



Access dispute between
Services Sydney Pty Ltd
and
Sydney Water Corporation

Arbitration report
19 July 2007

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Arbitration report

Part IIIA of the *Trade Practices Act 1974* (the Act) establishes a regime for facilitating third-party access to services considered critical to competition in related markets and provided by facilities that are uneconomic to duplicate. It also establishes a negotiate/arbitrate framework for resolving disputes concerning the arrangements for access to declared services. When parties are unable to agree on access arrangements, either can request the Australian Competition and Consumer Commission (the ACCC) to arbitrate the dispute.

On 22 June 2007 the ACCC made its *Final determination* and issued its *Statement of reasons* for an access dispute between Services Sydney Pty Limited (Services Sydney) and Sydney Water Corporation Limited (Sydney Water).

The dispute concerned the access pricing methodology for the following ‘declared’ sewage transportation services supplied by Sydney Water:

- A service for the transportation of sewage provided by means of the North Head Reticulation Network, from a customer’s boundary trap to points of interconnection.
- A service for the transportation of sewage provided by means of the Bondi Reticulation Network, from a customer’s boundary trap to points of interconnection.
- A service for the transportation of sewage provided by means of the Malabar Reticulation Network, from a customer’s boundary trap to points of interconnection.

In general there are various methodologies that can be used to calculate access prices, and the most appropriate methodology will depend on a range of factors including the particular characteristics of:

- the various upstream and downstream markets, including the nature of demand in those markets and any regulatory arrangements
- the infrastructure facilities to which access is sought, and the nature of the costs associated with those facilities.

In this arbitration, Services Sydney proposed a bottom-up building-block methodology whereas Sydney Water proposed a retail-minus methodology (with avoidable costs calculated using a building-block approach).

A bottom-up building-block methodology calculates access prices by building up the various ‘blocks’ of costs associated with providing the declared services.¹ In general, the cost blocks consist of capital costs (including a return on capital and a return of

¹ For examples of bottom-up building block approaches, see: ACCC, *Decision: ARTC access undertaking*, May 2002; and AER, *Compendium of electricity transmission regulatory guidelines*, August 2005.

capital), operating costs and indirect costs. Bottom-up building-block methodologies may differ according to the different ways of calculating each cost block. For example, asset-related costs will depend on the asset valuation approach adopted, which could range from the historical cost of the assets to the cost of replacing the assets.

A retail-minus methodology calculates access prices by subtracting from retail prices the cost of contestable activities associated with the supply of the product or service in the downstream market. Contestable activities are those other than the declared service(s). Hence, a retail-minus methodology is a type of top-down approach to calculating access prices.²

Differences in top-down approaches arise because they use different definitions for the costs that are to be subtracted from retail prices. One approach is to subtract only the costs that the access provider will actually avoid as a result of the access seeker supplying some customers in the downstream market. In contrast, the ACCC's determination requires those costs that the access provider could avoid in the long-run (that is *avoidable* costs) be subtracted from retail prices. Access prices are therefore lower than if only costs actually avoided are subtracted from retail prices.

Thus, the implication for access seekers of the ACCC's determination that access prices are to be calculated as Sydney Water's regulated retail prices minus avoidable costs (plus any facilitation costs) is that it provides scope for entry so long as the access seeker is more productively efficient than Sydney Water in undertaking the contestable activities associated with the provision of sewerage services.

The determination is the first application of access pricing to the water and sewerage industry in Australia. In determining the appropriate methodology, the ACCC had regard to the structural features of the sector, including that Sydney Water is a vertically integrated supplier with regulated retail prices set on a geographically uniform basis by the NSW Independent Pricing and Regulatory Tribunal.

The arbitration process and the information that the ACCC took into account in making its determination, including that provided by the parties, is discussed in chapter 1 of the *Statement of reasons*.

The Act provides certain matters (the statutory criteria) that the ACCC must take into account in making a determination in arbitration of an access dispute. As discussed in the *Statement of reasons* (in particular chapters 3 and 6) these include the principles that the ACCC applied in making its determination.

Section 44X(2) of the Act provides that the ACCC may also take into account any other matters that it considers relevant. The ACCC took into consideration the complexity that would be involved in practically implementing the parties' proposed access pricing methodologies.

² For an example of the retail-minus approach, see: ACCC, *Final determination and explanatory statement: pricing principles and indicative prices—local call service, wholesale line rental and public-switched telephone network*, November 2006.

The *Final determination* sets out the access-pricing methodology and asset valuation methodology determined by the ACCC. The reasons for such are as contained in the *Statement of reasons*.

This arbitration report, which includes in full the ACCC's *Final determination* and *Statement of reasons*, has been published in accordance with s. 44ZNB of the Act.

ACCESS DISPUTE BETWEEN SERVICES SYDNEY PTY LTD (ACCESS SEEKER) AND SYDNEY WATER CORPORATION (ACCESS PROVIDER)

SEWAGE TRANSPORTATION SERVICES PROVIDED BY MEANS OF BONDI, NORTH HEAD AND MALABAR RETICULATION NETWORKS

Access dispute notified under Section 44S of the *Trade Practices Act 1974* on
6 November 2006

Final Determination under Section 44V

Background

1. On 6 November 2006 the Australian Competition and Consumer Commission (the Commission) received written notification from Services Sydney of an access dispute in relation to the supply by Sydney Water of sewage transportation and interconnection services by means of the North Head, Bondi and Malabar reticulation networks. Services Sydney's notification was provided to the Commission pursuant to Section 44S of the *Trade Practices Act 1974*.
2. The Commission decided that the arbitration would be limited to the access pricing methodology to be used to determine the price at which Sydney Water is to provide the following declared services to Services Sydney:
 - A service for the transportation of sewage provided by means of the North Head Reticulation Network, from a customer's boundary trap to points of interconnection.
 - A service for the transportation of sewage provided by means of the Bondi Reticulation Network, from a customer's boundary trap to points of interconnection.
 - A service for the transportation of sewage provided by means of the Malabar Reticulation Network, from a customer's boundary trap to points of interconnection.

Determination

3. Except where the parties agree otherwise, the price payable by Services Sydney to Sydney Water for the supply of the declared sewage transportation services is to be determined as a charge per customer supplied by Services Sydney calculated using a retail-minus methodology as described below, plus costs directly attributable to facilitating access to the declared sewage transportation services.
4. The retail-minus methodology for determining the per customer access charge is to be Sydney Water's retail price for sewerage/wastewater services relevant to each customer as determined (from time to time) by the Independent Pricing and Regulatory Tribunal, minus the avoidable costs for Sydney Water as a result of supplying the declared sewage transportation services to Services Sydney.

5. Avoidable costs are the costs that Sydney Water would otherwise incur in the provision of sewerage services that could be avoided if it completely ceased provision of the relevant contestable components of providing sewerage services.
6. Relevant facilities are those used by Sydney Water in the provision of the relevant contestable components of sewerage services.
7. Separate avoidable costs are to be calculated in association with each of the declared sewage transportation services.
8. A building block approach that includes the operating and capital costs associated with the provision of the contestable components of providing sewerage services is to be used for the purpose of calculating avoidable costs.
9. For the purpose of calculating avoidable costs, the relevant facilities of Sydney Water are to be initially valued at depreciated optimised replacement cost (DORC) on the basis of:
 - a partial optimisation, with the optimisation constrained to the current site of Sydney Water's relevant facilities;
 - using modern equivalent assets that meet all relevant standards and Sydney Water's licence conditions at the time of entry by Services Sydney; and
 - that provide the capacity required to meet estimated demand for the duration of the determination, including capacity sufficient to manage peak sewage flows associated with all customers serviced by each of the North Head, Bondi and Malabar sewerage systems in accordance with Sydney Water's current requirements.
10. The DORC asset values of the relevant facilities are to be adjusted over time to allow for depreciation, disposals and capital expenditure associated with those facilities.
11. Avoidable costs are to include any costs associated with the management of wet weather flows that are avoidable by Sydney Water as a result of Services Sydney's actual operations.
12. Avoidable costs associated with the treatment and disposal of sewage are to be apportioned across customers on the basis of customers' dry weather flows or volume discharged, such that a standard per kilolitre rate is calculated.
13. Avoidable costs associated with retailing activities are to be allocated on a per customer basis.
14. Facilitation costs are not to include any costs associated with provision of the declared interconnection services.

15. This determination is to apply from the period commencing on the day this determination is made and ending 20 years after the day this determination is made.

Note: Section 44ZO(1) of the *Trade Practices Act 1974* states that if none of the parties to the arbitration applies to the Tribunal under section 44ZP for a review of the Commission's final determination, the determination has effect 21 days after the determination is made.



Graeme Julian Samuel
Chairman



Stephen Peter King
Commissioner

DATED: 22 June 2007



Access dispute between
Services Sydney Pty Ltd
and
Sydney Water Corporation

Final determination
Statement of reasons
22 June 2007

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Abbreviations

ACCC	Australian Competition and Consumer Commission
the Act	the <i>Trade Practices Act 1974</i>
ADWF	Average Dry Weather Flows
BOD	Biological Oxygen Demand
BOOS	Bondi Ocean Out-fall System
the Commission	The members of the ACCC who are constituted to conduct the arbitration
CPI	Consumer Price Index
CSO	Community Service Obligation
DIV	Determined Investment Value
DOOF	Deep Ocean Out-Falls
DORC	Depreciated Optimised Replacement Cost
ECPR	Efficient Component Pricing Rule
the EPA	Environment Protection Authority of New South Wales
IPART	Independent Pricing and Regulatory Tribunal
IPART Act	<i>Independent Pricing and Regulatory Tribunal Act 1992 (NSW)</i>
LCS	Local Carriage Service
Licence	Environmental Protection Licence
MEERA	Modern Engineering Equivalent Replacement Asset
NSW	New South Wales
NSOOS	Northern Suburbs Ocean Out-fall System
ODV	Optimised Deprivation Value
Ofwat	Office of the water regulator (United Kingdom)

the parties	Services Sydney and Sydney Water
POEO Act	<i>Protection of the Environment Operations Act 1997 (NSW)</i>
RAB	Regulatory Asset Base
Services Sydney	Services Sydney Pty. Limited
STP	Sewage Treatment Plant
SWSOOS	South and Western Suburbs Ocean Out-fall System
Sydney Water	Sydney Water Corporation Limited
the Tribunal	the Australian Competition Tribunal
WACC	Weighted Average Cost of Capital
WIC Act	<i>Water Industry Competition Act 2006 (NSW)</i>
WSAA	Water Services Association Australia

Glossary

Access Provider	Sydney Water Corporation Limited.
Access Seeker	Services Sydney Pty. Limited.
Avoidable Costs	Costs that a vertically integrated access provider would otherwise incur in the provision of a good or service that could be avoided if it ceased provision of the relevant contestable activities completely in respect of the good or service in question.
Avoided Costs	Costs that a vertically integrated access provider actually avoids when it ceases to be the supplier of goods or services to end-use customers because they are now supplied by a competitor.
Biosolids	The solid organic materials removed from wastewater during the treatment process.
Cliff-face Discharge Sewers	Sewers used to transport treated effluent from a sewage treatment plant to a discharge point that is situated at the shoreline.
CPI-X	An incentive based form of price/revenue regulation. Changes in price or revenue of a regulated good or service are limited to the increase in the CPI minus an X-factor determined by the regulatory authority. The X-factor is designed to reflect anticipated efficiency gains or productivity growth that will lower the cost of producing the regulated goods or services.
Deep Ocean Out-Falls	Sewers used to transport treated effluent from a sewage treatment plant to an off-shore discharge point that is situated in deep water.
Depreciated Optimised Replacement Cost	Estimate of the value of assets in use which is equivalent to the net current cost of replacing the assets with assets of similar service potential, depreciated to reflect the current remaining life of the assets, and optimised to reflect the level of redundancy, elements of over-design or excessive capacity.

Diurnal Pattern	The daily pattern of peaks and troughs of customers' discharges into the sewerage network.
Dry Weather Flows	The sewage flow associated with a set of customers in a period of dry weather.
MEERA Value	Estimate of the value of assets in use which is equivalent to the net current cost of replacing the assets with modern substitute assets of similar service potential.
Net Realisable Value	A method of asset valuation based on the amount that could be received for the assets if sold.
Non-residential Access Price	The access price for each non-residential customer supplied by Services Sydney.
Optimised Deprival Value	Estimate of the value of assets based on the loss the owner would suffer if it was deprived of the assets, optimised to reflect the level of redundancy, elements of over-design or excessive capacity. The ODV of assets is calculated as the lower of optimised depreciated replacement cost and economic value, where economic value is the higher of the recoverable value and the net realisable value of the assets.
Postage Stamp Pricing	A system of pricing whereby the same types of customers are charged the same price for the same service irrespective of their geographic location.
Primary Treatment	Treatment of sewage that involves the removal of solid particles through screening, skimming and sedimentation. High-rate primary treatment involves higher loading rates.
Real Time Flow Extraction	The extraction of sewage flows from a sewer at the point of extraction at the same rate that sewage arrives at the point of extraction, as opposed to extracting sewage at a constant rate. The rate at which sewage arrives at the extraction point may not necessarily match customers' diurnal patterns.
Recoverable Value	Method of asset valuation based on the present value of future cash flows received from the operation of the assets.
Residential Access Price	The access price for each residential customer supplied by Services Sydney.

Reticulation Network	The network of pipes and fittings that collect sewage from customer property connections and transports it to a sewage treatment plant or discharge point. Also referred to as a sewerage network.
Secondary Treatment	A higher level treatment of sewage than primary treatment that involves the removal of dissolved and suspended organic and inorganic solids through bacterial decomposition.
Sewage	A combination of water-carried waste removed from residential, commercial and industrial premises, together with any groundwater and surface water discharged into a sewerage network.
Sewer	An artificial conduit, usually underground, for conveying wastewater and sewage. A system of sewers can be referred to as a sewerage or reticulation network.
Sewer Mining	The extraction of sewage from trunk sewers for treatment to produce reclaimed water suitable for specific end uses.
Sewerage Network	The network of pipes and fittings that collect sewage from customer property connections and transports it to a sewage treatment plant or discharge point. Also referred to as a reticulation network.
Tertiary Treatment	Treatment of sewage above secondary treatment involving the removal of further inorganic compounds and substances, such as nitrogen and phosphorous and fine particles. Tertiary processing may involve physical, biological and/or chemical processes.
Trade Waste	Any liquid, and any substances contained in it, produced by an industrial or commercial activity at business premises.
Wastewater	A broader term which includes discarded water (clean or contaminated) of any origin that is discharged into a sewerage system.
Wet Weather Flows	The sewage flow associated with a set of customers in a period of wet weather.

1. Introduction

On 6 November 2006 the Australian Competition and Consumer Commission (ACCC) received written notification from Services Sydney Pty. Limited (Services Sydney) of an access dispute with Sydney Water Corporation Limited (Sydney Water), pursuant to section 44S of the *Trade Practices Act 1974* (the Act). The access dispute notification stated the dispute related to the methodology of access pricing in respect of the following services supplied by Sydney Water that were declared for a period of 50 years by the Australian Competition Tribunal (the Tribunal) on 21 December 2005:

- A service for the transportation of sewage provided by means of the North Head Reticulation Network, from a customer's boundary trap to points of interconnection.
- A service for the connection of new sewers to the North Head reticulation network at points of interconnection.
- A service for the transportation of sewage provided by means of the Bondi reticulation network, from a customer's boundary trap to points of interconnection.
- A service for the connection of new sewers to the Bondi reticulation network at points of interconnection.
- A service for the transportation of sewage provided by means of the Malabar reticulation network, from a customer's boundary trap to points of interconnection.
- A service for the connection of new sewers to the Malabar reticulation network at points of interconnection.

In declaring these services, the Tribunal identified three separately defined markets that are dependant upon the declared services—the sewage collection market, the sewage treatment market, and the recycled water market.¹

1.1 Arbitration process

In accordance with the process outlined in the ACCC's *Guide to the Resolution of Access Disputes* under Part IIIA² the parties each provided the Commission with a written Statement of Issues, and ACCC staff held a preliminary case management meeting with the parties on 21 November 2006 to discuss the issues in dispute.

The Commission subsequently considered the views of both parties regarding the issues in dispute, and decided that the arbitration would be limited to the access pricing methodology to be used to determine the price at which Sydney Water is to provide the three declared sewage transportation services to Services Sydney.

¹ Application by Services Sydney Pty Limited [2005] ACompT 7, para. 121.

² ACCC, *Arbitrations: A Guide To Resolution of Access Disputes Under Part IIIA of the Trade Practices Act 1974*, April 2006.

In regard to the declared interconnection services, the Commission was not satisfied that the parties had conducted negotiations such that it would be appropriate for the Commission to arbitrate in relation to these services at this stage.

Services Sydney submitted that the “[d]eclared facilities are the networks of pipes and fittings that collect sewage from non-residential and residential customer properties and transport it (‘the transportation service’) to sewage treatment plants (STPs) for treatment and/or licensed disposal points into the environment.”³

In this regard, under Division 3 of Part IIIA of the Act, the Commission’s role is to make a written determination on access by the third party to the declared service. The Commission notes that it is the role of the relevant Minister, upon recommendation from the National Competition Council, to decide whether to declare a particular service, and the Tribunal’s role to review such decisions. Accordingly, it is the role of these decision-making bodies, rather than the Commission, to specify the particular service to be declared.

The Commission understands the relevant declared services to be limited to transportation of sewage ‘from a customer’s boundary trap to points of interconnection.’⁴ However, in any event, the inclusion or exclusion of sewage transportation through deep ocean out-fall sewers and/or cliff-face discharge sewers would not alter the appropriateness of any access pricing methodology determined by the Commission in this dispute.

On 18 December 2006 the Commission issued Orders and Directions to the parties in relation to submissions on the content of a final determination. Parties were asked to provide submissions specifically on:

- the access pricing methodology to be used to determine the price(s) for the declared transportation services, and
- the matters in sections 44X(1)(a)–(h) of the Act, being the matters the Commission must take into account in making a final determination.

Initial submissions were received from the parties on 23 January 2007 and submissions in response were received on 19 February 2007. The Commission held a hearing with the parties on 26 February 2007 at which an opportunity was provided to the parties to make verbal submissions and further comments on written submissions.

The Commission provided its *Draft Determination* to the parties on 23 April 2007 and submissions in response were received on 21 May 2007. The parties also provided supplementary information throughout the course of the arbitration.

The ACCC sought information from the Independent Pricing and Regulatory Tribunal (IPART) and the Environmental Protection Authority of New South Wales (the EPA). The information provided by IPART and the EPA was copied to the parties.

³ Services Sydney, *Classification of transportation and treatment assets*, letter to the ACCC dated 26 February 2007, p. 1

⁴ *Application by Services Sydney Pty Limited to the Australian Competition Tribunal* [2005] ACompT 7 (21 December 2005), para. 1.

A list of all correspondence with the Parties, IPART and the EPA taken into account by the Commission in making the determination is in Appendix A. The Commission also took into account various public documents, or parts of documents, as referenced in this *Statement of Reasons* and listed in Appendix B.

1.2 Approach to considering issues raised in the arbitration

The Commission's consideration of the issues raised throughout the arbitration was informed by the arrangements for the provision of sewerage services in the greater Sydney region, IPART's regulation of Sydney Water's retail prices, and Services Sydney's proposal to compete with Sydney Water in provision of sewerage services. These are discussed in Chapter 2.

Chapter 3 sets out the legislative framework for making a determination in arbitration of an access dispute, including a discussion of the matters that the Commission must take into account.

Chapter 4 provides the details of the parties' proposed access pricing methodologies. Sydney Water proposed a 'retail-minus' access pricing methodology, whereas Services Sydney proposed a 'bottom-up' methodology.

In light of the key differences between the parties' proposed methodologies, Chapter 5 sets out the Commission's analysis of:

- initial asset valuation
- the structure of access prices, and
- whether access prices should include a contribution towards maintaining postage stamp pricing.

Chapter 6 discusses the Commission's consideration of the general access pricing methodology taking into account the matters set out under the legislative framework.

Chapter 7 considers those issues that relate to the calculation of 'avoidable costs' as required under a retail-minus access pricing methodology.

Chapter 8 discusses the treatment of 'facilitation costs'.

Chapter 9 discusses the Commission's consideration of the appropriate duration of the determination.

The parties requested that the access pricing methodology to be determined by the Commission be of sufficient detail to enable it to be practically applied. Whilst the Commission has sought to provide a detailed determination regarding methodology, it balanced this objective against ensuring that the determination did not extend to issues that should properly be considered in determining actual final access prices and other specific terms and conditions. Chapter 10 briefly discusses some of these issues.

Application of the access pricing methodology so as to determine actual final access prices and other terms and conditions will require the parties to undertake further negotiations. If the parties are unable to agree on actual final access prices and other

terms and conditions, either party will be able to seek arbitration by the Commission subsequent to such negotiations.

The Commission considered all issues raised throughout the course of the arbitration taking account of the matters in section 44X of the Act.

2. Sewerage services in the greater Sydney region

The provision of sewerage services involves collecting and transporting sewage from customer properties via a sewerage reticulation network to a sewage treatment plant where it is processed before being discharged into the environment (rivers and oceans) as effluent.

Sewage can be processed in different ways and to various levels. The level of treatment ranges from high rate primary (the lowest) to tertiary (the highest). Some or all of the sewage may also be recycled as biosolids (used in agriculture), and recycled water (currently used for non-drinking purposes by households, agriculture and industry).⁵

Disinfection can be applied at any treatment level to inactivate disease-causing micro-organisms such as bacteria, viruses and parasites.⁶ Disinfected secondary treated sewage can be used as recycled water for uses where there is minimal human contact, such as pasture irrigation and coal washing. Disinfected tertiary treated sewage produces high quality recycled water that is suitable for all types of non-potable use. Further treatment stages can be used to treat tertiary treated reclaimed water to a higher standard, suitable for blending with fresh water supplies that are further treated to produce drinking water.⁷

While secondary and tertiary treatment plants produce effluent of a higher quality, they are more expensive to construct and operate. They can also be more susceptible to shock loadings of chemicals and other trade waste components which can destroy microbes used in the treatment process.

2.1 The Sydney sewerage system

Sydney Water collects and disposes of more than 1.2 billion litres of sewage per day from around 1.6 million residential and non-residential customers,⁸ with the majority of customers being residential.⁹

The entire Sydney sewerage network consists of 25 separate sewage systems containing 23,404 km of sewer pipes, 659 sewage pumping stations and 30 sewage treatment plants¹⁰ (see Figure 2.1). With the exception of the Gerringong Gerroa reticulation network and STP¹¹ all other reticulation networks and STPs are owned and operated by Sydney Water.¹² There is also a large cumulative length of privately owned mains that are the responsibility of customers.

⁵ *ibid.*, para. 27.

⁶ *ibid.*, para. 28.

⁷ *ibid.*, para. 29.

⁸ Sydney Water, *Initial Submission*, 23 January 2007, p. 3.

