit from competition between service providers and the innovations a new entrant could bring. However, any access arrangement would need to ensure that new entrants fully meet the costs of the network services to which they gain access.

### **Yardstick Competition**

Yardstick competition entails retaining a single owner of shared transmission pipes, and having a number of retail suppliers, each of which has a monopoly over a geographically defined area. Yardstick competition may be an effective way of generating competitive pressures for efficiency and innovation, without sacrificing the scale and scope economy benefits of provision of water and wastewater services by an integrated supplier.

### **Conclusion**

These scenarios are not necessarily mutually exclusive. Some could be implemented sequentially, or concurrently. Each of them requires more detailed consideration. However, they could offer the prospect of finding ways to improve further the performance of the industry.

## **INTRODUCTION**

The purpose of this Submission is to contribute to IPART's Review of the water and wastewater industry in the Greater Sydney Region.

The Submission has three parts.

- Section 1 provides the Context for the Submission. It outlines the scope of the IPART Review, presents an evaluation framework, describes the key features of the industry and of Sydney Water, and outlines the economics of the water and wastewater industry.
- Section 2 discusses the four ways in which greater competitive pressure could be introduced to the industry, and presents and assesses four industry competition reform scenarios. The reform scenarios are not mutually exclusive. Some reforms could be implemented sequentially, or concurrently.
- The final Section presents some conclusions about the way forward.

## **1.0.0 CONTEXT**

### **1.1.0 IPART SECTION 9 REVIEW**

#### **1.1.1 Purpose of Review**

In December 2004, the Premier requested the Independent Pricing and Regulatory Tribunal (IPART) to

*investigate and provide advice on possible pricing principles and alternative arrangements including possible private sector involvement, for the delivery of water related services in the greater Sydney metropolitan area, with a view to making recommendations for providing these services in the most efficient, effective and sustainable way.*

The full Terms of Reference are at Attachment A.

#### **1.1.2 Issues Paper**

The Issues Paper, Investigation into water & wastewater services in the greater Sydney region, interprets the task of the review as being to

*explore the extent to which incentives could feasibly be created to encourage decentralised decision-making in the water industry where this leads to greater efficiency.*

The key policy focus of the Issues Paper is how to introduce greater competitive pressure to the industry in order to provide incentives for improved performance.

The Paper identifies the following strategic issues that need to be addressed in increasing competition in the industry:

- a) The identification of the aspects of the industry that require centralised decision-making and the aspects that can be allocated to decentralised decision-making, and the establishment of a clear boundary between the two spheres of decision-making;
- b) Where decentralised decisions are to be made, there needs to be competitive neutrality across industry participants;
- c) The ways in which private sector firms could be involved in service provision in the industry, and the likely benefits of this involvement;
- d) The need to ensure that Government objectives for public health, the environment and water conservation are met;
- e) The implications for the current uniform pricing arrangements;



- f) The implications for the State's existing investments in infrastructure;
- g) The way in which existing infrastructure might be accessed by new entrants; and
- h) The likelihood that industry reform would need to be implemented in stages.

IPART has identified options ranging from greater use of competitive contracting (including changes to the scope of competitive contracting), third party access and yardstick competition. The options identified by IPART are depicted in the diagram at Attachment B.

Third party access would require an access pricing arrangement. The Issues Paper canvasses a number of approaches, including long run marginal cost and the efficient component pricing rule.

### **1.2.0 POLICY OBJECTIVES**

Consideration of industry reform requires an evaluation framework, by which reforms can be assessed. The evaluation framework must come from the policy objectives for the industry enunciated by Government. The policy objectives for the water and wastewater industry comprise:

#### **1.2.1 Water Management**

- **Sustainability of Sydney's water resources**

A long run supply/demand balance is to be achieved through augmenting supply and demand management. The Metropolitan Water Plan outlines the Government's planning framework for addressing supply and achieving sustainability (the Plan is outlined at Attachment C).
- **Security of supply through drought**

The Metropolitan Water Plan includes measures to ensure security of supply through the current drought. These include the deep water storage pumping project, ground water investigations and desalination, as a drought contingency measure.
- **Environmental and water quality outcomes**

Environmental flows (flows that mimic the pattern of natural flows) are needed to maintain natural river processes. The NSW Government is committed to a policy of implementing environmental flows through an adaptive management framework, which responds to existing conditions,

such as drought, in the context of the long-term objective of increasing environmental flows in the Hawkesbury Nepean River system.

- **Re-use**

A principal objective of Sydney Water's enabling legislation, the Sydney Water Act 1994 (the Act), requires the Corporation to prevent the degradation of the environment, and to that end, to re-use and recover energy, water and other materials and substances, used or discharged by it. Sydney Water's commitment to re-use is reinforced by its Operating Licence.

## 1.2.2 Economic and Financial Performance

- **Efficient service provision**

This means providing efficient, innovative services of the kind that consumers want. The Act requires the Corporation to be a successful business and to this end, to operate at least as efficiently as any comparable business. As part of Sydney Water's regulated operating environment, IPART, when setting prices, is required to have regard to the protection of consumers from the abuses of monopoly power in terms of prices and the need for efficiency in the supply of services to reduce costs for the benefit of consumers.

Technically, efficiency has three dimensions, productive, allocative and dynamic efficiency. Productive efficiency is producing output at the least cost. Building on productive efficiency, allocative efficiency is then concerned with ensuring the best economic use of society's scarce resources, so that consumers are provided with the amounts and types of goods and services that they most prefer using an efficient mix of inputs. Prices are an important means by which resources are allocated in markets, and, accordingly, are an important means by which allocative (and other types of) efficiency is attained. Dynamic efficiency is achieved when, over time, new products, services and production processes are introduced.

- **Simplicity**

This refers to the costs of implementing reforms, and the costs of regulating and administering new arrangements. These costs should be minimised, and the best way to do that is to keep arrangements as simple as possible.

- **Adequate rate of return from ownership of Sydney Water**

Both the Act and the State Owned Corporations Act 1989 require government businesses such as Sydney Water to maximise the net worth of the State's investment in the Corporation. To this end, IPART allows for a regulated rate of return on the Corporation's investments, when setting prices for Sydney Water's services.

- **Provision of water and wastewater services for the North West and South West Growth Sectors**

The expected population growth in the Western Sydney region is in the order of 800,000 over the next 20 years. The region's current population is 600,000.

The Government has announced the staged release of land for 100,000 dwellings in the South West sector over the next 30 years. Sixty thousand dwellings are to be developed in the North West sector over the next 25-30 years.

The Government has also announced that a Growth Centres Commission (GCC) will be established under the Growth Centres (Development Corporations) Act 1974. The Commission will coordinate and manage land release and infrastructure delivery. The appointment of a Board was announced on 13 May 2005.

The GCC has been established to oversee and facilitate the development of land for urban development purposes in the growth sectors. It will also be a water supply authority.

On 11 June 2005, the Premier announced that an Expression of Interest would be conducted for recycling projects in the growth sectors, as well as in some established areas.

### **1.2.3 Public Stewardship**

- **Social equity**

Water and wastewater services are regarded as essential services to which everyone ought to have access on fair and reasonable terms. An important means of achieving this social equity value is through the use of postage stamp pricing for water and wastewater, whereby all customers pay uniform charges, even though the costs of service provision to different groups of customers vary considerably. In addition, IPART is required by

the IPART Act 1992 to have regard to the social impact of its determination of prices.

- **Public health**

A principal objective of the Act requires Sydney Water to protect public health by supplying safe drinking water to its customers and other members of the public in compliance with the requirements of any operating licence. The Operating Licence, issued and regulated by IPART, requires Sydney Water to comply with the Australian Drinking Water Guidelines 1996.

- **Community Service Obligations**

Each year Sydney Water carries out a number of non-commercial social programs at the direction of the Government, for which it receives reimbursement from the State Budget. In 2003-04, Sydney Water was reimbursed a total of \$79 million for pensioner rebates, property exemptions, the Blue Mountains Septic Pumpout Subsidy and the Priority Sewerage Program.

In addition to aiming to improve efficiency in the provision and use of water and wastewater and earning an adequate rate of return, the policy framework is concerned with social objectives, such as protecting the environment and public health, and ensuring that water and wastewater services are affordable and available to everyone in the community. Trade-offs are likely to be required between these objectives in making decisions about reforms to the industry.

A feature of the industry is the significance of externalities, such as public health. As an essential service, social equity considerations are also important. For these reasons, it is likely that the industry will always be highly regulated.

