HUNTER WATER RESPONSE TO IPART

PRICES FOR WHOLESALE WATER AND SEWERAGE SERVICES

31 May 2016

Enquiries regarding this submission should be directed to Hunter Water Corporation's Manager, Regulatory Policy.

Telephone: (02) 4979 9612

Email: price.review@hunterwater.com.au

Hunter Water Corporation
Response to IPART's Discussion Paper on prices for wholesale water and sewerage services

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Hunter Water Corporation
36 Honeysuckle Drive, Newcastle
PO Box 5171, Hunter Region Mail Centre, NSW 2310

www.hunterwater.com.au

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EXECUTIVE SUMMARY

- Hunter Water supports IPART's decision to regulate wholesale prices for water and wastewater services that Hunter Water and Sydney Water supply to wholesale customers.
- The *Water Industry Competition Act 2006* has enabled a number of private entities to obtain licences to own, operate and maintain water and wastewater infrastructure. These WIC utilities are seeking services from Hunter Water in the form of a drinking water supply delivered to the boundary of new greenfield development projects and the possible temporary connection to Hunter Water's wastewater system.
- Hunter Water agrees that the access provisions in the WIC Act were designed for negotiating prices for the use of infrastructure services, not for the delivery of bundled services that include treatment processes.
- It is important to recognise that competition in the urban water sector happens once in the early stages of any new project. WIC utilities and the public water utility compete to provide water and wastewater services to developers. After the developer has made an agreement with the service provider, there is no ongoing retail competition where end users within a development can switch suppliers if they are dissatisfied with prices or service standards.
- The Minister has issued four network operator licences in the Lower Hunter and IPART is currently considering one other licence application.
- There are approximately 15,000 housing lots within the proposed WIC utility schemes, representing almost half of forecast dwelling growth in the Lower Hunter over the next 20 years.
- There a number of common features to all new WIC utility schemes in the Lower Hunter. The WIC utility is providing an on-site, standalone wastewater treatment facility for a new large residential development, generally on the fringes of Hunter Water's area of operations. Once operational, the WIC utility provides wastewater services, a recycled water supply and on-sells drinking water within the development. The WIC utility undertakes all retailing functions to residential and non-residential end-use customers.
- IPART has made the right decision to regulate wholesale prices using the retail-minus approach. Retail-minus pricing enables the incumbent utility and wholesale customers to compete on equal terms for the supply of contestable services.
- Hunter Water has concerns with the proposed application of IPART's retail-minus pricing approach. IPART has departed from the standard form of avoidable cost pricing and proposed a reasonably efficient competitor model. Under this approach, the incumbent utility would be obliged to offer a retail-minus discount that is greater than the costs that it avoids in not providing the service. This would leave the public water utility exposed to revenue losses on all wholesale supply agreements.
- Hunter Water engaged Frontier Economics to review IPART's proposed pricing approach and implementation options. Frontier Economics supports IPART's key decisions on the form of regulation and the pricing approach, but raises concerns about IPART's rationale for the reasonably efficient competitor standard.
- Wholesale pricing in the Lower Hunter should be a relatively straightforward matter to resolve, particularly given the small number of WIC utility schemes seeking a potable water supply to the boundary of the development.
- Hunter Water obliges all new developers to pay for any lead infrastructure to connect and extend network assets, where necessary, for new developments. There is no need to adjust wholesale prices through 'net facilitation costs' to take account of these infrastructure costs.
- Hunter Water does not consider that any new WIC scheme in the Lower Hunter would contribute to any deferral or avoided costs elsewhere in Hunter Water's water system.
- IPART should determine system-wide wholesale prices for water and wastewater services supplied to wholesale customers in the Lower Hunter, using typical avoidable costs for all relevant retailing and reticulation maintenance functions.

1 INTRODUCTION

Hunter Water welcomes the opportunity to comment on the *Independent Pricing and Regulatory Tribunal's (IPART) Prices for wholesale water and sewerage services – Sydney Water Corporation and Hunter Water Corporation – Discussion Paper* (the Discussion Paper) as published on 26 April 2016.

Hunter Water supports IPART's decision to undertake a separate, detailed review of wholesale pricing arrangements for Hunter Water and Sydney Water. IPART should take as long as necessary to design and implement a robust and workable pricing approach. It is more important to get the wholesale price determination right first time than it is meet an arbitrary reporting deadline.

The *Water Industry Competition Act 2006* (NSW) (WIC Act) is the only state-based licensing and access regime in Australia. The regulatory precedents that IPART establishes in this wholesale price determination may have wider implications should other jurisdictions consider similar arrangements.

IPART's 2015 Issues Paper for Hunter Water's retail price review had canvassed the option of IPART determining wholesale prices for an interim period. IPART had recommended that Hunter Water (and Sydney Water) should seek a voluntary access undertaking under the WIC Act. Under this arrangement, Hunter Water would negotiate the terms of a wholesale supply agreement under the provisions of the WIC access regime.

Hunter Water supports IPART's decision to regulate wholesale services directly. Hunter Water had previously argued this position, noting the benefits of an IPART review of wholesale prices as well as the costs of a voluntary undertaking when no licensed WIC utility had sought access to Hunter Water's infrastructure services.

Hunter Water supports IPART's decision to pursue a retail-minus pricing approach. IPART's retail price determination places a legal requirement on Hunter Water to supply services to customers of the same type at same price across its area of operations. While some may question whether postage stamp pricing sends the right signal to developers and end users, it is part of the policy and legal framework in New South Wales. A retail-minus pricing approach is the only practical way to regulate wholesale prices without creating incentives for wholesale customers to target and exploit areas where servicing costs are lower than Hunter Water's regulated retail price.

Hunter Water engaged Frontier Economics to undertake an independent, expert review of IPART's Discussion Paper, including the proposed pricing approach and implementation options. Frontier Economics supports IPART's preliminary position to determine wholesale prices using a retail-minus approach. However, Frontier Economics is critical of IPART's proposed 'reasonably efficient entrant' standard on the basis that IPART has not demonstrated that any dynamic efficiency benefits of the proposed approach are outweighed by the near term loss in static efficiency. Frontier Economics also provide constructive comment on the merits of alternative implementation options.

Hunter Water has provided the Frontier Economics report as an attachment to this response and has summarised key points from the review in various sections of the following commentary.

Hunter Water describes the nature of new entry by WIC utilities in the Lower Hunter (see Section 2). At present, there is a small number of new entrants seeking a wholesale supply of services from Hunter Water. Hunter Water has finalised or is close to executing three utility services agreements: two agreements to supply potable water to the boundary of a new greenfield development and one temporary wastewater service to one of these developments. Hunter Water is not involved in any other negotiation for the supply of wholesale services at this time.

The typical WIC utility scheme in the Lower Hunter, including those licensed or proposed, involves a self-contained, on-site wastewater treatment facility that also provides recycled water to end users within a greenfield development. The WIC utility on-sells the potable water supply through its reticulation infrastructure within the development.

Hunter Water considers that the retail-minus pricing approach should be relatively straightforward for wholesale supply arrangements in the Lower Hunter. Hunter Water supports a retail-minus avoidable cost approach, recognising that avoidable costs for the typical wholesale service are limited to the costs of providing the retail service and the appropriate costs of operating and maintaining reticulation infrastructure within the development (see Section 3).

Hunter Water supports IPART's proposal to regulate wholesale prices for services supplied to wholesale customers using a price cap determination (Option 1). Should IPART contemplate a wholesale pricing

methodology, Hunter Water sets out the features of 'hybrid' model that would revert to default wholesale prices in circumstances where the avoidable costs were readily identified and measured (see Section 4).

Hunter Water has given detailed consideration to many of the matters that arise in implementing retail-minus pricing in practice. Hunter Water's response addresses the key issues in the Discussion Paper, but some of the detailed aspects will require further consideration and refinement. Hunter Water looks forward to the opportunity to provide ongoing input as the wholesale price review progresses.

2 COMPETITION IN THE URBAN WATER SECTOR

2.1 New South Wales context

The legal framework for competition in the NSW urban water sector is defined by the National Access Regime and the state-based *Water Industry Competition Act 2006* (NSW) (WIC Act). Under these access regimes, a competitor may provide a new water source or water treatment service to an area and require access to the transportation services provided in trunk water mains to convey that water to customers.[1] The frameworks focus on supporting such competition by providing a licensing regime for private sector entrants and enabling third-party access to significant infrastructure services.

Private sector entry into NSW urban water markets has emerged in a different form to that envisaged when the WIC Act was first introduced. There is only one case of where infrastructure services in Sydney have been declared open for third-party access and no cases in the Lower Hunter.[2] In contrast, the provisions for licensing private sector providers of drinking water, recycled water and sewerage services have been regularly exercised. The licences have not been sought by access-seekers but by private sector entrants seeking to provide infill and greenfield developments with predominantly self-contained recycled water services, combined with on-selling of water and/or wastewater services procured from the incumbent public water utility and reticulated and retailed to end users as a bundled service offering.

Competition in NSW has evolved in the seven years since the WIC Act and its supporting regulations commenced (see Figure 2.1).[3] In 2008-09 there were only two licences issued, both of which related to the same scheme.[4] The number of active licences has grown steadily over time with the number of network operator licences doubling in the last four years. Competition started in Sydney Water's area of operations and schemes in Hunter Water's area of operations have only emerged relatively recently. Some WIC utilities are active across multiple schemes and in both areas. For example, a single company is licensed to retail in both areas and it is licensed to operate four schemes in Sydney and three schemes in the Lower Hunter (under its subsidiaries).[5]

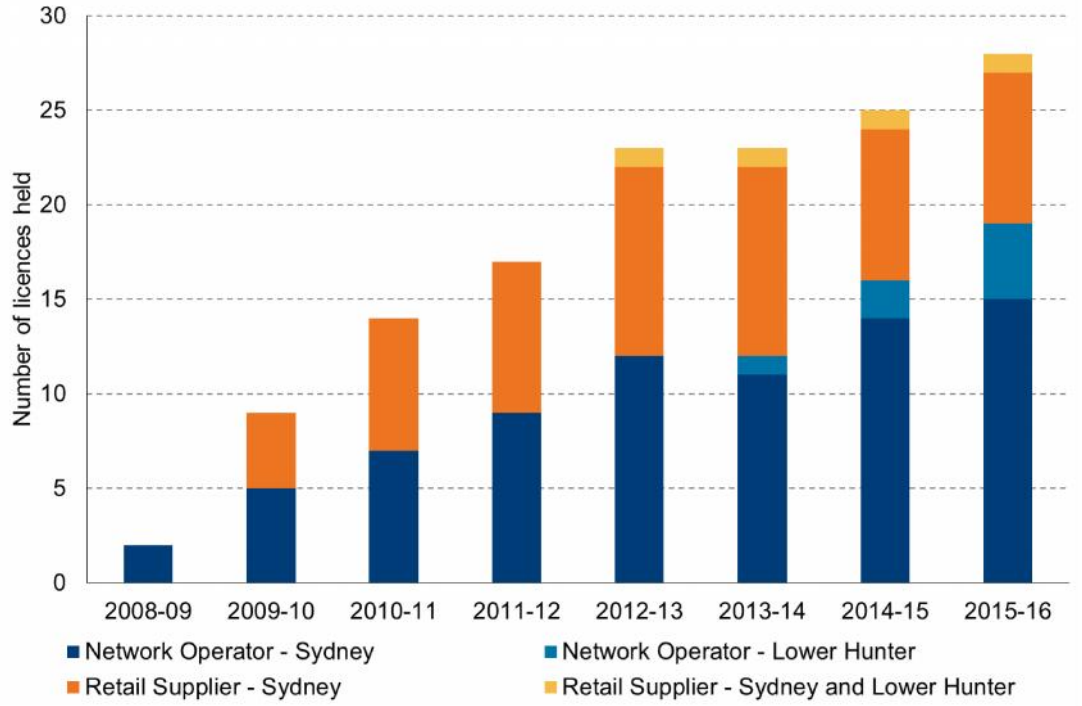
A commonality between areas is the prevalence of *competition for the market* servicing a specific area rather than *competition in the market*. *Competition for the market* occurs between the service providers and developers. Public water utilities advise developers of servicing methods, which determines the lead-in or lead-out infrastructure that must be paid for by the developer to connect to the local water or wastewater network. At this point, the developer may consider alternative servicing solutions.

Most private entrants retail a bundled wastewater, drinking water and recycled water service to end users. This means that there is no competition *in* the market between service providers and end users, with new entrants acting as localised monopolies. It also means that any analysis of the number of customers serviced by private sector licensees (WIC utilities) understates the likely market share, because all future customers in the WIC utility's scheme are 'locked in' to a permanent supply arrangement.

The number of customers serviced by WIC utilities has grown steadily over the last three years (see Figure 2.2). Customer numbers are likely to continue to grow steadily as lots sell and 'locked in' customers come online. For example, none of the schemes in the Lower Hunter had commenced operation by 30 June 2015, however licences were held to service 8,500 lots.

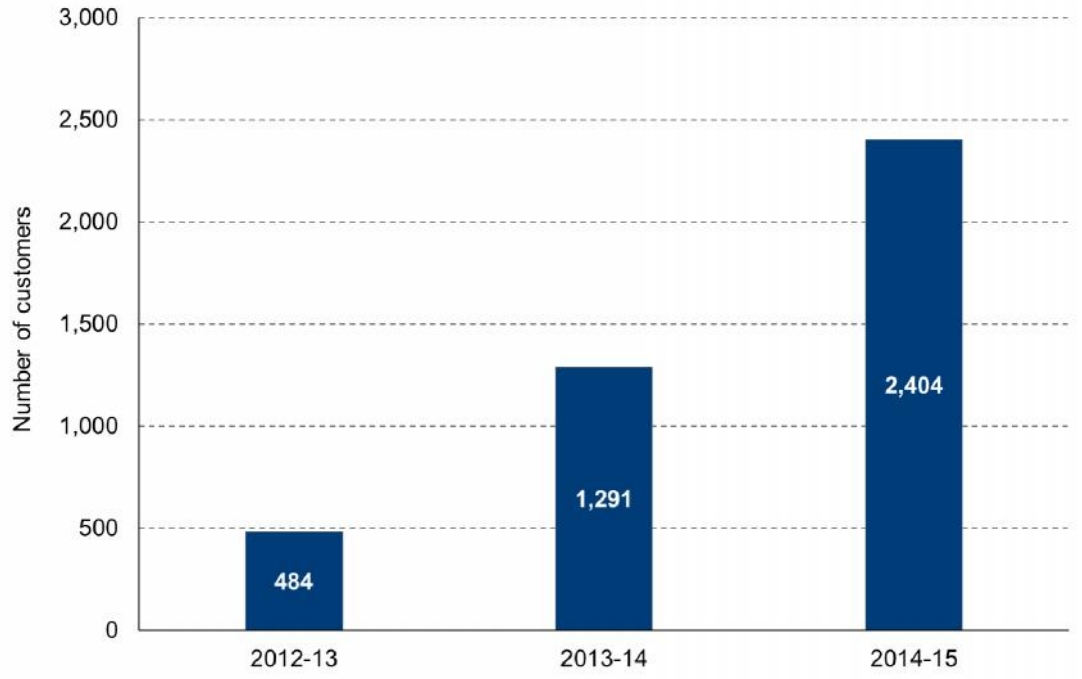
[1] Referred to as "infrastructure services" in the WIC Act.
[2] IPART Issues paper (HWC retail prices), 2015, page 145.
[3] Legislation commenced in August 2008.
[4] Rosehill recycled water scheme in Sydney. Separate licences are held for the Recycled Water Plant and the reticulation network.
[5] Flow Systems Pty. Ltd., Central Park Water Factory Pty. Ltd., Pitt Town Water Factory Pty. Ltd., Discovery Point Water Factory Pty. Ltd., Green Square Water Pty. Ltd., Wyee Water Pty. Ltd., Cooranbong Water Pty. Ltd., and Huntlee Water Pty. Ltd.

Figure 2.1 WIC licence activity over time



Source: WICA Licence Register, May 2016 and IPART WICA Licence Applicants website page. Hunter Water analysis.
Note: One retail supplier licence may cover more than one scheme whereas a network operator licence only covers one scheme. There are 14 licensed schemes in Sydney (excluding Sydney Desalination Plant Pty Ltd) and 4 in the Lower Hunter.

Figure 2.2 Customers serviced by WIC utilities



Source: IPART, 2013(a), 2014, 2015, Appendix C. Hunter Water analysis.

2.2 Lower Hunter context

The Department of Planning and Environment's Draft Hunter Regional Plan and the Draft Plan for Growing Hunter City, forecasts 60,000 new dwellings in the Lower Hunter region by 2036.[6,7] It envisages that around 70 per cent of the dwelling growth will occur in greenfield areas (e.g. new land releases, rezonings), with the remaining growth in urban infill areas.[8]

It is in these discrete greenfield developments that competition has emerged in Hunter Water's area of operations over the last few years. WIC licences have been granted, or are under consideration, for approximately 15,000 lots – almost half of the projected greenfields dwelling growth (see Table 2.1 and Figure 2.3).

These large-scale greenfield development projects share a number of common features:

- Multi-thousand lot developments built in stages over a period of years (up to 10 years in some cases).
- Generally on the fringes of Hunter Water's water supply system that may therefore be perceived as too costly to service from the existing network (due to the need to fund long 'lead-in' infrastructure to the point of connection, which creates a funding hurdle for developers in the form of upfront infrastructure costs).
- Predominately residential end-use customers but some non-residential end users.