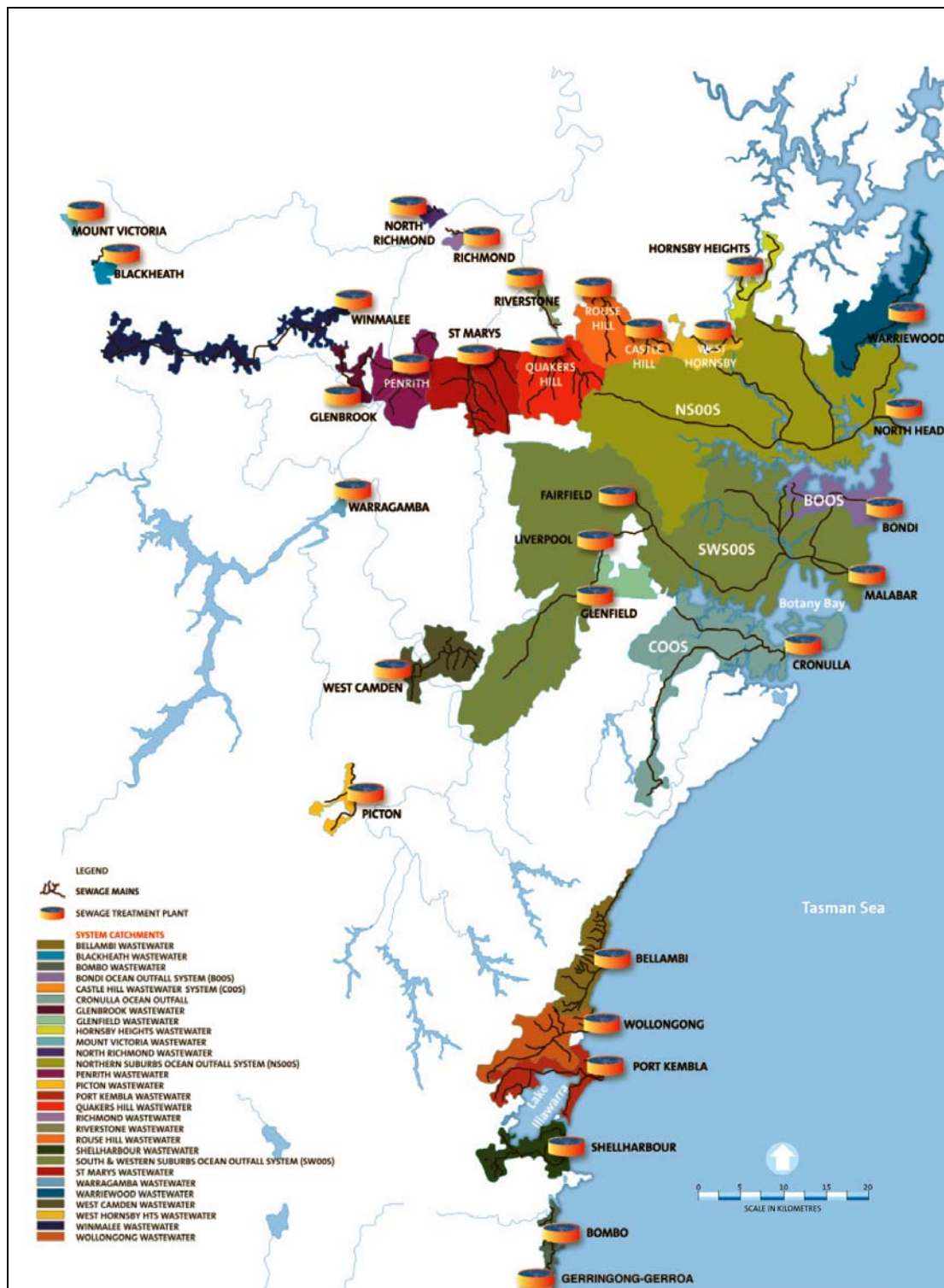
⁹ *ibid.*, p. 14.

¹⁰ Sydney Water, *Annual Report*, 2005, p. 3; and Sydney Water, *Submission in response to the Draft Determination*, 21 May 2007, p.27

¹¹ The Gerringong Gerroa reticulation network and STP is operated by the private sector under a 20 year design, build, operate and maintain contract with Sydney Water.

¹² Sydney Water, *Initial Submission*, 23 January 2007, p. 3.

Figure 2.1: Sydney Water's sewerage networks¹³



The North Head, Bondi and Malabar reticulation networks contain the three largest STPs in Sydney, and approximately 75 per cent of wastewater (900 million litres per day) is processed at these three plants. These plants are situated on operationally separate and geographically distinct reticulation networks. These systems were first constructed around 100 years ago and treatment at these plants is at a high-rate

¹³ Replicated from: Sydney Water, *Initial Submission*, 23 January 2007, p. 4.

primary level following which the treated effluent is discharged via deep ocean out-falls (approximately three kilometres off the coast).¹⁴ The reticulation networks of these three systems were designed to operate predominately via gravity with limited pumping requirements.

The sewerage service infrastructure (sewerage reticulation networks and STPs) is designed to meet certain capacity requirements based on peak flows that are likely to be experienced within the network. The peak flows in a sewerage network relate to the peaks in customers' sewage discharges into the network (diurnal patterns), and the peaks resulting from ingress into the sewerage pipes through illegal connections and general ingress¹⁵ during periods of rain.

Ingress into the network can cause flows in the sewerage network to increase dramatically. Sewerage systems are designed to cope with the flows that might occur in certain wet weather events. Most sewerage systems (reticulation networks and treatment plants) are designed to accommodate wet weather flows up to a multiple of designed dry weather flows. Sydney Water's sewerage reticulation network has sufficient capacity to avoid dry weather overflows, but they can still occur if there are blockages in the system or when a pump fails.

In extreme weather events, the wet weather flows may exceed the capacity of the reticulation network. Sydney Water's three major reticulation networks (North Head, Bondi and Malabar) have been designed to accommodate wet weather flows three to five times the average dry weather flow. If wet weather flows exceed the system's capacity, then wet weather overflows occur. These overflows occur at specifically designed overflow points, thereby preventing sewage from backing up into customer premises. There are 3000 designated overflow points in Sydney Water's reticulation networks.¹⁶

Similarly, STPs must also be designed to cater for these peaks, which typically involves expanding sewage treatment and storage facilities. Managing wet weather flows in a sewerage network typically involves up-sizing the components of an STP.

2.2 Sewer mining

Sewer mining involves the extraction of sewage from a reticulation network by a private sewer miner, which is then treated to produce biosolids and recycled water that are sold for further use. Sewer mining operates in conjunction with sewerage service providers rather than providing alternative sewerage service options for consumers. The sewer miner has no relationship with the sewerage customers because the sewerage transportation network provider collects all revenue from customers despite having reduced costs of treatment and disposal.

In 2006 Sydney Water introduced new policies to allow private sector water providers to connect to its sewerage transportation networks to extract sewage for treatment and

¹⁴ Sydney Water, *Initial Submission*, 23 January 2007, p. 5.

¹⁵ Stormwater and groundwater often infiltrates sewerage reticulation networks due to the porous nature of many sewerage reticulation assets, and infiltration may be exacerbated by cracks or faults in the infrastructure.

¹⁶ *Application by Services Sydney Pty Limited* [2005] ACompT 7, para. 31.

reuse as recycled water. Two sewer mining agreements have been concluded and other agreements are in negotiation.¹⁷

2.3 Retail price regulation

The prices that Sydney Water may charge for the provision of sewerage services are regulated by IPART. Sydney Water may not charge a price higher than that determined by IPART,¹⁸ and it may only charge a price lower than that determined by IPART following approval from the New South Wales (NSW) Treasurer.¹⁹

The *Independent Pricing and Regulatory Tribunal Act 1992* (NSW) (IPART Act) provides IPART with a standing reference to make determinations at any point in time for a duration to be determined by IPART. In addition, the Premier of NSW can request that IPART review Sydney Water's retail prices.²⁰ The most recent pricing determination for Sydney Water's sewerage services commenced on 1 October 2005 and expires on 30 June 2009.

IPART's determinations on Sydney Water's sewerage service prices are informed by a notional annual revenue requirement for Sydney Water for the provision of sewerage services that is derived from a building block model. Separate notional revenue requirements are calculated for each of Sydney Water's water supply, sewerage and stormwater functions. However, notional revenue requirements are not separately calculated for each of Sydney Water's 25 separate sewerage networks, and are also not separately calculated for the functional components of transportation and treatment.

In its building block model IPART adopted an Optimised Deprival Value (ODV) approach to the valuation of Sydney Water's asset base. Under the ODV approach IPART determined that Sydney Water's asset base should be determined as the recoverable value of the assets. IPART calculated the recoverable value of the assets by drawing a 'line-in-the-sand' at the end of the 1998-1999 financial year, adopting the value of Sydney Water's Regulatory Asset Base (RAB) at that time as the actual free cash flow in 1998-1999.²¹

The RAB determined by IPART under the ODV approach is less than the replacement value of the assets.²²

IPART has not re-valued Sydney Water's RAB since the end of the 1998-1999 financial year, instead rolling forward the RAB to account for disposals, prudent capital expenditure and depreciation.²³

IPART applied a P-nought adjustment and glide path in determining retail sewerage prices for the period 2005 to 2009.²⁴

¹⁷ Sydney Water, *Initial Submission*, 23 January 2007, p. 7.

¹⁸ *IPART Act*, s.18(1).

¹⁹ *IPART Act*, s.18(2).

²⁰ *IPART Act*, s.12.

²¹ This value also included \$79 million of working capital; Sydney Water, *Submission in response to the Draft Determination*, 21 May 2007, p. 25.

²² Sydney Water, *Initial Submission*, 23 January 2007, p. 16.

²³ Sydney Water, *Submission in response to the Draft Determination*, 21 May 2007, p. 25.

IPART determined that retail sewerage prices are to be charged per property. For residential properties, the price of sewerage services is comprised of a quarterly fixed charge. In 2006-2007 the annual residential charge is \$378.86.²⁵

For non-residential properties, the price of sewerage services is comprised of quarterly fixed and volumetric charges.

The fixed component is calculated as the customer's sewage discharge factor multiplied by a fixed charge that is determined by the number and size of water meters. For example, in 2006-2007 the fixed component of the retail charge varied from \$389.46 per annum for customers with a 20 mm water meter and a 100 per cent discharge factor to \$350,514 per annum for customers with a 600 mm water meter and a 100 per cent discharge factor.²⁶ A customer's discharge factor determines what proportion of the fixed charge they are required to pay. That is, a customer with a discharge factor of 60 per cent would be charged 60 per cent of the fixed charge associated with the customer's water meter size.

The volumetric component is calculated as the sewerage usage charge (dollars per kilolitre) multiplied by the amount of sewage that the customer discharges (determined by the customer's metered water usage and discharge factor). For example, in 2006-2007 the volumetric component of retail prices is the variable usage charge of \$1.233 per kilolitre of sewage discharged in excess of 500 kilolitres per annum. Non-residential customers that discharge less than 500 kilolitres in a year do not incur the volumetric component of the retail charge.²⁷

Sewerage service prices charged to both residential and non-residential customers as determined by IPART do not vary in relation to the geographic location of the customer. That is, IPART has set postage stamp retail prices for sewerage services in the greater Sydney region.

IPART also determines the price that Sydney Water can charge for the provision of trade waste services. Trade waste charges are levied on commercial and industrial customers that discharge certain trade waste substances into Sydney Water's sewerage system. Customers that discharge trade wastes are also often required by Sydney Water to undertake some form of pre-treatment of sewage before it is discharged into the sewerage system in order to protect the integrity of the system. Trade waste charges are then levied to recover the cost of administering and managing these regulatory actions associated with trade waste customers.²⁸ Trade waste charges are levied in addition to the general non-residential sewerage service charges.

Trade waste services were not a significant issue for the arbitration of the access dispute because the provision of trade waste services is sufficiently separate to the provision of sewerage services. While trade wastes may physically impact on

²⁴ IPART, *Prices of Water Supply, Wastewater and Stormwater Services: Sydney Water Corporation, Hunter Water Corporation and Sydney Catchment Authority*, Final Determination and Report, June 2005.

²⁵ Sydney Water, *Initial Submission*, 23 January 2007, p. 14.

²⁶ *ibid.*, p. 15.

²⁷ *ibid.*, p. 15.

²⁸ ACCC, Transcript of proceedings, *ACCC hearing with Services Sydney and Sydney Water*, 26 February 2007, pp. 22-23, 50.

sewerage transportation and treatment systems, it is practically impossible to determine the origin of trade wastes once discharged into a sewerage system. It is for this reason that the regulation of trade wastes is conducted as a separate service to sewerage transportation and treatment. Both parties agreed that regulation of trade wastes that may enter the sewerage transportation system should continue following third party access to the declared services, whether the regulation is undertaken by Sydney Water or another party.²⁹

Furthermore, as the arbitration was in relation to access pricing methodology, it did not require consideration of the non-price terms and conditions of access regarding the regulation of trade wastes that may enter the North Head, Bondi or Malabar sewerage networks.

2.4 Services Sydney

Services Sydney proposes to intercept sewage at certain points of Sydney Water's North Head, Bondi and Malabar systems and divert it to new sewage treatment and water reclamation infrastructure that will extract water from the sewage for reuse.³⁰ It stated that:

Services Sydney proposes to construct a deep tunnel between these three major Sydney ocean out-falls. This tunnel would transfer sewage that normally goes out to sea to new world-class water reclamation facilities.³¹

Services Sydney stated that subject to meeting strict environmental and health requirements, recycled water could be transferred back to the Hawkesbury-Nepean River for environmental river flows and a range of other uses, similar to recycling schemes at Bluescope in Wollongong, Rouse Hill in Sydney and at Sydney Olympic Park. It noted that future use of the recycled water will be determined by community choice.³²

²⁹ *ibid.*, pp. 27, 51.

³⁰ Services Sydney, *Initial Submission*, 23 January 2007, p. 6.

³¹ *ibid.*, p. 8.

³² *ibid.*, p. 9.

3. The legislative framework

The Act provides that the Commission is to arbitrate disputes relating to access to declared services. The Commission must release both a draft and final determination resolving the access dispute,³³ and a determination by the Commission may deal with any matter relating to access by the access seeker to the declared service, including matters that were not the basis for notification of the dispute.³⁴ The Act also directs the Commission to provide to the parties its reasons for making any determination and to publish a public report about its final determination.³⁵

The Act provides certain matters that the Commission must take into account in making a determination in arbitration of an access dispute, as well as providing certain restrictions on access determinations.³⁶ The matters that the Commission must take into account are discussed below. Section 44X(2) of the Act also provides that the Commission may take into account any other matters that it considers are relevant.

Matters that the Commission must take into account under Section 44X of the Act

Section 44X(1)(aa) The Objects of Part IIIA of the Act

Section 44AA of the Act provides that the objects of Part IIIA of the Act are to:

- (a) promote the economically efficient operation of, use of and investment in the infrastructure by which services are provided, thereby promoting effective competition in upstream and downstream markets; and
- (b) provide a framework and guiding principles to encourage a consistent approach to access regulation in each industry.

Object (a)

When arbitrating an access dispute, the Commission should take into account the object of promoting economic efficiency in the operation of, use of, and investment in the infrastructure by which services are provided. In the Commission's view, this requires the consideration of the different types of economic efficiency:

- **Allocative efficiency**—Firms employ resources to produce goods and services that provide maximum benefit to society. An important condition for allocative efficiency is that prices for services reflect the value society places on the next best alternative use of the resources used to produce the service.
- **Productive efficiency**—Firms produce services at lowest cost, and production activities are distributed between firms in a manner that minimises industry-wide costs. Productive efficiency will be promoted by access prices that allow for more efficient sources of supply to replace the less efficient.

³³ ss.44V(4) and 44V(1)(a) of the Act respectively.

³⁴ s.44V(2) of the Act.

³⁵ ss.44V(5) and 44ZNB of the Act respectively.

³⁶ ss.44X(1) and 44W of the Act respectively.

- **Dynamic efficiency**—Firms have the appropriate incentives to invest, innovate, improve the range and quality of services, increase productivity and lower costs over time. Dynamic efficiency will be promoted by access prices that facilitate entry and competition in the supply of services in dependent markets. However, the price should not be so low that it results in a failure to maintain or upgrade infrastructure, nor so high as to lead to inefficient investment.

These three types of economic efficiency are, in general, complementary, and are all promoted by effective competition. Access regulation of infrastructure facilities that have natural monopoly characteristics is a means by which a lack of competition can be addressed in certain circumstances. However, access regulation cannot always fully achieve the three types of economic efficiency. Determination of terms and conditions for access to the services provided by the infrastructure can therefore, at times, involve balancing the consideration of the different benefits of the three types of economic efficiency. How this balancing is achieved will typically depend on the physical and cost characteristics of the infrastructure and the demand for the services, such as whether capacity is scarce.

The Commission’s understanding of Object (a) of Part IIIA of the Act is that, in terms of promoting the efficient operation of, use of, and investment in access infrastructure, and hence promoting effective competition in upstream and downstream markets, any pricing framework should generally satisfy two-high level criteria. First, it should encourage the efficient use of the existing access infrastructure by access users. For example, by appropriately reflecting the costs associated with providing the declared service. Second, the pricing framework should reveal and signal opportunities for investment or other improvements to access infrastructure provision.

Object (b)

Object (b) of Part IIIA of the Act encourages consistency in the approach to access regulation, while also recognising that the most efficient access pricing framework for a particular access service should be determined on the basis of relevant characteristics of that service.

The Commission’s understanding of Object (b) is consistent with that adopted in the *Revised Explanatory Memorandum to the Trade Practices Amendment (National Access Regime) Bill 2006*.³⁷ In particular, it is the Commission’s view that the intention of Object (b) is to provide a consistent ‘overarching framework’ for access regimes and not to place binding restrictions on how access pricing frameworks are applied – for example, by state and territory regimes – which should properly be determined on the basis of the characteristics of the access facility in that jurisdiction.

Section 44X(1)(a) The legitimate business interests of the provider, and the provider’s investment in the facility

The term ‘legitimate business interests of the provider’ refers to the commercial considerations of the service provider such as the provider’s obligations to shareholders and other stakeholders, including the need to earn normal commercial

³⁷ Parliament of the Commonwealth of Australia, *Revised Explanatory Memorandum to the Trade Practices Amendment (National Access Regime) Bill 2006*, para. 1.8.

returns on the facility. The term ‘...and the provider’s investment in the facility’ reinforces that the access provider should be able to recover the costs (including earning a normal commercial return) of its efficient investment in the facility. Consideration of section 44X(1)(a) also includes ensuring that the access provider has appropriate incentives to maintain, improve and invest in the efficient provision of the facility.

Consistent with the *Competition Policy Reform Act 1995*, the Commission has in the past accepted that references to ‘legitimate business interests’ are intended to preclude arguments that the provider should be reimbursed by the third party seeking access for consequential costs which the provider may incur solely as a result of increased competition in an upstream or downstream market.³⁸ This includes not reimbursing the provider for any foregone monopoly profits that may arise as a result of increased competition in an upstream or downstream market.

However, access providers should not be precluded from earning higher than normal commercial returns where these returns are generated from, for example, innovative investments or unique cost cutting measures rather than through the exercise of market power.³⁹

Furthermore, the ACCC’s guide to access undertakings notes that the ACCC will not accept business interests as legitimate if they have the purpose or effect of preventing the objectives of the Act being realised.⁴⁰

However, consideration of this criterion could include taking into account obligations imposed on the service provider by government (such as Community Service Obligations (CSO)) and binding contractual obligations of the service provider.

Section 44X(1)(b) The public interest, including the public interest in having competition in markets (whether or not in Australia)

The term ‘public interest’ is not defined in the Act, and relevant considerations can vary from one access dispute to another. The Commission considers that the public interest criterion looks beyond the immediate interests of service providers and third party users, exploring the extent to which an access dispute determination contributes to the improved welfare of other parties and the broader community.

While section 44X(1)(b) of the Act explicitly states that the public interest can include having competition in markets, the object of the Act⁴¹ highlights that the public interest lies in the enhancement of welfare achieved through effective competition, rather than competition as its own end. As explained in the Hilmer Report:

³⁸ Parliament of the Commonwealth of Australia, *Explanatory Memorandum to the Competition Policy Reform Act 1995*, para. 233.

³⁹ ACCC, Final Decision, *Assessment of Telstra’s PSTN and LCS Access Undertaking*, 29 November 2006.

⁴⁰ ACCC, *Access undertakings – A guide to Part IIIA of the Trade Practices Act*, September 1999.

⁴¹ s.2 of the Act states that “the object of this Act is to enhance the welfare of Australians through the promotion of competition and fair trading and provision for consumer protection”.

Competition policy is not about the pursuit of competition for its own sake. Rather it seeks to facilitate effective competition in the interests of economic efficiency...⁴²

There is a considerable degree of overlap between the matters that the Commission must consider as required by the statutory criteria contained in sections 44X(1)(aa)-(h). While consideration of criterion 44X(1)(b) may involve issues that have been discussed pursuant to other criteria, criterion 44X(1)(b) requires examination of the manner in which such issues concern the public interest—the welfare of the broader community beyond the immediate interests of access providers or third party users.

The ACCC has provided a detailed consideration of the concept of public interest in its guide to access undertakings⁴³ and guide to arbitrating access disputes⁴⁴. The Commission considers its undertakings and arbitrations guides and the object of the Act provide some guidance as to issues that may concern the welfare of the broader community. These sources provide, *inter alia*, that intangible benefits that relate to such matters as the environment, health and safety or social equity may be regarded as public benefits and/or being in the public interest.

Section 44X(1)(c) The interests of all persons who have rights to use the service

All persons that have rights to use the service refers to the access provider, current users of the service and future potential access seekers. The Commission considers that access prices should reflect efficient provision of the service and should not incorporate pricing designed to generate monopoly profits or to artificially favour some persons who have rights to use the service over other such persons.

Criterion 44X(1)(c) is considered both a complement and the counterpart to criterion 44X(1)(a).

There may be a degree of common interest between access seekers and providers in relation to investment. The service provider has a legitimate interest in achieving a commercial return on its investment, while the access seeker has an incentive to ensure that returns are sufficient for the service provider to have incentives to maintain and invest in the relevant facilities.

The Commission considers that access seekers and the access provider should have the opportunity to compete in the provision of related goods and services on the basis of their relative merits. In particular, the access price should not artificially protect a provider of related goods and services (either the access provider or access seekers) from being displaced in the provision of these related goods and services by an access seeker that is more efficient in relation to the cost and quality of those goods and/or services.

⁴² Commonwealth of Australia, *National Competition Policy*, Report by the Independent Committee of Inquiry (Hilmer Report), 1993.

⁴³ ACCC, *Access undertakings – A guide to Part IIIA of the Trade Practices Act*, September 1999.

⁴⁴ ACCC, *Arbitrations: A Guide To Resolution of Access Disputes Under Part IIIA of the Trade Practices Act 1974*, April 2006.

Section 44X(1)(d) The direct costs of providing access to the service

The ‘direct costs of providing access to the service’ are those costs necessarily incurred (or caused) by the provision of access to the service. As noted in the *Explanatory Memorandum to the Competition Policy Reform Bill 1995*, the reference to ‘direct’ costs of providing access is intended to preclude arguments that the provider should be reimbursed by the access seeker for consequential costs that the provider may incur as a result of increased competition in an upstream or downstream market.⁴⁵ The telecommunications access pricing principles note that this criterion implies an upper and lower bound for access prices.