### **1.3.0 AN OUTLINE OF THE GREATER SYDNEY REGION WATER AND WASTEWATER INDUSTRY**

In the greater Sydney region, responsibility for the supply of potable water is divided between Sydney Water and the Sydney Catchment Authority (SCA). The SCA was established in 1998 to manage water catchments to ensure water quality, and to supply bulk water to Sydney Water from a system of dams and other infrastructure. Sydney Water's role is to deliver potable water to end-customers, and to transport and treat wastewater.

Sydney Water provides drinking water, wastewater services and some stormwater services to nearly 4.2 million people in Sydney, the Blue Mountains and the Illawarra. The area of operations is presented in Figure 1. The largest group is residential property owners who consume approximately seventy percent of the water supplied.

The Sydney Water Act 1994 and the State Owned Corporations Act 1989 provide Sydney Water's framework of corporate governance. Under this legislative framework, all decisions relating to Sydney Water's operations are made by or under the authority of its Board of Directors. In turn, the Board is accountable to the Government through a Portfolio Minister and two shareholding Ministers, one of whom must be the Treasurer.

In addition to the responsibilities set out in its enabling legislation, the obligations of Sydney Water are set out in its Operating Licence and Customer Contract, and the Protection of the Environment Operations Act 1997. A summary of Sydney Water's regulatory framework is at Attachment D.

IPART regulates the prices that can be charged by the SCA for bulk water and by Sydney Water for water, wastewater and stormwater services. IPART sets prices with the objective of generating sufficient revenue to allow for the recovery of efficient operating and capital costs necessary to provide the appropriate level of services.

Sydney Water employs 3,400 staff, operates assets valued at \$11 billion, earns more than \$1 billion in revenue per year, and has an annual capital works program of over \$500 million.

Over the last five years, Sydney has experienced the strongest sustained period of population growth since the 1960s. Current estimates by the Department of Infrastructure, Planning and Natural Resources project Sydney's population to grow by an average of about 40,000 people each year for the next 30 years. This growth of 1.2 million people is equivalent to the population of Adelaide moving to Sydney. At the same time, the average occupancy rate per household is decreasing. This

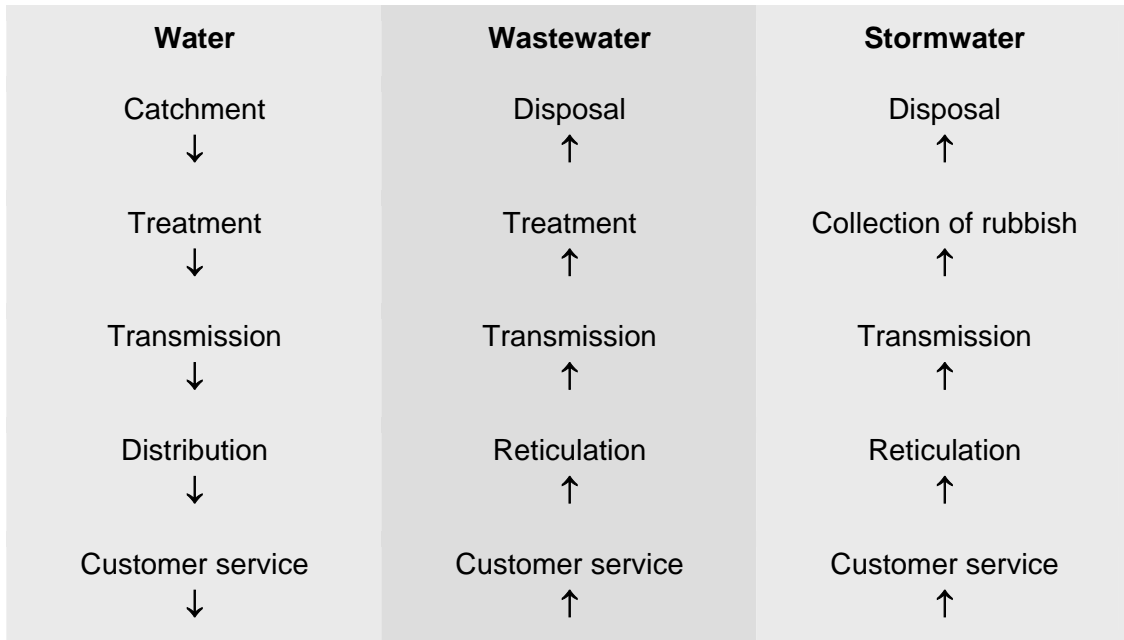
means that over the next 30 years about 23,500 new dwellings will need to be built each year in Sydney Water's area of operations. More than 200,000 of these dwellings will be in new release areas, which are expensive to service due to the need for new infrastructure.

**Figure 1 Sydney Water's Area of Operations**



#### 1.4.0 DESCRIPTION OF WATER AND WASTEWATER SERVICES

The principal activities for the provision of water related services are summarised in the following table.



#### 1.4.1 Water Services

For water services:

- catchment involves managing the collection of bulk water from the environment and storing it in dams to provide reliable water supplies for urban consumption (this is the role of the SCA for the Greater Sydney Region);
- treatment is the removal of natural and other pollutants from bulk water;
- transmission involves transport through large pipes both before and after treatment (the SCA transports bulk water to the intake point of Sydney Water's water filtration plants);
- distribution entails local storage in reservoirs to manage daily variation in demand and distribution through a network of smaller pipes to customers' properties;
- customer service involves customer connection, billing, meter reading and customer service contact (in relation to such things as malfunctions and complaints).

Sydney Water supplies more than 1.5 billion litres (1.5 gigalitres) of water to more than 1.6 million homes and businesses each day.

Sydney's water is treated to meet the water quality requirements of the Australian Drinking Water Guidelines at 10 water filtration plants. The largest plant is at Prospect and treats more than 80 per cent of Sydney Water's water (this water comes from Warragamba Dam). Six of the water filtration plants, including the Prospect plant, are owned and operated by the private sector under 25 year agreements with Sydney Water.

Water is then distributed to customers' properties through a network of 260 service reservoirs, 152 pumping stations and 20,867 kilometres of water mains.

#### **1.4.2 Wastewater Services**

For wastewater services:

- customer service involves customer connection, billing, meter reading (for large industrial and commercial wastewater customers), trade waste control and customer service contact;
- reticulation and transmission entails collection of wastewater in sewers and transport of the wastewater via larger pipes to sewage treatment plants;
- treatment and disposal involves the separation of solids and liquids in wastewater with the removal of solids (sludge) for discharge or re-use (biosolids) and the treatment of liquids (effluent) for discharge or re-use (recycled water).

Sydney Water collects and treats more than 1.3 billion litres of wastewater from homes and businesses and recycles more than 39 million litres of wastewater each day. The sewerage network comprises 23,014 kilometres of sewer pipes and 656 sewage-pumping stations in 28 separate sewerage systems. Wastewater collected in the sewerage systems flows to 31 sewage treatment plants, where it is treated before being re-used or discharged in accordance with licence conditions issued by the Department of Environment and Conservation under the Protection of the Environment Operations Act 1997.

Around eighty-six per cent of wastewater is processed at the three biggest plants at Malabar, North Head and Bondi. Water quality discharged from the plants is monitored in accordance with licence standards.

Sydney Water has a number of recycled water schemes in place that help reduce discharges of treated wastewater to the environment and reduce demand on existing and future water supplies. Since 1995, the use of recycled water has increased from 6.2 gegalitres per year to 14.2 gegalitres per year due to increased use of recycled water at Sydney Water's sewage treatment plants and the



commissioning of various recycled water schemes, including the Rouse Hill residential scheme.

In areas of urban growth, the Government's requirements under the Building and Sustainability Index (BASIX) for a forty percent reduction in water use for new developments will lead to more dual reticulation schemes in greenfield areas and recycling schemes for multi-unit developments in infill areas.

### **1.4.3 Stormwater Services**

For stormwater services:

- Customer service involves managing the interface with local drainage services managed by local government and other government agencies that connect to Sydney Water's trunk drainage system, billing and customer service contact;
- Reticulation and transmission is the transportation of stormwater flows through Sydney Water's trunk drainage system;
- Collection of rubbish and disposal entails the capture of materials transported by stormwater and the appropriate disposal of these materials.

Sydney Water's responsibility for stormwater services is limited to transmission via trunk mains, collection of rubbish and disposal. Local stormwater services are primarily the responsibility of councils. Sydney Water is responsible for customer services for those properties that connect directly to Sydney Water's trunk drains.