Table 2.1 Private sector licensing activity in the Hunter Water's Area of Operations

Location	Lots	End-use customer types	Network Operator Licence		Retail Supplier Licence	
			Licensee	Application Status	Licensee	Application Status
Catherine Hill Bay	600	540 residential and associated retail	Catherine Hill Bay Water Utility Pty. Ltd. [b]	Granted	Solo Water Pty Ltd	Submitted
Wyee	1,000	Predominantly residential	Wyee Water Pty Ltd. [a]	Granted	Flow Systems Pty Ltd	Granted
North Cooranbong	2,400	2,104 residential, one primary school and retail precinct	Cooranbong Water Pty Ltd. [a]	Granted	Flow Systems Pty Ltd	Granted
North Bellbird	3,500	1,600 residential and 6,000 m^2 of retail floor space	Bellbird Water	Submitted	Flow Systems Pty Ltd	Variation to existing – not submitted
Huntlee	7,500	7,500 residential and 200 ha of municipal, retail and commercial precincts	Huntlee Water Pty. Ltd. [a]	Granted	Flow Systems Pty Ltd	Granted

Source: WICA Licence Register, May 2016 and IPART WICA Licence Applicants website page.

Notes:

a) Subsidiary of Flow Systems Pty Ltd

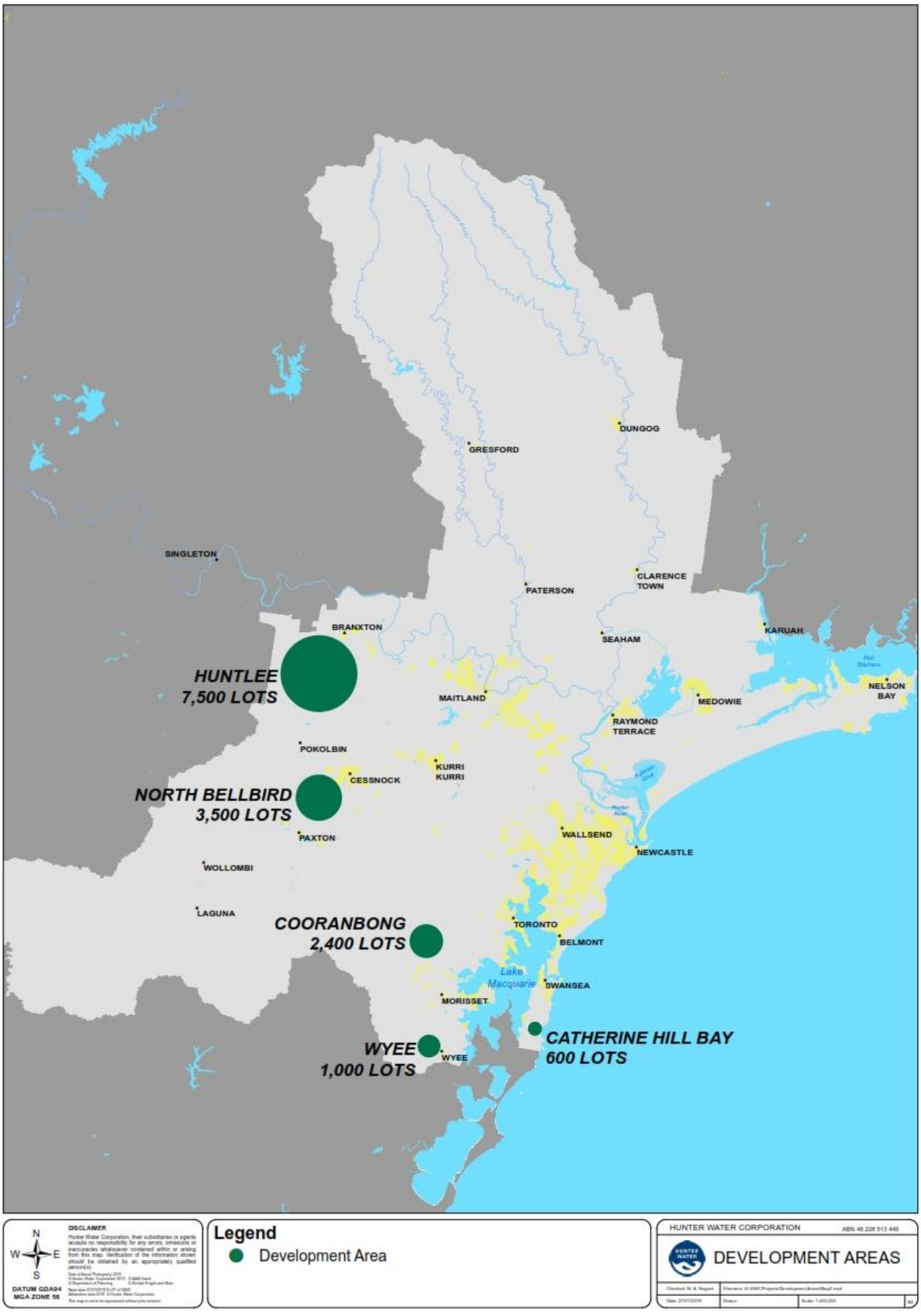
b) Solo Water will provide network operator services under contract to Catherine Hill Bay Water Utility.

[6] Planning and Environment, 2015(a), page 5.

[7] The 'Hunter City" refers to *"…the metropolitan areas he metropolitan area extending from Toronto and Swansea in the south to Raymond Terrace in the north and from Newcastle harbour in the east to Lochinvar in the west. It includes part of the lake Macquarie, Maitland and Ports Stephens local Government areas and all of the Newcastle local Government area*". Hunter City lies entirely within Hunter Water's Area of Operations. Planning and Environment, 2015(a), page 13.

[8] Planning and Environment, 2015(b), page 12.

Figure 2.3 Lower Hunter developments with WIC licensee activity



Source: Hunter Water.

Most WIC utilities are offering a bundled wastewater, drinking water and reticulated recycled water service. This means that the developer only needs to deal with one service provider and end users receive a single bill from the WIC utility retail supplier.

The typical WIC utility scheme is based on constructing and operating an on-site, self-contained wastewater treatment facility for the entire development, which then provides recycled water supply to end-use customers and other areas within the development (e.g. irrigation of open spaces).

WIC utilities are offering pressure sewer systems as an alternative in areas where conventional gravity sewer systems are expensive to install.[9] Pressure sewer systems involve a wet well and grinder pump on the end users' property that pumps macerated wastewater into a gravity main or pump station for transportation to the wastewater treatment plant. These systems offer lower upfront capital costs, but incur higher ongoing operational and mechanical/electrical maintenance costs.

Hunter Water requires developers to select the lowest life cycle cost option to service the area, which may be pressure sewer systems or convention gravity sewer systems. Mandating selection of the lower life cycle cost technology protects end-use customers from unnecessary price increases, however it may result in higher upfront costs for developers. WIC utilities treat the developer as the customer, and the developer may not fully account for the ongoing maintenance costs if those costs are borne by the end user.

WIC utilities and licence applicants have sought the following services from Hunter Water to date (see Table 2.1):

- Provision of potable water for the licensee to reticulate and on-sell to its customers.
- Provision of potable water for the licensee to top-up its recycled water scheme (e.g. during initial stages of development prior to recycled water being produced or during recycled water plant shut downs for planned or reactive maintenance when it cannot store sufficient product to meet end user demand).
- Temporary connection to the sewerage network. Temporary connection may be an interim arrangement up to the time when the WIC Act licensee has a functioning wastewater treatment facility.
- Receival of overflows from the licensee's wastewater treatment plant (WWTP) or receival of WWTP sludge or filter cake into Hunter Water's sewer for processing and disposal.

Most WIC applications state that the licensee intends to tanker waste offsite for disposal at a licenced facility.[10] Such waste may include excess recycled water, treatment by-products, and all wastewater prior to commissioning of a treatment plant or during prolonged unplanned maintenance on a treatment plant. Hunter Water notes that developments located near the boundary of its area of operations may not tanker wastewater to one of Hunter Water's WWTP. It is fair to say that this aspect of the proposed WIC utility's operations is vague. The inference from the WIC licence applicant is that the scheme is independent of the incumbent's systems but closer examination reveals that this is unlikely to be the case.

[9] Some factors that may affect the installation costs of gravity sewer systems are: unfavourable topography, high water table, acid sulphate soils or bedrock.
[10] WICA Licence Register, May 2016 and documents related to the licensee as available on IPART's website.

Table 2.2 Services requested by WIC utilities

Location	Provider of drinking water "wholesale service" [a]	Provider of sewerage "wholesale services"	USA [b] status
Catherine Hill Bay	Wyong Shire Council	NA	NA
Wyee	Hunter Water	NA	No contact from applicant in 2016
North Cooranbong	Hunter Water	Hunter Water Temporary – until 31 August 2016 [c]	Executed
North Bellbird	Hunter Water	NA	No contact from applicant in 2016
Huntlee	Hunter Water	NA	Nearing execution

Source: WICA Licence Register, May 2016 and documents related to the licensee as available on IPART's website.

Notes:

a) Includes potable top-up of WIC licensee's recycled water scheme

b) A Utility Services Agreement (USA) is a contract between the WIC licensee and Hunter Water detailing terms and conditions of the provision of wholesale services and each party's rights and obligations.

c) Hunter Water is unable to provide the service on an ongoing basis unless conditions are agreed with the licensee to ensure safe, reliable and financially viable service provision. Cooranbong Water's application states "[The temporary] *connection would remain as a permanent connection for the diversion of excess sewage and the possible disposal of waste activated sludge if required and approved by Hunter Water".* Provision of this service has not been agreed.

2.3 Wholesale services and customers

Hunter Water broadly supports IPART's proposed definitions of wholesale water and sewerage services and customers.

The discussion paper invites views on several arrangements that may warrant refinement of the proposed definitions, such as service transformation and supply to end-use customers beyond jurisdictional boundaries.[11] In considering these arrangements it is useful to reflect on the purpose of competition and form in which it has established in Sydney and the Lower Hunter.

2.3.1 Service transformation

WIC licences cover eighteen schemes - fourteen in Sydney and four schemes in the Lower Hunter.[12] Wholesale water and/or sewerage services have been sought from public water utilities for six schemes, all of which involve provision of recycled water by a WIC utility.

A recycled water scheme generally requires:

- A source of drinking water to use as potable top-up to ensure continuous supply to end users via recycled water mains. This may be needed during initial stages of development prior to recycled water being produced, or during recycled water plant shut downs for planned or reactive maintenance when it cannot store sufficient product to meet end user demand or when its recycled water does not meet quality specifications.
- A method to dispose of by-products of the recycled water treatment process:
    - Excess recycled water that is surplus to end user demands and exceeds storage capacity or to dispose of recycled water that does not meet quality specifications.
    - Waste streams.

Hunter Water considers that inputs to, and by-products from, service transformation should be treated as wholesale services. This would be consistent with IPART's pricing arrangements for recycled water, which requires NSW metropolitan water utilities to treat potable top-up to mandatory recycled water schemes as water sales to itself costed at the potable water retail usage price.[13]

[11] IPART, 2016(a), page 15.
[12] Excludes Sydney Desalination Plant Pty Ltd. Refer to sections 2.1 and 2.2 for further details.
[13] IPART, 2006, pages 30 and 47.

For administrative simplicity, Hunter Water proposes that usage of potable water by a WIC utility as an input to its recycled water scheme should be treated in the same manner as other wholesale water services. That is, the WIC utility's recycling facility would be treated as a non-residential end user for the purposes of calculating the 'retail' component of the pricing approach. The same approach could be adopted for disposals from the recycled facility directly to a wastewater system that is connected to a public water utilities wastewater system.

2.3.2 Boundary issues

Hunter Water provides drinking water supply to two regions adjacent to its area of operations: the Central Cost (Gosford City Council and Wyong Shire Council) and Midcoast Water (Great Lakes Council – North Karuah). The bulk supply provided to these areas is used to provide a water service to connected properties that are geographically closer to Hunter Water's supply system or to supplement the quantity of water available to these areas.

In both of these cases, Hunter Water provides services to the local council, which on-sells the services to end-use customers. Hunter Water considers that arrangements where end-use customers are located outside of its (or Sydney Water's) areas of operation should be excluded from the definitions of wholesale services and customers.

- IPART's main objective in determining wholesale prices is to encourage efficient entry and competition. This is consistent with the long title of the WIC Act 2006, which clarifies its objective of encouraging competition:

  > *An Act to encourage competition in relation to the supply of water and the provision of sewerage services and to facilitate the development of infrastructure for the production and reticulation of recycled water; and for other purposes"*

  Public water utilities and local councils are constrained from competing with each other or entering each other's markets.[14] Moreover, public utilities and local councils have sufficient bargaining power to negotiate private pricing agreements that may be mutually beneficial. These agreements may also specify other terms and conditions not present in wholesale service provision, such as upfront capital and/or asset contributions, protections of service levels for Hunter Water's retail customers, *et cetera*.

- Consistent definitions could be used in price determination for both Sydney Water and Hunter Water. In the Discussion Paper IPART accepted Hunter Water's representations that its Bulkwater service to the Central Coast differs from a wholesale arrangement.[15] Geographic boundaries would obviate the need to embed a single agreement in wholesale service definitions and therefore support consistency and flexibility.

- Complications may arise for services near the boundary of Hunter Water's area of operations, or located in an adjacent area, if these are not explicitly excluded from the wholesale services (e.g. obligation to provide services to adjacent local councils; or sale of wholesale services to local councils to on-sell to WIC utilities to on-sell to end-use customers).

[14] For example, Hunter Water act 1991 (NSW) Part 5, Division 1, section 16 and Local Government Act 1993, Part 3, Division 2, section 56.
[15] IPART, 2016(a), page 14. Hunter Water, 2016, page A.14.

2.4 Interdependencies with other reviews and issues

2.4.1 Regulation of prices for monopoly services

WIC applicants often claim that their supply of drinking water, recycled water and sewerage services are not monopoly services because their schemes are located within Hunter Water's area of operations for drinking water and sewerage services:

> *All customer classes have the ability to choose who will provide their drinking water and sewerage service.* [16]

Hunter Water has expressed the view that WIC utilities are localised monopoly service providers when commenting on WIC licence applications:

> [The WIC utility] *will own, operate and maintain all of the water and sewer assets within the* [local area (e.g. development boundary)]*. Hunter Water does not and will not have network infrastructure beyond the boundary drinking water connection. Hunter Water will not provide an alternative service to any customer in the development area.* [The WIC utility] *will act as a local monopoly network operator and retailer for all* [WIC utility] *customers.*[17]

Hunter Water notes that it could only compete in the WIC utility's local area by duplicating infrastructure or by negotiating access to the WIC utility's infrastructure. A WIC utility is not obligated to provide the public water utility with access to its service infrastructure.

IPART regulates the prices that monopoly utilities can charge end-use customers for the provision of monopoly services. Such regulation provides consumer protection while balancing a range of other considerations.[18] The regulatory framework creates incentives for public water utilities to pursue efficiencies and cost savings, which are passed on to customers through time. IPART's approach also ensures that the regulated utility recovers the cost of each service offering (water, wastewater, stormwater) without cross-subsidies between products.

The WIC Act provides for declaration of WIC utilities as monopoly suppliers and referral to IPART to either determine prices or review pricing policies.[19] Hunter Water notes that these powers have not been exercised to date. Given the increase in the number of WIC utility schemes, and the growing number of end-use customers, IPART will face a difficult task in future years in monitoring the retail prices charged by WIC utilities to end users within each scheme.

2.4.2 Last resort arrangements

The *Water Industry Competition (General) Regulation 2008* and *Water Industry Competition (Amendment) Act 2014* introduce last resort arrangements whereby a designated last resort provider is required to provide essential services to customers in the case of financial difficulty or corporate failure by a WIC utility. Hunter Water and Sydney Water are likely to be designated the roles of default providers of last resort in their areas of operation, at least during the early years of the new regulatory arrangements. Until the cost allocation mechanisms associated with last resort provisions are clarified, public water utilities are bearing risk on behalf of WIC utilities.

Hunter Water considers that last resort planning arrangements and the ongoing cost recovery mechanism costs arrangement should be considered separately to regulation of wholesale prices. Nonetheless, Hunter Water notes that WIC utilities have been allowed to operate and retail services to end-use customers in the absence of effective last resort provisions.

[16] Cooranbong Water Pty. Ltd., 2015, page 17.
[17] Hunter Water, 2015(b).
[18] The list of matters that IPART must consider in its pricing decisions is listed in section 15 of the IPART Act.
[19] Water Industry Competition Act 2006 (NSW), Part 5, Division 2, section 51 to 53.

3 SETTING WHOLESALE PRICES

3.1 Retail-minus pricing

Hunter Water considers that IPART has made the right decision on the most important question for this wholesale price review: regulating wholesale prices using a retail-minus pricing model. Hunter Water agrees that a retail-minus approach should provide certainty and facilitate efficient entry to the water and wastewater markets within the existing policy and legal framework.

IPART's retail price determination for Hunter Water sets common water and wastewater prices for customers of the same type throughout the Lower Hunter. This requirement effectively sets price based on the average cost of supply for customers of the same type across the entire area of operations. Charging retail customers a lower price requires the written approval of the NSW Treasurer, and charging a price higher than the IPART maximum price is not permitted.

The postage stamp pricing obligation builds in cross-subsidies between customers in different locations. Retail-minus pricing ensures that new entry by WIC utilities occurs on equal terms. That is, the 'minus' component should broadly reflect the incumbent's costs in the contestable part of the supply chain.

Hunter Water supports IPART's reasoning for rejecting pricing approaches that would set wholesale prices using a cost-of-service approach or non-residential prices. Both pricing approaches would allow private WIC utilities to exploit the system of postage stamp retail pricing. New entrants would target parts of the network where the cost of supplying customers is relatively low, and out compete the public water utility on price. This form of competition would not reflect the underlying efficiency of the incumbent or the WIC utility.