In the context of the telecommunications-specific access regime, the Tribunal has also stated that in determining direct costs, it may be appropriate to include a mark-up for fixed and common costs:⁴⁶

direct costs are a reference to the total costs of providing access to the relevant declared service which ordinarily include an appropriate allocation of fixed and common costs because without the existence of the assets in respect of which the fixed and common costs are incurred, the relevant access could not be provided.⁴⁷

Section 44X(1)(e) The value to the provider of extensions whose cost is borne by someone else

This criterion requires that if an extension is made to the facility at the cost of someone other than the access provider, then access terms and conditions should take into account the economic value to the access provider of the extension.⁴⁸ For example, if an access seeker bears the cost of extending the facility, and this extension is expected to provide benefits to the access provider, then the access price could be lower than it would otherwise be, so as to reflect the value to the provider of such benefits.

Section 44X(1)(ea) The value to the provider of interconnections to the facility whose cost is borne by someone else

This criterion operates in a similar fashion to section 44X(1)(e). It requires that if an interconnection is made to the facility at the cost of someone other than the access provider, then the access terms and conditions should take into account the economic value to the access provider of the interconnection.

⁴⁵ See Parliament of the Commonwealth of Australia, *Explanatory Memorandum for the Competition Policy Reform Bill 1995*, at para. 233.

⁴⁶ The Tribunal was referring to s.152AH(1)(d) of the Act which is comparable to s.44X(1)(d) of the Act.

⁴⁷ *Application by Optus Mobile Pty Limited & Optus Networks Pty Limited* [2006] ACompT 8 (22 November 2006).

⁴⁸ s.44X(1)(e) of the Act is similar to cl. 6(4) in Council of Australian Governments, *The Competition Principles Agreement*, 25 February 1994 where the criterion is mirrored in clause (h)(i)(iii). Cl. 6(4) lists the principles that a State or Territory access regime should incorporate and cl. 6(4)(h)(i) lists the matters a dispute resolution body for an access regime should take into account, which includes “the economic value to the owner of any additional investment that the person seeking access or the owner has agreed to undertake”.

Section 44X(1)(f) The operational and technical requirements necessary for the safe and reliable operation of the facility

The Commission notes in the ACCC's guide to the resolution of telecommunications access disputes⁴⁹ that an access price should not lead to arrangements between access providers and access seekers that encourage the unsafe or unreliable operation of a facility. This criterion may often be more relevant to the consideration of non-price terms and conditions.

Section 44X(1)(g) The economically efficient operation of the facility

Section 44X(1)(aa), which requires the Commission to consider the objects of Part IIIA of the Act, encapsulates the criterion in section 44X(1)(g) because section 44AA states that one of the objects of Part IIIA of the Act is to "promote the economically efficient operation of ... the infrastructure by which services are provided".

Section 44X(1)(h) The pricing principles specified in section 44ZZCA

Section 44ZZCA of the Act provides that the pricing principles for Part IIIA of the Act are:

- (a) that regulated access prices should:
 - (i) be set so as to generate expected revenue for a regulated service or services that is at least sufficient to meet the efficient costs of providing access to the regulated service or services; and
 - (ii) include a return on investment commensurate with the regulatory and commercial risks involved; and
- (b) that the access price structures should:
 - (i) allow multi-part pricing and price discrimination when it aids efficiency; and
 - (ii) not allow a vertically integrated access provider to set terms and conditions that discriminate in favour of its downstream operations, except to the extent that the cost of providing access to other operators is higher; and
- (c) that access pricing regimes should provide incentives to reduce costs or otherwise improve productivity.

Pricing principle (a)

(i) Expected revenue at least sufficient to meet efficient costs of providing access

The Commission's understanding of pricing principle (a) is that it is intended to set a 'revenue floor' for the revenue raised by the provider from access charges, being the 'efficient costs of providing access to the regulated service'.

Section 44ZZCA does not prescribe a particular methodology (such as long-run marginal cost or incremental cost) for determining the efficient costs. The appropriate methodology will depend on the individual circumstances of each case.

⁴⁹ ACCC, *Resolution of telecommunications access disputes – a guide (Revised)*, March 2004.

(ii) Commercial risk

When setting prices or revenue requirements, it is generally necessary to consider the appropriate rate of return on capital. The rate of return on capital is a market-determined rate required by investors to provide capital to the company. The appropriate rate of return on capital may depend on the level of commercial risk of the project.

One method of determining the appropriate rate of return on capital is to estimate the weighted average cost of capital (WACC). In determining the WACC, cost of debt financing is separated from the cost of equity financing, as the two options carry different levels of commercial risk. The WACC is then calculated by taking the average of these two weighted by the proportion of each type of financing used in the project.

The cost of debt financing is often derived by directly measuring the current effective interest rate on the various debts held by the firm. Alternatively, it can be derived by a benchmark return on bonds with similar credit rating to the firm. Cost of equity financing is derived by starting with the risk-free rate of investment, and adding a premium based on the commercial risk of the investment, determined on a case-by-case basis.

While there are a number of methods for determining the appropriate return on equity, a common method is the use of the capital asset pricing model. Under such a model, a premium reflecting the riskiness of a project is added to the risk-free rate. The premium is calculated using the market-determined risk premium coupled with the riskiness of the project relative to the riskiness of the market as a whole.

(ii) Regulatory risk

The revised *Explanatory Memorandum to the Trade Practices Amendment (National Access Regime) Bill 2006* notes that the reference to regulatory risk ‘is intended to refer to the perception that the exercise of regulatory discretion will be undertaken in a heavy-handed, arbitrary or uneven fashion’.⁵⁰ The memorandum goes on to state:

While such perceptions may deter investment in any dysfunctional market subject to regulation, regulatory risk takes on greater importance for infrastructure investors, due to the length of time and expense required for service providers to respond to changes in a market, perceptions that regulatory decisions tend to be biased in favour of service users rather than service providers/investors, the scale of investment in infrastructure and the sunk nature of assets. Pricing Principle (a)(ii) requires regulators specifically to factor in regulatory and commercial risks in setting access prices. This may assist to address perceptions that regulatory bias favours service users.⁵¹

The Commission considers that, in general, dealing with any actual or perceived regulatory risk simply by systematically increasing the allowed rate of return on investment is not an appropriate methodology. To systematically increase the allowed rate of return on investment would result in the redistribution of the proceeds of investment from consumers to shareholders, thereby obviating one of the purposes of

⁵⁰ Parliament of the Commonwealth of Australia, *Revised Explanatory Memorandum to the Trade Practices Amendment (National Access Regime) Bill 2006*, regulatory impact statement, para. 22.7.

⁵¹ *ibid.*

regulation in the first place. It might also distort investment if the risk mark-up was greater than the actual risk for the project.

Pricing principle (b)

(i) Multi-part pricing

Paragraph 44ZZCA(b)(i) states that access price structures should allow multi-part pricing when it aids efficiency. Access pricing arrangements that incorporate multi-part prices can, in principle, allow for many of the efficiency advantages associated with setting marginal or per-unit prices equal to short-run marginal cost, while at the same time promote efficient investment by allowing an access provider to recover a relevant share of fixed costs through fixed charges or higher infra-marginal pricing. The simplest multi-part pricing arrangement is a two-part tariff that involves an up-front charge which contributes to the recovery of fixed costs, as well as a per unit, or usage charge, which reflects the short-run marginal cost of providing the service.

(ii) Vertical integration

Paragraph 44ZZCA(b)(ii) states that access price structures should not allow a vertically integrated access provider to set terms and conditions that discriminate in favour of its own downstream operations, except to the extent that the costs of providing access to other operators is higher. This paragraph aims to ensure that access pricing allows suppliers of goods and services that are dependent upon access to the declared service to be able to compete on their relative merits.

Pricing principle (c)

Subsection 44ZZCA(c) states that access pricing regimes should provide incentives to reduce costs or otherwise improve productivity.

In principle, there are numerous ways in which an access pricing regime for a specific service may be designed. In practice, however, pricing regimes are often variants of either cost-of-service/rate-of-return regulation or price-cap regulation. Depending on how they are implemented, both of these forms of regulation, and variations based on them, have the potential to provide incentives to reduce costs and improve performance. The general point is that the incentives to reduce costs and improve performance under any access pricing regime depends on how closely linked an access provider's general level of prices are to the access provider's actual costs associated with providing those services.

The appropriateness of a particular pricing regime will depend on the characteristics of the facility under examination and how it is implemented in practice. Generally, this will involve consideration of the different types of potential efficiency gains, as well as facility-specific factors such as the importance of service quality, the potential for efficiency gains and the relative risk allocation between access providers and access users.

4. The parties' proposed access pricing methodologies

4.1 Services Sydney

Services Sydney submitted the following in regard to the access pricing methodology:

- The method that would define the most appropriate sewage transportation revenue requirement for access to the declared sewage transportation services should be a 'building block' approach composed of direct operating costs, indirect operating costs, a return on capital and a return of capital.⁵²
- Operating costs should be benchmarked to efficient costs.⁵³
- Sydney Water's indirect costs should be allocated between the transportation service and other services provided by Sydney Water based on an Avoidable Cost Allocation Methodology, where those "costs attributed to the sewage transportation should be those costs which would be avoided in the absence of this service".⁵⁴
- The RAB should be based on a determined investment value (DIV) calculated as the depreciated historic cost of Sydney Water's actual investment in the Malabar, North Head and Bondi networks.⁵⁵
- The Commission should outline a method for rolling forward Sydney Water's asset base to include new capital expenditure rather than periodic revaluation of Sydney Water's asset base. It noted that the continuing regulation of Sydney Water's retail prices by IPART is likely to provide appropriate tests of efficiency and prudence of future capital expenditure.⁵⁶
- The "return of the investment should be based on the same depreciation rates that will have been used in determining the initial DIV".⁵⁷
- The sewage transportation revenue requirement should not be composed of any contribution to maintaining postage stamp retail pricing.⁵⁸
- A CPI-X approach should be used to adjust access prices annually⁵⁹ "using projected volumes and the building block WACC as a discount rate [to] determine an X-factor such that the initial prices indexed forward at CPI-X will produce

⁵² Services Sydney, *Initial Submission*, 23 January 2007, p. 21.

⁵³ *ibid.*, p. 22.

⁵⁴ *ibid.*

⁵⁵ *ibid.*, pp. 23-24.

⁵⁶ ACCC, Transcript of proceedings, *ACCC hearing with Services Sydney and Sydney Water*, 26 February 2007, p. 38.

⁵⁷ Services Sydney, *Initial Submission*, 23 January 2007, p. 26.

⁵⁸ *ibid.*, p. 28.

⁵⁹ ACCC, Transcript of proceedings, *ACCC hearing with Services Sydney and Sydney Water*, 26 February 2007, pp. 38, 53-55.

revenues with the same expected net present value as the net present value of the annual revenue requirements”.⁶⁰

- The Commission should specify a set of principles intended to guide periodic resets via commercial negotiations between access provider and access seeker, in accordance with the determined access pricing methodology. Such resets could be scheduled to occur concurrently with IPART’s retail pricing determinations for Sydney Water’s sewerage charges to allow “current information regarding capital and operating expenditures to be utilised” and “reduce the likelihood of inconsistencies between retail and access prices”.⁶¹

In response to the *Draft Determination*, Services Sydney submitted that:

- The DIV “should be derived from the bundled RAB already determined by IPART (and also using a ‘line in the sand’ approach), in such a way that the difference between access prices and bundled retail prices is equivalent to the avoidable costs of treatment, disposal and retailing. ... [T]he avoidable costs would be determined by estimating a [depreciated optimised replacement cost] DORC valuation of a new entrant treatment and disposal ... [and] include the estimated operating and (ongoing) capital expenditure requirements of the assumed new-entrant plant.”⁶²
- The access pricing structure should “mirror the retail pricing structure (both now and in the future)”⁶³

With regard to the application of an access pricing methodology to take account of wet weather flows, Services Sydney submitted that “access charges should be calculated based on the assumption that Services Sydney will (after accounting for its own contribution to storage) extract all flows, including its contribution to processing wet weather flows, based on real-time flow rates, not average flow rates.”⁶⁴

4.2 Sydney Water

Sydney Water submitted the following in regard to the access pricing methodology:

- Prices for access to the declared sewage transportation services should be determined using a ‘retail-minus’ approach whereby “the access price is calculated by subtracting the *average or fully distributed costs* of wastewater treatment and retail services from the retail price to consumers. ... [In other words] the method is retail price minus ‘avoidable costs’⁶⁵ rather than ‘avoided costs’.”⁶⁶

⁶⁰ Services Sydney, *Initial Submission*, 23 January 2007, p. 27.

⁶¹ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 7.

⁶² *ibid.*, p. 29.

⁶³ *ibid.*, p. 7.

⁶⁴ *ibid.*

⁶⁵ *Avoidable costs* are defined as the costs that an access provider could avoid if it ceased providing the contestable service elements completely. *Avoided costs* are those costs that the access provider avoids in the short-run when it ceases supplying customers serviced by the access seeker. Avoidable cost is therefore a long-run concept.

⁶⁶ Sydney Water, *Initial Submission*, 23 January 2007, p. 19.

- Under this approach, the access price therefore “comprises the average or fully distributed cost of providing wastewater transportation services; plus a contribution to postage stamp pricing.”⁶⁷
- ‘Facilitation costs’ should be added to both residential and non-residential access prices and that facilitation costs “include the costs of interconnection, as well as other costs to Sydney Water to provide access”.⁶⁸
- ‘Avoidable costs’ should be calculated as the average costs of retailing and sewage treatment and disposal, these being the capital costs (including depreciation), operating costs and allocation of overheads.⁶⁹
- Avoidable costs should be allocated between customer groups on the basis of dry weather flows.⁷⁰
- There should be a fixed access charge for each residential customer supplied by Services Sydney (the residential access price), calculated as the residential retail price minus the avoidable costs of treatment and retail services per residential property. Facilitation costs would then be added to arrive at final residential access charges.
- Average treatment and retail costs per residential property should be calculated by dividing the avoidable costs associated with residential customers by the number of residential properties.⁷¹
- The access charge for each non-residential customer supplied by Services Sydney (the non-residential access price) should reflect Sydney Water’s retail price structure for non-residential customers. Thus, “unlike residential properties for which there is a single access price, there is a very large range of discrete access prices for non-residential properties depending on their individual characteristics.”⁷² Facilitation costs would also be added to arrive at final access charges.
- Calculation of the avoidable costs of sewage treatment and disposal and retail services for customers serviced by each of the Bondi, North Head and Malabar sewerage transportation networks should be derived using Sydney Water’s ‘cost of service’ model.⁷³
- The cost of service model “fully reconciles with Sydney Water’s current prices” and that “the total cost of all Sydney Water’s wastewater systems equals the annual wastewater revenue requirement determined by IPART”.⁷⁴ In the cost of service model, the cost of each sewerage system comprises:

⁶⁷ *ibid.*

⁶⁸ *ibid.*, p. 21.

⁶⁹ *ibid.*

⁷⁰ *ibid.*, p. 26.

⁷¹ *ibid.*, p. 21.

⁷² Sydney Water, *Non-residential access charges*, letter to ACCC, 23 February 2007, p. 1.

⁷³ Sydney Water, *Initial Submission*, 23 January 2007, pp. 20-26.

⁷⁴ *ibid.*, p. 21.

- Operating costs — total operating costs align with IPART’s 2005 price determination. While, IPART provides for revenue to recover efficient operating costs (not actual operating costs), IPART’s price determination does not disaggregate between sewage transportation and treatment. Sydney Water uses an activity based costing system to allocate operating costs “to wastewater treatment and disposal where they can be directly or causally allocated. Indirect costs [are] allocated using a combination of drivers such as dry weather flows, proportion of direct costs, and property numbers.”⁷⁵
- Capital expenditure — capital expenditure is based on the program set out in Sydney Water’s submission to IPART’s 2005 price determination and adjusted to reflect the approved capital expenditure in that determination.
- Return of assets — depreciation is based on asset lives within the fixed asset register estimated at the RAB and calculated on a straight-line basis.
- Return on assets — return on assets is based on IPART’s determined RAB and WACC.⁷⁶
- The depreciated modern engineering equivalent replacement asset (MEERA) values of the Malabar, Bondi, and North Head STPs should be used as the estimate of the initial capital component for the purpose of calculating the avoidable costs of treatment services because:
 - the RAB administered by IPART has not been disaggregated between the transport, treatment and retail components of the wastewater service; and
 - IPART’s RAB is significantly lower than the depreciated MEERA values for wastewater services.
- In regard to MEERA values (for the purpose of optimisation), the valuation should be done on a basis whereby “the layout and configuration of the treatment plants [is] assumed to remain in an ‘as built’ state for the purpose of the valuation. This recognises the specific physical limitations at the location of the three sewage treatment plants”.⁷⁷

In regard to the application of an access pricing methodology to take account of wet weather flows, Sydney Water submitted that access seekers should accept responsibility for a share of total wet weather ingress (irrespective of the source) in proportion to their customers’ share of total dry weather flows, as and when the flows occur.⁷⁸

⁷⁵ *ibid.*, p. 23.

⁷⁶ IPART adopts a real, pre-tax WACC in setting Sydney Water’s retail prices.

⁷⁷ Sydney Water, *Letter in response to the*, 16 March 2007, p. 3.

⁷⁸ Sydney Water, *Initial Submission*, 23 January 2007, p. 29.

5. Analysis of proposed access pricing methodologies

The parties initially proposed fundamentally different access pricing methodologies.

Sydney Water proposed a **retail-minus** methodology whereby:

- The Malabar, North Head and Bondi sewage treatment and disposal assets are valued on the basis of depreciated MEERA cost so as to calculate avoidable costs using a standard building block approach.
- Access prices are determined by subtracting avoidable costs from the retail prices determined by IPART. The structure of access prices is therefore derived from the structure of retail prices.
- To the extent that retail prices contain a contribution towards maintaining postage stamp pricing, the derived access prices will include the same contribution.

Services Sydney initially proposed a **bottom-up** methodology whereby:

- The Malabar, North Head and Bondi sewage transportation assets are initially valued at their depreciated historical cost.
- Access prices are determined using a standard building block approach. (The proposed structure of access prices was not specified.)
- Access prices do not include a contribution to maintaining postage stamp pricing.

In response to the *Draft Determination*, Services Sydney stated that it:

[S]upports the outcome that is achieved by the Commission in its *Draft Determination*—namely that it facilitates the entry of competitors by establishing ‘headroom’ between access prices and retail prices that is just sufficient to allow efficient competitors to enter the downstream markets for sewage treatment, disposal and retailing services.⁷⁹

Services Sydney also emphasised that “it is not seeking access prices at levels or structured in ways that would allow ‘cherry-picking’⁸⁰ or otherwise encourage inefficient market entry.”⁸¹

It therefore proposed a **hybrid retail-minus bottom-up** methodology whereby:

- The initial value of the Malabar, North Head and Bondi sewage transportation assets are derived from Sydney Water’s RAB in such a way that the difference between access prices and bundled retail prices is equivalent to the avoidable costs of treatment, disposal and retailing.

⁷⁹ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 3.

⁸⁰ Cherry-picking (or ‘cream skimming’) typically refers to the ability of an entrant to obtain an incumbent’s profitable customers by means other than on the basis of relative merit. The potential for cherry-picking often arises when the incumbent has obligations not faced by the entrant. In a competitive market where such obligations are not present, an entrant that targets the incumbent’s profitable customers promotes productive efficiency and drives out any monopoly rents.

⁸¹ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 3.

- Access prices are then determined by a bottom-up methodology using a standard building block approach.
- The structure of access prices is to be the same as under Sydney Water’s proposed retail-minus methodology.
- Any contribution to maintaining postage stamp pricing should be explicitly added to access prices calculated using the bottom-up methodology.

This Chapter therefore details the Commission’s analysis of three key issues in determining the appropriate access pricing methodology—initial asset valuation, structure of access prices, and postage stamp pricing.

5.1 Asset valuation

As discussed in Section 2.3, IPART adopted an ODV approach to valuing Sydney Water’s asset base by drawing a ‘line-in-the-sand’ at the end of the 1998-1999 financial year such that the initial RAB value would be the regulatory constrained present value of future cash flows derived from the assets from that point in time forward.

Thus, as noted by Services Sydney, “unbundling IPART’s RAB is problematic since the services on which the cash flow stream was based were not (and still are not) unbundled.”⁸²

Sydney Water submitted that “the fact that the RAB is significantly lower than the written down, or depreciated MEERA, value of wastewater assets presents a complex set of issues and tradeoffs.”⁸³

Sydney Water proposed that “it is appropriate to allocate depreciated MEERA ... values to the Malabar, Bondi and North Head STPs and retail services.”⁸⁴ “Transport values in the RAB would then be a residual value.”⁸⁵ Figure 5.1 illustrates Sydney Water’s proposed approach.

Sydney Water considered that “this approach maximises the potential for efficient entry while maintaining the legitimate business interests of Sydney Water in recovering the efficient wastewater transportation costs allowed through the IPART Current Determination.”⁸⁶

Sydney Water noted that the application of depreciated MEERA values for treatment assets would undervalue its transport assets relative to treatment assets, stating that “this approach could be interpreted as an arbitrary reduction in the value of transport infrastructure, which could be contrary to the legitimate business interests of the service provider.”⁸⁷

⁸² Services Sydney, *Initial Submission*, 23 January 2007, p. 23.

⁸³ Sydney Water, *Initial Submission*, 23 January 2007, p. 23.

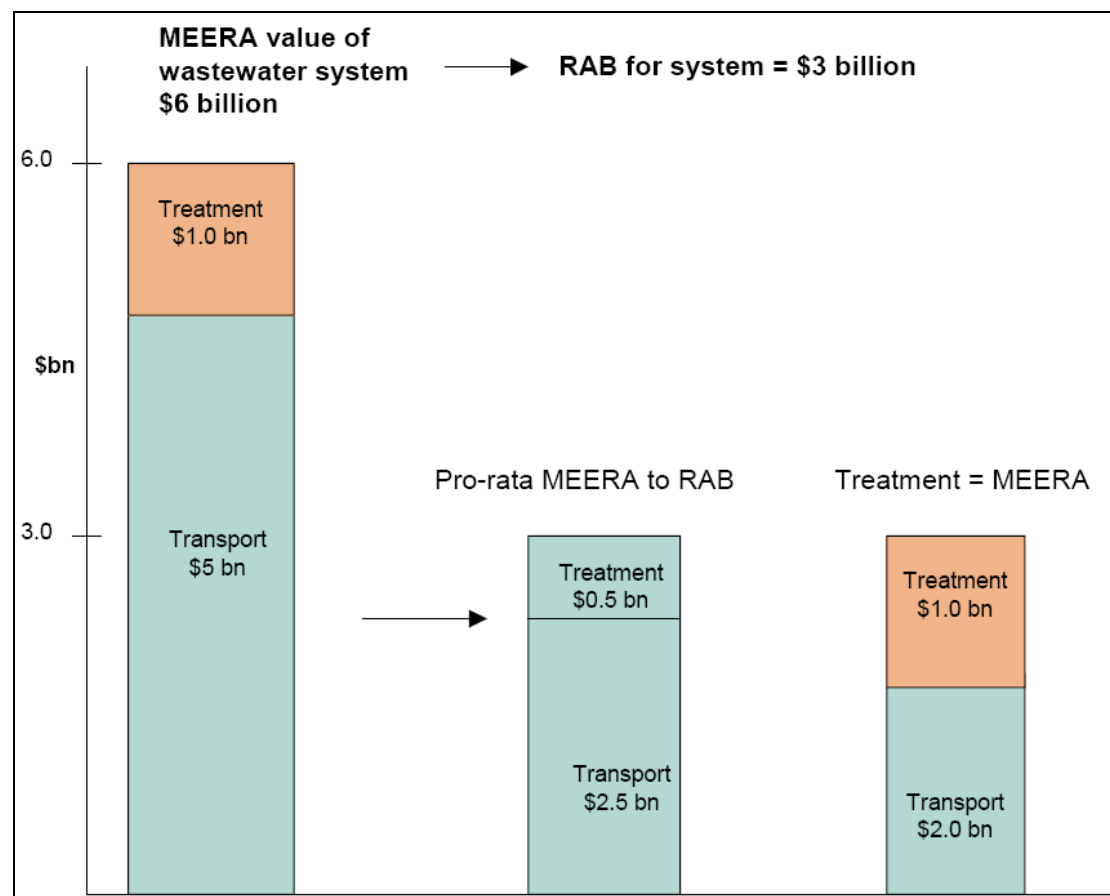
⁸⁴ *ibid.*, p. 24.