Sydney Water provides stormwater drainage facilities to approximately 450,000 homes and businesses. It operates 436 kilometres of stormwater channels, mostly in the south and south-western suburbs of Sydney. The channels help to minimise the pollution of waterways and mitigate flood risks.

Sydney Water also operates and maintains stormwater pollution control devices, with approximately 1,930 cubic metres of rubbish and 1,567 tonnes of sediment collected by gross pollutant and sediment traps in the past year.

## **1.5.0 REVENUE AND EXPENDITURE**

### **1.5.1 Revenue**

In 2003-04, Sydney Water's revenue from service and usage charges totalled \$1,246 million. In addition, Sydney Water received \$79 million in NSW Government contributions for social programs and \$104 million from developers as contributions to capital works.

### 1.5.2 Capital Expenditure

Capital expenditure for 2003-04 totalled \$507 million. This included \$204 million spent on projects to meet regulatory standards and \$61 million spent on providing infrastructure to service population growth. The key drivers of expenditure are shown in Figure 2.

### 1.5.3 Operating Expenditure

Total expenditure in 2003-4 of \$1,122 million comprised \$776 million in operating expenses, \$193 million in depreciation and amortisation and \$152 million in borrowing costs. A breakdown of Sydney Water's operating expenses is shown in Figure 3.

Figure 2: Capital Expenditure 2003-04.

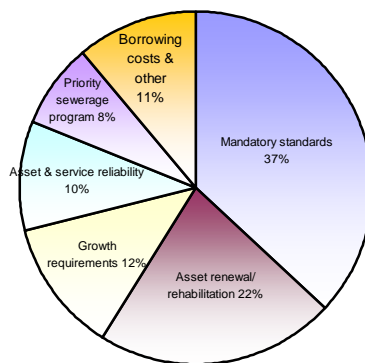
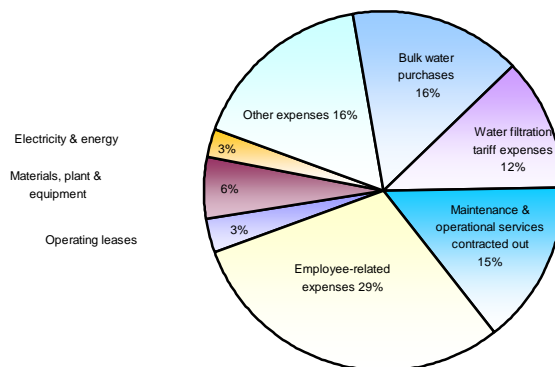


Figure 3: Operating Expenditure 2003-04



### **1.6.0 THE ECONOMICS OF THE WATER AND WASTEWATER INDUSTRY**

Sydney Water provides each of the services required for the delivery of water and wastewater services. As the sole producer, these services are provided to customers as an integrated bundle of linked services. However, the economics of the individual services vary significantly. A key economic issue in considering the industry structure required for the efficient provision of a service is whether there are significant economies of scale and scope in the production of a service.

The presence of economies of scale and scope is determined by the pattern of production costs and the optimum number of firms is then determined by the size of the market. Where there are high fixed costs and relatively low variable costs, then there are likely to be economies of scale. There are significant economies of scale for transportation facilities, including bulk transmission pipelines and reticulation networks.

Economies of scope exist where one firm can produce two or more goods or services at lower cost than if separate firms specialised in the production of each good or service. Again, the evidence is that there are significant economies of scope in the wastewater industry.

The Australian industry experience implies that there are significant economies of scale, with urban utilities typically serving around 1 million people. There is evidence of economies of scope for companies providing water and wastewater services in relation to functions such as billing and connections. Overseas experience can provide some guidance, although the companies studied are either very small or very large by Australian standards. In any event, few studies have been undertaken to investigate the relation of market size to economies of scale and scope. (The principal recent reference is Stone and Webster Consultants, 2004, *Investigation into evidence for economies of scale in the water and sewerage industry in England and Wales*).

Where there are significant economies of scale and scope in relation to the size of the market, there is a case for monopoly in order to deliver the production of goods and services at least cost. Natural monopoly exists where one firm can supply a market at lower cost than two or more firms. This policy case for monopoly is not a permanent one. Changes in the technology of production or increases in the size of the market can overtake the case for monopoly.

The IPART Issues Paper has classified the elements of the water and wastewater production process as either monopoly functions or competitive.

**Table 1: Competition and Monopoly in the Water and Wastewater Industry**

	Functional Element	Category	Comment
<b>Water</b>	Catchment	competitive	Single buyer could obtain from Catchment Authority (storage), but also obtain bulk supply from desalination, groundwater or recycling
	Treatment	competitive	Particularly for larger systems
	Transmission & Transportation	monopoly	
	Customer services	competitive	May not be efficient
<b>Wastewater</b>	Transport	Monopoly	
	Customer services	competitive	May not be efficient
	Treatment & disposal	competitive	Eg small scale onsite or an unbundled tariff based service to all potential users.

While the Issues Paper has indicated functions as a natural monopoly or open to competition, further analysis is required to determine how best to unbundle activities within the business and whether competition in those unbundled portions is likely to be efficient and result in improved outcomes for customers.

For instance, as the Issues Paper notes, catchment services are potentially competitive. However, the current relative costs of water delivery from alternatives to harvesting from the environment are relatively high.

## 2.0.0 INDUSTRY STRUCTURE REFORM

Sydney Water is a vertically integrated water and wastewater authority. Its structure is illustrated in Figure 4. For simplicity, the diagram only shows water services but the model applies equally to wastewater services. In the case of wastewater, the network is used to transport the waste from the customer's location to its treatment point.

As discussed in Section 1.3, in the current Sydney water industry structure, Sydney Water purchases bulk water from the SCA, which is responsible for the management of the catchment and abstraction. Sydney Water is responsible for treatment, transmission and distribution of water and for customer service. When it comes to wastewater, Sydney Water is responsible for customer service, transmission treatment and disposal.

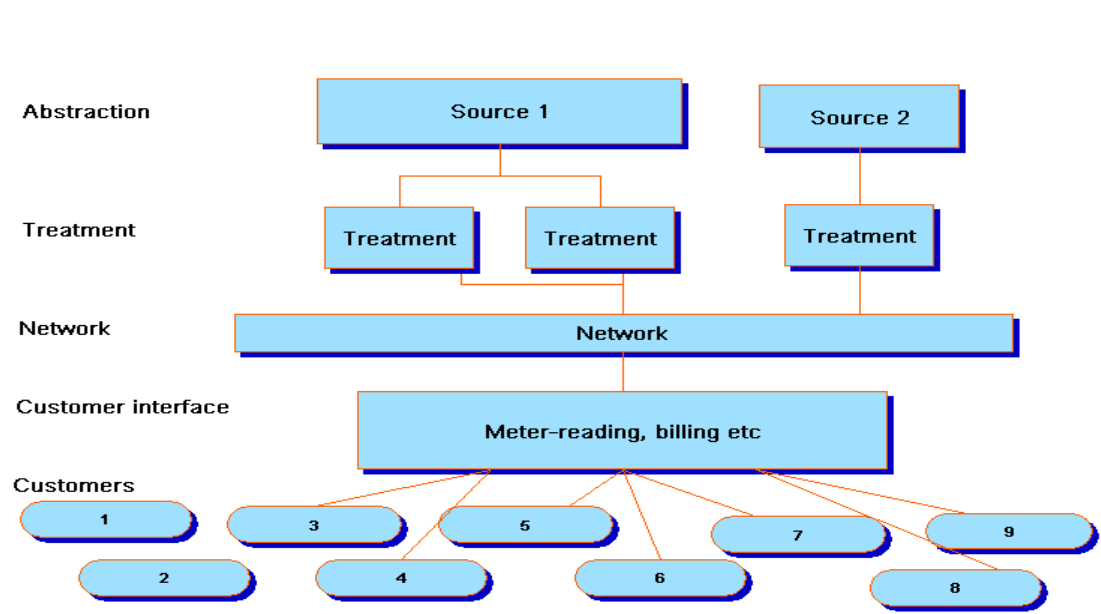


Figure 4: Vertically integrated water (and wastewater) company

## 2.1.0 INDUSTRY STRUCTURE MODELS

There are four kinds of industry structure models that aim to promote competition in the provision of water services, without sacrificing the benefits of having a single provider where this is necessary to secure least cost production of services.