IPART's Discussion Paper accurately describes the scope for wholesale customers to target low-cost areas within the incumbent's area of operations:

> *… wholesale customers could enter the market through the arbitrage opportunity rather than by being as or more efficient than the incumbent utility. Overtime, this could increase the revenue Sydney Water and Hunter Water need to recover from wider customer bases, which would increase prices to all their remaining retail customers, without any offsetting system-wide efficiency gains from the new entry.*[20]

IPART's Discussion Paper sets out a preliminary view that a retail-minus 'reasonably efficient competitor costs' plus 'net facilitation costs' is the appropriate form of retail-minus pricing. Hunter Water is not convinced of the case for departing from a retail-minus avoidable cost approach, as described in the IPART's 2015 Issues Paper.

3.2 Reasonably efficient competitor costs

IPART has proposed a retail-minus approach based on a 'reasonably efficient competitor' approach:

> *Our preliminary view is that the 'minus' component reflects the costs that a reasonably efficient competitor would incur in delivering water and/or sewerage services from the wholesale connection to the end users. We consider this would provide greater scope for dynamic efficiency gains (and hence greater benefits to consumers over time) than the retail minus avoidable cost approach we suggested in our Issues Papers.*
> *Our preferred approach of subtracting the reasonably efficient cost of contestable services recognises that competitive entry may be hindered if new entrants were required to achieve the scale economies of the incumbent immediately. Over time, this entry could benefit consumers through efficiency gains by entrants and incumbents.*[21]

The following analysis of IPART's reasonably efficient competitor approach is drawn from the Frontier Economics review of IPART's Discussion Paper (Appendix A, Section 3).

Frontier Economics is critical of the reasonably efficient competitor proposal on two grounds:

- Whether the approach is more likely to achieve the underlying policy objective of promoting efficient new entry in the context of the NSW urban water market; and
- Whether it is practical to apply.

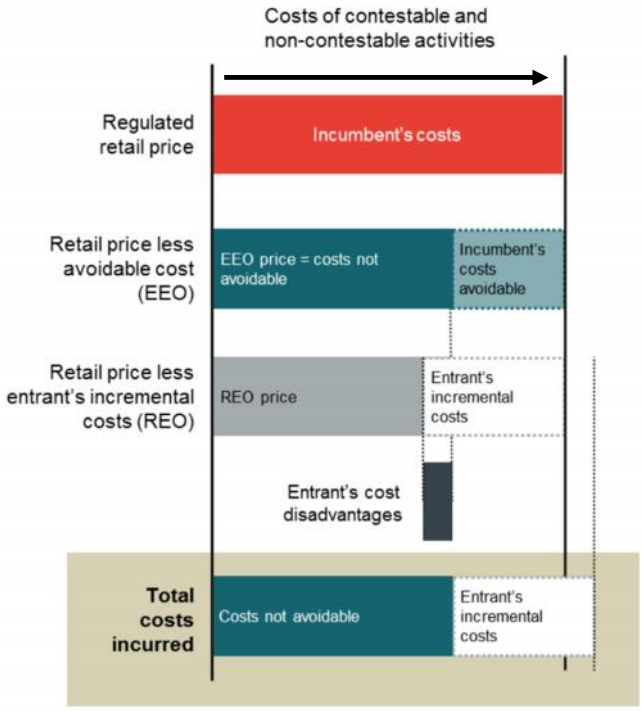
[20] IPART, 2016(a), page 3.
[21] IPART, 2016(a), page 3.

3.2.1 The rationale for the reasonably efficient competitor standard

Frontier Economics compares the reasonably efficient operator approach with the equally efficient operator approach. The equally efficient approach provides that the wholesale customer should be given a discount from retail prices reflecting the efficient costs of the public water utility – a discount equal to the incumbent's avoidable costs. The key difference in approaches is shown in the following diagram (Figure 3.1).

Under IPART's proposed approach, the new entrant's incremental costs are higher than the incumbent's avoidable costs. This results in a larger 'minus' component from the incumbent's retail price. Overall costs of providing services are higher, and retail prices based on regulated revenue allowances to the incumbent utility do not cover costs (unless adjusted for the shortfall).

Figure 3.1 Reasonably efficient competitor compared with equally efficient operator costs



Source: Frontier Economics Pty. Ltd., 2016, page 10.

IPART's preference for the 'minus' component to be based on a reasonably efficient operator is based on the premise that long-term gains in dynamic efficiency will outweigh short-term losses in static efficiency.[22] Frontier Economics sets out a framework for considering the trade-off between static efficiency and dynamic efficiency:

- The promotion of allocative and productive efficiency, which together are commonly known as 'static' efficiency, are likely to suffer from the reasonably efficient operator approach in the short term.
- This indicates that IPART's approach will result in the total costs of producing the services across incumbents and entrants being higher than if an equally efficient (avoidable costs) standard was used. This loss of static efficiency could only be 'worthwhile' if gains in dynamic efficiency outweigh the static losses.
- IPART provides no evidence that it has considered the magnitude of the trade-offs between higher costs now (from loss of scale) and potential future gains in dynamic efficiency.

[22] IPART, 2016, page 32. See IPART, 2016, Box 2.4, page 19 for a description of various types of efficiency.

- The discussion about the benefits of the reasonably efficient operator approach is made more tenuous because IPART does not identify the source or magnitude of the economies of scale that might be relevant to the kinds of entry proposed by wholesale customers, nor why it would be beneficial to sacrifice them to introduce competition.
- Economies in water supply might take the form of economies of scale, scope or density.
- The material loss of any of these economies will raise the costs of using the reasonably efficient operator standard. Such higher costs will be detrimental to end users in two ways:
    - It will encourage entry which is inefficient, and will lead to higher average costs of production (productive inefficiency).
    - In turn, returns from customers connected to other parts of the incumbent's network must be higher to recover these lower wholesale returns earned (or foregone) (allocative inefficiency).
- The fact that the water industry as a whole exhibits strong economies of scale is not sufficient to support IPART's proposal for adjusting the minus component to reflect these economies. The main reason for this is that the parts of the sector which are most subject to economies of scale are the monopoly network components, not the contestable elements. These economies are effectively passed through to new entrants in the retail price component of the retail-minus formula of the regulated wholesale price.
- Any concern about the scale advantages held by incumbents should focus on the economies in the contestable parts of the industry, which is the part where new entrants are seeking to compete. IPART has not proven the existence of significant economies of scale which favour incumbents in these contestable activities. Further substantiation is required.

In proposing the reasonably efficient operator standard, IPART argues that there will be dynamic efficiency benefits:

> *We consider this would provide greater scope for dynamic efficiency gains (and hence greater benefits to consumers over time) than the retail minus avoidable cost approach we suggested in our Issues Papers. Over time, competition should create an incentive for innovation that lowers costs and enhances service.*[23]

Frontier Economics questions the extent of any dynamic efficiency benefits:

- The primary area of competition that is emerging in NSW is for new developments on greenfield or brownfield sites. New entrants seek to provide a range of services which includes infrastructure for supply to end users. Notably there will be no ability of end users to switch to other suppliers once the initial decision to select a supplier is made. In other words, competition is one-time '*for the market*' rather than ongoing *'in the market'*. Unlike retail competition in the electricity market, there will be no competitive pressure 'in the market' to displace the new entrant if its costs turn out to be high or the WIC utility provides a poor service.
- It is likely that the incentives for new entrants to be statically and dynamically efficient over time will come from IPART, much as they currently do for incumbents.[24]
- It is possible that dynamic efficiencies might be encouraged if entrants can compete to supply new developments in the context of a series of such developments. In that case, entrants might improve their efficiency and services over time through 'learning by doing', and may ultimately become more efficient than the incumbent. However, it is questionable whether these entrants should effectively be subsidised through the use of a pricing methodology which accounts for any higher initial costs.

[23] IPART, 2016(a), page 32.
[24] See section 2.4.1 for further details.

3.2.2 Quantifying the reasonably efficient competitor standard

IPART suggests that it will attempt to measure the costs that a reasonably efficient business would incur between the wholesale connection point and servicing end users. IPART proposes two ways of calculating the relevant costs:

- *The costs of an efficient utility of a certain scale (e.g. one providing water and/or services to a community with a population of 50,000 people); or*
- *The costs of Sydney Water or Hunter Water in the area plus a percentage to reflect the smaller scale of a relatively new entrant, for example a five per cent addition …*[25]

IPART's proposals are either difficult to quantify or introduce a degree of subjectivity to the calculation of wholesale prices:

- It is not clear how any data submitted by new entrants reflecting their efficient costs would be verified. This is likely to be difficult given that new entrants have different business models from incumbents, and so have very different profiles of costs and revenues.
- IPART would have to make judgement about the relative efficiency of entrants, which may look very different to Hunter Water.
- Adding an incremental inefficiency margin would inevitably require a duplication of effort by IPART in establishing the avoidable costs of the public water utility.

3.2.3 IPART's approach results in a revenue shortfall

Hunter Water is concerned that IPART's proposed reasonably efficient new entrant methodology would leave the public water utility with a shortfall in regulated revenue. IPART's approach requires the incumbent to offer a discount to retail prices that is greater than the avoidable costs of supplying the wholesale customer.

In the absence of any corrective mechanism, the shortfall in revenue would reduce the earnings of the public water utility, resulting in a lower dividend payment to the shareholder (the NSW Government).

Alternatively, IPART could allow the public water utility to recover the revenue shortfall from its broader customer base. IPART could calculate a separate retail price uplift as part of its retail price determinations. IPART would need to forecast the likely quantum of services supplied to wholesale customers and estimate the increment between reasonably efficient costs and avoidable costs under each wholesale supply agreement.

IPART's Discussion Paper is silent on how it would treat the loss of revenue created by the reasonably efficient competitor methodology.

Hunter Water's preferred approach is for IPART to set retail-minus prices on the basis of avoidable costs. If IPART decides to retain some form of reasonably efficient cost methodology, it should allow the public water utility to recover those costs from the broader customer base through an explicit retail levy or margin. In that way, the costs of IPART's proposed approach would be transparent, and all parties would have an understanding of the costs of 'facilitating' entry by wholesale customers.

[25] IPART, 2016(a), page 35.

3.3 Net facilitation costs

IPART has set out an expanded definition of 'facilitation costs' in its modified approach to calculating retail-minus prices. The Discussion Paper describes positive facilitation costs as including costs imposed on incumbents, such as connection costs. Negative facilitation costs would include deferred or avoided expenditures by the incumbent, such as deferred water supply augmentation costs.

IPART describes some examples of positive and negative facilitation costs. Hunter Water is not clear how IPART's approach of separately quantifying net facilitation costs for associated infrastructure works differs from its earlier approach of calculating avoidable costs.

The following section provides worked examples showing typical wholesale supply requests from wholesale customers for a drinking water supply in Hunter Water's area of operations (see Figure 3.2). Hunter Water describes its understanding of how IPART's net facilitation costs would apply in each instance.

3.3.1 Scenario A: Hunter Water supplies end-use customers

Scenario A details the standard arrangements that apply in the absence of a wholesale customer. Hunter Water provides a retail water (and wastewater) service to all end-use customers within the development. Hunter Water would charge each residential and non-residential customer according to the prevailing IPART retail price determination. Hunter Water would require the developer to design and build all reticulation mains within the development. The developer is obliged to transfer the ownership of those assets at the same time that Hunter Water issues section 50 compliance certificates for each lot within the development.

The *Hunter Water Act 1991* (sections 49 and 50) sets out the process via which a developer can apply for a compliance certificate and the requirements for issuance of a compliance certificate. Hunter Water has the power, under section 50(1)b, to serve a notice on the developer requiring the developer to enter into an agreement providing for any one or more of:

i. the payment of an amount to the Corporation for amplification of the Corporation's works and headworks in consequence of the proposed development;

ii. the construction of the works in the specified notice;

iii. the transfer of the works to the Corporation.

In effect, Hunter Water requires developers to construct reticulation mains within a development and to transfer the ownership of those assets free of charge to Hunter Water. Those transferred assets are excluded from Hunter Water's regulatory asset base, although IPART does provide an allowance for the tax that Hunter Water pays on the value of the gifted assets in the year transferred. IPART also provides Hunter Water with an operating cost allowance for the maintenance of reticulation mains within the development.[26]

Hunter Water may also require the developer to pay for lead-in and lead-out infrastructure works associated with connecting a new development at the nominated point of connection. In other cases, Hunter Water may pay for the cost of 'upsizing' assets in those areas where there is potential to service growth in adjacent or nearby developments. Hunter Water's policy for the funding of growth infrastructure is outlined in Box 3.1.

[26] There are no explicit operating and maintenance cost allowances for servicing new developments. It is incorporate into overall operating cost budgets and IPART implicitly assumes that some of the additional costs will be absorbed by the utility (i.e. IPART expects public water utilities' operating costs to grow at less than the rate of new customer growth).

Box 3.1 Hunter Water's funding of growth infrastructure policy

Hunter Water generally funds major infrastructure such as dams, treatment plants, reservoirs, pump stations which form the 'back bone' of the network and service the broader community. The cost of investment in these assets is recovered from the broader customer base through IPART-determined retail prices.

As development occurs it is generally necessary for the developer to: provide the necessary local reticulation; extend the network; and, amplify existing assets where necessary to provide sufficient service capacity. These works arise under a range of different scenarios.

Some development projects will be local in nature with little prospect of adjacent development. In these cases, Hunter Water requires the lead developer to construct and fully fund the lead infrastructure works.

Other assets may provide a broader community benefit and Hunter Water may contribute the marginal upsizing cost.

There will be some larger asset types, such as trunk infrastructure, which are regional in nature and would generally be designed, constructed and funded by Hunter Water to serve broad populations.

Given the diverse range of potential scenarios which may arise, Hunter Water has developed guidelines to clarify the application of the cost sharing policy where Hunter Water requires a particular asset to be greater than the minimum size to serve a single development.

There are essentially three types of funding arrangements where assets are greater than minimum size:

1. Fully funded by the lead developer with potential reimbursement by future developers.
2. Partially funded by Hunter Water for upsizing, i.e. local development area asset with potential to service growth in adjoining areas.
3. Fully funded by Hunter Water for large scale assets serving broad populations.

3.3.2 Scenario B: Hunter Water provides wholesale water services using existing infrastructure

In Scenario B, Hunter Water provides a wholesale service in the form of drinking water supply to the wholesale customer at a boundary connection point to the new development. In this case, the wholesale price would comprise:

- Hunter Water's retail water usage price, as determined by IPART, for all drinking water supplied through the metered connection point;[27]
- Hunter Water's water service charge, as determined by IPART, for each lot within the development based on the standard residential service charge and the meter equivalent water service charge for each non-residential customer;
- Less the minus component for the contestable service:
    - Retailing costs for each property;
    - The cost of maintaining the local reticulation assets within the development.
- Plus net facilitation costs. In this scenario, the only facilitation cost relates to transaction costs (the legal and in-house resources spent preparing and finalising utility services agreements).

In terms of retailing costs, Hunter Water is able to approximately calculate the avoided cost of not having to undertake billing, metering and call centre functions for customers within the development. In this case avoided retail operating costs are a reasonably proxy for avoidable retailing costs. Retail capital spend is a function of the age and capability of existing systems. An increment or decrement in the number of customers has no material bearing on the timing of any billing system upgrade.

[27] See section 4.1.1 for further detail on calculating the 'retail' component.

3.3.3 Scenario C: Lead-in works part of Hunter Water's capital expenditure program

Scenario C is the same as Scenario B, with one difference. In Scenario C, the development requires an augmentation of the lead-in infrastructure to connect the wholesale customer to Hunter Water's water network. In this hypothetical example, Hunter Water had committed to undertaking the augmentation works within its next four-year capital program. Consequently, the retail prices charged to all connected properties in the Lower Hunter are inclusive of these costs.[28]

Under Scenario C, the wholesale customer requests that Hunter Water brings forward the capital expenditure on lead-in water network infrastructure. Under IPART's approach, there is an additional facilitation cost payable by the wholesale customer – the time value of money of fast-tracking the investment in lead-in or lead-out infrastructure for an earlier commissioning date. Hunter Water suggests that the prevailing weighted average cost of capital would be provide the appropriate reference point for calculating this value.

3.3.4 Scenario D: Lead-in works not part of Hunter Water's capital expenditure program

Scenario D is the same as Scenario B, with the difference in this case focusing on who pays for lead-in infrastructure works.

In Scenario D, the new development requires new lead-in infrastructure or an amplification of existing network assets to connect the wholesale customer to Hunter Water's system. In this example, Hunter Water had not planned to undertake any capital works in this part of its network.