⁸⁵ *ibid.*

⁸⁶ Sydney Water, *Initial Submission*, 23 January 2007, p. 24.

⁸⁷ *ibid.*, p. 24.

Figure 5.1 Initial asset valuation: an illustrative example⁸⁸



Services Sydney initially submitted that IPART’s RAB “is of no relevance to the Commission’s determination of transportation access prices”⁸⁹ because “it would be entirely circular for the Commission to use this RAB value to set prices given that it is based directly on then-current prices.”⁹⁰ It proposed that Sydney Water’s transportation assets should be valued at their DIV “based on the depreciated historical (that is the original) cost of the network assets involved.”⁹¹

Services Sydney submitted that this approach to asset valuation would “minimise the impact that sunk expenditure in the sewerage network might otherwise have in distorting efficient access prices”⁹² and “will provide a return on and of the depreciated historic cost of Sydney Water’s (and its predecessors’) actual investment in the network, thus preserving its financial capital (the Financial Capital Maintenance Principle) in those investments.”⁹³

However, in response to the *Draft Determination*, Services Sydney submitted that the:

⁸⁸ Replicated from: Sydney Water, *Initial Submission*, 23 January 2007, p. 25.

⁸⁹ Services Sydney, *Initial Submission*, 23 January 2007, p. 23.

⁹⁰ *ibid.*

⁹¹ *ibid.*, p. 25.

⁹² *ibid.*

⁹³ *ibid.*

[D]etermined investment value (DIV) of the facilities providing the declared transportation service[s]... should be derived from the bundled RAB already determined by IPART (and also using a “line in the sand” approach), in such a way that the difference between access prices and bundled retail prices is equivalent to the avoidable costs of treatment, disposal and retailing.⁹⁴

It stated that this “would provide the same level of ‘headroom’ between access and retail prices as is provided by the methodology in the *Draft Determination*.”⁹⁵

Consideration of the proposed approaches

Under Services Sydney’s initial proposed approach to asset valuation, the treatment and disposal assets would be valued at the difference between the IPART determined RAB and the depreciated historical cost of transportation assets. This is unlikely to result in treatment and disposal assets being valued at their efficient forward-looking cost.

A value of treatment and disposal assets lower than their efficient forward-looking cost would result in a margin between retail prices and access prices that could deter an efficient access seeker from entering the sewage treatment market. The deterrence of efficient entry is inconsistent with the objective of promoting effective competition in upstream and downstream markets. Furthermore, an access pricing methodology that resulted in an efficient access seeker being unable to compete with Sydney Water based on its relative merits (such as cost of providing the service, product differentiation, etc) would be contrary to the interests of all persons who have rights to use the service.

In comparison, a value of treatment and disposal assets higher than their efficient forward looking cost would result in a margin between retail prices and access prices that could encourage inefficient entry into the sewage treatment market. This would be inconsistent with the objective of promoting effective competition in upstream and downstream markets because although it may lead to competition between Sydney Water and Services Sydney, the margin between retail and access prices would not result in competition based on relative merit. Further, the inability of Sydney Water to compete with Services Sydney based on merit would be contrary to Sydney Water’s legitimate business interests.

Services Sydney’s initial proposed methodology for valuing transportation assets would also allow for the margin between retail prices and access prices to vary if IPART was to change its approach to determining retail prices. For example, if IPART was to revalue Sydney Water’s assets (for example to replacement cost), the residual value of the treatment and disposal assets would increase. This scope for the margin between access prices and retail prices to change because of a decision by IPART regarding asset valuation (and thus retail prices) would provide both Services Sydney and Sydney Water with less certainty over the scope for efficient entry.

One of the advantages of an approach to valuing transport assets as the residual between the IPART determined RAB and the depreciated optimised replacement value of treatment and disposal assets is that it provides IPART with the flexibility to

⁹⁴ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 29.
⁹⁵ *ibid.*

determine the level of compensation that Sydney Water should receive for its investment in the transportation network, without influencing the arena of competition between Services Sydney and Sydney Water. That is, if IPART considered that the residual of the RAB and the value of treatment and disposal assets determined for the purpose of access pricing did not provide Sydney Water with sufficient compensation for its investment in the transport assets, it could increase the level of retail prices without affecting the ability of Services Sydney to compete with Sydney Water.

Services Sydney's subsequent proposal that the DIV of the relevant sewage transport assets should be derived from the IPART determined RAB in such a way that the difference between access prices and retail prices is equivalent to the avoidable costs of treatment, disposal and retailing does not appear to be practical. It is not clear how a DIV that ensured this outcome could be calculated—Services Sydney did not propose a methodology.

The Commission considered that the only practical way to ensure that the difference between retail prices and access prices is equivalent to the avoidable costs of treatment, disposal and retailing is to estimate such avoidable costs and to subtract them from retail prices. It may be possible to then estimate a value of the DIV based on this process, and to subsequently calculate 'bottom-up' access prices using this DIV. However, if consistent estimates of costs are used in the first 'top-down' stage and the second 'bottom-up' stage, the access prices calculated in this manner would be equal to retail prices minus avoidable costs—the retail-minus outcome. The second 'bottom-up' stage of Services Sydney's proposed hybrid approach would introduce unnecessary complexity.

It would be possible to calculate an initial value for the sewage transportation assets by deducting an efficient forward-looking cost valuation of the sewage treatment and disposal assets from the IPART determined RAB.

However, if this was used as the DIV for the purpose of calculating access prices using a building block approach, access prices would not be equivalent to the retail prices less the avoidable costs of treatment, disposal and retailing. This is because the DIV is only one component of the building block methodology. The determined allowable access revenue would also depend on future capital expenditure, depreciation, operating expenditure and indirect costs associated with the transportation assets. In contrast, avoidable costs calculated using a building block approach will depend on future capital expenditure, depreciation, operating expenditure and indirect costs associated with treatment, disposal and retailing.

Services Sydney recognised the limitations to its proposed hybrid methodology, stating that “this approach does not *automatically* maintain a particular price difference between retail sewerage prices and ... access prices” (emphasis added).⁹⁶

One of the advantages of a retail-minus methodology is that it automatically maintains a particular margin.

⁹⁶ *ibid.*, p. 30.

5.2 Structure of access prices

In proposing a retail-minus access pricing methodology, Sydney Water implicitly proposed an access price structure that is derived from the retail price structure determined by IPART and the associated basis by which avoidable costs are allocated to customers.

The structure of retail prices for Sydney Water's sewerage services as determined by IPART is outlined in Section 2.3. In summary, the retail prices involve a fixed charge for all residential customers and a schedule of fixed and volumetric charges for non-residential customers.

Sydney Water proposed that avoidable costs associated with sewage treatment and disposal be allocated to customers on the basis of average dry weather flows (thereby deriving a measure of avoidable costs on a dollars per kilolitre basis), which would be a deemed volume for residential customers. It proposed that avoidable retailing costs be allocated on a per customer basis.⁹⁷

Thus, the structure of access prices under Sydney Water's proposed retail-minus methodology would involve a fixed access charge per residential customer, and a combination of fixed and volumetric charges for non-residential customers. This is a two-part tariff that involves fixed and volumetric components, as follows:

Customer type	Fixed charge	Volumetric charge
Residential	per customer	zero
Small non-residential*	per customer	zero minus per kl avoidable treatment and disposal costs (which is negative)
Other non-residential	per customer based on the number and size of water meters and discharge factor	retail volumetric rate minus per kl avoidable treatment & disposal costs (which can be positive or negative)

* customers with a 20 mm water meter that discharge less than 500kl of sewage per year

Under this structure, access prices for non-residential customers that discharge a low volume of sewage are high relative to retail revenue, and access charges for non-residential customers that discharge a high volume of sewage are low relative to retail revenue (and possibly negative).

Sydney Water noted its concern about the interaction of the structure of retail prices and its method for allocating the avoidable costs of treatment and disposal to types of customers. In particular, Sydney Water noted that its proposed access charges were a result "of the interaction of the current structure of non-residential retail charges and the costs of treatment services by customer [sic] that have been calculated on the basis of dry weather flows."⁹⁸

⁹⁷ Sydney Water, *Initial Submission*, 23 January 2007, p. 21.

⁹⁸ Sydney Water, *Non-residential access charges*, letter to ACCC, 23 February 2007, p. 3.

Sydney Water submitted that it “will be drawing IPART’s attention to the issue of rebalancing charges between customer groups to better reflect costs”⁹⁹ which would “ensure that the structure of retail prices does not provide perverse incentives or inefficient outcomes.”¹⁰⁰

However, it is not clear that what Sydney Water describes as ‘perverse incentives or inefficient outcomes’ are of concern in setting access prices based on a retail-minus approach. One of the benefits of a retail-minus methodology is that the ability of the access seeker to compete is independent of the level and structure of retail prices. That is, as long as the difference between the retail price and the access price reflects the avoidable costs of providing the contestable components of sewerage services, a retail-minus access pricing methodology will provide the correct incentive for efficient entry thereby promoting effective competition.

To the extent that access prices for some customers may be negative, they will still provide the correct signal for competition between Services Sydney and Sydney Water. This is because the payment that Sydney Water will make to Services Sydney (i.e. the negative access price), combined with the revenue that Services Sydney can obtain from the customer if it was to match Sydney Water’s price, reflects Sydney Water’s avoidable costs of providing the contestable components of sewerage services.

This highlights that a critical component of the implementation of a retail-minus access pricing methodology is to ensure that the difference between the retail price and access price reflects a robust estimate of Sydney Water’s avoidable costs.

Services Sydney initially reserved its position on the access price structure, stating:

Pending the Commission’s resolution of the factors leading to these anomalies (the negative access prices for some non-residential customers), Services Sydney reserves any position ... on price structuring.¹⁰¹

In response to the *Draft Determination*, Services Sydney submitted that it “accepts the principle that the access pricing structure should mirror the retail pricing structure (both now and in the future).”¹⁰² It therefore has “no objection to Sydney Water’s proposal for fixed per customer annual access charges for residential customers; and ... a scale of fixed per customer charges and a single volumetric rate [for non-residential access charges].”¹⁰³

Services Sydney noted that “there is a reasonable likelihood that Sydney Water’s wastewater retail price structure may change over the course of the access arrangement... [and therefore] may be required to consider a change to the structure of its access prices”.¹⁰⁴

⁹⁹ *ibid.*

¹⁰⁰ *ibid.*

¹⁰¹ Services Sydney, *Third Submission*, 19 March 2007, p. 8.

¹⁰² Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 7.

¹⁰³ *ibid.*, p. 34.

¹⁰⁴ *ibid.*, p. 35.

Accordingly, Services Sydney stated that its “two main requirements are to ensure that such changes are revenue neutral and that they are not designed in a way that disadvantages Services Sydney’s commercial position as a third-party access customer with a particular customer mix”.¹⁰⁵

As the arbitration was limited to the issue of access pricing methodology, it does not address how any other aspects of an actual access arrangement between the parties are to be determined. For example, the parties may agree on specific access prices that will apply up until IPART’s next price determination, and also agree on a method for adjusting access prices to take account of IPART’s future price determinations (including any change in the structure of Sydney Water’s retail prices).

However, the Commission notes that under a retail-minus methodology, Services Sydney’s commercial position will only be exposed to risk arising from any change in the structure of Sydney Water’s retail prices if it were to sign-up customers on contract terms that extended past the date at which future IPART determinations come into effect. In contrast to Sydney Water, Services Sydney will be able to adjust its retail prices to take account of any change in the structure (or level) of access prices.

Structure of access prices and efficient use of and investment in the facility

The Commission’s consideration of the appropriate structure of access prices also took into account the objective of achieving efficient use of and investment in the facility that provides the declared services.

In general, this is achieved by linking the structure of access prices to the drivers of the costs of providing the declared services because it signals to end-use consumers the effect of their consumption decisions on the access provider’s costs. The link between the cost drivers of sewerage services and retail prices is considered in Box 5.1.

The current structure of retail prices means that access prices determined using a retail-minus approach would be linked to the costs of conditioning the transportation network to meet a particular capacity, because the access price for both residential and non-residential customers will contain a fixed component. In contrast, an access price that was, for example, a purely per kilolitre rate would be based solely on customers’ actual as opposed to potential sewage discharge. It would therefore not align with the critical long-term cost drivers of providing the sewage transportation service because the volume of sewage discharged is not the main cost driver.

Structure of access prices and competition in downstream markets

The introduction of an access price structure that is inconsistent with the retail price structure determined by IPART could distort competition between Sydney Water and Services Sydney. That is, it could result in Services Sydney and Sydney Water not competing for some customers on the basis of relative merit (cost of providing the retailing, treatment and disposal activities, and extent of product differentiation).

For example, if the access price for non-residential customers was set on a purely volumetric (i.e. dollars per kilolitre) basis, Services Sydney (and potentially other

¹⁰⁵ *ibid.*

access seekers) may have an advantage in competing for those non-residential customers who faced high fixed charges and discharged small quantities of sewage. Conversely, depending on the relative magnitude of the volumetric access charge and the access seeker's costs, Sydney Water may have an advantage in serving non-residential customers that discharge large quantities of sewage.

Thus, any inconsistency between the access price structure and the retail price structure would not promote effective competition in the downstream market for sewage. Such an outcome would be contrary to both Sydney Water's legitimate business interests, and the interests of all persons that have the rights to use the declared services.

Box 5.1 Retail price structure and cost drivers of sewerage services

IPART stated that "a sewerage service is made up of a number of different cost elements encompassing such things as reticulation and transportation, sewerage treatment, residuals and management and retail functions."¹⁰⁶ IPART noted that "while the primary driver of some of these functions may be related to dry weather flows other costs are likely to relate to customer numbers (or equivalent residential properties) and wet weather flows."¹⁰⁷

Sydney Water noted that the costs of the main components of sewerage services do not bear a strong relationship to dry weather flows in the short-term, stating that "once constructed, wastewater costs do not bear a strong relationship to flows (wet or dry). The marginal cost of transporting and treating a customer's wastewater is very low, and approaches zero on the declared services."¹⁰⁸

A report recently prepared for the Water Services Association Australia (WSAA) considered the drivers of the long-term costs of the components of sewerage services, drawing upon, among other sources, econometric models applied by the United Kingdom office of the water regulator (Ofwat).¹⁰⁹ The report considered that while "the applicability of Ofwat's econometric analysis in the Australian context was debatable, the analysis behind the modelling provides useful insights into the [cost] drivers of wastewater systems generally."¹¹⁰

In relation to the sewerage reticulation network, Ofwat's econometric model identified *sewer length*, *area* and *resident population* as the critical drivers of operating expenditure, and *sewer length* and *proportion of critical sewers*¹¹¹ as the critical drivers of capital expenditure. In relation to sewage treatment, the model identified *volume* and *biological oxygen demand (BOD)* as the critical drivers of operating expenditure, and *total load* as the critical driver of capital expenditure.

WSAA short-listed the cost drivers in Ofwat's econometric model in the context of Australian conditions. It identified *number of connections*, *peak wet weather flow*, *volume discharged*, *BOD*, *topography*, *density of development*, *transmission distance*,

¹⁰⁶ IPART, *Response to letter from ACCC*, letter to ACCC, 23 March 2007, p. 3.

¹⁰⁷ *ibid.*

¹⁰⁸ Sydney Water, *Initial Submission*, 23 January 2007, p. 26.

¹⁰⁹ WSAA, *Identifying Costs for Wastewater Services*, Occasional Paper No. 16, January 2007.

¹¹⁰ *ibid.*, p. 34.

¹¹¹ That is, sewers in need of replacement.

the size and timing of capacity increments and critical sewers as cost drivers impacting on the transmission business segment.¹¹² *Number of connections, disposal method, peak wet weather flow, volume discharged, BOD, suspended solids, salt, and the size and timing of capacity increments* were identified as cost drivers impacting on the treatment business segment.¹¹³

The extensive list of cost drivers identified by WSAA, and in particular the inclusion of volume discharged as a cost driver of sewage transportation, suggests that it may be difficult to establish an exact relationship between costs and the retail tariff structure. However, the critical cost drivers identified by Ofwat suggest that a two-part tariff for retail sewerage services is appropriate, with fixed charges set primarily to recover the costs of the reticulation network, and volumetric charges set to recover treatment and disposal costs.

IPART stated that Sydney Water's retail prices are based "on the use made of services or the potential to use those services."¹¹⁴ It noted that:

- basing the fixed charge for non-residential customers on meter size "reflects the potential load that different non-residential properties can impose on the sewerage system";¹¹⁵ and
- the volumetric charge "relates to the cost to Sydney Water of transporting and treating larger volumes of domestic strength wastes."¹¹⁶

Sydney Water's retail prices involve a uniform fixed price for all residential customers and small non-residential customers (i.e. those that have a 20 mm water meter and discharge less than 500 kilolitres per year). Setting a uniform fixed price for all of these customers is consistent with IPART's rationale that prices should reflect the potential for customers to use the sewerage system, because residential and small non-residential customers all have a 20 mm water meter that limits their possible water use and therefore sewage discharge. However, as these customers do not face a volumetric charge, the retail tariff structure does not take account of their actual use of the sewerage system assets.

5.3 Postage stamp pricing

Sydney Water and Services Sydney disagreed on whether access prices should include a contribution to maintain the postage stamp pricing of Sydney Water's retail sewerage services.

'Postage stamp pricing' or 'geographically uniform pricing' is a system of pricing whereby the same types of customers are charged the same price for the same service irrespective of their geographic location. Sydney Water's retail prices for sewerage services are an example of postage stamp pricing because they do not vary with the location of customers within the area serviced by Sydney Water. That is, prices for

¹¹² WSAA, *Identifying Costs for Wastewater Services*, Occasional Paper No. 16, January 2007, p. 36.

¹¹³ *ibid.*

¹¹⁴ IPART *Response to letter from ACCC of 8 March 2007*, letter to ACCC, 23 March 2007, p. 1.

¹¹⁵ *ibid.*, p. 2.

¹¹⁶ *ibid.*

residential and non-residential customers connected to the Bondi, Malabar and North Head sewerage networks are the same as prices for similar customers served by Sydney Water's other sewerage networks.

Sydney Water submitted that the "three geographic areas declared under Part IIIA of the Act make a substantial contribution to the postage stamp pricing obligations"¹¹⁷ and that the "transfers involved with postage stamp pricing tend to flow from the eastern or the coastal parts of Sydney to the west."¹¹⁸

The access prices for residential customers proposed by Sydney Water include positive contributions to postage stamp pricing.¹¹⁹ The amount of any contribution to postage stamp pricing in Sydney Water's proposed non-residential access prices is less transparent due to the complexity of the retail price structure.

Sydney Water also submitted that IPART's approach of determining postage stamp prices was recently "confirmed by the NSW government in its endorsement of IPART's October 2005 investigation into water and wastewater service provision in the greater Sydney region"¹²⁰ and "reaffirmed in the *Water Industry Competition Act*."¹²¹

The *Water Industry Competition Act 2006* (WIC Act) provides that the access pricing principles contained in section 41 of that Act:

must be implemented in a manner that is consistent with any relevant pricing determinations for the supply of water and the provision of sewerage services, including (where applicable) the maintenance of "postage stamp pricing" (that is, a system of pricing in which the same kinds of customers within the same area of operations are charged the same price for the same service).¹²²

Sydney Water submitted that in respect of the Tribunal's decision to declare the interconnection and transportation services:

- the Tribunal "considered that the social equity aspects of postage stamp pricing in the provision of sewerage services to be so important to wastewater infrastructure that it expressly said that any access pricing mechanism should have access prices that do not vary with the location of a customer in a system";¹²³ and
- the Tribunal's "finding that declaration would not be contrary to the public interest was expressly based on an assumption that access pricing would also be on a postage stamp basis."¹²⁴

However, the Tribunal did not expressly state that the access pricing methodology should be consistent with maintenance of postage stamp pricing. Rather, it expressed the view that the maintenance of postage stamp pricing would not necessarily be

¹¹⁷ Sydney Water, *Initial Submission*, 23 January 2007, p. 35.

¹¹⁸ *ibid.*, p. 14.

¹¹⁹ *ibid.*, p. 27.

¹²⁰ *ibid.*, p. 13.

¹²¹ *ibid.*

¹²² *Water Industry Competition Act 2006* (NSW) s.41(3).

¹²³ Sydney Water, *Initial Submission*, 23 January 2007, p. 37.

¹²⁴ *ibid.*

incompatible with declaration, as long as access prices were constructed in a way that did not provide incentive for ‘cream skimming’¹²⁵ entry.

In particular, the Tribunal could see “no reason why the maintenance of postage stamp pricing is not compatible with declaration.”¹²⁶ It stated:

As long as access prices do not vary with the location of the customer, there would not be any incentive for cream skimming. This could be achieved either through the use of ECPR¹²⁷ based pricing, as recommended by IPART, or through some other average cost approach, including an average building block cost approach.¹²⁸

It does not appear that the Tribunal based its decision that declaration would not be contrary to the public interest on the assumption that access pricing would also be on a postage stamp basis. Rather, the Tribunal considered a number of factors, including that outlined above, and concluded that it was satisfied that declaration would not be contrary to the public interest.

Services Sydney submitted that “the Commission’s decision on a sewage network access pricing methodology should not take account of the NSW government’s policy of postage stamp pricing of Sydney Water’s bundled sewage services.”¹²⁹

Services Sydney contended that Sydney Water’s retail prices are not consistent with the definition of postage stamp pricing in the WIC Act. In support of this view, Services Sydney stated:

customers serviced by Sydney Water’s sewerage networks other than the three declared services are not within the same ‘area of operations’. And they are not receiving the same service since customers in the three declared networks receive an inferior quality of service, as their sewage is not subject to tertiary treatment as is the case in many other parts of the overall Sydney Water sewerage network.¹³⁰

The Commission considered that Sydney Water’s area of operations is that serviced by its overall sewerage network. Whether customers connected to the facilities providing the declared services are receiving the same level of sewerage services as those connected to Sydney Water’s other sewerage networks can only be tested once Services Sydney enters the sewage treatment market. All other things being equal,

¹²⁵ ‘Cream skimming’ and ‘cherry-picking’ are often used interchangeably.

¹²⁶ *Application by Services Sydney Pty Limited* [2005] ACompT 7, para. 205.