### 2.1.1 Competition for Specific Services

Competition for specific services occurs when outside firms can compete for the provision of services through competitive tendering processes. This is the

competitive contracting approach. There are three kinds of competitive contracting opportunities:

Input Sourcing	The procurement of goods and services.
Outcome Sourcing	The procurement of 'solutions' or outcomes from the market. Rather than seeking competitive bids for defined projects, a company could specify its requirements for water supply or sewerage treatment and call for bids to meet these requirements. This would provide bidders with greater freedom to put forward proposals that meet defined objectives in the most effective way.
Contract Manager	All non-core activities or functions would be subject to competitive contracting. This could mean a water and wastewater provider would be confined to asset planning, regulatory interface and contract management.

### 2.1.2 Competition for the Market

Competition for the market involves allowing firms to compete for the right to supply water and wastewater services. Commonly, this is a matter of competing for the right to supply a market that is a natural monopoly. The premise underpinning this type of competition is that if the right to service such a market is auctioned in a competitive process, the competition for the right to supply the market by potential providers would result in the award of the tender to the firm offering to supply the market at the lowest cost.

The way in which the rights to supply are specified will affect the outcome. The various forms of contract can be grouped into three broad categories:

Management contracts	In which the right to manage the operations and maintenance of the business are tendered. These are typically short-term contracts (3-5 years) and ownership of the assets and responsibility for planning and financing of investment remains with the asset owner.
Lease (or affermage) contracts	In which the right to bill customers and operate and maintain the business is tendered. These are typically medium term contracts (8-15 years). The lease-holder receives part of the revenue it collects from customers, with the other part being returned to the asset owner. Planning for new investment is sometimes passed to the lease-holder, but the financing of new capital investment remains with the asset owner.

Concession contracts	In which the right to operate and maintain and invest in the network and to bill customers is tendered. This approach includes the alternatives of managing existing assets and investing in new assets. These are usually long-term contracts (20-30 years) in which the concessionaire retains all revenues.
----------------------	--

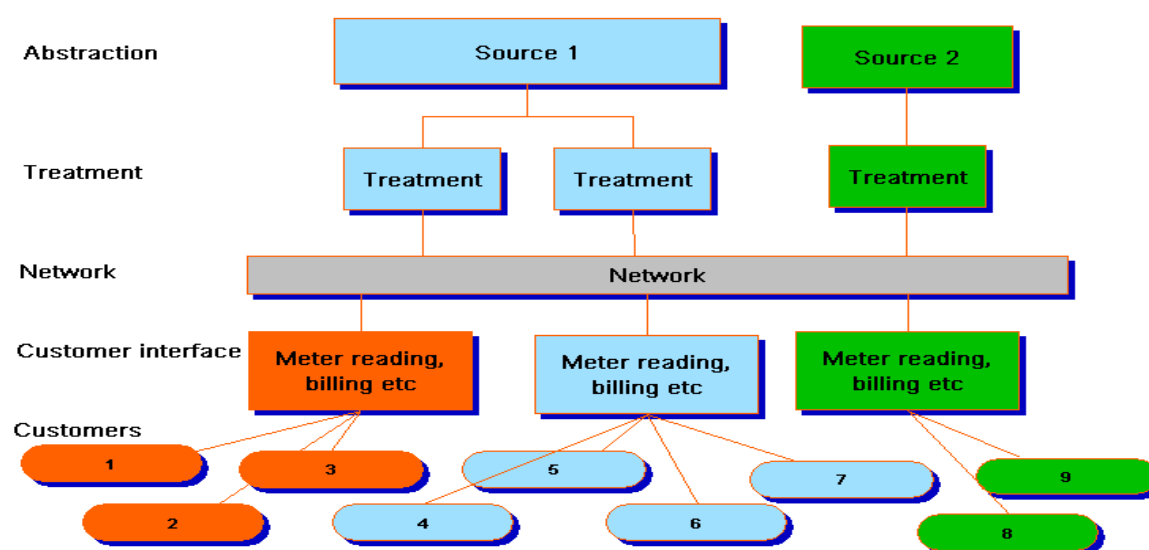
Introducing competition for the market would require arrangements to monitor performance against the contract and to conduct performance reviews when required. This would be necessary to maximise efficiency over time, particularly for long-term contracts and to ensure that suppliers do not minimise cost by reducing service quality and new investment.

### 2.1.3 Competition Within the Market

This form of competition is based on sharing access to the facilities in the vertical supply chain that have clear natural monopoly characteristics and promoting competition in those parts that are potentially competitive. Access based competition refers to competition that does not require a new entrant to establish any natural monopoly infrastructure. The principal forms of this are common carriage competition (for example for wastewater, competitors would share networks, but compete to supply customers with treatment, disposal and retail services); and retail only competition (for example for water, where a new entrant purchases bulk water and resells the water to customers).

These two forms of competition within the market for water services are illustrated in Figure 5.

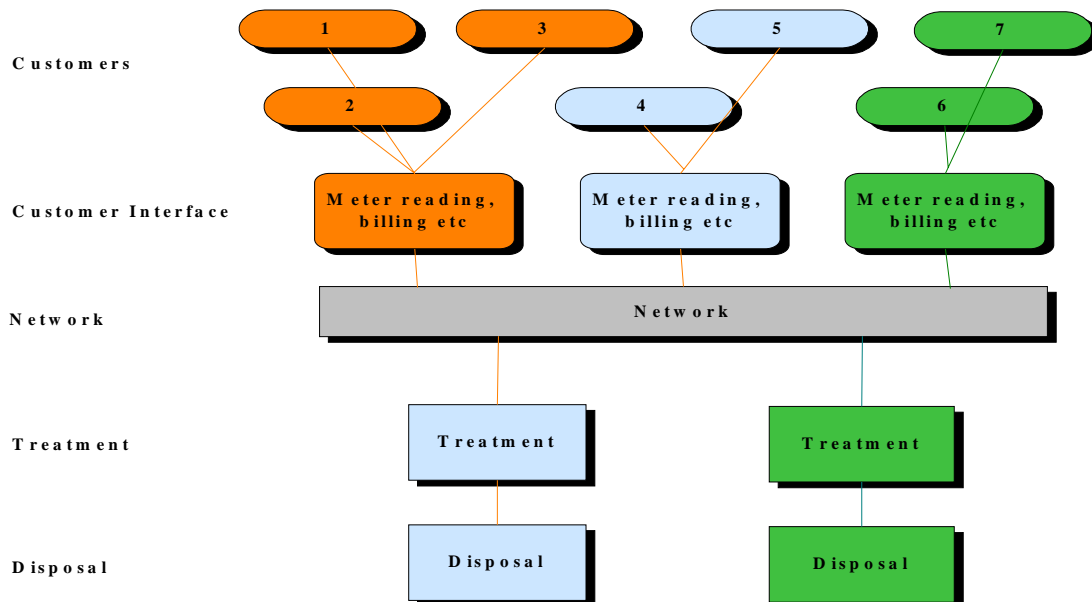
**Figure 5: Common carriage and retail only competition – water**



The green and blue represent the parties competing using common carriage. The network (shaded grey) is owned by a third party. Retail only competition is illustrated in orange.

Competition within the market for wastewater services is illustrated in Figure 6.

Competition within the market is most likely to occur via an access arrangement that enables a new entrant to access part of the extant transmission and distribution network, thereby avoiding uneconomic duplication of the network. Under such arrangements, new entrants could use the incumbent firm's network, but compete to supply customers with those services that are potentially competitive (the supply of bulk water, water treatment, sewage treatment and disposal, retail services).



**Figure 6: Common carriage and retail only competition – wastewater**

Retail only competition is a subset of common carriage competition where the new entrant purchases bulk water from the incumbent at the point where the water and the wastewater network connects with the customers' premises and resells the service to the customer. This allows the entrant to exploit any price differential between the bulk water and retail price the incumbent charges and to compete by providing innovative retailing services (eg. multi-utility offerings).

To date, only the United Kingdom (UK) has introduced the concept of common carriage in water, and these arrangements have not yet been extended to wastewater services. It is too early to tell what impact the specific legislation introduced in the UK to facilitate access to water network will have on the development of common carriage competition.