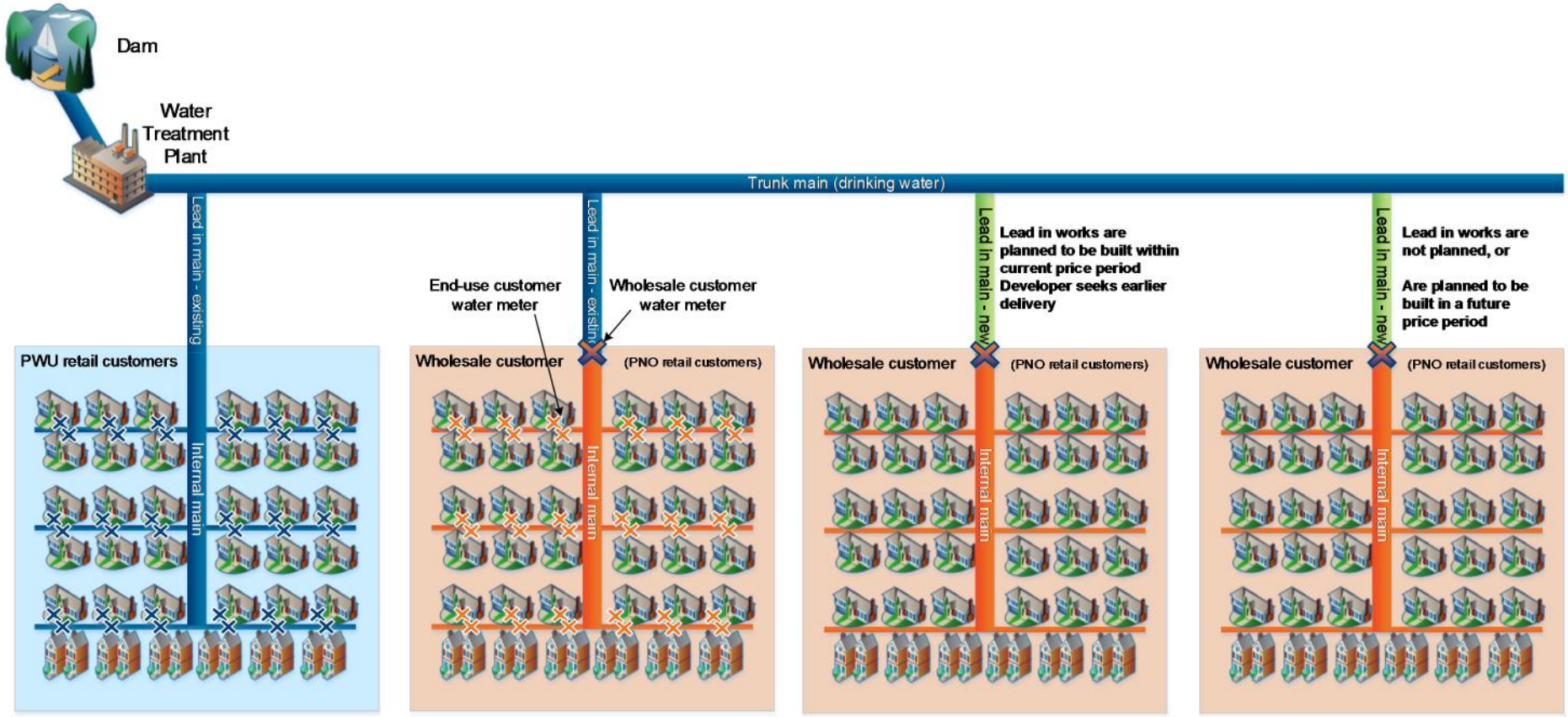
Under Hunter Water's funding of growth infrastructure policy, the developer would be responsible for funding the lead-in works to a greenfield development site, with the possibility that Hunter Water may pay for network upsizing costs. In most cases, the developer would fund and deliver the lead-in infrastructure, and transfer asset ownership to Hunter Water. Hunter Water would own, operate and maintain these assets on an ongoing basis.

Hunter Water has considered a number of utility services agreements in the past two years, all involving the connection of a greenfield development to Hunter Water's drinking water supply. In one case, Hunter Water was able to provide a connection without significant infrastructure works through an arrangement that allows the wholesale customer access to Hunter Water's system during off-peak periods only. In another case, the developer agreed to pay for a series of upgrades to the lead-in water network in accordance with certain development thresholds.

Under Hunter Water's approach to the funding of growth infrastructure, the developer or wholesale customers delivers and funds the capital works or makes a lump-sum payment when Hunter Water commissions the assets. If the project involves a series of upgrades, the developer or wholesale customer can deliver the works or pay Hunter Water for the cost of works completed. The underlying principle applied is that the developer or wholesale customer funds the work directly or makes a one-off payment to Hunter Water. In this way, there is no need to adjust the wholesale price of the water service to account for 'facilitation costs', as the funding is dealt with separately to the ongoing wholesale supply arrangement.

[28] That is, return *on* and *of* capital expenditure.

Figure 3.2 Facilitation costs under various scenarios



Scenario A	Scenario B	Scenario C	Scenario D
Traditional supply model	WIC utility supplies end-use customers	WIC utility supplies end-use customers	WIC utility supplies end users
Hunter Water supplies all end-use customers	HW supplies water to connection point on the boundary of new development	HW supplies water to connection point on boundary to new development	HW supplies water to connection point on boundary of new development
Developer commissions reticulation assets and gifts to Hunter Water	Existing lead-in infrastructure, no upgrades necessary.	Upgrade needed to lead-in infrastructure, factored into HW's forward capex program	Upgrade needed to lead-in infrastructure, not in HW's Growth Servicing Plan

3.3.5 Negative facilitation costs – deferred or avoided expenditure

IPART intends to incorporate deferred or avoided investments (savings) that arise from the activities of the wholesale customer as a negative facilitation cost (or facilitation benefit). These are savings or benefits that are realised elsewhere in Hunter Water's water or wastewater supply chain.

The WIC utility's on-site water treatment facility may give rise to negative facilitation costs if a wholesale customer produces recycled water that allows the wholesale service provide to defer a water supply related investment. The value of such a deferment is a function of a range of factors:

- the incremental household water savings generated by the new WIC utility's scheme;
- the number of connections in the WIC utility's area;
- the impact of the reduction in potable water generated by the PNO and the overall demand growth; and
- the magnitude and timing of the incumbent's related water supply investments.

Hunter Water has applied the principles defined in IPART's recycled water guidelines to calculate the potential avoided and deferred costs of a hypothetical recycled water in Lower Hunter.[29] These guidelines require a counterfactual analysis. The value of any potable saving is the difference between the present value of the investment cash flow without the WIC utility and the investment cash flow with the WIC utility scheme. The following steps are applied to calculate the deferral benefit:

a) determine of the volume of potable water savings;

b) estimate the impact of a) on the timing of any planned investment; and

c) calculate the present value of this impact (discount rate set at the prevailing weighted average cost of capital).

Hunter Water has developed an indicative example to demonstrate this approach and estimate the potential impact of a typical WIC utility scheme for a hypothetical water supply augmentation. In this example, the water supply augmentation is an upgrade to the water supply distribution network.

The volume of potable water savings is a function of the current BASIX requirement set at 165 kL per household per year (this is what would have been achieved without the WIC utility scheme).[30] For the purposes of this calculation it is assumed that the WIC utility's customers will achieve a lower consumption of 145 kL per household per year, consistent with WIC licensing applications in the Lower Hunter. This example assumes that the WIC utility connects 3,000 residential lots for an annual incremental potable saving of 60 ML per year or 0.164 ML per day.

The impact of this reduction on the timing of investment is derived by comparing the incremental saving in potable water supply to the average annual growth in peak demand over the near term of 4 ML per day per year.[31] The equivalent number of years of growth avoided is given by 0.164 divided by 4 equalling 0.04 years or around 15 days. If this impact was applied to hypothetical water supply investment of $5 million in year 5 of an investment program, the deferment impact of the WIC utility's scheme represents approximately $8,000 across the scheme or $2.67 per household within the new development. For the avoidance of doubt, this figure represents the equivalent once-off benefit.

IPART accepted the above methodology for the estimation of deferred costs of the Kooragang Industrial Water Supply (KIWS) project (see Box 3.2). In the KIWS example, a 9 ML per day plant, the equivalent of about 5 per cent of annual potable supply, resulted in a deferment of investment in Hunter Water's capital program of 2.5 years. To generate a deferral benefit commensurate with KIWS scheme would require 164,000 residential connections – the equivalent of about 70 per cent of Hunter Water's existing residential customer base.

[29] IPART, 2006.
[30] Hunter Water, 2012(a), page 7.
[31] Hunter Water, 2013.

Hunter Water considers that negative facilitation costs in the form of benefits from deferral or avoided costs associated with WIC utility recycling schemes in the Lower Hunter are unlikely to be material in the near future. IPART's decision to terminate any avoided cost saving for Hunter Water associated with the KIWS scheme reinforces this view.

Box 3.2 Kooragang Industrial Water Scheme – a case study of deferral benefits

The Kooragang Industrial Water Scheme (KIWS) was designed as 9 ML per day advanced industrial recycled water plant. The business case for the project recognised that the 9 ML per day (3.29 GL per year) would substitute for potable water and therefore would influence the timing of upgrades at the Grahamstown Water Treatment Plant (WTP). The design and construction of the planned WTP upgrade was estimated at around $120 million ($2012-13 terms). Following the upgrade, the incremental operation and maintenance costs were estimated at $2 million per year.

The impact of this potable demand reduction on the timing of the planned upgrade was estimated through an understanding of the annual growth in peak demand. The bulk water supply strategy at the time defined the annual average growth in peak demand at around 3.6 ML per day. Using this factor, the 9 ML per day reduction was estimated to be equivalent to 2.5 years of growth. In other words the impact of the KIWS commissioning was to allow capital investment and associated operation costs to be deferred for 2.5 years.

IPART's 2006 Recycled Water Determination set out a guideline which proposed that the total costs of a recycled water scheme should be shared between direct recycled water users and the broader water and/or sewerage customers. IPART would determine the contribution from the broader customer base by calculating the amount of avoided or deferred costs generated by the scheme, using information provided by the regulated utility. In the case of the KIWS scheme, the value of the deferred costs was calculated using the difference between the present value of the without and with KIWS cash flows.

IPART estimated the initial value of the KIWS related deferment at $9.5 million. In 2012, Hunter Water asked IPART to include this value in the forward capital program, with cost recovery through regulated prices.[32] The 2012 expenditure review by IPART's consultants concluded that the value of the deferrals associated with the KIWS scheme was "somewhere in the envelope of $5.9 million to $9.5 million". IPART's 2013 Determination included "$9.5 million of avoided costs for KIWS in the RAB and therefore in the water charges". Water charges from 2013-14 to 2015-16 included a contribution from all water customers to the costs of KIWS.[33]

IPART's 2016 Draft Determination reported a lower uptake of recycled water provided by the KIWS. Consequently, IPART decided to remove the KIWS avoided costs from Hunter Water's regulatory asset base.[34]

IPART's 2016 Draft Determination flagged a full review of its approach to recycled water pricing, including the quantification of avoided costs in 2017-18.[35]

[32] Hunter Water, 2012(b).
[33] IPART, 2013(b).
[34] IPART, 2016(c), page 69.
[35] IPART, 2016(c), pages 68 and 69.

3.4 The avoidable cost approach is efficient and measurable

Hunter Water supports the earlier IPART approach of setting wholesale prices on the basis of the regulated retail price less avoidable costs.[36] Frontier Economics summarises the key advantages of this approach:

- The minus component would be readily calculated by reference to the costs that Hunter Water would avoid over the long term as a result of the activities of the entrant as an alternative supplier.
- The avoidable cost methodology does not require any resetting of past regulatory asset base values (see Box 3.3).
- There is no need to separately quantify 'net facilitation costs': additional infrastructure costs are paid up-front, and any deferred benefits, to the extent they can be quantified, are factored into the calculation.
- The avoidable cost approach does not require IPART to assess whether it is efficient to do things differently from the incumbent – the only requirement is that if the entrant does things differently, it must result in greater efficiency. This might be reflected in:
    - Lower costs; or
    - Higher willingness to pay for a higher quality service (e.g., a faster build or additional features). In that case, the entrant would enter even if it had higher costs than the incumbent because its service would be more valuable to developers and end users.

[36] IPART, 2015.

Box 3.3 The value of the public water utility's existing assets

IPART refers to claims made by some stakeholders at its public hearings relating to past asset valuations:

> *…some stakeholders said that the 2000 'line-in-the-sand' valuations of Sydney Water and Hunter Water's regulatory asset bases are a barrier to competition. The regulatory asset base 'line-in-the-sand' valuations were based on prevailing prices in 2000, rather than the depreciated replacement costs of the assets. This is seen as a barrier to competition, as wholesale customers are likely to require a market rate of return on the full investment cost of their assets.*[37]

IPART appears to uncritically accept these claims in proposing that its approach to wholesale pricing adopt a retail minus 'reasonably efficient competitor' cost where this cost reflects "the full investment cost of their assets":

> *We consider that the reasonably efficient competitor cost should be based on the full value of assets. This would create a level playing field where a low-cost wholesale customer can compete with Sydney Water and Hunter Water, while making a market return on their assets.*[38]

This argument reflects a misunderstanding of the how the retail-minus avoidable cost approach would work.

The first point is that the vast majority of Hunter Water's regulatory asset base relates to monopoly network assets rather than to assets in the contestable activities upstream or downstream of these monopoly networks. This means that any 'low' valuation of these assets will be reflected in relatively low retail prices which in turn will be reflected in a 'low' starting point for the retail-minus calculation of wholesale prices levied on new entrants.

This in turn implies that any concerns about 'low' regulatory asset valuations would relate only to assets used in providing the contestable services. Given that many of the contestable services relate to greenfield developments, it is not clear that the incumbent would have any existing such assets themselves or if they do they are likely to be relatively new and as such their regulatory value is likely to be close to their "full investment cost".

More fundamentally, the claim that past asset valuations will distort entry decisions merely highlights the flaw in basing the minus component on a backward-looking valuation of assets.

A proper definition of avoidable costs should refer to the future, and not the past. Past costs that might have been avoided have no relevance to this definition.

The corollary of this definition is that the focus of the retail minus approach should be on costs that would be avoidable by the incumbent (or, in IPART's alternative, incurred by an efficient asset seeker). This is an explicitly forward looking test. It has nothing to do with whether the incumbent's regulatory asset base is 'line in the sand' or based on full replacement cost.

Source: Frontier Economics

[37] IPART, 2016(a), page 33.
[38] IPART, 2016(a), page 33.

4 IMPLEMENTATION OPTIONS

Hunter Water favours IPART's Option 1 proposal out of the three implementation models detailed in the Discussion Paper. Under this arrangement, IPART would determine a standard, system-wide average minus and net facilitation costs to apply to all schemes within Hunter Water's area of operations. A separate wholesale price would apply for water services and wastewater services. Different minus components may apply depending on the nature of the supply arrangement, for example, whether the development was a high density development or a greenfield residential project.

Hunter Water has also described the general features of a 'hybrid' implementation model should IPART consider some form or price methodology. The hybrid approach would default to a straightforward retail minus system-wide avoidable costs in instances where the avoidable costs were readily identifiable and measurable.

4.1 System-wide wholesale prices

Hunter Water favours a simple, uniform approach because it does not see a need for anything more complicated. This reflects the reality that there are a small number of wholesale customers in the Lower Hunter and each wholesale supply arrangement is limited to the provision of a drinking water service at the boundary of the new development.[39]

Hunter Water considers that the following matters are also relevant to any consideration of a wholesale pricing determination covering Hunter Water's area of operations:

- Hunter Water requires developers to fund and deliver the reticulation assets within each new development.
- Hunter Water has a funding of growth infrastructure policy that requires developers to fund lead-in infrastructure works to connect the development and amplify existing assets where necessary to provide sufficient service capacity. In almost all cases, the developer builds and commissions the lead-in infrastructure. The developer may also elect to pay for lead-in infrastructure delivered by Hunter Water.

Under these funding arrangements, the developer directly funds infrastructure works necessary to connect the new development to Hunter Water's water and wastewater networks. Consequently, there is no need to adjust wholesale prices to factor in any additional 'facilitation costs' associated with connecting and extending network assets for each development. Further, given the type and scale of WIC utility developments in the Lower Hunter, Hunter Water does not consider that there is likely to be any material benefits associated with deferred or avoided investment elsewhere in Hunter Water's water supply system.

4.1.1 Calculating the retail component

IPART suggests that wholesale service providers should calculate the retail component of the retail-minus formula using the following approach:

- *the number and average connection sizes of end-use customers the wholesale customer will supply, and*
- *the end-use customers' demand for the services (i.e., both water usage and/or sewerage usage), and its current retail prices for those services.*[40]

Hunter Water considers that the retail component is most accurately determined using information on end-use customers that the wholesale customer will supply at a level of detail that reflects Hunter Water's prevailing retail price structures, as determined by IPART.

Service charges for wholesale water services can be determined using the number of residential end users (because there is a common residential water service charge for houses, flats and units) and the number and size of water meters of non-residential customers (i.e. meter equivalents).[41] Service

[39] Aside from one case in which wholesale sewerage services are being provided temporarily. See Table 2.2
[40] IPART, 2016(a), page 41.
[41] A meter equivalent is a factor set with reference to a base meter size, such as 20 mm.

charges for wholesale wastewater services are more complicated due to the lack of a common residential service charge and sewer usage considerations.[42]

Usage charges for wholesale water services could be determined either based on end-use customer water meters or the wholesale customer's meter(s) at the boundary of the development. Some considerations in selecting the best approach are:

- Usage charges based on the end-use customer meter would remove an incentive for the WIC utility to maintain an economic level of leakage within its water supply system and implicitly involve a cross-subsidy from the public water utility's retail customers. It would penalise the public water utility by making it report leakage from a jurisdiction where it has no authority to undertake leakage management activities. In the short term, leakage from young assets is expected to be minimal and therefore it may be appropriate to adopt a simplified approach, revisiting materiality at a later review.
- Potable top-up of a WIC utility's recycled water scheme can be accommodated with either approach (see section 2.3.1) however it would be more simply addressed at the wholesale customer meter.
- Public water utilities may have visibility of usage at the wholesale meter but not at end user meters.

IPART needs to consider the best way of requiring wholesale customers to provide the public water utility with up-to-date information on the number of connected end-use customers and relevant details on the type of end users.