¹²⁷ Also known as the Baumol–Willig Rule, the efficient component pricing rule (ECPR) provides a method for determining the price of an intermediary good or service (an input into the downstream production of another good or service) supplied by a vertically integrated firm. ECPR states that the price of an input supplied by a vertically integrated firm should be equal to the direct incremental cost of the input, plus the opportunity cost to the input supplier of the sale of a unit of input. The opportunity cost to the vertically integrated input supplier of the sale of a unit of input includes two components:

- any revenue from the sale of downstream goods or services that may be forgone as a result of the purchasers of the input supplying the downstream market, and
- any expense from the production of downstream goods or services that may be foregone (an opportunity benefit or negative opportunity cost) as a result of the purchasers of the input supplying the downstream market.

¹²⁸ *Application by Services Sydney Pty Limited* [2005] ACompT 7, para. 205.

¹²⁹ Services Sydney, *Initial Submission*, 23 January 2007, p. 28.

¹³⁰ Services Sydney, *Submission in response to Sydney Water’s Initial Submission*, 19 February 2007, p. 19.

those customers that place a value on their sewage being tertiary rather than primary treated will have incentive to switch supplier.

Services Sydney also submitted that it “has been unable to find any formal direction to IPART to require uniform retail prices in IPART’s current determination”¹³¹ and that the reference to “postage stamp pricing in the *Water Industry Competition Act 2006* is the only statement of the NSW Government policy in this matter of which Services Sydney is aware.”¹³²

As stated by the Tribunal, it is the NSW government’s prerogative to determine whether or not postage stamp pricing should be maintained.¹³³ The Commission’s determination was therefore not based on the view that postage stamp pricing necessarily is or will be the policy of the NSW government.

Competition in the downstream sewage treatment market and recycled water market

Sydney Water submitted that “if access seekers did not make a contribution to postage stamp pricing, then the access prices for the declared services would allow access seekers to set retail prices well below the regulated level that Sydney Water is legally obliged to charge”¹³⁴ and that “in such a situation, Sydney Water would be prevented from recovering its efficiently incurred costs, which would be inconsistent with its legitimate business interests.”¹³⁵

Sydney Water also submitted that the exclusion of a contribution to postage stamp pricing in access prices would be contrary to the public interest in having competition in markets. In particular, Sydney Water noted that in “the statutory and regulatory environment in which Sydney Water operates, the adoption of any access pricing methodology which results in system specific charges will result in price distortion and facilitate inefficient entry and as such is contrary to the promotion of competition.”¹³⁶

Sydney Water’s contentions assume that IPART would continue to require Sydney Water to levy geographically uniform retail prices for sewerage services, even if access prices did not include a contribution to the maintenance of postage stamp pricing.

However, the Tribunal noted that geographically uniform retail prices would likely be unwound if access prices did not include a contribution to postage stamp pricing. In particular:

If uniform retail prices were maintained but access prices for transport and interconnection were non-uniform, this would create incentives for ‘cream skimming entry’, whereby new entrants targeted low cost customers, leaving Sydney Water to

¹³¹ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 16.

¹³² *ibid.*

¹³³ *Application by Services Sydney Pty Limited* [2005] ACompT 7, para. 205.

¹³⁴ Sydney Water, *Initial Submission*, 23 January 2007, p. 35.

¹³⁵ *ibid.*

¹³⁶ *ibid.*, p. 38.

supply high cost customers. This would be unsustainable and would likely result in the unwinding of postage stamp pricing.¹³⁷

How IPART would determine Sydney Water's retail prices in the context of access prices that did not include a contribution to postage stamp pricing is an important issue because it determines the scope for Services Sydney (and potentially other access seekers) to 'cherry-pick' Sydney Water's customers in the sewage treatment market.

The Commission sought guidance from IPART on this issue.

IPART stated that it "cannot and should not form a view on likely future pricing decisions in the absence of consideration of the views and submissions of all interested parties."¹³⁸ However, it noted that its consideration of this issue in future retail price determinations would need to take account of a range of matters under the IPART Act, stating that "economic efficiency is one such matter and this must be balanced against other matters of importance such as equity, affordability, public health and administrative simplicity."¹³⁹

IPART identified that the close linkage between developer charges and postage stamp pricing would also be an important consideration in an assessment of whether postage stamp pricing should continue. This is because developer charges are set such that "land developers contribute to the cost of water and sewerage infrastructure...where the costs of servicing a particular development area are likely to exceed the average cost of service"¹⁴⁰ and any "move away from postage stamp prices will therefore bring with it a range of issues in relation to people who have paid high access fees (developer charges) on the understanding that postage stamp pricing arrangements will continue."¹⁴¹

Further, IPART noted that "the interplay of different charging elements ... highlights the need for integrated and consistent regulatory oversight of prices and price setting processes"¹⁴² and that "inconsistent regulation of third party access prices may well result in the creation of a number of unintended or even perverse incentives."¹⁴³

The Commission notes the Tribunal's view that postage stamp pricing would likely be unwound if access prices excluded a contribution to postage stamp pricing. IPART would need to take steps to place Sydney Water on a level playing field with Services Sydney. However, this view is balanced against IPART's comments that a decision on whether to unwind postage stamp retail prices would involve detailed consideration of submissions from all interested parties, and would require resolution of issues such as the relationship between postage stamp pricing and developer charges.

It is unclear how long a transition to a level playing field for Sydney Water and Services Sydney would take if access prices did not contain a contribution to postage

¹³⁷ *Application by Services Sydney Pty Limited* [2005] ACompT 7, para. 203.

¹³⁸ IPART, *Response to letter from ACCC*, 23 March 2007, p. 4.

¹³⁹ *ibid.*

¹⁴⁰ *ibid.*

¹⁴¹ *ibid.*

¹⁴² *ibid.*

¹⁴³ *ibid.*

stamp pricing. This would depend on a number of things, importantly the timing of any consideration by IPART to review postage stamp pricing for Sydney Water's sewerage services. For example, IPART could review postage stamp pricing in response to the initial entry of Services Sydney into the market, or alternatively in response to the realisation of any substantive impact on Sydney Water's ability to recover its costs.

Given IPART's views and the level of uncertainty over how long any consideration would take, it appears likely that there would be scope for access prices that did not include a contribution to postage stamp pricing to enable Services Sydney (and, potentially, other access seekers) to cherry-pick Sydney Water's customers in the downstream sewage treatment market, at least in the short-term. Therefore, the exclusion of a contribution to postage stamp pricing in access prices would be contrary to Sydney Water's legitimate business interests.

In response to the *Draft Determination*, Services Sydney agreed "that it would create an economically inefficient opportunity if access seekers did not have the same obligations that Sydney Water has towards the same customers ... [and that it] does not seek to gain through such a policy."¹⁴⁴ As discussed later in this section, Services Sydney noted that the NSW government has the prerogative to implement other mechanisms to maintain postage stamp pricing, such as providing a CSO subsidy or establishing a tariff equalisation fund, which could set out specifically the obligations that each service provider may have towards the same customers.¹⁴⁵

The Commission also considered whether the inclusion of a contribution to postage stamp pricing in access prices would affect the efficient supply of goods and services for which treated effluent can be an input, in particular bulk (recycled) water supply.

Services Sydney submitted that the efficiency consequences of postage stamp pricing would be material, noting that "if the 'tax' of postage stamp pricing makes recycling uneconomic, then postage stamp pricing will impose a real economic cost to Sydney consumers in the form of higher cost water supply investment (desalination) and/or restricted supply of treated water."¹⁴⁶

Sydney Water submitted that under its proposed access pricing methodology "the cash flow available to an entrant from each customer is **the same** as it would be if prices were not set on a postage stamp basis"¹⁴⁷ and that therefore "Sydney Water's access pricing method cannot be said to impose a tax on an entrant."¹⁴⁸

Whilst the inclusion of a contribution to postage stamp pricing in access prices would result in higher access prices, this contribution would be off-set by higher retail prices, and therefore would not impose an additional cost or burden on Services Sydney's production of recycled water. Thus, the cost competitiveness of using tertiary treated effluent in producing bulk water relative to other sources will not be affected by the inclusion of a contribution towards postage stamp pricing in access prices.

¹⁴⁴ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 15.

¹⁴⁵ *ibid.*, p. 16-17.

¹⁴⁶ Services Sydney, *Third Submission*, 19 March 2007, p. 6.

¹⁴⁷ Sydney Water, *Submission in response to Services Sydney's Third Submission*, 2 April 2007, p. 2.

¹⁴⁸ *ibid.*, p. 3.

Services Sydney also submitted that the provision of recycled water would provide significant public benefits by avoiding “the need for increased water transfers from the Shoalhaven River that would otherwise be to the detriment of that river and the Shoalhaven’s economy generally.”¹⁴⁹

Bulk water prices should provide the appropriate incentives to recycled water suppliers for the public benefits associated with recycled water to be realised. The existence of any public benefit of the nature suggested by Services Sydney does not require the access pricing methodology to apply to the declared sewage transportation services to specifically take such benefits into account.¹⁵⁰

In summary, access prices that do not include a contribution to postage stamp pricing would have adverse implications for efficient entry and competition in the downstream sewage treatment market, whereas access prices that do include a contribution to postage stamp pricing would not have any adverse implications for competition in the downstream recycled water market.

Equity implications of not maintaining postage stamp pricing

Sydney Water submitted that the “strong social equity considerations which underlie the use of postage stamp pricing would be negatively impacted upon by the adoption of an access pricing methodology which was inconsistent with the continuation of postage stamp pricing.”¹⁵¹ Sydney Water argued that “the general support for postage stamp pricing is underpinned by several factors:

- water is essential for life and wastewater services are essential for public health;
- public health and environmental outcomes arising from water and wastewater provision are enjoyed by all members of a defined community;
- it is often mandated that households be connected to the water and wastewater system; hence
- it is accepted that all members of the community contribute to these costs on an equal basis.”¹⁵²

Sydney Water also submitted that “the transfers involved with postage stamp pricing tend to flow from the eastern or coastal parts of Sydney to the west and that, in general average incomes tend to be higher in the east than the west.”¹⁵³

In general, geographically uniform retail prices are considered more equitable than geographically specific prices because they do not provide for large pricing disparities

¹⁴⁹ Services Sydney, *Submission in response to Sydney Water’s initial submission*, 19 February 2007, p. 27.

¹⁵⁰ If the bulk water price is not sufficient to ensure that the public benefits associated with the use of tertiary treated wastewater as an input into bulk water supply are realised, then the bulk water market would be the appropriate arena for any adjustment (for example, a subsidy) to be introduced. It would not be appropriate to distort the price signal in the upstream market for the declared sewage transportation services in order to realise such public benefits.

¹⁵¹ Sydney Water, *Initial Submission*, 23 January 2007, p. 38.

¹⁵² *ibid.*, pp. 13–14.

¹⁵³ *ibid.*, p. 14.

between different geographic areas. Sydney Water quantified the pricing disparities associated with the unbundling of postage stamp pricing, noting that:

- “the removal of postage stamp pricing would have the impact of increasing the average wastewater charge on the non-declared wastewater systems to around \$500 per year”¹⁵⁴; and
- “the removal of postage stamp pricing and the introduction of cost-based retail prices could increase wastewater costs for some customers in Sydney’s West from \$378.86 to over \$2000 per year.”¹⁵⁵

However, the pricing disparities described in the second outcome would only occur if postage stamp pricing did not continue in respect of Sydney Water’s sewerage services provided to customers not connected to the Bondi, North Head and Malabar sewerage networks.

Assuming that IPART would be forced to respond to access prices that did not include a contribution to postage stamp pricing by setting non-geographically uniform retail prices, retail prices for some customers (those customers in the Bondi, Malabar and North Head sewerage networks) would decline as Services Sydney (and any other access seekers) competed to capture Sydney Water’s customers, and the price for sewerage services in other areas serviced by Sydney Water would rise above current levels. This would result in substantial price disparities between different geographic areas.

On the other hand, as noted by Services Sydney, prices for sewerage services “from Nowra (Shoalhaven Water) in the south to Newcastle (Hunter Water) in the north and including Sydney and the Central Coast – are ... not uniform”.¹⁵⁶

Economic efficiency implications of maintaining postage stamp pricing

As noted by the Tribunal, “postage stamp pricing is inefficient because prices do not reflect the true cost of the services, providing poor incentives for the efficient allocation of resources.”¹⁵⁷

Postage stamp pricing results in a distortion of prices away from efficient cost. In areas where price is below cost consumption and investment would be distorted above the efficient level, and in areas where price is above cost consumption and investment is distorted below the efficient level. In general, this can result in the economically inefficient operation of, use of and investment in the infrastructure by which the declared sewage transportation services are provided. The inclusion of a contribution to postage stamp pricing in access prices can also distort the “build or buy” decision faced by access seekers, potentially resulting in inefficient bypass in areas where access prices are greater than the cost of duplicating some part of the facilities used to provide the declared services.

¹⁵⁴ *ibid.*, p. ii.

¹⁵⁵ *ibid.*

¹⁵⁶ Services Sydney, *Submission in response to Sydney Water’s Initial Submission*, 19 February 2007, p. 21.

¹⁵⁷ *Application by Services Sydney Pty Limited* [2005] ACompT 7, para. 203.

The price elasticity of demand determines the magnitude of any distortion to efficient use of and investment in the sewerage network associated with access prices that include a contribution to maintaining postage stamp pricing.

Sydney Water submitted that there do not appear to be compelling reasons to depart from postage stamp pricing on economic efficiency grounds because “consumer behaviour is not likely to be significantly changed, or distorted by the departure from cost based pricing.”¹⁵⁸ Sydney Water also submitted that “within a defined area, it is often mandated that houses and businesses are connected to the wastewater system”¹⁵⁹ and “even if that were not the case, the elasticity of demand for wastewater services is likely to be low since the cost of alternative treatment and disposal arrangements in urban settings tend to be significantly more expensive.”¹⁶⁰

Sydney Water noted that postage stamp pricing could potentially create distortions for new developments (the cost of serving new developments is higher than the cost of servicing established areas) by influencing “...the choice of treatment options for new developments, and at the margin, the rate of development itself.”¹⁶¹ However, Sydney Water submitted that up-front developer charges (lump sum payments to Sydney Water where the costs of serving a particular development area are likely to exceed the average cost of service) set by IPART would appear to minimise this potential distortion.

Sydney Water also discussed the difference between the price elasticity of demand for residential and non-residential customers. While Sydney Water noted that it did not have any specific evidence of the price elasticity of demand for non-residential customers, it said:

[F]or most categories of non-res[idential customers] it is highly likely to be inelastic for similar kinds of reasons as it is for residential. [These are that sewerage charges are] a small portion of costs, [the] nature of an essential service, [and] mandated connections. There is presumably ... somewhat greater elasticity for those non-residential customers that are high water users and therefore high ... wastewater dischargers. But even for those customers ... our impression is that typically ... those water/wastewater cost[s] ... are still a very small portion of the [customer's] total costs [so] you would expect demand to be still relatively inelastic.¹⁶²

It is important to make the distinction between the price elasticity of demand for connection and, once connected, the price elasticity of demand for sewage discharge. The legal requirement to connect to the sewerage network results in a price elasticity of demand for connection of zero (perfectly inelastic) in the short-term. In the medium to long-term, a customer's decision to locate in a particular area would take account of relative prices in different areas, but will still be close to zero.

However, once connected, prices for sewerage services will have some influence on residential and non-residential customers' decisions about how much sewage to discharge. The price elasticity of sewage discharge would likely be inelastic for

¹⁵⁸ Sydney Water, *Initial Submission*, 23 January 2007, p. 14.

¹⁵⁹ *ibid.*

¹⁶⁰ *ibid.*

¹⁶¹ *ibid.*

¹⁶² ACCC, Transcript of proceedings, *ACCC hearing with Services Sydney and Sydney Water*, 26 February 2007, p. 54.

residential and most non-residential customers because sewerage services are largely essential services. Currently, residential customers and non-residential customers that discharge less than the 500 kilolitre per annum threshold do not face volumetric charges for sewage discharge.

Non-residential customers that discharge high volumes of sewage would be likely to have relatively elastic demand compared to other customers because:

- usage is more discretionary and related to the customer's commercial activities; and
- there would appear to be greater scope for large non-residential customers to consider production processes that produce less waste and/or make better use of sewage recycling compared with residential and small non-residential customers.

Sydney Water did not provide the Commission with any empirical evidence or studies on the elasticity of demand for sewerage services. Empirical estimation of demand elasticities appears limited to the price elasticity of demand for water use rather than sewage discharge. The price elasticity of demand for water use and price elasticity of demand for sewage discharge are linked because a large proportion of water used is also discharged, and the charges determined by IPART for sewage discharge for non-residential customers are linked to water use. Given the clear linkages between water use and sewage discharge, it appears reasonable to use empirical estimates of elasticity of demand for water to inform the Commission's consideration of the elasticity of demand for sewerage services.

A report for the Department of Natural Resources and Environment reviewed 41 empirical studies of price elasticity of demand for water for regions that share some characteristics with Melbourne.¹⁶³ While the report noted that considerable caution should be taken to the interpretation of the figures, it was able to make "a number of tentative inferences:

- the price elasticity of demand for water is invariably smaller [in magnitude] than -1.0 and is generally closer to 0;
- the estimated long-run elasticity is usually greater than the associated short-run elasticity, reflecting the time that it takes customers to make investments that alter consumption and the duration of those investments;
- domestic consumers generally have lower price elasticities of demand for water (around 0 to -0.5) than non-domestic customers (around -0.25 to -0.75)".¹⁶⁴

The report also noted that the elasticity of demand would "depend heavily on the particular characteristics of the water industry being considered."¹⁶⁵

IPART considered the elasticity of demand for water in an issues paper for its review of metropolitan water agency prices in the context of considering the issue of whether

¹⁶³ National Economic Research Associates, *A Review of Melbourne's Water Tariffs – A Report for the Department of Natural Resources and Environment*, October 2001.

¹⁶⁴ *ibid.*, p. 70-71.

¹⁶⁵ *ibid.*, p. 71.

price increases for water would reduce water demand.¹⁶⁶ In reviewing Australian and international data on the responsiveness of water demand to changes in price, IPART found “that in general water demand is not very responsive to price changes. That is large increases in price will only result in a relatively small reduction in demand”¹⁶⁷ and that the price elasticity “was found to be in the order of -0.1 to -0.3.”¹⁶⁸

Thus, while the inclusion of a contribution to postage stamp pricing in access prices will result in prices above efficient costs, any distortion to the efficient use of and investment in the sewerage reticulation networks will be small because of the nature of the price elasticity of demand.

Should a contribution to maintaining postage stamp pricing be implicit or explicit?

In response to the *Draft Determination*, Services Sydney noted that a recovery of the cost of maintaining postage stamp pricing “can be dealt with subsequently by other means”¹⁶⁹ and identified that

[T]he NSW Government can direct Sydney Water to undertake certain social obligations, such as providing uniform retail prices. ... [Sydney Water] can then seek funding from the NSW Government ... [or] Government could establish a tariff equalisation fund or similar ‘levy’ arrangement, which would apply equally to Sydney Water, Services Sydney and any other parties obtaining access.”¹⁷⁰

Services Sydney further submitted that

Any decision to incorporate postage stamp pricing into the access price is likely to pre-empt NSW Government decision making in this area. ... If the Commission was to determine that a contribution to uniform retail pricing for Sydney Water should be included in the access prices ... then this should be done in a manner which is fully transparent, so that it could be unwound or adjusted if the NSW Government policies, or Sydney Water’s retail pricing was to change.”¹⁷¹

The above actually highlights one of the main benefits of a retail-minus methodology—any change in NSW government policy or Sydney Water’s retail pricing in respect of postage stamp pricing will automatically unwind any contribution to maintaining postage stamp pricing that is implicitly built into access prices. The Commission’s determination does not pre-empt or prevent the NSW government from undertaking the alternative measures identified above.

By linking access prices to retail prices, a retail-minus methodology allows postage stamp pricing to be discontinued or funded via another arrangement without affecting the arena of competition between Services Sydney and Sydney Water:

¹⁶⁶ IPART, *Review of Metropolitan Water Agency Prices*, Issues Paper, June 2002.

¹⁶⁷ *ibid.*, p. 25.

¹⁶⁸ *ibid.*

¹⁶⁹ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 16.

¹⁷⁰ *ibid.*, p. 17.

¹⁷¹ *ibid.*

- If the NSW government decided to provide Sydney Water with a CSO subsidy, IPART would be able to reduce Sydney Water's retail prices in accordance with the subsidy. Access prices would also decrease.
- If a tariff equalisation fund was established, access prices would decrease because Sydney Water's avoidable costs would rise but Services Sydney would then be required to pay into the fund.

There is therefore no net effect in terms of Services Sydney's ability to compete with Sydney Water on merit.

However, endeavouring to include in access prices a separate component to take account of the current (and possibly alternative) postage stamp pricing arrangements would add significant complexity to the access pricing methodology. For example, the retail-minus methodology does not require that the level of contribution to postage stamp pricing made by any particular type of customer be identified as there is no requirement to specifically determine the contributions towards postage stamp pricing that are included within each access price. To undertake the task in reverse would require allocating a specific contribution to each type of customer, which could only be achieved after deciding how the common costs associated with each of the North Head, Bondi and Malabar sewerage networks should be allocated across the many different types of customers supplied by those networks.

6. Consideration of the access pricing methodology

This Chapter discusses the Commission’s consideration of the general access pricing methodology taking into account the matters in section 44X of the Act as discussed in Chapter 2. Where relevant, it draws on the analyses in Chapter 5.

Sections 44X(1)(aa) To provide a framework and guiding principles to encourage a consistent approach to access regulation in each industry. [Section 44AA (b)]

This determination is the first application of access pricing to the water and sewerage industry in Australia.

Sydney Water submitted that its proposed access pricing methodology is:

[C]onsistent with the approaches to set access charges in other industries. Specifically, the inclusion of the costs of past but efficient investments in existing capital assets in the cost pool used to calculate access charges is a fundamentally accepted principle in Australian economic regulation. Sydney Water’s fully distributed cost approach, with a high degree of cost causality, is consistent with methodologies used in other industries in Australia, as is the inclusion of a contribution to postage stamp pricing obligations.¹⁷²

Services Sydney submitted that “its proposed access terms provide a sound framework and practical principles that can be applied in a consistent way across the broader water sector.”¹⁷³ It stated that its proposed methodology:

[D]raws on pricing principles that have already been tried and tested in both the water and other sectors. The principles can be applied in a manner that is replicable and commensurable with access terms for other facilities in the water sector.¹⁷⁴

In relation to a retail-minus access pricing methodology, Services Sydney submitted that:

[A]ccess prices are invariably set on a ‘bottom-up’ basis that reflects costs associated with the regulated assets themselves. The determinations of access prices have no dependency whatsoever on prevailing retail prices or retail price determinations.

The direction is clear in every case—access prices are inputs to retail regulation, but retail prices are not inputs into access regulation.¹⁷⁵

Services Sydney is correct in submitting that ‘bottom-up’ access pricing approaches are used widely, including in regard to electricity network prices.¹⁷⁶

However, in the case of the electricity industry, the functional components of electricity supply—generation, transmission, distribution and retail—were structurally separated (and in the case of the contestable generation and retail elements also

¹⁷² Sydney Water, *Initial Submission*, 23 January 2007, p. 34.