#### **2.1.4 Yardstick Competition**

Yardstick competition entails retaining a single owner of shared transmission pipes, and having a number of retail suppliers, each of which has a monopoly over a geographically defined area. The idea of yardstick competition is that the area monopolies compete by comparison with each other. In this way, the scale and scope economies of monopoly provision can be retained, while at the same time competitive pressure is exerted on each firm to perform efficiently. Yardstick competition involves placing pressure on a firm with a monopoly in one area by assessing its performance to comparable firms competing in other locations. Competitors are other firms in the same city, as well as firms in other places. Effective yardstick competition requires the existence of appropriate comparators and information that enables comparison of relative performance of firms.

This model was adopted in Melbourne in 1994, when the Melbourne retail market was broken into three areas. These areas were broadly based on the three principal operating networks, and comprise City West, South East Water and Yarra Valley Water. Melbourne Water was established as the wholesaler, and had responsibility for the bulk storage and bulk transmission pipes. It sold bulk water to the three retailers.

The Victorian Government White Paper on Water Reform released in 2004 announced that the role of Melbourne Water would be confined to the ownership and operation of the bulk water assets. Each retailer is to be given a tradeable bulk water entitlement. These changes have two purposes. One is to give greater autonomy and responsibility to retailers to manage the sustainability of supply and demand. The other is to redress the imbalance of relations between Melbourne Water and the three retailers. When Melbourne Water sold transmission services and supplied bulk water, it was a monopolist that accounted for seventy per cent of retailers' costs.

In future, price regulation will be undertaken by the Essential Services Commissioner, consistent with regulatory practice in NSW.

In the United Kingdom, the Office of Water Services (Ofwat) has used yardstick competition in setting regulated prices. Ofwat collects detailed information from each privatised regional water and sewerage company and the water-only companies and uses benchmarking to compare the costs of each. The benchmarking results are then used to set regulated prices for each firm.

#### **2.2.0 INDUSTRY STRUCTURE SCENARIOS**

The Sydney water and wastewater industry could be reformed in relation to a number of dimensions, including pricing and the number of firms, and there are

several ways of making reforms to each of these dimensions. Thinking about a way forward is therefore complex. The role of scenarios is to package these variables into alternative futures, as a way of clarifying and simplifying thinking about a way forward for the water and wastewater industry.

Four scenarios for industry structure are presented in this Section, based on the four industry structure models discussed in the Section 2.1.0. Each scenario reflects one of the four models for competition. They are not mutually exclusive. For instance, the scenarios could be implemented sequentially. Some, such as competitive processes, could be implemented simultaneously with other reform scenarios.

### **2.2.1 Competitive Processes (competition for specific services)**

Under this scenario, internal and external provision of services is compared, and the optimum combination of internal and external provision is determined. The selection of the optimum combination must be subject to cost effectiveness and Government policy.

Over the last two decades, Sydney Water has been progressively utilising the market to provide inputs, with major elements of the business now delivered by private providers. Activities including construction, some maintenance, bill issuing and collection, printing, plant hire and fleet management are carried out under contractual arrangements. This strategy has contributed to a 37% decrease in Sydney Water's operating costs since 1994. External providers accounted for 90% of Sydney Water's capital expenditure and 35% of operating expenditure in 2003-04.

The competitive processes approach would build on and evolve Sydney Water's current extensive relationship with the private sector for the competitive procurement of goods and services. Under this scenario, Sydney Water would remain responsible for the provision of water and wastewater services. Sydney Water would continue to be responsible for the achievement of the policy objectives as outlined in Section 1.2.0.

The key focus of the competitive processes approach would be to improve efficiency and reduce operating costs by an active program of benchmarking and, where appropriate, by seeking competitive tendering arrangements for inputs.

Sydney Water might continue operating within existing regulations and regimes, seeking to optimise private sector involvement in providing discrete services. Under this scenario, possible savings from contracting out functions such as facilities management, information technology, maintenance and construction services and corporate support activities would be assessed.

If contractual arrangements were outcomes focused, then competitive tendering may become a means by which improvements in dimensions other than efficiency might also be achieved. The extent to which this occurred would depend on the improvements sought by Sydney Water through competitive contracting, and the potential for innovation that exists.

Future competitive contracting could be undertaken to an extent determined by the relative efficiency of in-house and competitive provision. Under this scenario, areas including asset operations and maintenance, capital procurement and corporate support functions could all be assessed for competitive provision.

The vehicle for consideration of greater use of competitive processes could be through the Statement of Corporate Intent, which is negotiated annually with Sydney Water's shareholding Ministers.

### **2.2.2 Competition for the Market**

If there were competition for the market, this would require interface arrangements with Sydney Water in relation to the extant Sydney Water network.

The Growth Centres Commission (GCC) has been established to plan and implement strategies for the growth sectors. To that end, the Government has announced that the GCC will be a water supply authority, with responsibility for the provision of services. It is expected that the investigation of private sector provision will occur in this context. The following discussion sets out some of the alternatives that might be investigated.

Major infrastructure projects, like the provision of water and wastewater services for the growth sectors, pose challenges. For instance, new water infrastructure requires large, upfront capital expenditure, while revenues are lagged and spread over a long period of time. This difference in the timing of expenditure and revenues creates financial management challenges. In addition, if postage stamp pricing is retained, then the financial returns to the investment may be quite low

A variant of this scenario would be that in addition to servicing the growth sectors, a new service provider under the umbrella of the GCC could have access to existing customers in areas adjoining the growth sectors. This may balance somewhat the problems of the high capital expenditure requirements and the delay in earning significant revenue likely to occur if services were confined to the growth sectors.

In these circumstances, a process of competition for the right to service the market may be possible.

In both these cases, asset ownership would ultimately be held within the public sector, by the GCC, as the water supply authority.

Planning needs to commence in advance of any change process, to establish the parameters of the required infrastructure. To expedite the timing of the land release process would require the participation of Sydney Water, until the role could be transferred to the GCC. If Sydney Water were to undertake these roles, it would need to be compensated for the value of any assets and intellectual property it generated in relation to the growth sectors. In addition, arrangements would need to be determined to manage the interface between the new infrastructure developed by the GCC and Sydney Water's existing infrastructure.

Having another provider would establish yardstick competition with Sydney Water. As a water supply authority, the GCC would be a rival supplier to Sydney Water (as this term is understood in the context of yardstick competition). There would then be the basis of yardstick competition. Therefore, a monitoring, performance and regulatory framework could be established at the same time as the new provider arrangements are established, to create yardstick competition between it and Sydney Water.

The two entities could have different characteristics. In relative terms, an entity that included the growth sectors would have a larger capital program and a smaller population base, with higher network costs. Each entity could be free to pursue its own commercial strategies to improve performance. Even in circumstances of firms being significantly different, yardstick competition can be effective in driving improved performance. The key focus of comparison is the rate of improvement, rather than, for instance, the levels of costs.

### **2.2.3 Third Party Access (competition within the market)**

Access can be to the wastewater resource and/or the customers of wastewater services. Access could also be sought to the water system. However, to date, interest in access has been in relation to wastewater, and this discussion will focus on access to the wastewater resource and services.

Third parties can already seek access directly to Sydney Water's wastewater network through the arrangements Sydney Water has for permitting sewer mining. Third parties may seek access to the wastewater resource in order to treat the wastewater and sell it as recycled water. In these circumstances, the third party taking the wastewater resource could be paid an amount equal to any costs avoided by Sydney Water, as a result of a third party taking the resource at a point in the production process. This payment would vary depending on a system from which sewer mining was performed.

In relation to access to services, where parties are unable to voluntarily progress negotiations about access to services, a third party wishing to have access to monopoly infrastructure can seek to have access declared under the Trade Practices Act, 1974. If access is declared, the incumbent firm is required to negotiate with the third party about the terms and conditions of access. The Australian Consumer and Competition Commission is empowered to arbitrate on access prices and arrangements, if one of the parties seeks arbitration. In this context, it is noted that the declaration of access to wastewater services is presently the subject of an application to the Australian Competition Tribunal. Accordingly, the particular issues that are the subject of this application are not pursued in this Submission.

If access is to the customer of wastewater services, then determining the access price is more complex than it is for access to the resource. A common means of determining such a price is through the Efficient Component Pricing Rule (ECPR).

Under the ECPR, current retail tariffs are used as the benchmark for access tariffs and a 'rebate' is provided for elements of the retail service that are not drawn on by the entrant. For example, under ECPR, a network access tariff would be calculated from the bundled retail customer tariff by deducting the costs of abstraction, harvesting and treatment and customer service that are avoided by the network owner as a consequence of the new entrant establishing a relationship with a customer, and withdrawing the wastewater that can be associated with the customers at some point in the network system.