4.1.2 Calculating the minus component

Following IPART's proposed retail-minus approach, there would be two deductions from the IPART determined retail price to derive wholesale water and wastewater prices:

1. *Avoidable retailing costs* – operating costs associated with billing, metering and call centre operations avoided by supplying a single wholesale customer. Hunter Water does not consider that there would be any material avoidable capital expenditure costs that fall within the retailing cost category. Hunter Water has a good understanding of the likely avoided retail costs for a large greenfield development. These costs can be expressed in average retail costs per customer or in percentage terms.
2. *Avoidable network operating and maintenance costs* – Hunter Water would not incur costs associated with the maintenance of water and wastewater reticulation assets within the development. Hunter Water is currently working on a project to apportion network maintenance costs within the water and wastewater networks based on different fault types and different network assets. Hunter Water will derive a maintenance and operating cost per development lot for new water and wastewater reticulation assets in the coming weeks.

Under the IPART approach, the transaction costs associated with negotiating utility services agreements, monitoring those agreements, and metering at the offtake point would be added to the wholesale price. Hunter Water has not given detailed consideration as to how some of these transaction costs would be allocated to specific supply agreements or how the wholesale price would be adjusted through time.

Under the Option 1 proposal, IPART would determine wholesale prices for a fixed period of time. It would make sense for the IPART wholesale price determination to lag the IPART retail price determination by a period of time, possibly 12 months.

IPART could bring forward a wholesale price review if it became aware of problems with the determination, or if wholesale customers or public water utilities were circumventing the IPART-determined wholesale prices in some way.

[42] For example, deemed usage embedded in some service charges, free discharge allowances, sewer discharge factors and sewer usage charges for non-residential customers.

4.2 A 'hybrid' implementation model

Hunter Water recognises that IPART may give weight to ensuring that any pricing approach is capable of fully addressing all avoidable costs associated with both water and sewerage infrastructure and applying a consistent approach in the Hunter Water and Sydney Water areas of operation.

Should IPART decide to pursue a wholesale price methodology model, in line with Option 2 in the Discussion Paper, it would be possible to design a hybrid mechanism that enables a proportionate application of the methodology based on the scope and value of avoidable costs in the wholesale supply arrangement.

The hybrid model would combine elements of IPART's Option 1 and Option 2:

- Hunter Water would apply standardised estimates for avoidable cost elements which are system-wide and do not varying with location. Hunter Water would publish the standardised estimates in advance and updates its calculations if the costings change. Alternatively, IPART could publish typical system-wide retail minus prices that would apply in these circumstances.
- The standardised estimates would include average avoidable retail costs per customer and avoidable operating and maintenance costs for reticulation assets within the development. Each of these avoidable costs could be calculated for greenfield developments and high density developments including separate estimates for wastewater services and potable water supply.
- If there were no other avoidable costs, Hunter Water would calculate wholesale prices in accordance with IPART's retail determination and the standardised avoidable cost estimates.
- If there were cost savings to the public water utility outside of the wholesale customer's scheme, the public water utility would be required to estimate bespoke elements of avoidable costs. These bespoke elements would cover avoidable costs which may arise from the activities of the wholesale customer which are not reflected in the standardised estimates.
- The wholesale price methodology would set out defined information thresholds or triggers. The onus should initially rest with the wholesale customer to identify any additional avoidable costs and demonstrate the likely magnitude of those savings. If those thresholds are met, the public water utility would be obliged to follow the steps outlined in IPART's Option 2, including the publication of wholesale servicing plans and consultation on the individual inputs to the calculation of wholesale prices.
- IPART would provide detailed guidance material on how the public water utility would calculate bespoke elements, using typical scenarios to illustrate how this would apply.

Hunter Water considers that the hybrid approach offers the following advantages:

- The amount of time and effort required to finalise a wholesale pricing offer under IPART's price methodology would be tailored to each agreement. If there are wider avoidable costs not accounted for in the standardised approach, those costs would be properly defined and measured if the bespoke stage is triggered.
- All parties would benefit from lower transaction costs and a more timely execution of utility services agreements.
- The hybrid mechanism would apply the standardised estimates of avoidable costs as the default wholesale pricing offer to wholesale customers. There would be no need to contemplate non-residential tariffs as an interim wholesale price. This may also negate the need to back calculate amounts owing for interim pricing periods.
- The public water utility and the wholesale customer could still negotiate a mutually agreeable wholesale price under an opt-out arrangement.

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APPENDIX A

EXPERT ADVICE FROM FRONTIER ECONOMICS PTY. LTD.

Prices for wholesale water and sewerage services: a review of IPART's proposed approach

A REPORT PREPARED FOR HUNTER WATER

May 2016

Prices for wholesale water and sewerage services: a review of IPART's proposed approach

Prices for wholesale water and sewerage services: a review of IPART's proposed approach

Boxes

Figures

Executive summary

Frontier Economics (Frontier) has been engaged by Hunter Water to provide independent analysis of proposed approaches to regulating the prices of wholesale water and sewerage services provided by Hunter Water (and Sydney Water) as set out by IPART in its recent Discussion Paper.

The way forward

Frontier Economics does not consider that IPART's preferred approach to pricing of wholesale water and sewerage services outlined in its Discussion Paper will achieve either the primary underlying policy objective of facilitating efficient entry or the secondary objective of ensuring that the administrative burden placed on the parties involved is proportional to the potential benefits of competition.

In our view, therefore, IPART should revert to a retail minus avoidable cost approach it favoured in its earlier issues paper. However, in applying the retail minus avoidable cost approach, the focus should be on long-term forward-looking costs rather than historic or building block costs.

We propose an avoidable cost or equally efficient operator approach, applied in a pragmatic way. This would include scope for adjustments to ensure a level playing field between the incumbent and new entrants consistent with economically efficient outcomes where certain disadvantages can be demonstrated to exist and are material.

The key elements of this approach include:

- A retail minus avoidable costs methodology apply for wholesale water and sewage sewerage service prices whereby:
  - Wholesale price = Retail price - Avoidable costs + Facilitation costs
- In applying the retail minus avoidable costs methodology to these wholesale services:
  - The starting point 'retail price' be established by 'looking through' the access seeker to end users to ascertain the retail tariffs which would apply to those customers if served by Hunter Water.
  - Avoidable costs be identified and calculated by reference to the costs Hunter Water would avoid over the long run (covering a 25 year planning period) as a result of the activities of the entrant as an alternative supplier, as distinct from costs avoided in the short run or average historic or building block costs.
  - A hybrid approach which uses both standardised and bespoke elements of avoidable costs depending on the nature of the wholesale customer's activities.

  - Any facilitation costs incurred by Hunter Water in providing access should be added to determine a wholesale price.
  - A case-by-case approach to converting the wholesale customer 'revenue requirement' into a wholesale tariff structure.
- In order to provide certainty to potential new entrants and to guide negotiations, values of the standardised elements of this methodology could be published in advance (and updated as appropriate) by the public water utilities. In addition, detailed guidance material could be provided on how the bespoke elements would be calculated, using typical scenarios to illustrate how this would apply.

We have reached this position after undertaking analysis covering three main topics addressed in IPART's Discussion Paper:

- The appropriate objectives and principles for the regulation of wholesale water and sewerage services.
- IPART's proposed pricing methodology.
- How the pricing methodology can best be implemented.

Objectives and principles

A fundamental position in IPART's Discussion Paper is that it should directly regulate the prices of wholesale services provided by Sydney Water and Hunter Water to wholesale customers under the provisions of the IPART Act.

- While its proposed definitions of wholesale services appear broadly appropriate, in practice there may be a need to define the wholesale services being provided by public utilities to wholesale customers in specific cases more precisely.
- More generally, there is a need to be very clear about the types of new entry which are likely to occur in practice and to ensure that the approaches to wholesale pricing reflect these.
- IPART has effectively concluded that bulk water supply is not readily contestable – at least in the supply regions of Hunter Water and Sydney Water - and that seeking to use the WICA access regime is too cumbersome and costly for new entrants to secure what they really want: a wholesale water or wastewater service to the boundary of their development. While IPART's assessment may well be correct, it is somewhat concerning that the process of introducing competition into the NSW water industry is developing in a seemingly *ad hoc* manner.
- While IPART identifies suitable objectives, and the relevant dimensions of economic efficiency, its discussion of these objectives does not provide much insight into the potential trade-offs which later emerge in its choice of pricing methodology.

- We agree with IPART that access and/or wholesale pricing which allows new entrants and existing public utilities to compete on equal terms is only one part of the solution for facilitating competition in the water industry but also support its intent to adopt a pricing approach that provides certainty and facilitates efficient entry to the water and sewerage markets within the existing policy and legal framework. However in our view it would be helpful to explicitly recognise that one of the key relevant current policy settings relates to the nature of competition which the Government seeks to promote.

IPART's proposed pricing methodology

IPART has proposed an alternative form of retail minus, namely a retail minus 'reasonably efficient new entrant' approach:

Wholesale price = Incumbent's retail price – reasonably efficient competitor's costs + net facilitation costs

Our key findings on IPART's proposed approach are as follows:

- Frontier concurs with IPART's assessment that given the existence of postage stamp pricing, a retail minus approach is the only feasible option. It also concurs with IPART that a cost-based approach or non-residential customer approach could lead to inefficient entry based on cherry-picking.
- IPART's proposal to use a 'reasonably efficient operator' rather than an 'equally efficient operator' (or avoidable cost approach) is:
  - Not likely to promote economic efficiency, as where reasonably efficient entrants have higher costs than Hunter Water, there will be losses in static efficiency that will be passed through to the Hunter Water's remaining retail customers.
  - Likely to be more difficult to implement, as IPART will have to make judgements about the relative efficiency of entrants (which may look very different from Hunter Water), and rely on cost information that is less verifiable than that of Hunter Water.
- We therefore submit that in calculating wholesale prices, IPART should use the avoidable costs of Hunter Water or Sydney Water (the equally efficient operator standard). These costs should only be adjusted in the following circumstances:
  - If the entrant's disadvantage is caused by something other than the incumbent's efficiency
  - If there is evidence to suggest that the disadvantage is material and quantifiable.

Implementation

While we suggest a variation of IPART's preferred approach for determining wholesale prices, many of the implementation issues would be common to either approach. Our key findings on IPART's proposed approach are as follows:

- The first step under IPART's proposed approach (indeed, under any retail minus approach) involves the wholesale service provider calculating how much revenue it would generate from charging postage-stamp prices to the wholesale customer's scheme's end-users.
- Under IPART'S Option 1 IPART would determine the minus component as a percentage or value that reflects the system-wide average or typical costs a reasonably efficient competitor would incur to provide water and/or sewerage services from the wholesale connection point to the end-use customers. In our view this implementation option would not appear to be likely to achieve the stated policy objective of promoting efficient entry.
- IPART's second option for calculating the minus and net facilitation cost components of its proposed formula for calculating default wholesale charges would require the wholesale service provider to calculate the minus and net facilitation costs components for each scheme in accordance with a methodology specified by IPART in the determination. Option 2 is superior to Option 1, although IPART needs to give further consideration to how to make this approach not unduly burdensome.
- The third option identified by IPART for implementing its preferred approach is for IPART to directly determine the minus and net facilitation cost components of each scheme. In our view, this approach is likely to be excessively prescriptive. Further, it may undermine the ability of the wholesale service provider and prospective wholesale customer to reach agreement (i.e. opt out of the regulated price) as envisaged by IPART's approach.

1 Purpose and scope of this report

1.1 Background

As set out in detail in our previous report, in recent years competition has emerged in Hunter Water's area of operations in the form of private sector provision of water, wastewater and recycled water services to discrete greenfield developments.

To date, the majority of Hunter Water's interactions with private network operators (PNOs) have involved the provision of a bulk water supply to the boundary of a new development area (predominately residential developments). Under this model, the PNO would on-sell drinking water to each customer in the development as well as provide self-contained sewerage and recycled water services. As noted by IPART:

> A new category of water customer has emerged in NSW: wholesale customers. They buy wholesale water and/or sewerage services from Sydney Water Corporation (Sydney Water) or Hunter Water Corporation (Hunter Water) and on-supply these services to end-use customers. Typically, wholesale customers will be licensed under the Water Industry Competition Act 2006 (the WIC Act). Therefore, they are alternative retail suppliers to the incumbent utilities, and compete with them for customers.

IPART originally intended to review the prices for these wholesale services as part of its ongoing 2016 reviews of the incumbent utilities' retail prices, and undertook some initial consultation on this issue as part of these reviews.

IPART subsequently decided to conduct a separate and longer review of wholesale water and sewerage prices for Sydney Water and Hunter Water. This reflected its recognition that wholesale pricing is a new and complex area of price regulation for IPART and the water industry which has major implications for the future development of the wider NSW urban water market. A separate extended review would allow more time to consult with stakeholders and develop the best wholesale pricing approach. IPART also noted that a separate review and determination will help it ensure that the pricing approach for wholesale services is consistent for Sydney Water and Hunter Water, thereby providing wholesale customers with greater certainty to better facilitate state-wide expansion of activities.

On 26th April IPART released a Discussion Paper setting out its preliminary views on its proposed approach to the setting of wholesale water and sewerage services. IPART is now requesting views on these (or alternative) proposals for the regulation of wholesale prices for Sydney Water and Hunter Water.[1]

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1 IPART, *Prices for wholesale water and sewerage services Sydney Water Corporation and Hunter Water Corporation Water — Discussion Paper*, April 2016 ('Discussion Paper').

1.2 This report

Frontier Economics (Frontier) has been engaged by Hunter Water to provide independent analysis of proposed approaches to regulating the prices of wholesale water and sewerage services provided by Hunter Water (and Sydney Water) as set out by IPART in its recent Discussion Paper.

Our analysis covers three main areas:

- The appropriate objectives for the regulation of wholesale water and sewerage services (Section 2).
- IPART's proposed pricing methodology (Section 3).
- How the pricing methodology can best be implemented (Section 4).

We draw on this analysis in then proposing a suitable way forward (Section 5).

2 Rationale and objectives for regulating wholesale water and sewerage services

2.1 Direct regulation of prices of wholesale services

A fundamental position in IPART's Discussion Paper is that it should directly regulate the prices of wholesale services provided by Sydney Water and Hunter Water to wholesale customers under the provisions of the IPART Act.

2.1.1 Definition of wholesale services and customers

In its Discussion Paper IPART defines 'wholesale customers' to be those that purchase water supply and/or sewerage services from Hunter Water and Sydney Water for the purposes of on-supplying water and sewerage services to customers. It observes that as such, wholesale customers are alternative water and sewerage service providers to Hunter Water and Sydney Water. A wholesale customer could be a public water utility, a licensed retail supplier, or person required to hold a retail supplier's licence, under the WIC Act; a licensed network operator, or person required to hold a network operator's licence, under the WIC Act; a sewerage services supplier that is exempt from the requirement to obtain a retail supplier's licence or network operator's licence under the WIC Act; or a local council.

IPART also states that the types of supply arrangements it envisages as wholesale services could be where wholesale customers purchase a wholesale water supply service from Hunter Water and/or Sydney Water (comprising, for example, bulk water, treatment and transportation) and then provide retail water services to end-use customers. Similarly, wholesale customers could purchase a wholesale sewerage service from Hunter Water and/or Sydney Water (comprising, for example, sewage transportation, treatment and disposal) and provide retail sewerage services to end-use customers.

While these definitions appear broadly appropriate, in practice there may be a need to define the wholesale services being provided by public utilities to wholesale customers in specific cases more precisely. For example, in some cases the public utility may supply a wholesale potable water supply service to a development to provide for potable water demand in that development but may also provide a back-up potable wholesale water supply to provide for demand for non-potable uses at times when a recycled water facility serving non-potable uses in the development is off-line.

More generally, there is a need to be very clear about the types of new entry which are likely to occur in practice and to ensure that the approaches to wholesale pricing reflect these.

2.1.2 Rationale and instrument for regulation

A threshold issue is whether wholesale services provide by Hunter Water and Sydney Water should be regulated, and if so, how.

In its earlier Issues Paper, IPART suggested that in principle, it considered that wholesale prices should be regulated through the WICA access regime. However, it observed that without an approved access undertaking in place (or a coverage declaration being made) there may be barriers to entry, especially for smaller utilities. It therefore proposed that it should temporarily determine wholesale and sewerage price caps until:

- A specified period (e.g. 12 months) after a voluntary access undertaking covering these wholesale services has been approved by IPART or
- Prices have been agreed between Hunter Water and the wholesale customer under the WICA access regime.

IPART's most recent Discussion Paper signalled a significant change in its position on this issue and it now proposes to regulate these services directly rather than through the WICA access regime:

> As state owned corporations, Sydney Water and Hunter Water are government agencies, and their water supply and sewerage services have been declared government monopoly services. Therefore, we are required to regulate the price of all of Sydney Water and Hunter Water's water supply and sewerage services, regardless of whether they are retail or wholesale services…
>
> We also consider there is an in-principle need for us to regulate Sydney Water's and Hunter Water's wholesale prices. Both utilities are the monopoly supplier of wholesale water and sewerage services in their area of operations, so regulation is needed to protect wholesale customers from potential abuses of this monopoly power. In addition, we do not consider the WIC Act access regime is currently a suitable framework for this regulation. It regulates access to 'infrastructure services', rather than the wholesale purchase of bundled water and sewerage services.

By its decision that it should regulate wholesale services, IPART has effectively concluded that bulk water supply is not readily contestable – at least in the supply regions of Hunter Water and Sydney Water - and that seeking to use the WICA access regime is too cumbersome and costly for new entrants to secure what they really want: a wholesale water or wastewater service to the boundary of their development.