¹⁷³ Services Sydney, *Initial Submission*, 23 January 2007, p. 12

¹⁷⁴ *ibid.*

¹⁷⁵ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 14

¹⁷⁶ *ibid.*, pp. 30-31.

horizontally disaggregated) as part of a broader policy by state and federal governments to establish the National Electricity Market. This policy also included clearly established timeframes for the phased removal of retail price controls. These structural features are not prevalent in the water and sewerage industry—Sydney Water is a vertically integrated service provider subject to full retail price regulation.

The scope for the specific regulatory arrangements to vary in accordance with the different structural features across industries provides for such arrangements to be consistent with the broader principles of access regulation that are applicable to all industries. In certain circumstances, a retail-minus methodology is consistent with these broader principles.

By way of example, it is noted that the ACCC previously determined that a ‘top-down’ approach was the most appropriate method for determining the price of access to local carriage services (LCS)¹⁷⁷ and more recently determined that an interim retail-minus-retail-costs pricing principle should be adopted for the LCS.¹⁷⁸

Services Sydney submitted that the ACCC’s “LCS decision is irrelevant and not a valid precedent”¹⁷⁹ because “under section 152AJ of the Act, retail pricing decisions made under Part XIC in respect of telecommunications services are not relevant to any wholesale pricing decisions made under Part IIIA.”¹⁸⁰

It is noted that the Commission is not referring to the LCS decisions for the purpose of adopting them as a precedent for the purpose of Part IIIA of the Act. Rather, the Commission is noting the LCS decisions as examples to show that access prices are not invariably set on a bottom-up basis. Further, it is noted that section 152AJ of the Act states that “in determining the meaning of a provision of Part IIIA, the provisions of this Part [XIC] (other than section 152CK) are to be ignored.”¹⁸¹ Thus section 152AJ of the Act does not provide that regulatory decisions made under Part XIC are to be ignored or are not necessarily relevant as examples of infrastructure regulation in Australia.

Section 44X(1)(b) The public interest, including the public interest in having competition in markets (whether or not in Australia)

The public interest in having competition lies in the enhancement of welfare (including economic efficiency) achieved through competition, rather than competition as its own end. Thus, a key consideration in the determination of the general access pricing methodology is that it should promote efficient entry such that the access seeker and vertically integrated service provider will compete on merit (such as relative efficiency, product differentiation and customer service).

¹⁷⁷ ACCC, *Local Carriage Service: Pricing Principles and Indicative Prices*, April 2002.

¹⁷⁸ ACCC, *Final Determination and Explanatory Statement for the Pricing principles and indicative Prices: Local carriage service, wholesale line rental and PSTN originating and terminating access services*, 29 November 2006.

¹⁷⁹ Services Sydney, *Submission in response to Sydney Water’s Initial Submission*, 19 February 2007, p. 20.

¹⁸⁰ *ibid.*, p. 19.

¹⁸¹ Section 152AJ of the Act.

In this particular case where Sydney Water's retail prices are determined by an independent regulator, a retail-minus methodology that uses *avoidable* (rather than *avoided*) costs best achieves this objective.

First, avoidable costs are those costs that the access provider would avoid if it ceased providing the contestable service elements. As such, it is a long-run concept. In contrast, avoided costs are those costs that the access provider avoids in the short-run when it ceases supplying customers who are now serviced by the access seeker.

Thus, whilst in the short-run Sydney Water may not actually avoid the calculated avoidable costs, in the long-run it can adjust its operations to account for any customers lost to Services Sydney and thus its avoided costs will approach its avoidable costs.

Given that retail prices are set to recover the average costs of providing sewerage services in the long run, a similar long-run view should be taken in respect to costs avoided by Sydney Water. If this were not the case, Sydney Water would be compensated through the access price for costs that it will avoid in the long-run.

Second, the inclusion of a contribution towards postage stamp pricing in access prices would not have any impact on competition in the sewage treatment market or in the supply of recycled water.

In contrast, excluding a contribution to postage stamp pricing in access prices would not promote efficient entry and effective competition between Sydney Water and Services Sydney because Services Sydney would be able to cherry-pick Sydney Water's customers, at least until such time that IPART adjusted retail prices or the NSW government introduced some other mechanism for funding the maintenance of postage stamp pricing.¹⁸² However, as this may result in pricing disparities between customers in the east and west of Sydney, this would be undesirable to the extent to which there is public interest in having equity¹⁸³ in prices across different geographic regions served by Sydney Water.

Third, because Sydney Water's retail prices for sewerage services are set by IPART using a building block methodology with an established RAB, valuing the transportation assets as a residual by focussing on the efficient forward-looking cost of the contestable elements of the provision of sewerage services maximises the scope for efficient entry. In contrast, directly valuing the transportation assets when Sydney Water's retail prices are regulated could deter efficient entry, or lead to inefficient entry where it creates scope for new entrants to cherry-pick customers.

¹⁸² The existence of such mechanisms does not distract from the fact that including a contribution to maintaining postage stamp pricing in access prices will not have any impact on Services Sydney's ability to compete on merit with Sydney Water.

¹⁸³ Services Sydney submitted that "the equity, or otherwise, of such price disparities is not a matter for...the Commission, but is properly a matter for the NSW government" (*Submission in response to the Draft Determination*, 21 May 2007, p. 15). Whilst it may be considered that equity should properly be a matter for the NSW government, it does not distract from the requirement of the Commission to consider the public interest when arbitrating an access dispute under Part IIIA of the Act. As discussed in more detail in Chapter 3, equity may be regarded as a public benefit and/or being in the public interest. Thus, to the extent that equity is an issue concerning the public interest, the Commission must take it into consideration.

Similar issues arise in respect of determining the structure of access prices. For example, any inconsistency between the structure of the regulated retail prices and access prices may prevent both Services Sydney and Sydney Water from competing on merit for particular types of customers.

Section 44X(1)(a) The legitimate business interests of the provider, and the provider's investment in the facility

An access pricing methodology that prevented Sydney Water from being able to compete on the basis of merit would be contrary to its legitimate business interests.

IPART determines Sydney Water's retail tariffs to recover the cost of providing sewerage services, including the prudent and efficient costs associated with Sydney Water's investment in the facilities that provide the declared services.¹⁸⁴ Cherry-picking would undermine the ability of Sydney Water to recover its efficiently incurred costs (including a return on its investment) through the prices determined by IPART, and hence may harm Sydney Water's legitimate business interests.

A retail-minus access pricing methodology will maintain Sydney Water's legitimate business interests, including in regard to its investment in the relevant facilities.

Section 44X(1)(c) The interests of all persons who have rights to use the service

An access pricing methodology that resulted in access prices that deterred efficient entry, or that provided Sydney Water with an advantage in respect of some customers, would be contrary to the interests of all persons who have rights to use the service.

As discussed in Chapter 5, this situation may arise if the relevant transportation assets are directly valued (as initially proposed by Services Sydney), or if the structure of access prices is inconsistent with the structure of Sydney Water's retail prices as determined by IPART.

A retail-minus methodology has the advantage of providing Services Sydney (and other access seekers) with a high degree of certainty regarding the arena of competition and thus scope for profitable entry. In particular, Services Sydney need not be exposed to risks associated with IPART varying over time its approach to determining retail prices, such as revaluing Sydney Water's assets or changing the structure or level of Sydney Water's retail prices.

It will therefore allow Services Sydney (and other possible access seekers) to enter and compete on merit, and thus maintains the interests of all persons who have rights to use the service.

Section 44X(1)(aa) To promote the economically efficient operation of, use of and investment in the infrastructure by which services are

¹⁸⁴ Sections 15(1)(a), (c) and (e) of the IPART Act provides that IPART must, when making a pricing determination, have regard to the cost of providing the services concerned, appropriate rate of return on public sector assets, and the need for greater efficiency in the supply of services respectively.

provided, thereby promoting effective competition in upstream and downstream markets [Section 44AA(a)]

Section 44X(1)(g) The economically efficient operation of the facility

The Commission's consideration of the proposed access pricing methodology in respect of promoting effective competition in upstream and downstream markets has been covered in taking into account section 44X(1)(b) above.

Access prices that include a contribution to maintaining postage stamp pricing will have minimal impact on the efficient use of and investment in the infrastructure by which services are provided because final demand for sewerage services is inelastic.

However, as discussed in regard to section 44X(1)(a), an access pricing methodology that provided scope for a new entrant to cherry-pick Sydney Water's customers may adversely affect Sydney Water's ability to recover the costs associated with its investment in its sewerage network, and may therefore not promote economically efficient investment in these assets.

A retail-minus access pricing methodology will automatically incorporate the outcome of IPART's obligations to ensure that Sydney Water's capital expenditure is prudent and efficient.

Section 44X(1)(d) The direct costs of providing access to the service

Neither of the methodologies proposed by the parties would enable Sydney Water to recover the consequential costs of increased competition in upstream or downstream markets. The regulation of retail prices by IPART is to ensure that Sydney Water does not earn monopoly profits and that it recovers only efficiently incurred costs.¹⁸⁵

The Commission agrees with Services Sydney that "access prices should be calculated based on the costs relating to the facilities which provide the declared services."¹⁸⁶ The retail-minus methodology as determined by the Commission provides for this outcome because it removes the costs of avoidable components of the bundled sewerage service from the total cost pool:

- In determining Sydney Water's retail prices, IPART is required to ensure that Sydney Water recovers the prudent and efficient costs of providing all components of sewerage services (transport, treatment, disposal and retailing), including a return on its investments in providing these services.
- Access prices will be derived by subtracting from retail prices the avoidable costs associated with Sydney Water undertaking the treatment, disposal and retail activities including the return on its investment in these activities.

¹⁸⁵ Section 15(1)(b) of the IPART Act provides that IPART, when making a pricing determination, must have regard to the "protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standard of services."

¹⁸⁶ Services Sydney *Submission in response to the Draft Determination*, 21 May 2007., p. 10.

Access prices are therefore based on the costs relating to the sewage reticulation network, which are the facilities that provide the declared sewage transportation services.

Under a retail-minus approach, the residual value of transportation assets will be less than the replacement costs of those assets. Access prices will therefore not provide incentives for inefficient bypass.

As discussed in section 5.2, under a retail-minus approach there is potential for the access prices for some customers to be negative, which would appear to be inconsistent with the lower bound implied by the direct cost criterion. However, on average access prices would not be negative.

This situation arises because of Sydney Water's current retail price structure, and Sydney Water has proposed to raise this issue with IPART as part of the next price determination process.¹⁸⁷ Negative access prices would not arise if all of Sydney Water's customers faced a retail price that had a volumetric component at least as great as the determined per kilolitre avoidable cost.

However, even if this issue is not subsequently addressed in future retail price determinations, negative access prices for some customers will not affect Services Sydney's incentives to bypass the network, the ability of Sydney Water to recover its efficient costs, or the arena of competition between Sydney Water and Services Sydney. Rather, it simply reflects that current retail prices result in some customers contributing relatively less to Sydney Water's total cost of providing sewerage services.

Section 44X(1)(e) The value to the provider of extensions whose cost is borne by someone else

As submitted by both of the parties, the value to the provider of extensions to the facility is not relevant to this determination on access pricing methodology.

Section 44X(1)(ea) The value to the provider of interconnections to the facility whose cost is borne by someone else

Services Sydney submitted that its "proposals include the provision and funding of interconnections to the facility and it will require certain access rights in exchange for funding these facilities. However, the Commission has directed not to arbitrate in regard to the interconnection services at this time."¹⁸⁸

Sydney Water submitted that "this factor is not relevant to this determination. Interconnection has been excluded from the scope of this determination."¹⁸⁹

The value to the provider of interconnections to the facility whose cost is borne by someone else was not relevant to this access dispute.

¹⁸⁷ Sydney Water, *Non-residential access charges*, letter to ACCC, 23 February 2007, p. 3

¹⁸⁸ Services Sydney, *Initial Submission*, 23 January 2007, p. 14.

¹⁸⁹ Sydney Water, *Initial Submission*, 23 January 2007, p. 42.

Section 44X(1)(f) The operational and technical requirements necessary for the safe and reliable operation of the facility

Services Sydney submitted that its “proposals will be carefully developed to ensure that they do not affect or detract from the operational and technical requirements necessary for the safe and reliable operation of the facility”¹⁹⁰ and that there would be “no diminution in the quality or quantity of service, or increase in the cost of service, as a consequence of the implementation of Services Sydney’s proposed access terms.”¹⁹¹

Sydney Water submitted that its proposed access pricing methodology “would result in prices that are consistent with the safe and reliable operation of the three reticulation networks”¹⁹² that provide the declared sewage transportation services and would provide “the appropriate incentives for Sydney Water to fund the operational and technical requirements necessary for the safe and reliable operation of these networks.”¹⁹³

Neither of the proposed access pricing methodologies would therefore appear to compromise the safe and reliable operation of the facilities that provide the declared sewage transportation services.

Section 44X(1)(h) The pricing principles for Part IIIA

Sydney Water submitted that the pricing principles have been incorporated in the WIC Act, and that its proposed access pricing methodology is consistent with these pricing principles.¹⁹⁴

Services Sydney submitted that “setting access charges to a declared service using a method that is directly dependant on the incumbent’s assessed costs of providing non-declared services with which the entrant wishes to compete would be clearly contrary to the Pricing Principles and the objects of Part IIIA of the Act.”¹⁹⁵

The Commission does not agree with Services Sydney’s view for the reasons set out in this Chapter.

Section 44ZZCA (a) Regulated access prices should:

- (i) be set so as to generate expected revenue for a regulated service or services that is at least sufficient to meet the efficient costs of providing access to the regulated service or services; and**
- (ii) include a return on investment commensurate with the regulatory and commercial risks involved.**

Services Sydney submitted that “a building block approach, to calculating access prices over the term of the access period, is more consistent with the Act” than a

¹⁹⁰ Services Sydney, *Initial Submission*, 23 January 2007, p. 15.

¹⁹¹ *ibid.*, p. 14.

¹⁹² Sydney Water, *Initial Submission*, 23 January 2007, p. 39.

¹⁹³ *ibid.*

¹⁹⁴ *ibid.*, p. 41.

¹⁹⁵ Services Sydney, *Submission in response to Sydney Water’s Initial Submission*, 19 February 2007, p. 16.

retail-minus approach.¹⁹⁶ In particular, Services Sydney inferred that the pricing principles in section 44ZZCA require the use of a ‘bottom-up’ approach by stipulating that access prices must include the efficient costs of providing the service, plus a return on investment.

However, section 44ZZCA(a) simply requires that the expected revenue that will be generated by access prices is at least sufficient to meet the efficient costs of providing access to the regulated services, and that the access prices should be set so that the expected revenue incorporates a return on investment commensurate with the regulatory and commercial risks involved. It does not stipulate that this must be achieved by the use of a ‘bottom-up’ access pricing methodology.

Sydney Water submitted that new capital expenditure would be rolled into the RAB determined by IPART for setting retail prices, as well as the asset base for the purpose of calculating avoidable costs under a retail-minus methodology. Given that prudently incurred capital expenditure would be incorporated into Sydney Water’s retail prices, access prices determined under a retail-minus methodology would also compensate Sydney Water for prudently incurred capital expenditure.

Services Sydney¹⁹⁷ and Sydney Water¹⁹⁸ both submitted that their access pricing methodologies included a return that would be commensurate with the regulatory and commercial risks involved, and that the rate of return would be close to the WACC determined by IPART.

The retail-minus methodology as specified in the determination, can provide for a return commensurate with Sydney Water’s regulatory and commercial risks, although such an outcome will depend on any future negotiations between the parties.

Section 44ZZCA (b) Access price structures should:

- (i) allow multi-part pricing and price discrimination when it aids efficiency; and**
- (ii) not allow a vertically integrated access provider to set terms and conditions that discriminate in favour of its downstream operations, except to the extent that the cost of providing access to other operators is higher.**

As discussed in Section 5.2, the structure of access pricing under Sydney Water’s proposed methodology would be a form of two-part tariff (ie multi-part pricing) because it is derived from the structure of retail prices and the basis by which avoidable costs are allocated to end-use customers. Among a number of matters, IPART is obliged to consider economic efficiency under the IPART Act in determining Sydney Water’s retail prices, and as such IPART would have regard to the extent to which the retail price structure promotes allocative efficiency.¹⁹⁹

Under the determined retail-minus methodology, Sydney Waters’ downstream operations would implicitly face the same access prices as Services Sydney.

¹⁹⁶ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 4.

¹⁹⁷ Services Sydney, *Initial Submission*, 23 January 2007, p. 14.

¹⁹⁸ Sydney Water, *Initial Submission*, 23 January 2007, p. 41.

¹⁹⁹ IPART, *Response to ACCC*, 23 March 2007, p. 4.

Section 44ZZCA (c) Access pricing regimes should provide incentives to reduce costs or otherwise improve productivity.

IPART's regulation of Sydney Water's retail prices, in particular a CPI-X approach informed by a building block methodology, provides Sydney Water with incentives to minimise costs and improve productivity over time. A retail-minus methodology for access pricing will therefore incorporate, without distortion, these incentives for Sydney Water to reduce costs or otherwise improve productivity.

As mentioned in relation to section 44X(1)(b), a retail-minus methodology that uses *avoidable* costs rather than *avoided* costs ensures that the arena of competition between the access provider and access seekers in the provision of related goods and services is based on relative merit. As a result the efficient level of competition is encouraged, and through this competition, firms are driven to innovate, reduce costs, and otherwise improve productivity.

Section 44X(2) Other matters that the Commission may think are relevant

Services Sydney submitted that Sydney Water's proposed access pricing methodology would create difficulties in practical implementation greater than those that would be experienced with a building block methodology. Services Sydney contended that the application of Sydney Water's proposed access pricing methodology requires resolution of the costs of the whole of Sydney Water's operations rather than only the costs of providing the declared transportation services.²⁰⁰

However, the proposed access pricing methodologies of both parties would require the resolution of most of the same issues, including initial asset valuation, the appropriate level of the WACC, and allocation of costs across types of customers. Thus, both methodologies would involve a similar level of complexity to administer. Services Sydney's proposed hybrid methodology would be particularly complex.

²⁰⁰ Services Sydney, *Submission in response to Sydney Water's Initial Submission*, 19 February 2007, pp. 14-15.

7. Avoidable costs

Under a retail-minus access pricing methodology, access prices will be determined for the sewage transportation services provided by each of the Malabar, North Head and Bondi sewerage systems.

This Chapter discusses the Commission's consideration of the appropriate methodology for calculating Sydney Water's avoidable costs associated with the contestable elements of sewerage services—retailing and sewage treatment and disposal—of each of those systems. In particular this involves consideration of:

- The delineation of costs relevant to providing the declared sewage transportation services and the contestable components of sewerage services.
- The calculation of avoidable capital and operating costs and in particular the initial valuation of Sydney Water's treatment and disposal assets used to provide contestable services.
- The allocation of the avoidable costs between types of customers.
- The treatment of costs associated with retailer of last resort obligations.
- The incorporation of costs associated with managing wet weather flows.

7.1 Assets relevant to calculating avoidable costs

The parties provided submissions regarding the function of the following assets and whether they should be considered to provide the declared transportation services:

- Glenfield, Fairfield and Liverpool STPs
- Liverpool to Ashfield pipeline, and
- Northside storage tunnel.

Sydney Water submitted that these assets are used in the provision of the declared sewage transportation services because they all serve to manage wet weather flows and/or reduce wet weather overflows. Sydney Water also submitted that the Liverpool, Glenfield and Fairfield STPs are “vital to managing corrosion in the downstream transport system.”²⁰¹

Services Sydney submitted that whilst these assets serve to manage wet weather flows, they are used in the provision of services other than the declared sewage transportation services.²⁰²

The parties provided these submissions in the context of their respective proposed pricing methodologies. In respect of a retail-minus methodology, allocating the costs associated with the aforementioned assets to the declared transportation services

²⁰¹ Sydney Water, *Letter in response to the ACCC*, 16 March 2007, p. 1.

²⁰² Services Sydney, *Letter in response to the ACCC*, 16 March 2007, p. 1.

would mean that those costs would not be included in the calculation of avoidable costs. Conversely, if the costs associated with these assets are included in avoidable costs, it would mean that they are considered to not be used to provide the declared transportation services and, consequently, access prices would be lower.

The costs associated with the above assets are likely to be significant and dispute over their allocation across different components of the sewerage system may become a sticking point in the practical application of the proposed access pricing methodology.

The parties agree that the aforementioned assets serve to manage wet weather flows. The issue in dispute is therefore whether the costs associated with these assets should be attributable to the provision of the declared transportation services incorporated within the calculation of avoidable costs.

The Commission does not have sufficient information to make a determination on this issue. For example, the role of each specific asset within Sydney Water's sewerage supply system(s) and continued need for that role may be affected by the entry of Services Sydney. The operation of the sewage transportation and treatment assets actually built by Services Sydney in due course, as well as the actual quantum and timing of sewage off-take is likely to be relevant.

However, the appropriate test under a retail-minus access pricing methodology is whether any costs associated with any of these assets would be avoidable for Sydney Water if it were to no longer provide sewage treatment and disposal services to customers serviced by the Malabar, Bondi and North Head networks. That is, would Sydney Water be able to avoid these costs in the long-run as a result of the contestable components of sewerage services being wholly provided by Services Sydney. If so, they would not be incorporated into access prices.

The fact that the assets listed above are understood to be located upstream of Services Sydney's proposed points of interconnection does not negate the applicability of this test.

7.2 Methodology for calculating avoidable costs

Both parties proposed a building block approach for calculating costs—Services Sydney for the transport component and Sydney Water for the treatment and disposal component.

The building block methodology is designed such that the expenditure of the service provider is appropriately amortised over time. In the context of determining avoidable costs, a building block approach will determine Sydney Water's average costs of providing the contestable services in the long-run.

Therefore, under a building block methodology, avoidable costs would include the operating expenditure and capital costs (return of and return on capital) associated with Sydney Water's provision of the contestable service elements.

7.3 Initial valuation of treatment and disposal assets

Under a building block methodology for calculating avoidable costs, a methodology for initially valuing treatment and disposal assets is required.

The appropriate method for valuing treatment and disposal assets requires consideration of different elements which together determine the valuation methodology adopted. These include:

- the use of historic or forward-looking estimates of asset values,
- the appropriate measure of replacement cost,
- the assumed level of technology embodied in the assets, and
- the assumed level of optimisation of the assets.

Forward looking or historic costs

In proposing a depreciated MEERA methodology for valuing the treatment assets, Sydney Water is proposing a forward-looking approach to asset valuation, as opposed to a backward-looking or historical cost approach.

Historical cost approaches are backward-looking estimates of costs which are typically based on the actual (accounting) costs associated with the investment in assets. Conversely, forward-looking approaches are based on current or future projections of the value of the assets, such as the replacement value. The choice as to the appropriate perspective with which to estimate the value of the assets depends on a range of factors, including in particular: the objectives being pursued in determining the access price; the degree of accuracy associated with the estimates; and the potential efficiency impacts under each approach.

In general, forward-looking estimates of asset values are typically favoured in regulatory settings. This is because they provide incentives which are more consistent with competitive markets insofar as firms in those markets are assumed to set prices based on prevailing or expected market conditions, rather than on the basis of the historical costs already incurred. As such, they promote more efficient outcomes, particularly in terms of entry. This would be consistent with promoting effective competition in markets and the interests of all persons who have rights to use the service.

Therefore, a forward-looking approach to asset valuation is appropriate for the current arbitration. A commonly employed approach to forward-looking asset valuation in other regulated settings is to estimate the value of assets with reference to the current replacement cost of these assets.