There are two benefits to this approach.

First, only this method of charging is consistent with postage stamp pricing to customers. Worldwide, wastewater customers are presently charged a uniform price, determined by the average cost of service provision. However, the costs of serving different groups of customers vary considerably. The cost of servicing customers near the ocean outfalls is much lower than the cost of serving customers in areas which are a long way from the ocean outfalls or for customers whose wastewater is discharged into the Hawkesbury Nepean system. These latter areas tend also to have lower population and property densities, and are therefore more expensive to service.

If as a matter of policy the Government wants to retain postage stamp pricing, then the access price for a third party would need to recover the average cost of service provision, less any avoided cost.

If an access prices were set at the marginal cost of service provision, then there would be scope for a third party to provide services to consumers for whom the marginal cost is low. A third party could gain these customers by charging a price

below the uniform price. The incumbent firm would need to reduce its price, or face reduced profits, or raise prices for customers not able to access the third party services. If an access pricing methodology is established that facilitates cherry picking of low cost customers, then the additional costs will be borne both by other upstream customers and those downstream of the access location who have no choice (of competitor).

Either way, the incumbent would face the risk of stranded assets, as it lost customers to the third party. Uniform pricing would be difficult to sustain in these circumstances.

The second reason is that application of ECPR is most likely to avoid inefficient investment and maximise community benefits. Network infrastructure such as large sewers, pipes and pumping stations are expensive to provide. The costs of capital investments that have been made and cannot be reversed are sunk costs. To the extent that these costs have not yet been recovered from customers through charges, it is important that the access regime pricing provides for the recovery of sunk costs. This will ensure that these assets are not stranded and incentives are maintained for further investment.

If access price were based on marginal cost, that would encourage investment in additional capacity by the entrant. This would leave existing capacity under-utilised, and result in excess investment in capacity.

Sewer systems need to be designed to cope with wet weather flows. These flows in sewerage systems occur as a result of the entry of rainwater through cracks, joints, and illegal roof connections. Sewer systems are designed to accommodate levels of wet weather flows. However, when the rainfall that enters the sewer causes the transport capacity of the system to be exceeded, overflows occur. Particularly for the large coastal systems, dry weather flows exceed their original design intent (as a result of population growth and network expansion). So there is a reduced capacity to accommodate wet weather flows. As a result wet weather overflows can occur in these systems.

A third party entrant ought to bear a cost of providing wet weather flow capacity. However, they may only want to manage the dry weather component of flow to minimize their own investment in treatment and transport infrastructure. Under these circumstances they might want to negotiate access arrangements whereby Sydney Water continues to manage the wet weather component of the flows. Under these conditions the avoided costs to Sydney Water would be low.

Sydney Water undertakes a number of services that are community service obligations. These projects have a cost, which is currently factored into the retail price. Identifying the cost of each of these obligations separately might be relatively

difficult, but is important for calculating access prices. Areas where there can be difficulty in determining this component can relate to items such as provision for fire fighting in the design of the system and supplier of last resort.

The requirement for Sydney Water to deliver the improved wastewater services to backlog areas under the State Government's Priority Sewerage program, where beneficiary contributions represent only a small proportion of the investment costs, requires the wider community to fund the provision of these services through Sydney Water's prices.

ECPR prices include a contribution towards the joint and common costs of running the network and costs of community service obligations. ECPR would therefore ensure that the incumbent and any new entrants contribute towards the cost of meeting joint costs and community service obligations.

Finally, the regulatory and transaction costs of ECPR would be relatively low compared to a bottom up form of access pricing, particularly in the water industry where contributions to joint and common costs, social obligations and stranded assets are substantial as a proportion of total costs.

Owat has recently introduced guidelines for access pricing. Owat then certifies the arrangements proposed by water companies. Arrangements certified so far are all forms of ECPR (Attachment E presents one access arrangement in the UK).

The principal alternative to ECPR is access prices based on long run marginal cost (LRMC). LRMC pricing sets access prices to recover forward-looking marginal costs of the production of the service being accessed. Thus, access prices that recover the LRMC are not designed to ensure full cost recovery. LRMC may result in stranded assets where access results in existing upstream facilities being by-passed.

In water, the LRMC of the network distribution varies significantly across locations owing to local differences in network capacity constraints. Setting access prices at the level of local LRMC estimates may lead to significantly different network access prices from place to place, inviting substantial entry (hence under-recovery of total costs) in those places where LRMC is low. To the extent this entry is driven by avoidance of contributions to joint and common costs, community service costs and embedded asset costs, it is inefficient and will increase costs to the community.

In summary, if uniform prices are to be maintained, then access prices set according to ECPR are required. ECPR would avoid inefficient entry and ensure entrants meet customer service obligations. ECPR based access prices would ensure that entry would only occur if the incremental costs of entry were lower than the avoidable costs of the incumbent. In this way, entry would occur if it led to lower total costs,

resulting in improvements in long-term productive efficiency and innovation in services for consumers. The objection that ECPR can lead to monopoly pricing does not apply in this case, because the retail price of water and wastewater services is regulated by IPART.

Unlike ECPR, the marginal cost approach does not enable the recovery of fixed costs. This means that everyone who applies for access would be able to provide services more cheaply than the incumbent firm, who in the extreme would provide no services, but still be required to cover the fixed costs of the natural monopoly infrastructure.

#### **2.2.4 Disaggregation (yardstick competition)**

The principle behind a 'yardstick' model is the creation of competing organisations as a means of driving efficiency. This model is achieved by disaggregation of an existing organisation into separate, autonomous businesses. The simplest approach for the Greater Sydney Region would be a two firm model, comprising an entity attached to the Growth Centres Commission, which focussed on the growth sectors, and Sydney Water.

When considered as the basis of a yardstick competition model, this two firm model builds on the reforms being considered by Government for the growth sectors.

Agreements to manage the financial and operational arrangements between service providers would need to address interface issues relating to:

- Overlap of water and wastewater systems;
- Interconnections between water systems to ensure continuity of supply to customers;
- Wholesale supply and distribution, with some assets servicing one or more areas such as the Prospect Filtration Plant, pumping stations and associated supply mains and the centralised telemetry computer system (IICATS) through which the water and wastewater systems are monitored and operated.

Differences in capital investment and operating costs would reflect the inherent characteristics of the regions for which providers could be responsible, including:

- Aging infrastructure - the age of the assets follow the pattern of development of Sydney, which affects the operational costs associated with the asset maintenance and the capital investment needed for renewal;
- Overflow abatement - significant capital investment will be needed over the next two decades to improve the performance of the wastewater system to reduce wet weather overflows;



- Servicing population growth - servicing the 'greenfields' development in Western Sydney will require considerable capital investment. By comparison, population growth in the northern and southern areas will necessitate upgrading existing system capacity over time;
- Water conservation and recycling - water usage patterns vary across Sydney as would opportunities to establish recycling schemes for residential and industrial users;
- Wastewater systems - there are significant differences in the systems in the western area compared to the coastal systems, including population numbers and the operational cost of treatment plants;
- Water systems - water filtration and delivery costs vary by area;
- Critical sewerage system assets - approximately \$400 million of capital expenditure will be required in the coming years to repair and maintain sections of critical trunk sewerage system assets; and
- Environmental conditions - the cost of operating the networks vary with the physical nature of the region.

Centralised planning would be needed to address strategic directions on issues such as balancing water supply and demand, recycled water policy, water conservation, trade waste policy, integrated water management, sustainability, and environmental and customer service standards. Institutionally, this role could be performed in a planning agency.

The intention of disaggregation would be potentially to achieve efficiencies in the medium to long term. However, further analysis is required to estimate likely short-term costs of disaggregation and the potential longer-term financial benefits. Whether these changes yield improved performance through such things as greater efficiency and innovation depends on at least two factors. The first of these is very general; whether change of itself can be a driver to improvement, as organisations are forced to re-evaluate existing policies and practices. The second is whether the establishment of smaller, rivalrous enterprises, which is the particular feature of disaggregation, yields companies with greater focus, driven by greater competitive pressure. It has been argued that the experience in Melbourne suggests that disaggregation did improve performance, for these reasons. However, whether this would occur in the Sydney industry needs further investigation.

### **3.0.0 CONCLUSION**

The challenge of meeting the needs of Sydney's growing population, and the Government's interest in investigating alternate models for the provision of services for the growth sectors, mean that there is both the need and the opportunity to find new ways of providing water and wastewater services.