Frontier notes that IPART's assessment may well be correct. The NSW experience with WICA to date suggests that simply enacting an access regime is unlikely to unleash widespread competition. It would seem more productive to put in place arrangements which focus on promoting effective competition in the activities where competition is most likely to occur and be beneficial. In our view, regulation of wholesale services as a bundled product is more likely to promote effective competition than relying on the WICA access regime. It would also remove legal

ambiguities raised in our previous report as to whether these wholesale services are in fact covered by the WICA access regime.

That said, it is somewhat concerning that the process of introducing competition into the NSW water industry is developing in a seemingly *ad hoc* manner. In most other industries where access regimes have been introduced – including through the Part IIIA National Access Regime – considerable effort has gone into determining principles and processes for determining how to get the maximum benefits from competition while minimising the potential negative efficiency consequences (such as inefficient asset duplication). In our opinion, the lack of clarity about the application of regulation is an issue that may need further attention by the NSW Government.

2.2 Objectives and guiding principles

In considering possible approaches to how prices of wholesale services provided by Hunter Water to WIC licensees should be priced and/or regulated, it is critical that decisions are based on clear underlying objectives and on sound principles.

In its Discussion Paper IPART articulates its proposed objectives for regulation of wholesale prices as follows:

> Our objective in determining wholesale prices for water and sewerage services is to create a level playing field, so that new entry to the water and sewerage services markets occurs where it is efficient. That is, that new entrants or alternative suppliers to Sydney Water and Hunter Water can compete where they are efficient, leading to overall least cost supply, enhanced service levels and efficiency gains in the water and sewerage services markets.

IPART stresses that it is important to get wholesale prices right, otherwise prices may:

- encourage inefficient entry if the price is too low, or
- discourage efficient entry if the price is too high.

To achieve this objective in the current policy and operating environment, IPART states that it needs to set prices that allow:

- the wholesale service providers (the incumbent utilities) and wholesale customers (new entrants) to compete on a level playing field (i.e. on equal terms), and
- new entrants to compete with each other on a level playing field.

It contends that:

> Such prices would allow new entrants to enter the contestable parts of the market where it is efficient for them to do so. That is, where they can compete by supplying contestable services at lower cost and/or by enhancing value to customers through the services they provide. Over time, increasing competition should encourage greater

> efficiency in the supply of water and sewerage services, thus reducing costs and enhancing services for the benefit of consumers.

IPART identifies three types of efficiency which would be enhanced by such new entry: productive efficiency, allocative efficiency and dynamic efficiency.

While IPART identifies suitable objectives, and the relevant dimensions of economic efficiency, its discussion of these objectives does not provide much insight into the potential trade-offs which later emerge in its choice of pricing methodology.

In particular, we note that in considering what constitutes a 'level playing field', it is important to focus on the underlying efficiency objectives, rather than seeking to identify and account for every advantage or disadvantage which public utilities and new entrants might face. Seeking to neutralise every such factor would undermine the very purpose and function of competition.

An implication of this is that in considering what constitutes a 'level playing field', it is important to distinguish between 'artificial' advantages which might apply to public entities and advantages which simply reflect the underlying economics of alternative supply solutions.

An example of a potential artificial advantage is public ownership. However, the artificial advantages relating to public ownership are already addressed by the policy of competitive neutrality which applies to GBEs including Hunter Water and Sydney Water. Competitive neutrality requires that government business activities should not enjoy net competitive advantages over their private sector competitors simply by virtue of public sector ownership. This policy recognises that if governments use their legislative or fiscal powers to advantage their own businesses over the private sector, it will distort the competitive process and reduce efficiency, particularly if the government businesses are technically less efficient than their private sector competitors.

Importantly, competitive neutrality does not imply that government businesses cannot be successful in competition with private businesses. Government businesses can achieve success as a result of their own merits and intrinsic strengths. As noted in New South Wales Government Policy Summary of the Competitive Neutrality Complaints Handling Mechanism January 2002 (p.2):

> Competition policy does not require that all firms or businesses compete on an equal footing. It recognises that competing businesses may differ in size, assets, skills experience and culture.

It is therefore by no means clear that seeking to create a 'level playing field' by adjusting for factors such as size or scale economies is consistent with the underlying objective of promoting only efficient entry – indeed there is a risk that doing so will promote entry which is inefficient. This issue is discussed further in the context of IPART's proposed retail minus pricing methodology in section 3 below.

2.3 Broader policy settings

IPART recognises in its Discussion Paper that access and/or wholesale pricing which allows new entrants and existing public utilities to compete on equal terms is only one part of the solution for facilitating competition in the water industry.

In particular, it identifies the NSW Government's policies of postage stamp pricing and setting developer charges to zero as potential impediments to competition in the sector and suggests there would be merit in an industry-wide review of how to better facilitate competition in the water industry.

As indicated in Section 2.1, Frontier agrees with this assessment. We also agree with IPART that it should not defer establishing an approach to setting wholesale charge pending such a review. We support IPART's intent to adopt a pricing approach that provides certainty and facilitates efficient entry to the water and sewerage markets within the existing policy and legal framework.

However, in our view it would be helpful to explicitly recognise that one of the key relevant current policy settings relates to the nature of competition which the Government seeks to promote. In particular, the NSW Government has recently moved to amend legislation to limit the right of WICA licensees to provide retail service only in connection with a scheme approved under the WIC Act, so that they could not simply purchase water from a public utility and on-sell it without providing any investment in physical infrastructure.

These changes gave effect to the Government's intent to promote competition to service new greenfeld or infill developments ('competition for the market') rather than full retail contestability across a public utility's entire region ('competition in the market'). In our view approaches to wholesale pricing should be developed- in a way which explicitly recognises the nature of competition in the urban water sector which the Government is seeking to encourage, rather than adopting approaches or relying too heavily on analysis drawn from other sectors where full retail competition has been an explicit policy objective.

3 Assessment of IPART's preferred pricing approach

3.1 Broad approaches to wholesale pricing

As noted in our earlier report, there is no universal rule for determining the price for access to a service. The appropriate pricing rule will depend on particular objectives of the decision maker (perhaps given in legislation), the characteristics of the industry, including any retail pricing constraints, if relevant, and the service provided by the facility in question.

As we also noted, a taxonomy of access prices typically recognises two broad categories:

- A top down or 'retail-minus' approach, which starts at the retail price and removes costs to derive an access price.
- A bottom up or 'cost of service' approach, which builds up the costs of providing the service and include variants such as short-run marginal cost, long-run marginal cost and long-run average cost (which includes building block models).

In its initial issue paper IPART also identified two other potential approaches:

- non-residential charge – the non-residential customer charge based on the connection size, as set under our prevailing price determination, and
- mixed multi premise charge – the mixed multi premise charge based on the number of properties, as set under our price determination.

In both its earlier issues paper and its more recent Discussion Paper, IPART has come out strongly in favour of a 'retail minus' approach. Its Discussion Paper (p. 26) states:

> Our preliminary view is that a retail-minus (plus net facilitation costs) approach is the best approach for pricing wholesale service at this time. We consider that it is the only viable wholesale pricing approach, in the long term, which can facilitate efficient entry to the water and sewerage services markets while the postage stamp pricing policy applies to Sydney Water and Hunter Water retail prices.

Frontier concurs with IPART's assessment that given the existence of postage stamp pricing, a retail minus approach is the only feasible option. It also concurs with IPART that a cost-based approach or non-residential customer approach could lead to inefficient entry based on cherry-picking.

Frontier also notes that one advantage of a retail minus approach is that it would automatically transition towards a cost-based approach if retail tariff reform which moved to more cost-reflective pricing occurs.

The issue then becomes the form of retail minus which is applied.

3.2 IPART's proposed retail minus approach

In its initial issues paper IPART expressed a preliminary view in favour of a retail minus avoidable cost approach.

(1) Wholesale price = Incumbent's retail price – incumbent's avoidable costs + facilitation costs

However, in its more recent Discussion Paper, IPART has proposed an alternative form of retail minus, namely a retail minus 'reasonably efficient new entrant' approach.

(2) Wholesale price = Incumbent's retail price – reasonably efficient competitor's costs + net facilitation costs

Given that this represents a significant shift in IPART's position, it is important to carefully consider both:

- whether this approach is in fact more likely to achieve the underlying policy objective of promoting efficient new entry in the context of the NSW urban water market, and
- whether it is practicable to apply.

The discussion below describes and assesses IPART's proposed approach as set out in its recent Discussion Paper.

3.2.1 IPART's rationale for the reasonably efficient competitor standard

As noted, IPART's proposed retail minus approach differs from the more commonly-used 'retail minus avoidable costs' standard.

IPART notes the following about its approach:

> Our preliminary view is that the 'minus' component should reflect the costs that a reasonably efficient competitor would incur in delivering water and/or sewerage services from the wholesale connection point to the end-users. We consider this would provide greater scope for dynamic efficiency gains (and hence greater benefits to consumers over time) than the retail minus avoidable cost approach we suggested in our Issues Papers.
>
> Our preferred approach of subtracting the reasonably efficient cost of contestable services recognises that competitive entry may be hindered if new entrants were required to achieve the scale economies of the incumbent utility immediately. Over

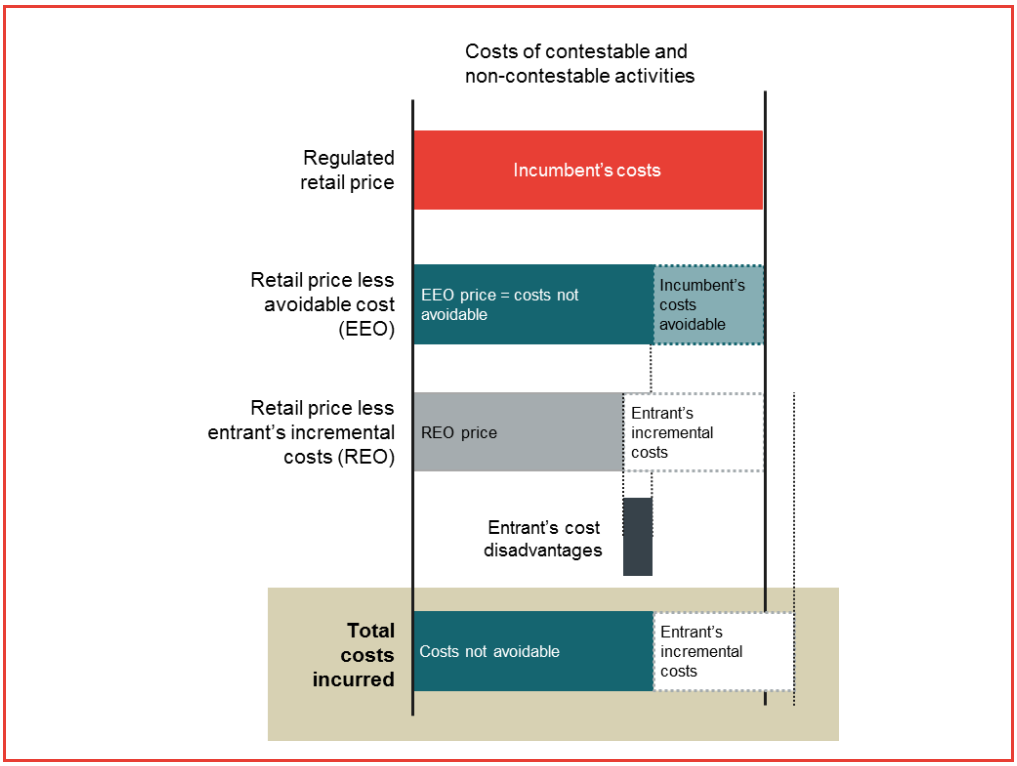
time, this entry could benefit consumers through efficiency gains by entrants and incumbents.[2]

In broad terms, the reasonably efficient operator (REO) approach can be juxtaposed with the 'equally efficient operator' (EEO) approach which provides that the wholesale customer should be given a discount from retail prices reflecting the efficient costs of the public utility; equal to the public utility's avoidable costs.

Our understanding of the approach is shown diagrammatically below (Figure 1).

This Figure illustrates that the key difference in approaches is that the reasonably efficient operator standard leads to lower wholesale returns for incumbents and higher total costs of producing services. It is therefore critical that any adjustments to reflect the higher costs of wholesale customers are consistent with the regime's objectives and empirically supportable.

Figure 1: Representation of REO and EEO (avoidable cost) approaches



Source: Frontier Economics

In the following sections, we outline why we consider that IPART's approach is not likely to best promote its objectives.

[2] Discussion Paper, p. 3

3.3 A reasonably efficient competitor standard can reduce economic efficiency

3.3.1 The REO standard implies losses in static efficiency

The promotion of allocative and productive efficiency, which together are commonly known as 'static' efficiency, are likely to suffer from the REO approach in the short term. IPART appears to be aware of this risk from the REO approach:

> One of the key challenges in this review is to develop a clear, workable definition of a reasonably efficient competitor. A reasonably efficient competitor would be assumed to have higher costs than the current incumbents.[3]

This indicates that IPART's approach will result in the total costs of producing the services across incumbents and entrants being higher than if an equally efficient (avoidable costs) standard was used. This loss of static efficiency could only be 'worthwhile' if gains in dynamic efficiency can outweigh the static losses.

In its Discussion Paper IPART (p.35) suggests that:

> The water industry exhibits strong economies of scale. That is, as a utility grows its customer base, its costs per customer generally decrease. Therefore, the reasonably efficient competitor cost reflects the level of efficiency that is reasonable to expect from a well-run smaller utility or a new entrant to the market…
>
> The reasonably efficient competitor benchmark would allow more innovation, as new businesses would not be deterred from entering the industry because they are of smaller scale than the incumbents. This would allow the industry to make dynamic efficiency gains, through maximising productive and allocative efficiency over time.

We can see no evidence in IPART's paper that is has considered the magnitude of the trade-offs between higher costs now (from loss of scale) and potential future gains in dynamic efficiency. Consequently, it is unclear on what basis IPART has formed the view that the REO approach is more compatible with IPART's stated objectives relating to efficient entry.

The discussion about the benefits of the REO approach is made more tenuous because IPART does not identify the source or magnitude of the economies of scale that might be relevant to the kinds of entry proposed by wholesale customers, nor why it would be beneficial to sacrifice them to introduce competition.

Further, it is apparent that the kinds of economies that might be relevant to costs in water networks are not limited to economies of scale. Economies in water supply might take the form of (one or more of) economies of scale, scope or density. These are described in Box 1. In each case, the source of the economy is different, and therefore the likelihood that the entrant will be disadvantaged is also different.

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[3] Discussion Paper, p. 34.

Box 1: Economies in water networks

Economies of scope relate to the behaviour of costs as two or more distinct goods are produced; for example, there may be scope economies between water and sewerage services if the assets used to supply the services are shared.

Economies of scale relate to the behaviour of costs as output expands as the network size increases; for example, in potable water reticulation networks, scale economies will exist if the additional costs of adding a new network development (with associated customers) fall as the network is extended.

Economies of density relate to the behaviour of costs as output expands over a given sized network; for potable water networks, economies of density exist if adding a subscriber within a given network footprint becomes cheaper as more subscribers are added.

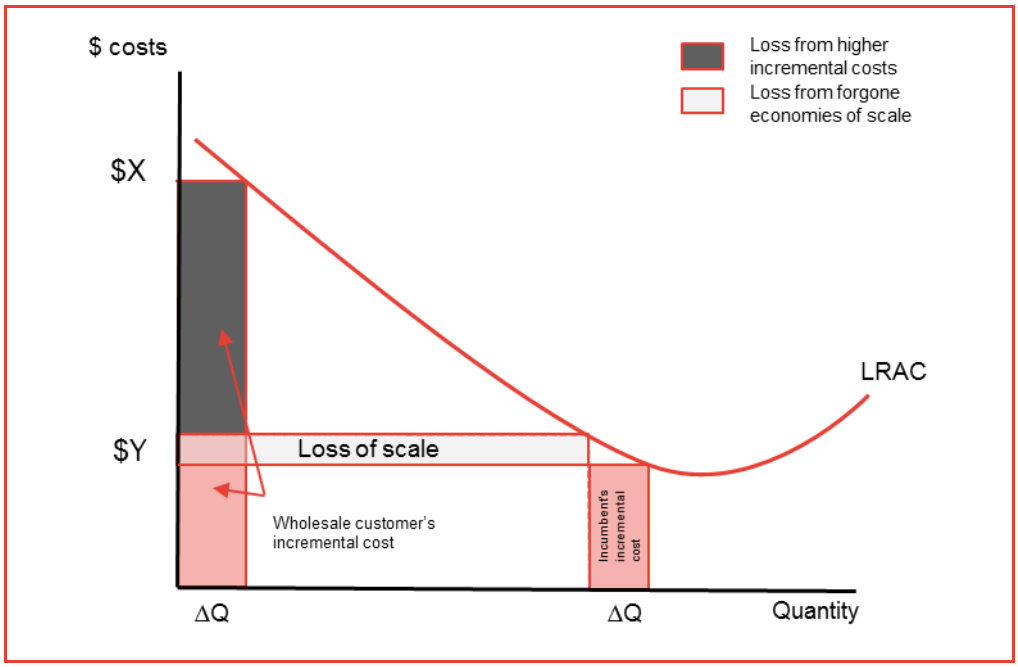
Source: Frontier Economics

The reason why this is important is that the material loss of any of these economies will raise the costs of using the REO standard. Such higher costs will be detrimental to end users in two ways:

- It will encourage entry which is inefficient, and will lead to higher average costs of production (productive inefficiency).
- In turn, returns from customers connected to other parts of the incumbent's network must be higher to recover these lower wholesale returns earned (or foregone) (allocative inefficiency).