Replacement cost measure

A commonly employed approach used to estimate the value of assets is known as the depreciated optimised replacement cost (DORC). This approach estimates the current value of a replacement asset—determined with reference to the cost of replacing the existing facility with a modern equivalent asset—and then depreciates this value to reflect the remaining useful life of the existing asset. This implies that the value of

treatment and disposal assets is set equal to the depreciated value of buying or building equivalent assets.

Sydney Water proposed a *depreciated* MEERA approach to valuing treatment (and disposal) assets. This corresponds, in general terms, to a DORC valuation of the assets because a MEERA approach values an existing asset by reference to equivalent modern assets that replace the existing assets while providing the same level of service.

However, as discussed below, valuing assets using a DORC approach requires assumptions to be made regarding the level of technology and the degree of optimisation of those assets.

Replacement cost technology

When determining the value of ‘modern’ equivalent treatment assets, the assumed technology is relevant because different forms of sewage treatment technology (eg primary, secondary and tertiary treatment) could be employed, each of which involves different asset costs.

For the purpose of determining an initial value for the treatment and disposal assets, a forward-looking optimised replacement cost should be determined with reference to the treatment technology required to meet the environmental standards as reflected in licence conditions that would apply if Sydney Water’s treatment and disposal assets were to be replaced with modern equivalents.

Sydney Water’s current MEERA valuations for its ocean outfall STPs were carried out on the basis that the plants would be replaced ‘as built’.²⁰³ The appropriateness of this MEERA valuation in terms of the choice of technology requires consideration of the impact of this assumption in the context of licence conditions being applied to an entrant. In this regard, it is considered that the treatment technology choice of any entrant will be informed *inter alia* by licence conditions determined by the EPA.

In assessing applications for Environmental Protection Licences (‘licences’), the EPA must consider a range of matters, including the environmental values of water affected by the activity and the practical measures that could be taken to restore or maintain those environmental values.²⁰⁴

With advancements in sewage treatment technology, it is therefore possible that an access seeker may face relatively stricter licence requirements than those that are applied to Sydney Water.

The Commission initially proposed that the licence conditions of Services Sydney be used as a proxy for the licence conditions that would apply to Sydney Water if it were to replace its STPs with modern equivalents for the DORC valuation. The *Draft Determination* stated that the relevant assets of Sydney Water are to be initially valued under the assumption that “the level of technology in the assets is that level required to meet the various conditions of a sewage treatment system licence that will apply to Services Sydney at the time of its entry into the sewage treatment market.”

²⁰³ Sydney Water, *Letter in response to the ACCC*, 16 March 2007, p. 2.

²⁰⁴ *Protection of the Environment Operations Act 1997* (NSW), s.45.

Services Sydney stated that it supported this aspect of the *Draft Determination*.²⁰⁵ However, it noted that the EPA “licence conditions that will apply to Services Sydney will, by definition, not be known with certainty until the EPA issues that licence [and that]...this will take some time.”²⁰⁶

Sydney Water submitted that it did not support the view that present licence conditions may be inconsistent with current environmental standards or standards that would apply at entry. Sydney Water stated that “... there is no scientific evidence to suggest that current licence conditions are not consistent with the community’s current environmental standards”²⁰⁷ and that “uniform licence conditions based on those applying to a new entrant would not be consistent with the NSW regulatory regime for issuing and renewing licences.”²⁰⁸

Sydney Water also submitted that mitigating the impact of STP discharges on the receiving environment can be achieved in various ways. It stated that “dilution and dispersion in ocean waters can be used instead of higher levels of treatment”²⁰⁹ and that the “existing assets at Bondi, Malabar and North Head STPs represent the least-cost solution to maintaining the community’s environmental values at their respective locations. As such, their depreciated MEERA costs represent the ‘best-in-use’ facility valuation.”²¹⁰

Furthermore, Sydney Water submitted that licence conditions imposed on Services Sydney would not represent an appropriate proxy for licence conditions that would be imposed if Sydney Water’s treatment and disposal assets were replaced with modern equivalents. It noted that licence requirements are location specific, including the conditions relating to the quality of treated effluent that relate to the environment into which the effluent is discharged.²¹¹

In reference to the statutory criteria, Sydney Water submitted that valuing its sewage treatment and disposal assets based on Services Sydney’s licence conditions:

- Would not be consistent with Sydney Water’s legitimate business interests.
- Depending on the licence conditions of the new entrant, access revenue may be less than the ‘revenue floor’ required under section 44ZZCA of the Act.
- Could result in inefficient entry because the entrant would not face the consequences of choosing a site for effluent discharges that needed higher levels of treatment.
- Would not be consistent with the public interest because it may reduce or remove the contribution to postage stamp pricing from the sewerage systems that provide the declared services.²¹²

The Commission sought guidance from the EPA to assist in its consideration of this matter.

²⁰⁵ Service Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 21.

²⁰⁶ *ibid.*, p. 22.

²⁰⁷ Sydney Water *Submission in response to the Draft Determination*, 21 May 2007, p. ii

²⁰⁸ *ibid.*, p. 12.

²⁰⁹ *ibid.*, p. 9.

²¹⁰ *ibid.*, p. iii.

²¹¹ *ibid.*, p. 4.

²¹² *ibid.*,

The EPA confirmed that licence conditions are considered on a case-by-case basis taking into account the matters under section 45 of the *Protection of the Environment Operations Act 1997* (POEO Act), including the ‘the environmental values of water affected by the activity or work’.²¹³ It stated:

Section 45 of the POEO Act lists the matters that must be considered by the EPA as an appropriate regulatory authority in exercising its environment protection licensing functions. These matters include:

- the pollution caused or likely to be caused by the carrying out of the activity or work concerned and the likely impact of that pollution on the environment;
- the practical measures that could be taken to prevent, control, abate or mitigate that pollution, and to protect the environment from harm as a result of that pollution; and
- in relation to an activity or work that causes, is likely to cause or has caused water pollution, the environmental values of water affected by the activity or work, and the practical measures that could be taken to restore or maintain those environmental values.²¹⁴

Services Sydney proposes to build a high level sewage treatment and water reclamation plant in order to produce recycled water that can be used for environmental flows and a range of other uses.²¹⁵ It is likely that this recycled water will be discharged into an inland water body, such that this discharge will be required to meet licence conditions relevant to the specific discharge location. These discharge licence conditions will be based on the environmental values of this inland water body, which may result in the conditions applied to discharges from Services Sydney’s treatment system being more stringent than the conditions currently applied to discharges from Sydney Water’s coastal plants.

It is not known if Services Sydney will seek a licence that will allow it to discharge treated effluent into the ocean. However, even in this instance the licence conditions will be specific to the location of discharge.²¹⁶

It is therefore apparent that no clear link can be drawn between the licence conditions that will apply to Services Sydney and the licence conditions that would apply if Sydney Water’s treatment and disposal assets were to be replaced at their current location.

The ACCC asked the EPA whether the licence conditions that would apply to a new entrant’s STP would be the same as an existing licensed system if it were to discharge effluent into the same receiving environment, in this particular scenario through deep ocean out-falls.²¹⁷ The EPA stated that:

²¹³ EPA (NSW), *Letter in response to ACCC letter of 8 June 2007*, 15 June 2007, p. 2.

²¹⁴ *ibid.*, p. 1.

²¹⁵ Services Sydney, *Initial Submission*, 23 January 2007, p. 9.

²¹⁶ Different water quality objectives exist for different ocean regions. Therefore, different discharge pollutant limits and quality conditions can exist for different ocean regions into which effluent is discharged. For example, Sydney Water’s deep ocean out-fall plants could be considered to discharge into open coastal waters/offshore marine waters and thus discharge licence conditions may vary from those applied to shoreline discharge into enclosed/inshore marine waters.

²¹⁷ ACCC, *Letter to EPA*, 8 June 2007

In the case of an ocean outfall, the combination of treatment and outfall technology proposed to protect environmental values is considered along with other practical measures that might be taken to avoid or mitigate pollution. The licence conditions would depend on where the discharge point is, what the specific conditions of the receiving environment are and also what the effluent toxicity may be. This would require careful modelling of the ocean environment at the point of discharge.²¹⁸

As noted above, EPA licence conditions need to be considered “on a case-by-case basis taking into account the matters under section 45 of the POEO Act”.²¹⁹ Services Sydney also noted that the EPA “...is not able to make definitive statements regarding licence conditions that might apply to new entrants or even changes to an existing licence.”²²⁰

However, the EPA advised that the POEO Act “requires the appropriate regulatory authority to review each licence at intervals not exceeding five years after the issue of the licence.”²²¹ The frequency of licence reviews indicates that, in the long-run, the licence conditions imposed on Sydney Water are likely to reflect any changes in the environmental values placed on the relevant water body. Sydney Water’s future capital expenditure associated with meeting any revisions to its licence conditions will be incorporated into avoidable costs under a building block methodology for calculating those costs (see section 7.4).

The Commission therefore decided that the level of technology to be assumed for the purpose of the initial valuation of Sydney Water’s treatment and disposal assets should be based on Sydney Water’s actual licence conditions as at the time of entry by Services Sydney.

The EPA also advised that the majority of Sydney Water’s licences were last reviewed in 2005 and that “public notification of the licences that are to be reviewed must be given by publishing a notice in a newspaper circulating throughout [NSW].”²²² The EPA stated that there “were no concerns expressed regarding environmental outcomes arising from the discharge of effluent through the deep ocean out-falls.”²²³

The Commission notes that Services Sydney has highlighted the significant number of public submissions received by Sydney Water regarding the proposed Kurnell desalination facility, and that the majority of these submissions did not support that proposal.²²⁴ However, the Commission considered that the views expressed in those submissions are more relevant to gauging community and consumer values regarding ‘value for money by using the best technology to deliver’ additional water supplies

²¹⁸ EPA (NSW), *Letter in response to the ACCC*, 15 June 2007, p. 2.

²¹⁹ *ibid.*, p. 2.

²²⁰ Services Sydney, *EPA licence conditions and level of technology*, letter to the ACCC dated 18 June 2007.

²²¹ EPA (NSW), *Letter in response to the ACCC*, 15 June 2007, p. 2.

²²² Public notification must be made not less than 1 month, and not more than 6 months, before the review of the licence is undertaken. The notice must specify the activity or work to which the licence relates and the address of the premises [if any] at which it is carried out. EPA (NSW), *Letter in response to the ACCC*, 15 June 2007.

²²³ *ibid.*, p. 2.

²²⁴ Services Sydney, *Community Environmental Values: North Head, Bondi and Malabar STP assets*, Letter to the ACCC, 29 May 2007.

taking into consideration the specifics of that proposal as well as their general views on such issues as sewerage recycling, rather than necessarily reflecting community values regarding the treatment and disposal technology embodied in Sydney Water's coastal STPs.

Asset optimisation

Asset optimisation in this context refers to the extent to which the treatment and disposal assets should be redesigned in the optimisation process. This includes any redesign necessary to satisfy a specified level of service (i.e. performance optimisation) and the extent to which any elements of the facility should be reconfigured in the optimisation process (i.e. full or partial optimisation).

For example, in relation to performance optimisation this becomes a question of what is assumed regarding the performance of treatment assets—are they operating at optimal/efficient levels of utilisation given the prevailing demand conditions. Put simply, if there is substantial spare capacity then the question arises as to whether this should be accounted for in valuing the treatment and disposal assets.

In terms of the extent of optimisation, a full optimisation assumption could be adopted (i.e. greenfield approach) which would base the value of the assets on an optimally designed hypothetical treatment plant. That is, using a given set of demands/inflows, this approach would construct a hypothetical treatment asset to satisfy those demands in the most efficient way.

Alternatively, a partial optimisation approach could be adopted (i.e. incremental approach) which would take as fixed the capacity, some elements of the configuration of assets and the service level of the existing treatment and disposal assets, but would optimise the performance of those assets for the optimised demand conditions. Sydney Water's current MEERA valuations for its ocean outfall STPs were carried out on the basis of a partial optimisation in that the plants were assumed to be replaced "as built".²²⁵

In most regulatory settings, a partial optimisation approach is generally utilised as this approach more closely resembles the performance of actual assets, rather than hypothetical assets. In the case of sewage treatment and disposal assets, the current level of service could be considered to be defined with reference to the performance of the existing assets. Therefore, a partial optimisation approach appears appropriate.

The *Draft Determination* stated that for the purpose of the DORC valuation the optimised assets should provide the capacity required to meet estimated demand for the duration of the determination.

Services Sydney agreed with this approach stating that "unless proven otherwise, the capacity of the notional plant should be based on the current sewage treatment facilities, with allowance for growth."²²⁶

²²⁵ Sydney Water, *Letter in response to the ACCC*, 16 March 2007, p. 2.

²²⁶ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 26.

Sydney Water stated that the “capacities of Bondi, Malabar and North Head STPs are suitable given anticipated growth in property numbers and the level of wet weather flows.”²²⁷

The Commission therefore considers that the DORC estimate for the treatment and disposal assets should be on the basis of a partial optimisation as at the actual location of the existing assets that meets all relevant standards and Sydney Water’s licence conditions at the time of entry by Services Sydney and provides the capacity required to meet estimated demand for the duration of the determination.

7.4 Future capital expenditure – roll forward

In a building block model, costs associated with capital expenditure are recovered through a return on capital and a return of capital (in the form of depreciation). The value of the asset base is adjusted (i.e. rolled forward) over time to allow for capital expenditure and depreciation.

The building block model is designed such that the expenditure of the service provider is appropriately amortised over time in such a way as to ensure that the service provider, given efficient expenditure practices and decisions, is adequately compensated for the cost of providing the service in the long-run.

A building block approach to determining the avoidable treatment and disposal costs where capital expenditure is recoverable through a ‘lock-in’ and roll forward approach is considered to approach the service provider’s avoidable capital costs of providing the contestable sewage treatment and disposal service in the long-run.

Under this approach, an initial valuation of the treatment and disposal assets is rolled forward over time to incorporate future capital expenditure less any depreciation applicable to these assets.

Both parties have indicated that they agree with the lock in and roll forward approach to determining avoidable capital costs on an ongoing basis. However, parties held disparate views regarding how future capital expenditure should be calculated.

Sydney Water submitted that the initial valuation of treatment and disposal assets should be rolled forward based on prudent investment, depreciation and disposal of assets.²²⁸

Services Sydney submitted that the “methodology as currently drafted ... seems to assume IPART will, in future retail price determinations roll forward the DORC valuation of notional new entrant facilities” noting that “IPART will not have notional capital expenditure information or depreciation calculations to apply to notional facilities.”²²⁹ However, Services Sydney also submitted that it would be inappropriate “to roll forward these notional plant valuations [i.e. initial DORC valuations] using

²²⁷ Sydney Water, *Submission in response to Draft Determination*, p. 21

²²⁸ *ibid.*, p. 21.

²²⁹ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 19.

capital expenditure and depreciation applicable to Sydney Water's current facilities."²³⁰

However, the intention of the *Draft Determination* was that the initial value of Sydney Water's treatment and disposal assets (determined using a DORC valuation) should be adjusted over time to allow for future capital expenditure, depreciation and disposals associated with Sydney Water's existing, not notional, facilities.

Where any capital expenditure associated with Sydney Water's treatment and disposal assets is rolled into the asset base used for determining avoidable costs, this would increase the margin between the retail price and access price. Therefore, where Services Sydney is able to provide the contestable services more efficiently than Sydney Water it should be able to enter the market. Hence, provided the margin reflects Sydney Water's costs in providing the contestable service then efficient entry can occur. This would be consistent with promoting effective competition in upstream and downstream markets and the interests of all persons who have rights to use the service.

Furthermore, if Sydney Water's actual future capital expenditure associated with the treatment and disposal assets is included in the avoidable cost calculation, future capital expenditure associated with the facilities that provided the declared transportation services will be recovered by Sydney Water through the access price²³¹. This outcome will ensure Sydney Water has the ability to recover costs associated with its future investment in its transportation network and therefore this is consistent with the legitimate business interests of the provider and the promotion of efficient investment in the infrastructure by which services are provided.

The Commission therefore decided that the initial asset valuations associated with the sewage treatment and disposal assets should be 'rolled forward' to include actual capital expenditure associated with the relevant sewage treatment and disposal assets, less depreciation and any asset disposal.

7.5 Operating expenditure

Both parties assumed in their submissions on the *Draft Determination* that the calculation of avoidable costs would incorporate estimated operating expenses associated with the facilities (and therefore the implicit level of treatment technology) assumed in the initial DORC valuation of the treatment and disposal assets, rather than Sydney Water's actual operating expenses relating to the existing assets.

Services Sydney submitted that operating costs as well as capital costs are highly sensitive to the technology of the assets, stating that not accounting for the higher operating expenditure associated with a sewage treatment plant that provides a higher level of treatment, would result in "a material underestimation of avoidable costs."²³²

Sydney Water submitted that if 'notional' operating costs for the re-valued sewage treatment plants were used to determine avoidable costs, it would leave them with "no

²³⁰ *ibid.*, pp. 18-19.

²³¹ Assuming the capital expenditure associated with the facilities that provide the declared services is considered prudent and efficient by IPART such they are recoverable through the retail price.

²³² Service Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 19.

ability to offset the increase in operating costs against the operating costs of other sewage treatment plants or transport networks”²³³ given retail prices are based on the prudent operating expenses of the existing assets.

The purpose of determining the initial valuation for Sydney Water’s treatment and disposal assets using a DORC approach is to estimate the value of Sydney Water’s existing assets such that the avoidable cost would include the capital costs associated with these assets.

If on an ongoing basis the avoidable operating expenditure was estimated assuming it related to a STP that provided a higher level of treatment, it could result in a higher estimate than Sydney Water’s operating expenditure used to determine retail prices.²³⁴ In this case, Services Sydney’s customers would be providing a lower contribution to Sydney Water’s operating expenditure associated with the facilities that provided the declared service and/or a lower contribution to postage stamp pricing. This outcome would be inconsistent with the legitimate business interests of the provider, and may create scope for inefficient entry.

In the long-run, the licence conditions imposed on Sydney Water are likely to reflect any changes in the environmental values placed on the relevant water body into which it discharges. Sydney Water’s actual operating expenditure will adjust accordingly in response to any changes in technology requirements over time. Therefore, provided the avoidable costs reflect Sydney Water’s costs in providing the contestable service, a retail-minus approach will promote efficient entry. This implies that Sydney Water’s actual operating expenditure associated with providing the contestable services should form part of the avoidable cost calculation.

7.6 Allocating avoidable costs to customer types

Sydney Water submitted two possible approaches to allocating avoidable costs across customers:

- costs are allocated on the basis of the proportion of dry weather flows, or
- costs are allocated according to the revenue generated from each customer group.²³⁵

Sydney Water submitted that allocating avoidable costs on the basis of dry weather flows “is appealing in that dry weather flows are used as a basis for designing wastewater systems”²³⁶ and thus “[d]ry weather flows represent the best available cost driver of wastewater costs.”²³⁷ Sydney Water noted that “accurate data and hydrological modelling exists across Sydney Water’s wastewater systems to calculate dry weather flows.”²³⁸

²³³ Sydney Water, *Submission in response to the Draft Determination*, 21 May 2007, p. 16.

²³⁴ Operating expenditure based on providing the treatment and disposal services with the existing assets.

²³⁵ Sydney Water, *Initial Submission*, 23 January 2007, p. 25.

²³⁶ *ibid.*

²³⁷ *ibid.*, p. 26.

²³⁸ *ibid.*

Sydney Water stated that retail prices are not based solely on dry weather flows and that this can create anomalous results when translated into access charges. Sydney Water therefore proposed as an alternative that avoidable costs could be allocated according to the revenue generated by each customer group, such that for all customers the access price would be a constant proportion of the retail price. However, Sydney Water noted that this would not remove potential distortions.²³⁹

Allocating avoidable costs on the basis of revenue attributable to each customer group rather than average dry weather flows could prevent the parties from competing on the basis of merit. For example, it could allow an access seeker to cherry-pick particular customers, such as those who contribute relatively more to revenue through higher fixed charges.

Services Sydney supported the apportionment of costs between customer types based on their relative dry weather flows.²⁴⁰

In order to promote efficient entry, the avoidable costs allocated to each customer should relate directly to the drivers of the access provider's avoidable costs in providing the retailing and treatment and disposal service elements.

The Commission agrees with both Sydney Water and Services Sydney that retailing costs should be allocated on a per customer basis.

As discussed in detail in Section 5.2, Ofwat's econometric model identified *volume* and *BOD* as the critical drivers of operating expenditure and *total load* as the critical driver of capital expenditure for sewage treatment.²⁴¹ Similarly, WSAA noted that "the cost drivers for treatment vary according to the stage of the process. The majority of pre-treatment infrastructure costs are driven by the raw *volume* of wastewater treated, while the secondary treatment costs are driven predominantly by the level of *BOD*, *suspended solids* and *other relevant load factors*."²⁴²

As noted by IPART, "[w]here a firm discharges wastes that contain pollutants in concentrations in excess of domestic strength wastes or contain wastes that cannot be effectively treated, trade waste charges apply."²⁴³ Additional costs imposed on the treatment system as a result of any differences in customers' sewage quality (i.e. BOD and suspended solids) are therefore managed using trade waste charges. As a result, the standard retail prices relate to the treatment and disposal of domestic strength sewage.

The capital and operating costs of undertaking treatment and disposal in relation to domestic strength waste can therefore be considered to be primarily driven by volume rather than sewage quality, and therefore allocation of these costs on the basis of dry

²³⁹ *ibid.*,

²⁴⁰ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 34.

²⁴¹ WSAA, *Identifying Costs for Wastewater Services*, Occasional Paper No. 16, January 2007, p. 34.

²⁴² *ibid.*, p. 41.

²⁴³ IPART, *Response to letter from ACCC*, 23 March 2007, p. 2.

weather flows or volume discharged²⁴⁴ (so as to calculate a standard per kilolitre rate) would be appropriate.

7.7 Sydney Water as retailer-of-last-resort

Sydney Water submitted that it is likely that it would be declared retailer-of-last-resort under the WIC Act, and that “recovering the costs of providing [the retail-of-last-resort service] exclusively from Sydney Water’s customer base in the presence of another provider would place an inequitable burden on those customers and potentially offer a competitive advantage to Services Sydney.”²⁴⁵

The WIC Act has not yet come into force, and it is likely that regulations will be passed in association with the WIC Act that will govern arrangements for the funding of retailer-of-last-resort obligations. If regulations for the funding of retailer-of-last-resort obligations are not implemented, it is reasonable to expect that IPART would have regard to these costs in determining retail prices. Under this scenario, the issue would then be whether these costs should be considered to be avoidable costs for the purpose of calculating access prices under a retail-minus methodology.

7.8 Wet weather flows

Sydney Water’s sewerage network is subject to wet weather ingress. Wet weather ingress is a general term that incorporates water entering the sewerage network during wet weather from a number of sources. One estimate of the relative contributions of the various sources is:²⁴⁶

- 10 per cent from inflows relating to damaged manholes and/or broken sewers.
- 45 per cent from infiltration into Sydney Water’s sewerage network, and
- 45 per cent from infiltration into the private sewers of customers.

These relative contributions are understood to represent the average volumetric contribution of these ingress sources, as opposed to the proportion of the peak flow attributable to these sources.