The Submission has canvassed some of the options that might be investigated for the growth sectors, within the context of the Growth Centres Commission as the water supply authority.

Structural reform of the industry is not a precondition to the greater use of competitive processes by Sydney Water. The responsibility of Sydney Water is to determine the optimum mix of internal and external provision of services on the basis of cost effectiveness and Government policy.

## **GLOSSARY OF TERMS**

### **Marginal costs**

Marginal costs are the costs of supplying an extra unit of output. Short-run marginal costs (SRMC) measure the additional cost of production with the existing capital stock. Long-run marginal cost (LRMC) include the cost of additional investment in new productive capacity, to meet a sustained increase in output.

### **Joint and common costs**

In any network industry, it is likely that a significant proportion of the costs will not be directly related to any one user and/or one service that is provided. Instead, many costs are likely to be joint across different services and/or common across different customers.

Where costs are either joint across types of services or common across customers, then principles need to be defined to allocate these costs between individual customers or customer classes.

### **Sunk and avoidable costs**

Sunk costs refer to the costs of capital investments (in resources, treatment and distribution) that have been made and are irreversible. On the other hand, if a decision to incur costs is reversible, the costs are avoidable. Sunk costs include the past costs of building infrastructure such as treatment plants and distribution networks. Avoidable costs include the cost of keeping such plant available in future (operations and maintenance) and the variable costs of output (eg. pumping and chemicals).

### **Stranded Assets**

Stranded assets are created when a change in a regulatory regime (eg. liberalisation of a segment of the market) prevents the recovery of some sunk costs, ie. revenues no longer provide a reasonable expectation of a return on and recovery of past investments. Often the book value of the associated assets will exceed the market value.

**ATTACHMENT A**

**IPART Section 9 Review Terms of Reference**

---



Premier of New South Wales  
Australia

204/11278

3 DEC 2004

Mr James Cox  
Acting Chairman  
Independent Pricing and Regulatory Tribunal  
PO Box Q290  
QVB Post Office  
NSW 1230



Dear Mr Cox

The Minister for Energy and Utilities has requested the provision of assistance by the Tribunal to provide advice on arrangements for the delivery of water and wastewater services in the greater Sydney metropolitan area, pursuant to section 9 of the *Independent Pricing and Regulatory Tribunal Act 1992*.

I hereby approve of IPART providing this assistance in accordance with the attached Terms of Reference.

Yours sincerely

Bob Carr  
Premier

---

## TERMS OF REFERENCE

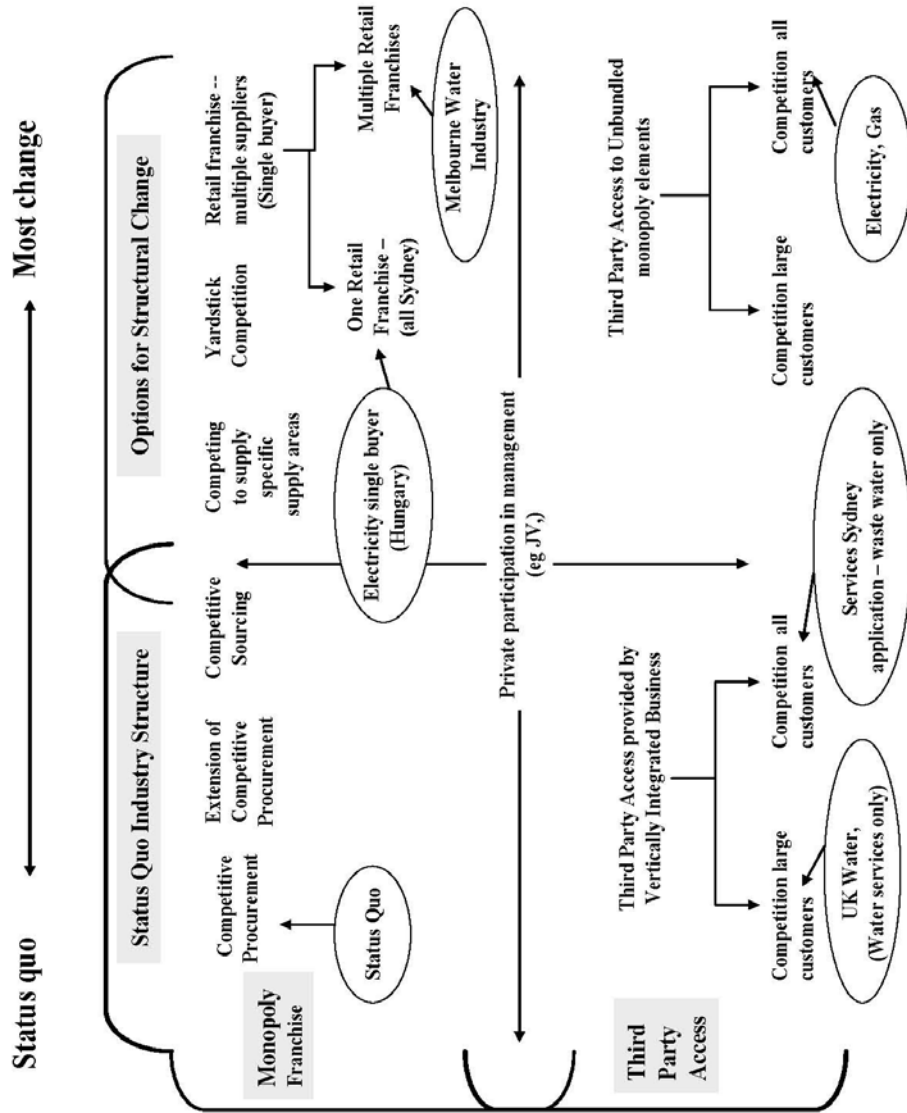
Sydney Water Corporation is the statutory State-owned corporation responsible for delivering water and wastewater services to customers in Sydney, the Blue Mountains and the Illawarra. Since corporatisation, Sydney Water has made significant efficiency gains, leading to lower prices for its customers. At the same time, Sydney's demand for water now exceeds the sustainable yield of its catchment. The Government has developed the Metropolitan Water Plan which outlines a mix of actions which will deliver a long-term balance between supply of and demand for water. A key element of the Plan is encouraging the involvement of the private sector in developing innovative solutions to Sydney's water problems. These developments have important implications for the pricing of water and wastewater and for the structure of the water and wastewater services industry.

1. The Independent Pricing and Regulatory Tribunal (IPART) is requested, under section 9 of the *Independent Pricing and Regulatory Tribunal Act 1992*, to investigate and provide advice on possible pricing principles and alternative arrangements, including possible private sector involvement, for the delivery of water and wastewater services in the greater Sydney metropolitan area, with a view to making recommendations for providing these services in the most efficient, effective and sustainable way.
2. In conducting the review and developing recommendations, IPART is to
  - i. Have regard to:
    - i. The principles of integrated water cycle management;
    - ii. The roles and responsibilities of participants in the industry, both Government and private sector;
    - iii. Approaches taken in other jurisdictions to the pricing and delivery of water and wastewater services;
    - iv. Recent reforms in other industries with similar characteristics;
    - v. The costs and benefits of alternative industry structures, including transitional costs that may be incurred in changing to a new structure;
    - vi. The principles for pricing, including pricing for recycled water, that should be associated with existing and alternative industry structures;
    - vii. The principles for access that should be associated with alternative industry structures;
    - viii. Mechanisms for implementation of the pricing and access principles;

- 
- ix. Any impacts (including service provision, operational or financial impacts) on existing asset owners and operators;
  - x. Any impact on customers and in particular any differential impact on large families or low income households, and how these may be addressed;
  - xi. Any impact on human health; and
  - xii. Any impact on the environment.
- ii. Consult with Government, the water and wastewater industry, water and wastewater customers, and other interested parties.
3. IPART is to provide a final report to the Minister for Energy and Utilities within 9 months of receipt of these Terms of Reference.

ATTACHMENT B

Structure Model Option Identified by IPART



## **ATTACHMENT C**

### **The Metropolitan Water Plan**

In October 2004, the NSW Government released the Metropolitan Water Plan, a 25 year plan to ensure that Sydney's water supply needs are met and that the health of the Hawkesbury-Nepean River system is restored. In addition, the Plan contains provisions to respond to the current drought. The Plan was developed via a whole of Government process, of which Sydney Water was an active participant.

In developing the Plan, the Government evaluated all sensible, practical options to supply, save or substitute water. The Plan recognises that there is no single solution to our water supply problems. It is a cost effective mix of demand management and supply augmentation measures that will ensure Sydney's future water supply needs are met.