An example is shown in the following figure. This shows an industry cost curve for an industry with economies of scale, as indicated by a declining long-run average cost curve over the relevant range of output. Suppose that an opportunity exists to extend an existing network (delta Q); if economies of scale are material (as shown) the entrant's incremental (and average) costs will be in the vicinity of $X. This reflects that it will not benefit from the economies of scale of a larger enterprise such as the incumbent, which would have average costs of around $Y.

Figure 2: Efficiency costs when economies of scale are material



Source: Frontier Economics

The costs to society from favouring a new entrant with higher costs in this example are represented by:

- The higher incremental cost of serving the new network area (roughly the difference between X and Y)
- The higher average costs of serving the remaining areas caused by the foregone scale economies from operating at a higher quantity. This cost is passed on to the incumbent's customers (or more accurately, the foregone benefit from lower costs does not materialise and so is not passed through).

It is apparent from the Figure that the magnitude of the losses if efficiency from adjusting for economies of scale could be non-trivial.

Notwithstanding this concern about the loss of economies of scale, no evidence has yet been put forward identifying where these economies might exist and how large they might be. However, IPART appears to have accepted that new entrants will be disadvantaged without further scrutiny.

3.3.2 Are economies of scale actually material?

The fact that the water industry *as a whole* exhibits strong economies of scale is not sufficient to support IPART's proposal for adjusting the minus component to reflect these economies. The main reason for this is that the parts of the sector which are most subject to economies of scale are the monopoly network components, not the contestable elements. These economies are effectively passed

through to new entrants in the retail price component of the retail-minus formula of the regulated wholesale price.

Any concern held by IPART on the scale advantages held by incumbents should therefore focus on any such economies in the contestable parts of the industry, which is the part new entrants are seeking to compete in. However, almost by definition, it would be expected that these activities are seen as contestable precisely because they are not subject to significant economies of scale, in contrast to the natural monopoly network components of the industry.

The existence of significant economies of scale which favour incumbents in these contestable activities has not been proven or even addressed by IPART. Indeed, claims to the contrary are provided by Flow Systems, one of the most active new entrants in the NSW urban water market, on its website:

> Flow local utilities deliver more affordable and sustainable water solutions than many public utilities. For example, Flow designs and constructs drinking water and wastewater solutions in NSW for up to half the cost of Sydney Water or Hunter Water…Private local water solutions are reducing water costs for connections to existing centralised systems for developers by as much as 50 per cent.

Indeed, Flow identify a number of competitive advantages they offer to developers, including reduced lead-in infrastructure costs, earlier property release and therefore faster property sales, higher property values as a result of a sustainable water solution, and streamlining of approvals.

Flow also suggests that they may enjoy significant economics of scope, stating that "Our bundled energy and water services reduce costs and achieve high sustainability outcomes".

While each new development may be relatively small compared to the entire region of Sydney or Newcastle, this does not mean that the private companies themselves are too small to enjoy economies of scale and scope across various projects. For example, Flow observes that:

> We have been appointed the local water utility for 8 communities, including more than 25,000 dwellings and 800,000m^2 of commercial retail space. Our offering has recently extended to include energy, making us a multi-utility business.

It also states that:

> Flow is an Australian company backed by Australian, NZ and international investment. In March 2013 global asset management leader, Brookfield Infrastructure, took a 51 per cent shareholding in Flow Systems. Brookfield Asset Management has more than $175 billion in assets under management and a strong 100-year history of owning and operating assets. The company has a focus on real estate, power, infrastructure and private equity and extensive experience in gas, trigeneration and cogeneration.

Such companies would appear well-placed to make investments in new technological solutions with potentially lucrative long-term returns.

3.3.3 The REO standard is unlikely to promote dynamic efficiency compared to avoidable costs

In proposing a REO rather than an avoidable cost standard, the trade-off for the loss of static efficiency is said to be dynamic efficiency:

> We consider this would provide greater scope for dynamic efficiency gains (and hence greater benefits to consumers over time) than the retail minus avoidable cost approach we suggested in our Issues Papers… Over time, competition should create an incentive for innovation that lowers costs and enhances service.[4]

Again IPART offers little in the way of discussion or evidence that the dynamic efficiencies expected from new entry would be material, or could outweigh the losses in static efficiency.

Moreover, there are some reasons to think that the particular model of competition likely to prevail in NSW is not likely to generate dynamic efficiencies that would outweigh static inefficiencies.

We understand that the primary area of competition that is emerging in NSW is for new developments on greenfield or brownfield sites. New entrants seek to provide a range of services which includes infrastructure, for supply to end users. Notably, there will be no ability of end users to switch to other suppliers once the initial decision to select a supplier is made. In other words, competition is one-time 'for the market' rather than ongoing 'in the market'. Unlike the situation IPART references in Box 2.4 (relating to retail electricity), there will be no competitive pressure 'in the market' to displace the new entrant if its costs turn out to be high or offerings poor.

Given that new entrants will likely need to be regulated as monopoly suppliers of retail services, one suspects that the incentives for the new entrant to be statically and dynamically efficient over time will come from IPART, much as they currently do for incumbents.

It is possible that dynamic efficiencies might be encouraged if entrants can compete to supply new developments in the context of a series of such developments. In that case, entrants might improve their efficiency and services over time through 'learning by doing', and may ultimately become more efficient than the incumbent. However, it remains questionable whether these entrants should be effectively subsidised through the use of a pricing methodology which accounts for any higher initial costs. If such efficiencies are likely to occur then it is not obvious why this would not be better promoted by using the incumbent's avoidable costs, which the entrant must ultimately better for genuine efficiency gains to occur.

[4] Discussion Paper p. 32

3.3.4 The goldilocks approach?

In summary, there is:

- No compelling conceptual case or evidence that new entrants will be deterred from entering the market because they are of smaller scale than the incumbents and/or suffer from significant scale, scope or density disadvantages relative to incumbent public utilities in relation to contestable activities.
- No evidence that, if such economies existed and were material, that the size of the foregone static efficiencies would be outweighed by dynamic efficiencies.

It appears that IPART is seeking a kind of 'goldilocks solution' to the choice of cost standard; the reasonably efficient operator supplies where the scale advantages of incumbents are big enough to justify an adjustment, but not so large as to make the foregone scale efficiencies too costly.

The risk in this approach is that, rather than 'levelling the playing field', adjustments to wholesale prices in the manner suggested by IPART may inadvertently place the regulator in the position of 'picking winners' or effectively requiring existing customers of the public utilities to underwrite private investments.

3.4 The reasonably efficient competitor standard is impractical compared to avoidable costs

Our discussion of the REO standard has illustrated the conceptual weakness of lowering wholesale prices to reflect the higher costs of new retail entrants. In this section, we highlight why such a cost standard is both impractical and unnecessary to achieve IPART's objectives.

3.4.1 Using the REO standard will duplicate regulatory effort

IPART suggests that it will attempt to measure the costs that a reasonably efficient business would incur between the wholesale connection point and serving end users.[5]

From a practical perspective, it is unclear from this statement how IPART will attempt to measure what the costs of an efficient business are. IPART is aware of this difficulty:

> To simplify the calculation of the costs of a reasonably efficient competitor it could, for example, be defined as:
>
> the costs of an efficient utility of a certain scale (e.g. one providing water and/or sewerage services to a community with a population of 50,000 people),

[5] Discussion Paper, p. 32

or

the costs of Sydney Water or Hunter Water in the area plus a percentage to reflect the smaller scale of a relatively new entrant, for example a five percent addition to Sydney Water's or Hunter Water's costs of servicing the area[6].

In our view, taking this approach will inevitably require a duplication of effort by IPART in establishing the efficiency of costs in comparison to the avoidable cost approach, in which the avoidable costs of Sydney Water or Hunter Water are estimated.

This duplication is most obvious using the second alternative. This takes Sydney or Hunter Water's costs as a starting point and then adds an increment reflecting the disadvantage of a new entrant. But duplication is also implied in the first alternative. How else would one assess the costs of the entrant and whether they were reasonable without reference to the costs of the incumbents? For example, if the minimum efficient scale was a population on 100,000 people, both Hunter Water and Sydney Water would have a material advantage over a new entrant with 50,000 customers. But this would only become apparent if one studied the avoidable costs of Hunter and Sydney Water.

3.4.2 The activities of a reasonably efficient competitor are difficult to define

The avoidable cost approach focuses on the costs the incumbent would avoid in the long run in not supplying a potable or wastewater service. It promotes entry where the entrant is no less efficient (equally or more efficient) than the incumbent.

Importantly, this approach does not require IPART to assess whether it is efficient for the entrant to do things differently from the incumbent – the only requirement is that if the entrant does things differently, it must result in greater efficiency. This might be reflected in:

(a) lower costs or

(b) higher willingness to pay for a higher quality service (e.g. a faster build or additional features). In that case, the entrant would enter even if it had higher costs than the incumbent because its service would be more valuable to developers and end-users.

An example of the difficulties with IPART's proposed approach can be illustrated with reference to a wholesale customer seeking to buy potable water from Hunter Water, but supplying its own wastewater treatment services within a development. In principle, such activities should be encouraged where this results in lower costs of supply or a higher willingness to pay by the developer. The costs include both

[6] Discussion Paper, p.35

the direct costs of building and operating the local treatment facility, but also the costs that would be avoidable if Hunter Water did not have to supply such facilities to that development.

IPART's current proposal appears to be that it should allow for the entrant's costs by deducting these from retail prices as long as the costs are reasonably efficient. This will require some assessment of the business model of the entrant and in particular whether higher costs are driven by:

- provision of a better quality service (with associated higher willingness to pay)
- inefficient duplication of assets (e.g. local treatment where existing sunk assets may be in place that could readily supply such treatment)
- the entrant's inability to capture economies of scale, scope and density. If the entrant does not capture these economies to the same degree as the incumbents, a judgement will then need to be made about whether the higher costs incurred by the entrant are 'worthwhile' in the context of prospective gains in dynamic efficiency.

In our opinion, this example highlights a key problem with the REO concept: defining and estimating the efficient competitor benchmark. The UK Communications regulator, Ofcom, has recently given extensive consideration to the REO and EEO concepts. Ofcom found that the REO approach was too difficult to implement because it would require a complex and costly assessment process:

> Ofcom would need to define the scope of the REO's activities, business model and cost base in order to populate the model used to assess the [service] margin: this would be a complex and uncertain exercise with clear scope for error. Alternatively, Ofcom might select an existing rival to BT and use that rival's costs to populate the model. That would also be a complex exercise and could potentially risk regulatory gaming; given that BT's rivals are differentiated, it would also not be clear which rival to select.[7]

Rather than the REO approach, Ofcom favoured the EEO approach, but did make some adjustments to define what it called the 'adjusted EEO' approach. This is analogous to the approach of adjusting the incumbent's avoidable costs to reflect certain kinds of entrant disadvantages (see Box 2 for further details).

Box 2: Ofcom's approach to setting margins for wholesale fibre services

The UK telecommunications regulator, Ofcom, applies an *ex ante* test for "margin squeezes" that is analogous to IPART's price-setting for wholesale services.

Incumbent British Telecom (BT) is designated under the regulatory framework as having significant market power in the wholesale local access market. As a pro-

7 Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, 19 March 2015, p. 82

competitive remedy, Ofcom has directed BT to supply access to local fibre services ('VULA'). Ofcom has decided that given the prevailing uncertainty about the profitability of fibre investments, the appropriate access pricing approach is a form of retail minus.

Ofcom derives a wholesale price for these services by ensuring that the margin earned by retail competitors to BT is sufficient to be able to match BT's retail offers. The wholesale price is then calculated as the retail price less a calculated margin which is indicative of BT's long run incremental costs of supplying retail services.

Ofcom states that its approach is based on an equally efficient operator ('EEO') approach, which uses BT's own costs and revenues, with the exception of two adjustments to reflect other communication providers' lower average customer lifetimes and bandwidth costs. Ofcom calls this an 'adjusted EEO' approach. Notably, Ofcom explicitly rejected the use of a REO approach.

Initially, Ofcom's approach in its 2010 regulatory statement indicated that it would initially assess the impact of the VULA margin on a REO basis (as distinct from one that is equally efficient to BT). Ofcom argued that:

> 5.27 We consider that an adjusted EEO approach is more effective in achieving our aim and less onerous than an REO approach.

The REO approach was considered onerous because Ofcom would need to define the scope of the REO's activities, business model and cost base in order to populate the model used to assess the VULA margin.

Further, Ofcom developed a clear framework to identify in what circumstances it would adjust costs and revenues to reflect any particular advantages of BT:

> We considered that it would be appropriate to use the following two considerations in order to identify whether a particular item should be adjusted.
>
> • First Consideration – is there evidence that BT's costs/revenues materially differ from those of other operators, and if so, is it likely to be possible for other operators to match BT's costs/revenues?
>
> • Second Consideration – would the adjustment meet our objective by allowing an operator with slightly higher costs than BT (or some other slight commercial drawback relative to BT) to profitably match BT's superfast broadband retail offers?

Ofcom considered it appropriate to make an adjustment where a difference was material and where that difference is likely to be unmatchable. Ofcom considered that an advantage is likely to be unmatchable where there exist factors, including economies of scale, first-mover advantages, or a lack of technical replicability, which may be linked to BT's position as the legacy incumbent.

Source: Ofcom, Fixed Access Market Reviews: Approach to the VULA margin, 19 March 2015

3.4.3 Incumbent's avoidable costs are more verifiable than a new entrant's costs

A further benefit of the avoidable costs approach is that IPART regulates the prices of Hunter Water and Sydney Water, and assesses the costs of these entities in detail to ensure that retail tariffs are reflective of efficient costs. This provides IPART with a means to verify or otherwise check the costs submitted by Hunter Water or Sydney Water as avoidable costs.

In contrast, it is not clear how verifiable any data submitted by new entrants reflecting their efficient costs will be. This is particular so as new entrants may have very different business models from incumbents, and so have a very different profiles of costs and revenues.

3.4.4 Using avoidable costs is more straightforward and consistent with 'facilitation costs'

IPART's discussion of facilitation costs specifies that there are two kinds of facilitation costs: positive and negative. Positive facilitation costs would include costs imposed on incumbents (such as connection costs) and negative facilitation costs would include deferred expenditures by the incumbent (such as augmentation costs).

We agree that in principle, direct costs and deferred expenditures are relevant to considering the efficiency of new entry. However, IPART's approach of treating deferred expenditure as something that is distinguishable as a 'facilitation cost' is somewhat confusing.[8] Taking again the example of a new development, it is clear that avoidable costs would include both:

(a) the costs avoided from not servicing the new development

(b) any costs deferred from not having to augment existing facilities (e.g. water treatment).

3.4.5 Past costs are irrelevant to avoidable costs

In its Discussion Paper, IPART refers to claims made by some stakeholders at its public hearings relating to past asset valuations:

> …some stakeholders said that the 2000 'line-in-the-sand' valuations of Sydney Water and Hunter Water's regulatory asset bases are a barrier to competition. The regulatory asset base 'line-in-the-sand' valuations were based on prevailing prices in 2000, rather than the depreciated replacement costs of the assets. This is seen as a barrier to

[8] A dictionary definition of 'facilitation' is the act of assisting or making easier the progress or improvement of something. Therefore, it is clear that costs associated with assisting the entry of the wholesale customer are facilitation costs.

> competition, as wholesale customers are likely to require a market rate of return on the full investment cost of their assets.

IPART appears to uncritically accept these claims in proposing that its approach to wholesale pricing adopt a retail minus 'reasonably efficient competitor' cost where this cost reflects "the full investment cost of their assets":

> We consider that the reasonably efficient competitor cost should be based on the full value of assets. This would create a level playing field where a low-cost wholesale customer can compete with Sydney Water and Hunter Water, while making a market return on their assets.

In our view, this argument reflects a misunderstanding of the how the retail minus avoidable cost approach would work.

The first point is that the vast majority of Hunter Water's (and Sydney Water's) regulatory asset base relates to monopoly network assets rather than to assets in the contestable activities upstream or downstream of these monopoly networks. This means that any 'low' valuation of these assets will be reflected in relatively low *retail* prices which in turn will be reflected in a 'low' starting point for the retail-minus calculation of wholesale prices levied on new entrants.

This in turn implies that any concerns about 'low' regulatory asset valuations would relate only to assets used in providing the contestable services. Given that many of the contestable services relate to greenfield developments, it is not clear that the incumbents will have any existing such assets themselves or if they do they are likely to be relatively new and as such their regulatory value is likely to be close to their "full investment cost".

More fundamentally, the claim that past asset valuations will distort entry decisions merely highlights the flaw in basing the minus component on a backward-looking valuation of assets.

As we pointed out in our first report, a proper definition of avoidable costs should refer to the future, and not the past. Past costs that might have been avoided have no relevance to this definition.[9]

The corollary of this definition is that the focus of the retail minus approach should be on costs that would be avoidable by the incumbent (or, in IPART's alternative, incurred by an efficient asset seeker). This is an explicitly forward looking test. It has nothing to do with whether incumbent's regulatory asset base is 'line in the sand' or based on full replacement cost. This has been recognised by Ofwat in its most recent pricing considerations (see Box 3).

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[9] The value of incumbent's existing assets could only be relevant to avoidable costs where these were thought to be a good proxy for avoidable costs.

Box 3: Access pricing in the UK Water Sector

Third party access pricing has a longer history in the UK water sector. The *Water Act 2003* allowed competitors to enter the water industry and supply large customers by paying incumbents for the use of their assets and where appropriate for wholesale water supplies.

Ofwat's initial pricing approach to third party access used a variant of retail minus pricing, with costs deducted known as ARROW costs (**A**voidable, **r**educible or **r**ecoverable in some **o**ther **w**ay).