Wet weather ingress during rainfall events results in additional wet weather flows through the sewerage system. These flows, together with customers’ pattern of discharge (diurnal pattern), are the key components of peak flows within the network. This is visually represented in Figure 7.1.

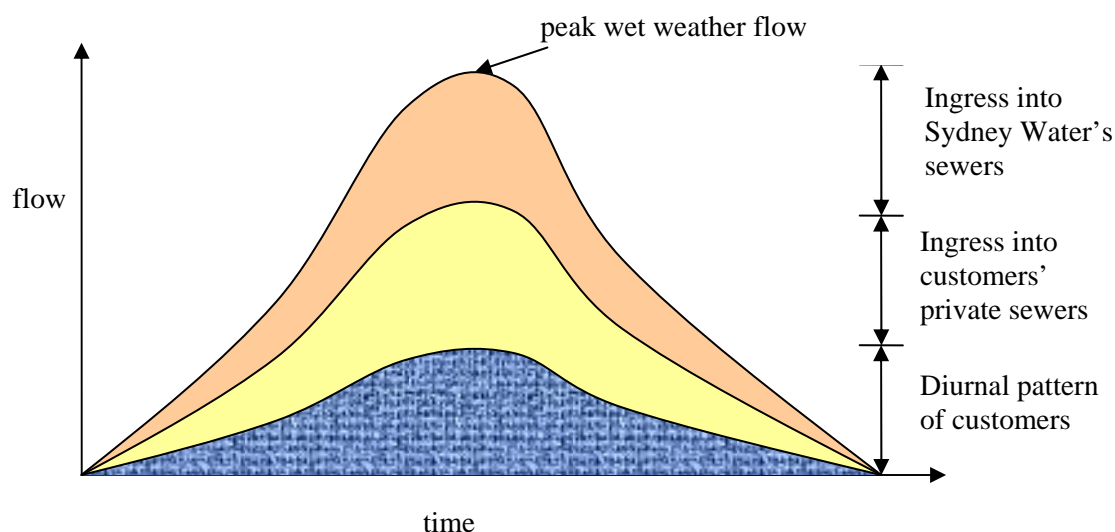
Managing peak flows adds to the total costs of providing sewerage services due to the need to condition the system to store, transport and treat the peak flow. Most sewerage systems are designed to accommodate peak wet weather flows up to a set multiple of designed dry weather flows.

²⁴⁴ Given that the actual sewage volume discharged by each customer is not directly metered, for non-residential customers this could be derived from the volume determined for the purpose of calculating non-residential customers’ actual retail charges. A deemed volume would be required for residential customers.

²⁴⁵ Sydney Water, Initial Submission, 23 January 2007, p. 38.

²⁴⁶ Sydney Water, *Environmental impact study of the Northside storage tunnel*, 1997, p. 61.

Figure 7.1 Schematic of flow components contributing to peak (wet weather) flows in a sewerage system



The Commission understands that there are three main ways of managing peak flows:

- Peak flows can be managed within the system either by storing wet weather flows within the transportation network (and conveying these volumes downstream to the treatment plant at non-peak times) or upsizing the infrastructure to increase the capacity of the system to transport and treat these peak flows.
- Sewage is allowed to overflow at specified points during wet weather events.
- Peaks are reduced through expenditure designed to reduce ingress (eg repairing and relining pipes).

It may be possible to condition a sewerage network to minimise wet weather ingress into the network, thereby resulting in a lower peak wet weather flow and reducing the need for increased capacity in treatment and transportation assets. However, irrespective of Services Sydney's entry, Sydney Water as a vertically integrated service provider should have the incentive to choose the most cost effective mix of the mechanisms for dealing with wet weather flows.

Sydney Water submitted that wet weather ingress “is an intrinsic feature of a largely non-pressurised liquid transportation network embedded within the ground. Rainwater ingress can be many times the dry weather flow volume. Wet weather flow determines the required transport and treatment capacity for a wastewater system.”²⁴⁷

Sydney Water stated that wet weather overflows are almost entirely a function of downstream capacity constraints within the transportation network rather than treatment assets.²⁴⁸ Thus, wet weather flows are managed almost entirely within the

²⁴⁷ Sydney Water, *Initial Submission*, 23 January 2007, p. 10.

²⁴⁸ Briefing and site examination of Malabar STP by Sydney Water and Services Sydney, 30 January 2007.

transportation network using storage facilities and, on occasion, directing sewage to specified overflow points.

Responsibilities of the parties regarding the various sewage flow components

Sydney Water submitted that “like gas and electricity, wastewater infrastructure must be designed to meet peak loads”²⁴⁹ and that “an entrant must accept responsibility for a share of wet weather flows in proportion to its share of the market.”²⁵⁰

Sydney Water noted that an access seeker’s responsibilities in managing wet weather flows could “entail the entrant building plant capacity to handle its share of total flows as and when flows occur.”²⁵¹ Alternatively, Sydney Water stated “...if an entrant didn’t want to handle wet weather flows then we can negotiate an arrangement [as] between us by which we would handle their wet weather flows. They might not want to scale a plant to a sufficient size to deal with the wet weather flows, recognising that they are ... four and a half to five times the dry weather flow”.²⁵²

Services Sydney acknowledged “that transportation and management of wet weather flows represent a real system-wide cost and that Services Sydney should contribute to the cost of managing wet weather flows in proportion to the inflows of its customer base.”²⁵³

Services Sydney stated that it intends to build facilities that “will allow it to process, or otherwise to store, all of its customers’ peak sewage, and wet weather flows in real time.”²⁵⁴ Services Sydney also submitted that its storage facilities will contribute significant storage within the transportation network and therefore contribute “to the management of flow variation in Sydney Water’s transport system”.²⁵⁵

The volume of sewage discharged by a customer of a sewerage service provider is clearly the responsibility of the service provider. Wet weather ingress into a customer’s private sewer contributes to the quantity of sewage entering Sydney Water’s sewers from the customer’s premises, and managing this sewage volume is also the responsibility of the customer’s sewerage service provider.

The remaining component of sewage flow arises from wet weather ingress into Sydney Water’s sewers. The costs associated with the management of these wet weather flows are associated with, and arise directly from, providing the declared sewage transportation services. The access price should therefore compensate Sydney Water for any costs associated with transporting and (where necessary) treating and disposing of this sewage flow component in proportion to the access seeker’s market share.

²⁴⁹ Sydney Water, *Initial Submission*, 23 January 2007, p. 10.

²⁵⁰ *ibid.*, p. 28.

²⁵¹ *ibid.*

²⁵² ACCC, Transcript of proceedings, *ACCC hearing with Services Sydney and Sydney Water*, 26 February 2007, p. 10.

²⁵³ Services Sydney, *Third Submission*, 19 March 2007, p. 4.

²⁵⁴ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 26.

²⁵⁵ *ibid.*

If an access seeker was to extract and treat only the wet weather flows that originate from the private sewers of its customers, Sydney Water would by default be required to treat and dispose of wet weather flows arising from ingress from all other sources. As noted by Sydney Water:

[I]f an access seeker provided sewerage services to 100 per cent of customers connected to a particular reticulation network, Sydney Water would not receive any revenue to cover the costs of treating and disposing of the effluent. In these circumstances, if the entrant were to be required to accept [only] dry weather flows, Sydney Water would be required to continue to operate its treatment plant to manage wet weather flows, but without a revenue base to support it.²⁵⁶

Such an outcome would be contrary to the legitimate business interests of Sydney Water, and would provide scope for inefficient entry.

The Commission therefore agreed with Services Sydney that it should divert a volume of sewage at the point of interconnection with each of the Malabar, Bondi and North Head systems in proportion to its share of customers serviced by that system.

Incorporating the cost of managing wet weather flows into the access pricing methodology

The costs associated with managing wet weather flows are associated with sewage transportation, treatment and disposal facilities.

Under a retail-minus access pricing methodology, the costs associated with the transportation facilities will be incorporated into the access price. This is because the calculation of avoidable costs does not incorporate the costs associated with the transportation facilities, and the retail prices adequately compensate Sydney Water for the cost of scaling its transportation network to deal with wet weather flows.

The basis upon which Services Sydney will extract sewage at the points of interconnection could have a bearing on the extent to which managing wet weather flows gives rise to costs associated with Sydney Water's treatment and disposal facilities.

As Services Sydney proposes to extract a proportion of the actual flow at points of interconnection in real time (with the proportion determined on the basis of its share of customers serviced by that system), Sydney Water will not incur any treatment and disposal costs associated with Services Sydney's customers.²⁵⁷

Thus, Sydney Water will not be required to continue to maintain treatment plants with the capacity to deal with peak flows associated with Services Sydney's customer base (including a share of wet weather ingress into Sydney Water's sewers), and the DORC valuation of treatment (and disposal) assets for each system should be calculated with reference to a plant capacity sufficient to manage the peak associated with all customers connected to the service. This would result in a higher asset valuation and lower access prices, which is consistent with the fact that Services Sydney would, in

²⁵⁶ Sydney Water, *Initial Submission*, 23 January 2007, p. 29.

²⁵⁷ The Commission acknowledges that it would not be possible for Services Sydney to extract sewage in exact accordance with its customers' diurnal patterns or wet weather ingress into the system.

effect, mitigate Sydney Water's costs associated with the peak caused by wet weather flows.

7.9 Conclusion

Consistent with the consideration of the appropriate access pricing methodology, the appropriate method of estimating Sydney Water's avoidable costs must be assessed in the context of the statutory criteria as discussed in Chapter 3.

The method of estimating Sydney Water's avoidable costs is important for determining the arena of competition between Sydney Water and Services Sydney.

The appropriate arena of competition will ensure that the retail-minus methodology results in access prices that create scope for efficient entry over time. As discussed in Chapter 6, a methodology that provides for competition based on relative merit ensures that the legitimate business interests of the access provider are not impaired.

Therefore, avoidable costs are to be based on Sydney Water's average costs of providing the contestable elements of sewerage services, calculated using a building block approach that includes the operating costs and capital costs associated with the provision of the contestable service elements in the long run.

This will provide scope for an efficient access seeker to be able to enter and compete on merit in the market for sewage treatment, and thus protects the interests of persons with rights to access the service as well as the public interest in having effective competition in upstream and downstream markets.

For the purpose of calculating Sydney Water's avoidable costs, the assets associated with Sydney Water's treatment and disposal of sewage are to be initially valued using a DORC methodology. Asset optimisation is to be on the basis of:

- a partial optimisation, with optimisation constrained to the current site of Sydney Water's relevant sewage treatment and disposal assets,
- using modern equivalent assets that meet all relevant standards and Sydney Water's licence conditions at the time of entry by Services Sydney, and
- provide the capacity required to meet estimated demand for the duration of the determination including having capacity sufficient to manage the peak sewage flows associated with all customers serviced by each sewerage system in accordance with Sydney Water's current requirements.

The asset valuation is to be 'rolled forward', that is adjusted over time, to allow for any actual capital expenditure associated with Sydney Water's relevant sewage treatment and disposal assets, less depreciation and any asset disposal.

Similarly, Sydney Water's operating expenditure associated with providing sewage treatment and disposal services form part of the avoidable costs.

The capital and operating costs of undertaking treatment and disposal in relation to domestic strength sewage is considered to be primarily driven by volume rather than sewage quality. Therefore, these costs should be allocated across customers on the

basis of dry weather flows or volume discharged, such that a standard per kilolitre rate is calculated.

Sydney Water's costs associated with providing retail services form part of avoidable costs, and are to be allocated on a per customer basis.

8. Facilitation costs

Sydney Water proposed that ‘facilitation costs’ should be added to both residential and non-residential access prices and that facilitation costs “include the costs of interconnection, as well as other costs to Sydney Water to provide access.”²⁵⁸

However, Sydney Water stated that it had not provided an estimate of facilitation costs because interconnection services were not a matter under arbitration.²⁵⁹

As the determination is in respect of access pricing methodology for the declared sewage transportation services, facilitation costs should not include any costs associated with providing the declared interconnection services. Such costs should be recovered through the charges for providing these interconnection services.

However, there may be some facilitation costs associated with providing the declared sewage transportation services, such as Sydney Water’s prudently incurred costs of calculating the access charges for these services.

In response to the *Draft Determination*, Services Sydney submitted that it expected that the facilitation costs in developing valuations of the relevant assets would be incurred by Sydney Water and recovered through access charges.

Services Sydney would expect these costs to be incurred in the first instance by Sydney Water, as the access provider. This would be consistent with the process in other utility sectors under regulation. ... Services Sydney would expect these costs to be classified as facilitation costs and included in the access charge.²⁶⁰

It is appropriate that the access seeker should bear facilitation costs, such as costs arising from calculating the access charges. The determination does not cover the issue of which party should undertake the activities that give rise to, and hence incur in the first instance, the costs associated with facilitating access, as this issue is not directly relevant to a determination on access pricing methodology.

The total charge levied on Services Sydney for access to the declared services should be the access charges as determined by the prescribed retail-minus methodology plus facilitation costs, rather than adding a proportion of facilitation costs to access prices associated with each customer.

²⁵⁸ Sydney Water, *Initial Submission*, 23 January 2007, p. 21.

²⁵⁹ *ibid.*

²⁶⁰ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 23.

9. Duration of determination

Sydney Water did not make a submission regarding the appropriate duration of the determination.

In access negotiations with Sydney Water prior to notification, Services Sydney proposed an access agreement to extend to the expiry of the declaration period.²⁶¹ However, Services Sydney submitted that it may be challenging to make a determination on “an access pricing methodology that is sustainable over the entire duration of the declaration period.”²⁶²

The period of declaration of the sewage transportation services provides an upper limit on the possible duration of the determination. In considering the appropriate period of declaration, the Tribunal stated:

The likelihood of the facilities by means of which the services are provided being duplicated within 50 years and a competitive service becoming available are extremely remote. While technical change in sewage treatment and water reclamation processes is likely, the need for access to transportation and interconnection services to carry sewage from customers' premises to the competing treatment plants is likely to remain. Investors in new treatment and reclamation plants, which are expected to provide many of the dynamic gains from competition, will require the certainty of long term access arrangements before committing funds to the planning and implementation of such projects.²⁶³

The Tribunal noted that access seekers require sufficient certainty in relation to access terms in order to undertake the significant investment associated with “the substantial nature and long life of the assets which a new entrant, other than a pure reseller, would need to invest in”.²⁶⁴

The *Draft Determination* proposed that the duration of the determination be 15 years. In response, Services Sydney submitted that a duration of 25 years from the time that it begins using the declared service would be more appropriate because:

Delay in the completion of arrangements would reduce the effective duration of the access arrangement... An access arrangement with a short duration effectively of much less than 15 years substantially reduces the attractiveness of investing in the proposed sewage treatment infrastructure and associated facilities. It creates uncertainty over access prices for a large part of the investment cycle. The likely implication of this uncertainty is a higher cost of capital ... and may well make entry into the market unviable.²⁶⁵

However, it would be inappropriate for the determination not to take effect until the time that Services Sydney begins using the declared service. In this regard, the

²⁶¹ Services Sydney, *Access Charges for NSOOS, BOOS and SWSOOS: Commercial Negotiations for Transportation and Interconnection Services*, Letter to Sydney Water, 18 September 2006, p. 2.

²⁶² Services Sydney, *Third Submission*, 19 March 2007, p. 7.

²⁶³ *Application by Services Sydney Pty Limited* [2005] ACompT 7, para. 212.

²⁶⁴ *ibid.*, para. 210.

²⁶⁵ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 32.

Commission understands that the parties propose to use the Commission's determination regarding access pricing methodology in order to inform the parties' negotiations in access prices. The Commission assumes that Services Sydney would not begin using the declared service until the parties had agreed on the access prices. If the determination did not take effect until after the time that Services Sydney begins using the declared service (i.e. after the parties had agreed on access prices), then the determination would be of limited use.

In deciding on the appropriate duration, a balance must be struck between providing the requisite levels of certainty and opportunity for review.

The determination must be sufficiently robust to be applied in practice over a period of time, while also allowing for review within an appropriate timeframe, particularly given that this dispute concerns the methodology by which access prices should be set rather than setting the actual access prices.

The Commission has had regard to Services Sydney's submissions regarding the effect that the duration of the determination may have on the attractiveness of investment. The Commission decided that the duration of the determination of 20 years would provide an appropriate timeframe for Services Sydney to undertake the significant investment involved with entry into the sewage treatment market, while also allowing for review within an appropriate period of time. A duration of the determination of 20 years also factors in that actual access may not commence for some time.

It is noted that in addition to there being scope for review of the methodology after 20 years, section 44ZU of the Act provides a mechanism for the variation of the final determination during the period of its operation. Pursuant to section 44ZU:

- Either of the parties may apply to the Commission for a variation to the final determination. The Commission may vary the final determination if the other party does not object.
- If the parties cannot agree on a variation, a new access dispute can be notified under section 44S of the Act. The Commission would then be required to make a final determination in relation to the new access dispute.

The determination on access pricing methodology has been made taking account of the current available information and circumstances, including the current retail price regulation of Sydney Water's sewerage services. As outlined above, the Act provides avenues for the determination to be varied in the event of a material change in the circumstances that have been taken into consideration in making the determination.

10. Other issues

Application of the access pricing methodology so as to establish actual final access prices and other terms and conditions will require the parties to undertake further commercial negotiations.

The parties expressed a preference for a determination on access pricing methodology that provides sufficient detail so as to be practically applied. Whilst the Commission sought to provide a detailed determination regarding methodology, it balanced this objective against ensuring that the determination did not extend to issues that should properly be considered in determining actual final access prices and other specific terms and conditions. These include:

- the appropriate WACC to be used in the calculation of avoided costs, and
- assessment of assumptions contained in, and data used to populate, Sydney Water's *Cost of Service* model.

Services Sydney noted that it was seeking guidance on the appropriate WACC to apply to the value of Sydney Water's treatment and disposal assets determined using a DORC methodology, and submitted that "the relevant comparators operate in competitive rather than monopoly market sectors."²⁶⁶ As noted in Chapter 3, the Commission considers that the WACC should factor in the commercial risk of the investment, determined on a case-by-case basis.

Throughout the course of the arbitration, Sydney Water provided indicative access prices calculated using its *Cost of Service* model, which in turn draws on its activity based costing system. Thus, the indicative access prices proposed by Sydney Water are based on various assumptions about the appropriate allocation of total costs across all services provided by Sydney Water—the allocation of operating costs to the various components of those services (eg transport, treatment and disposal, and retailing) and the allocation of any remaining costs, that is 'indirect costs'.

The Commission considered that a decision on how such indirect costs should be allocated should be informed *inter alia* by assessment of detailed information on the type and quantity of these costs, as well as consideration of the approach taken by IPART to allocating costs across all services provided by Sydney Water.

Similarly, Sydney Water's *Cost of Service* model applies a depreciation schedule to the relevant treatment and disposal assets. Depreciation is a standard component of a building block approach and therefore the Commission considered that depreciation of the asset base should be included in the calculation of avoidable costs. Whilst the exact nature of the depreciation schedule to be adopted for determining final access prices is a matter for further negotiation between the parties, an appropriate starting point would appear to be the depreciation schedule adopted by IPART for the purpose of determining Sydney Water's retail prices.

²⁶⁶ Services Sydney, *Submission in response to the Draft Determination*, 21 May 2007, p. 24.

Services Sydney stated that it is concerned that Sydney Water lacks commercial incentives to negotiate final terms and conditions for access. It therefore suggested that the Commission stipulate a timeframe of four months from the date of the final determination for both parties to agree on access prices.

The Commission is of the view that in a final determination, it would not be appropriate to stipulate a timeframe for the completion of any future commercial negotiations between the parties. If the parties are unable to agree on actual final access prices and other terms and conditions, either party will be able to seek arbitration by the Commission subsequent to those negotiations.

The Commission notes that it expects that the parties will provide each other with all relevant information necessary to facilitate such negotiations in good faith.

Appendix A Correspondence

Correspondence with the parties, the NSW EPA and IPART that the Commission had regard to in making the determination

Author	Date	Title
Services Sydney	18 September 2006	<i>Letter to Sydney Water, Access Charges for NSOOS, BOOS and SWSOOS: Commercial Negotiations for Transportation and Interconnection Services</i>
Services Sydney	6 November 2006	<i>Notification of access dispute</i>
Services Sydney	17 November 2006	<i>Statement of issues</i>
Services Sydney	22 November 2006	<i>Response to 'statement of issues'</i>
Services Sydney	22 November 2006	<i>Previous correspondence</i>
Services Sydney	23 January 2007	<i>Submission</i>
Services Sydney	2 February 2007	<i>Deep ocean out-falls</i>
Services Sydney	12 February 2007	<i>Water Industry Competition Act</i>
Services Sydney	19 February 2007	<i>Submission in response</i>
Services Sydney	26 February 2007	<i>Classification of transportation and sewage treatment assets</i>
Services Sydney	28 February 2007	<i>Wet weather flows</i>
Services Sydney	2 March 2007	<i>Deep ocean out-falls</i>
Services Sydney	16 March 2007	<i>Response to ACCC's additional information request</i>
Services Sydney	19 March 2007	<i>Third submission in response to matters raised at the hearing</i>
Services Sydney	2 May 2007	<i>Clarification letter of issues raised in the Draft Determination</i>
Services Sydney	4 May 2007	<i>Clarification of comments regarding structure of treatment and disposal prices</i>
Services Sydney	21 May 2007	<i>Response to Draft Determination</i>
Services Sydney	29 May 2007	<i>Information regarding community environmental values</i>
Services Sydney	4 June 2007	<i>Letter regarding environmental values</i>
Services Sydney	19 June 2007	<i>Letter in response to EPA advice</i>
Sydney Water	20 November 2006	<i>Statement of issues</i>
Sydney Water	23 November 2006	<i>Previous correspondence</i>
Sydney Water	23 January 2007	<i>Submission</i>
Sydney Water	19 February 2007	<i>Submission in response</i>
Sydney Water	21 February 2007	<i>Cost of service model presentation</i>
Sydney Water	23 February 2007	<i>Non residential access charges</i>
Sydney Water	1 March 2007	<i>Deep ocean out-falls</i>
Sydney Water	14 March 2007	<i>Response to matters raised in the hearing</i>
Sydney Water	16 March 2007	<i>Response to ACCC's additional information request</i>

Sydney Water	2 April 2007	<i>Response to Services Sydney's third submission</i>
Sydney Water	21 May 2007	<i>Response to Draft Determination</i>
Sydney Water	1 June 2007	<i>Response to Services Sydney submission addressing community values</i>
Sydney Water & Services Sydney	30 January 2007	<i>Briefings from Sydney Water and Services Sydney and tour of Sydney Water's Malabar sewage treatment plant</i>
ACCC	5 December 2006	<i>Case management meeting report</i>
ACCC	18 December 2006	<i>Orders and Directions to Parties in relation to initial submissions</i>
ACCC	26 February 2007	<i>Transcript of hearing proceedings</i>
ACCC	8 March 2007	<i>Letter to IPART</i>
ACCC	23 April 2007	<i>Draft Determination</i>
ACCC	8 June 2007	<i>Letter to NSW EPA</i>
IPART	23 March 2007	<i>Response to ACCC's letter dated 8 March 2007</i>
NSW EPA	15 June 2007	<i>Response to ACCC's letter dated 8 June 2007</i>

Appendix B Reference list

Australian Competition and Consumer Commission, *Access undertakings – A guide to Part IIIA of the Trade Practices Act*, September 1999

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