The Plan contains a number of supply augmentation measures. Some are to respond to the short-term needs of the drought and others will provide long-term water security. The Plan contains three key drought response initiatives. Firstly, work will be undertaken to access water that cannot currently be accessed from the bottom of the dams. Secondly, the feasibility of using groundwater to complement existing supplies is being investigated. Thirdly, a feasibility study into desalination has been undertaken.

In terms of long-term water security the Plan will increase the amount of water that is transferred from the Shoalhaven River. Depending on the findings of technical studies and community consultation, Stage 1 of this project will provide between 50 and 80 billion litres of new water per year, with the construction of Stage 2 this could increase to 110 billion litres. The construction work will provide additional infrastructure to accommodate the increased volumes and reduce the environmental impacts of the existing transfers.

The Plan contains a number of initiatives to increase the amount of wastewater recycling in Sydney including initiatives by Sydney Water to achieve an additional 8 billion litres of recycling. These include projects at BlueScope Steel, Liverpool Golf Course, Hoxton Park and Rouse Hill Stage Two new release areas and North Head and Malabar sewage treatment plants. In addition, the Government will prepare a Recycled Water Strategy that will deliver up to 80 billion litres of recycled water over the next 25 years.

Reducing demand for water is also a key component of the Metropolitan Water Plan; actions include:

- A contestable fund to support business and local councils undertake water conservation and recycling projects;



- Requiring high water using Government Departments, Local Councils and certain commercial and industrial businesses to develop and implement water conservation plans;
- Reducing leaks from Sydney Water's water network to the economic level of leakage and increasing the time taken to fix burst water mains;
- Implementing a water efficiency labelling and standards scheme for water using appliances such as toilets, showerheads, washing machines and dishwashers;
- Increasing water conservation education programs to improve the awareness of the community of water issues and their solutions;
- Continuing Sydney Water's residential retrofit program, which installs water saving devices and fixes leaks at a subsidised rates to customers;
- Continuing Sydney Water's rainwater tank rebate program;
- Developing regulations to require houses to be water efficient at the point of sale;
- Developing guidelines to moderate the use of river and groundwater;
- Investigating options to increase water savings in new release areas; and
- Continue programs to improve water efficiency on farms in the Greater Sydney area.

In addition, the Plan endorses the continuation of Sydney Water's existing demand management initiatives.

The Metropolitan Water Plan also seeks to ensure that the Hawkesbury-Nepean Rivers have sufficient water. The Plan includes a program for the implementation of environmental flow releases from Avon, Cataract, Cordeaux and Nepean Dams. Following the analysis of these flows, decisions will be made on releases from Warragamba Dam.

The Metropolitan Water Plan also commits to the development of a Sydney Metropolitan Water Sharing Plan. This will secure the share of water available for urban and rural consumption as well as protect the new environmental flow regimes. The water sharing plan will contain a 'water benchmark' that indicates how much water Sydney residents, businesses and irrigators can sustainably use within the life of the plan.

## ATTACHMENT D

### Sydney Water Regulatory Environment

Sydney Water operates in a highly regulated environment that establishes defined obligations for the Corporation. Sydney Water's activities are directly affected by 62 pieces of legislation, 27 Environment Protection Licences, its Operating Licence and its Customer Contract.

The regulatory environment provides a high level of control over the activities of Sydney Water, which is consistent with the nature of the activities it carries out and the implications of those activities for environmental, public health and safety matters.

The key instruments used to regulate Sydney Water are summarised in Table 1 and discussed in more detail below.

**Table 1: Regulators of Sydney Water's business**

Performance area	Instrument	Regulator
Prices	Pricing Determination	The Tribunal
Customer service	Operating Licence Customer Contract	The Tribunal
Environmental performance of wastewater systems	Environment Protection Licences	DEC
Drinking water quality & system requirements	Operating Licence Memorandum of Understanding Australian Drinking Water Guidelines 1996	NSW Health
Stormwater management	Stormwater Environmental Improvement Program	DEC
Planning	Approvals Water Allocation	DIPNR
Water extraction	Water Extraction Licences	DIPNR via SCA

Sydney Water's Operating Licence, issued under Section 12 of the Sydney Water Act 1994, regulates the manner in which Sydney Water provides, constructs, operates, manages or maintains systems or services for:

- storing or supplying water;
- providing sewerage services;

- providing stormwater drainage systems; and
- disposing of wastewater.

The Operating Licence requires Sydney Water to provide these services within metropolitan Sydney, Illawarra and the Blue Mountains. There are penalties payable under Section 19 of the Sydney Water Act 1994 for contravention of the Operating Licence. There is an annual independent audit of Sydney Water's Operating Licence, commissioned by the Tribunal.

Section 55 of the Sydney Water Act 1994 establishes the Customer Contract, which sets out the relationship between Sydney Water and its customers. The Tribunal makes recommendations to Government about the terms and conditions of the Customer Contract when it is reviewed as a schedule to Sydney Water's Operating Licence.

In addition to the strict regulatory parameters imposed by the Sydney Water Act 1994, the Operating Licence and the Customer Contract, the services supplied by Sydney Water are regulated specifically by a number of Acts and regulations, including:

- Protection of the Environment Operations Act 1997 (NSW) which establishes general environmental offences and prosecution provisions, and under which environmental protection licences are issued by DEC;
- Public Health Act 1991 (NSW) which charges NSW Health with protecting public health, including safe drinking water;
- Environmental Planning and Assessment Act 1979 (NSW) which charges DIPNR with overseeing approvals for urban development; and
- Heritage Act 1977 (NSW) which charges DEC with protecting NSW's cultural heritage.
- Sydney Water is also required to comply with the terms and conditions of various licences. In some circumstances, a breach of those licence conditions constitutes a strict liability offence and limited defences apply.

### **Price regulation**

Under Section 4 of the Independent Pricing and Regulatory Tribunal Act 1992, the Tribunal has responsibility for setting prices for services declared to be government monopoly services. Consequently, the majority of Sydney Water's revenue is regulated by the Tribunal, including:<sup>1</sup>

---

<sup>1</sup> Particular services supplied by the Water Board (Sydney Water's predecessor) were declared to be government monopoly services in 1992 (The Tribunal (Water, Sewerage and Drainage Services) Order 1992 (Gazette No. 105, 28 August 1992, page 6430)). Sydney Water's services were declared to be government monopoly services

- water services;
- sewerage services;
- stormwater drainage services;
- trade waste services;
- services supplied in connection with the provision or upgrading of water supply, sewerage facilities and, if required, drainage facilities for new developments;
- ancillary and miscellaneous customer services for which no alternative supply exists and which relate to the supply of services referred to in the paragraphs above; and
- other water supply, sewerage and drainage services for which no alternative supply exists.

In addition, the bulk water services supplied to Sydney Water by the SCA were declared as government monopoly services in 1999.<sup>2</sup>

---

in 1997 (The Tribunal (Water, Sewerage and Drainage Services) Order 1997 (Gazette No. 18, 14 February 1997, page 558)).

<sup>2</sup> Independent Pricing and Regulatory Tribunal (Water Supply Services) Order 1999 (Gazette No. 95, 20 August 1999, page 6136).

## **ATTACHMENT E**

### **Severn Trent**

**STW has adopted the following high level principles for network access to the water supply network and water treatment works. For the avoidance of doubt the Severn Trent Water Access Code is consistent with the guidance issued by OFWAT in March 2002 entitled 'Access Codes to Common Carriage' and should be interpreted in line with that guidance.**

#### **Water Supply**

1. Severn Trent Water Ltd (STW) will offer Common Carriage and Water Treatment Services to any person able to provide satisfactory assurances as to their technical, managerial and financial competence to pursue the range of activities that they intend to pursue.
2. There should be a clear criminal liability on applicants for the quality and safety of water that they supply to the Network.
3. Carriage and Treatment Services will only be available once a contract is in force between STW and the Applicant. It will be a condition of the contract that the Applicant will be a "fit and proper" person and comply in full with the STW Network Access Code.
4. The charging methodology will produce fair, reasonable and non-discriminatory charges for Network Access which allow STW to recover in aggregate its full costs including being Supplier of Last Resort and a reasonable return on capital.
5. All Network Users, including STW, will meet the same standards of safety, quality, reliability, appearance and taste of water supplied.
6. STW will retain responsibility for the operation, maintenance and control of its Network.