Practical problems emerged with Ofwat's approach to pricing: "the very small margin that we are seeing as a result of the application of the mechanism for calculating the access price for new entrants to use the incumbent's water network (the "costs principle"). With low volumes of customers and potentially very low margins, new entrants could argue that it is difficult for them to make a viable business case, even if they are efficient.[10]"

In part it appears that these problems were caused by a lack of clarity over the time period in which costs could be avoided. Following a lengthy period of review, the new *Water Act 2014* provided for Ofwat to determine new charging rules for network access for bulk water suppliers.

In December 2015 Ofwat published a consultation paper on the regulatory framework for wholesale markets and the 2019 review. Appendix 3 discusses its approach to access pricing. As noted by Ofwat[11] in this document:

> Access prices need to fulfil two objectives:
>
> - They provide entry signals to incentives efficient entry and so ensure that entry results in lower cost of service to customers
> - They compensate incumbents for efficiently incurred costs
>
> Where forward-looking costs are similar to historical costs, these two objectives may be fulfilled relatively straightforwardly. However, where there are large differences between forward-looking and historical costs, there can be a tension, which needs to be addressed when seeking to implement access pricing.

Ofwat's proposal is that the published access prices for the water distribution network should be based on two elements:

1. The average cost implied in its water network plus control, which will be set at the 2019 price review (PR19).
2. A compensation payment or rebate, based on the difference between the incumbent provider's incremental cost (measured by average incremental cost) and the average cost of water resources. **This will enable entry by**

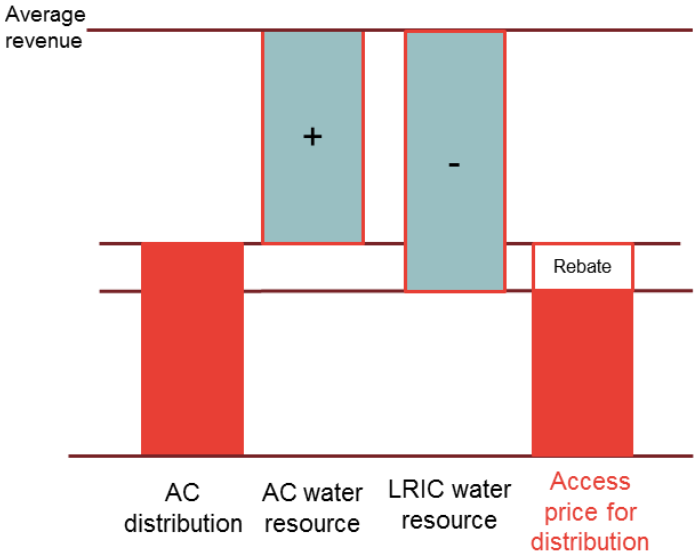
[10] Ofwat, *Letter to the Minister for Climate Change and the Environment*, 26 November 2007

[11] Ofwat *Water 2020: regulatory framework for wholesale markets and the 2019 price review*, Appendix 3: Approach to access pricing

service providers where their cost of new resources is lower than the incumbent. [emphasis added]

The difference between (forward looking) LRIC and average costs arises because the regulatory asset base values for assets are not equal to LRIC. On privatisation, water assets in the UK sold at a considerable discount to their LRIC values.

In practice, the Ofwat approach ends up being similar – and possibly identical – to a retail minus avoidable costs approach. This may be demonstrated in the following figure, which assumes that the LRIC of water resources is greater than the average cost. The access price is built from the average costs of distribution (AC distribution), with an adjustment – here a rebate.



If avoidable costs are equal to LRIC costs[12], and average revenue is equal to the retail price, then this approach gives the *same wholesale price* as one that started with retail prices and deducted the avoidable costs of water resources.

Source: Ofwat

We also note that the ACCC's use of avoidable costs in *Services Sydney* explicitly used a forward-looking valuation of assets (the DORC approach, see Box 4).

Moreover, in the case of new infrastructure such as for developments, both incumbents and new entrants would have to build. The real question is whether it is appropriate to calculate the minus using:

- the costs avoidable by incumbents in not building and operating the infrastructure (which might include economies associated with scale or scope) or

12 This is true if there are no sunk costs which a water business could not avoid even in the long run.

- the incremental costs of a new entrant.

Box 4: The ACCC's approaches to retail minus in water and telecommunications

Water

The ACCC's 2007 determination in the *Services Sydney* matter set out its rationale for, and principles of, its preferred retail-minus methodology. Access prices would be determined using:

- the retail price, set at the regulated wastewater charge determined by IPART; less
- Sydney Water's avoidable costs, which 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; plus
- costs directly attributable to facilitating access to the declared sewage transportation services such as Sydney Water's prudently incurred costs of calculating the access charges for these services but excluding any costs associated with provision of the declared interconnection services.[13]

The ACCC indicated that key elements of its rationale for this recommendation included:

- Where retail prices are determined by an independent regulator and are set to recover average costs of service provision in the long run, a retail-minus methodology that uses avoidable (long-run) costs best meets the objective of promoting efficient entry.
- The approach allows the inclusion of a contribution towards postage stamp pricing, without detrimental impacts on competition. The ACCC indicates that excluding this contribution could lead to inefficient entry through cherry-picking. Cherry picking is also undesirable as it would undermine the ability of Sydney Water to recover its efficiently incurred costs and incentives for future efficient investment.
- The approach values assets on the basis of efficient forward-looking costs of the provision of services, which also support efficient entry.
- The retail minus approach maintains ensures that access prices remain consistent with the structure and approach to determining retail prices (which may change over time) which promotes competition.
- Sydney Water's downstream operations would implicitly face the same access prices as Services Sydney.

Notably, the ACCC's decision in Services Sydney relating to access to sewerage infrastructure adopted a building block approach for estimating those cost elements that would be avoidable:

13 Australian Competition and Consumer Commission (2007), *Access dispute between Services Sydney Pty Ltd and Sydney Water Corporation, Arbitration Report*, 19 July.

> 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[14]

The ACCC used building block costs that were 'forward looking'. That is, it did not derive estimates of the return on and of capital using a regulatory asset base (RAB) based on past costs incurred. Rather, it approved of the DORC methodology to set the RAB; DORC is explicitly a forward-looking concept, being based on the replacement costs of the infrastructure and depreciated to reflect the age and condition of the optimised asset.

Telecommunications

Under Part XIC of the *Competition and Consumer Act 2010*, the ACCC regulates the prices of local call resale services (known as LCS). These services are used by entrants to supply a bundle of fixed calling services, including line rental, local, national and international calls.

In April 2002, the Commission released pricing principles and indicative prices for LCS that proposed the use of a 'retail minus' methodology (which it called 'retail minus retail costs' or RMRC). This was because it considered a cost-based methodology was not appropriate for this service at that stage; the retail price for the service had been held below Telstra's costs by retail price controls. The retail-minus methodology proposed determined the LCS price by subtracting avoidable retail costs from the retail price of a local call:

> RMRC is a 'top-down' approach that takes the retail prices paid for the declared service and deducts the avoidable costs of retailing the service to end-users to calculate an access price…. In applying the RMRC methodology, it is necessary to deduct avoidable retail costs of line rental and local calls from these prices to obtain the RMRC prices for the LCS and WLR.[15]

Source: ACCC

3.5 Avoidable costs could be adjusted in some circumstances

Our objections to the use of the 'reasonably efficient operator' standard do raise the question of whether there are circumstances in which adjustments to avoidable cost could be justified.

In principle, we consider that there are some circumstances in which adjustments could be made to avoidable costs. These circumstances are where *the incumbent has*

14 ACCC, *Access dispute between Services Sydney Pty Ltd and Sydney Water Corporation*, Arbitration report 19 July 2007, p.2

15 ACCC, *Pricing principles and indicative prices Local carriage service, wholesale line rental and PSTN originating and terminating access services Final Determination and Explanatory Statement*, 29 November 2006

some form of advantage over entrants that is not related to the incumbent's superior efficiency. If the incumbent's advantage is due to efficiency, the risk of IPART's 'reasonably efficient operator' pricing approach encouraging inefficient entry is heightened.

The approach we put forward is similar in concept to Ofcom's 'Adjusted EEO' approach we discuss in Box 3. However, using our definition, we would not agree that adjustments for scale economies should be made. Scale economies reflect economic efficiencies. However, we accept it could be in consumer's interests for adjustments to be made in some circumstances. While it is difficult to offer an exhaustive list, the following reflects some circumstances which might meet this test:

- *Incumbency advantages*: Incumbent's may derive specific advantages from customer inertia. For example, Ofcom argued that it should calculated BT's margins based on the shorter average customer lives of BT's competitors rather than BT's actual customer lives. The longer average customer lives of BT's customers was considered to be an advantage that derived from its legacy subscriber base – not its efficiency.[16]
- *Bundling benefits*: An incumbent might benefit from economies of scope from bundling different services together. This would lower the incumbent's avoidable cost. However, in some instances such bundles might not be replicable by competitors. This advantage might stem from market power in other related markets rather than efficiency.

We also suggest that there is a second threshold for making adjustments to avoidable costs. This is that there is sufficient evidence that the adjustments required are materially important and quantifiable. It is difficult to specify what is 'material', and IPART would need to exercise judgement in this respect. However, in our view, a positive case backed by evidence of disadvantage must be made so that any adjustments made are limited to those necessary for effective competition.

3.6 Facilitation costs and developer charges should be treated equally

In its Discussion Paper, IPART states that in principle, the wholesale customer receiving a wholesale service should pay for the net facilitation costs that service provision creates.

IPART notes that one component of such facilitation costs could be the capital costs associated with the need for a wholesale service provider to upgrade or extend its water and/or sewerage network to provide services to a wholesale customer (this could apply to its sewerage network).

16 Ofcom, op. cit., p. 132.

IPART suggests that scheme-specific facilitation costs which include the costs of any such system augmentations could signal to wholesale customers where it is lowest cost to provide water and/or sewerage services. This would help to ensure the wholesale service providers (and their retail customers) do not subsidise schemes that involve high net facilitation costs (such as in developments in isolated fringe areas). IPART also notes that this would also create an incentive for wholesale customers and developers to build schemes where they represent the lowest cost option to supply the services. Where the augmentation costs were particularly high, the resultant high facilitation costs may even encourage wholesale customers and/or developers to build standalone systems.

However, as recognised by IPART, a key issue here is the interaction between facilitation costs and developer charges. Current NSW Government policy settings require the public water utilities to set developer charges at zero. As noted by IPART (p.36), this means that:

> .. when Sydney Water or Hunter Water supplies a new development area, it recovers all its additional system costs from its wider customer base through an uplift to the postage stamp price. In effect, this allows an incumbent to supply the development at subsidised retail prices, and thus gives it a competitive advantage over competing providers (such as wholesale customers).
>
> To remove this advantage and allow competition on a level playing field in this scenario, our pricing methodology needs to extend an equivalent subsidy to wholesale customers. However, it needs to do so in a way that does not create incentives for wholesale customers to operate in high-cost fringe areas (which would ultimately increase the price for all water users).

In seeking to achieve these aims, IPART proposes that in circumstances where there are no developer charges (as is currently the case in NSW), the facilitation costs incorporated into the wholesale charge levied on wholesale customers should also be subsidised.

In the interests of competitive neutrality Frontier supports treating the facilitation costs relating to system augmentation costs symmetrically to developer charges relating to such augmentation costs.

Doing so in a way which also provides an appropriate location-based price signal first requires a clear articulation and resolution of the role of developer charges and which costs they are seeking to recover.

We note that in its Draft Decision for Hunter Water's retail prices, IPART has flagged its intention to conduct a consolidated review of developer charges and backlog sewerage services for metropolitan water utilities in 2017-18.

While we would tend to support a review of developer charges (and other potential mechanisms for funding system growth) in our view this should be part of a comprehensive review of barriers to competition rather than *ad hoc* or partial changes occurring via regulation of wholesale charges.

3.7 Conclusions

In this section, we have submitted that:

- IPART's proposal for the use of 'retail minus' pricing is appropriate and necessary given postage stamp pricing constraints
- IPART's proposal to use a 'reasonably efficient operator' rather than an 'equally efficient operator' (or avoidable cost approach) is:
  - Not likely to promote economic efficiency, as where reasonably efficient entrants have higher costs[17] than Hunter Water, there will be losses in static efficiency that will be passed through to the Hunter Water's remaining retail customers.
  - Likely to be more difficult to implement, as IPART will have to make judgements about the relative efficiency of entrants (which may look very different from Hunter Water), and rely on cost information that is less verifiable than that of Hunter Water.

We therefore submit that in calculating wholesale prices, IPART should use the avoidable costs of Hunter Water or Sydney Water (the equally efficient operator standard). These costs should only be adjusted in the following circumstances:

- If the entrant's disadvantage is caused by something other than the incumbent's efficiency
- If there is evidence to suggest that the disadvantage is material and quantifiable.

17 Where entrants have lower costs, the avoidable cost standard will also offer stronger incentives to enter.

4 Options for implementing IPART's preferred approach

While we suggest a variation of IPART's preferred approach for determining wholesale prices, many of the implementation issues would be common to either approach.

IPART states that implementation of its proposed approach entails four main steps to calculating wholesale prices:

1. Calculate the retail component, or the postage-stamp price retail revenue, that would be generated by the wholesale customer's end-use customers.
2. Calculate the minus component, or the cost a reasonably efficient competitor would incur to provide water and/or sewerage services from the wholesale connection point to the end-use customers.
3. Calculate the net facilitation costs, or the additional system costs the wholesale customer would create for the wholesale service provider.
4. Calculate the wholesale price by subtracting the reasonably efficient competitor costs (2) from the retail revenue (1) and adding the net facilitation costs (3) (i.e. wholesale price = retail component – reasonably efficient utility costs + net facilitation costs).

In our view there is an additional step required which converts the revenue calculated in step 4 into a specified structure of prices (e.g. fixed and variable components).

4.1 Step 1: Calculating retail revenue

The first step under IPART's proposed approach (indeed, under any retail minus approach) involves the wholesale service provider calculating how much revenue it would generate from charging postage-stamp prices to the wholesale customer's scheme's end-users. This is the starting point 'retail' component of the retail-minus approach, and is common to each of IPART's proposed implementation options.

IPART states that to determine this component, the wholesale service provider would use:

- the number and average connection sizes of end-use customers the wholesale customer will supply, and
- the end-use customers' demand for the services (i.e. both water usage and/or sewerage usage), and its current retail prices for those services.

IPART suggested that the methodology would likely be similar to the formula below:

> $Retail_t$ = water usage $charge_t$ × wholesale water $purchases_t$ + water service $charge_t$ × end-use water $customers_t$ + sewerage usage $charge_t$ × chargeable wholesale sewage $discharge_t$ + sewerage service $charge_t$ × end-use

While Frontier supports the broad thrust of this approach, one key point we would make is that there is a need to calculate a separate price for each defined wholesale service which is provided by the public utility to a wholesale customer. The formula as presented by IPART could be construed as implying there would be only one price for a 'conglomerate' wholesale service.

The need for separate prices for different wholesale services reflects the fact that in some cases wholesale customer will only require a subset of services (e.g. a development with a fully self-contained wastewater treatment/recycling facility may require a wholesale potable water service but not a wholesale sewerage service). In addition, the basis for pricing may differ between services (e.g. a wholesale potable water service may be charge on the basis of metered connection points).

The need for separate wholesale prices for each service means that there is a need to also calculate the retail price/revenue separately for each service.

Frontier recognises that a key feature of a retail minus approach is that for the public utility to set the appropriate retail minus price, it needs to know from the access seeker the identity of its customers and their water consumption. This amount of transparency is likely to be resisted by access seekers, as it gives the incumbent a detailed insight into their business. That said, it is difficult to see how this can be avoided without opening up the risk of cherry picking profitable customers.

4.2 Option 1: System-wide average minus and net facilitation costs

4.2.1 Description

This is the first option proposed by IPART for calculating the minus and net facilitation cost components of its proposed formula for calculating default wholesale charges:

> Under this option, IPART would determine the minus component as a percentage or value that reflects the system-wide average or typical costs a reasonably efficient competitor would incur to provide water and/or sewerage services from the wholesale connection point to the end-use customers. This minus could be set as a percentage of the retail component or a value (e.g. $ and/or $ per kL).

As noted by IPART, one advantage of this option is that the methodology would be relatively simple to apply and would provide certainty to both wholesale service providers and wholesale customers.

IPART expresses concerns, however, that the system-wide averaging inherent in the approach would blunt price signals for efficient entry and in particular may discourage wholesale customers developing more complex schemes with higher costs, even where they are the most efficient way to supply the services. It suggests, for example, that under this approach, the margin between the retail and wholesale prices for a wholesale customer providing a less expensive service (e.g. using a small network to supply water in a high-density development) would be higher than the margin for a wholesale customer providing a more expensive service (e.g. using a larger network to supply water in a low-density development and treating a portion of sewerage onsite).

4.2.2 Our assessment

Frontier shares IPART's concerns about the ability of this approach to promote efficient new entry. It would tend to encourage new entry simply where a new entrant has a solution which is lower cost than the average of all schemes to provide water and/or sewerage services from the wholesale connection point to the end-use customers, when this may actually be an inefficient solution in a particular case. It would also discourage entry in cases where the underlying costs to service a particular development are inherently high.

More fundamentally, however, in our view this approach could encourage inefficient new entry because it focuses on the relative costs of alternative new entrants, rather than on whether any new entrant can provide the service more efficiently than the incumbent.

IPART's suggestion that it could set a schedule of minus percentages or values to reflect different wholesale customer models and locations would not address this fundamental problem. In any event, it may be difficult to accurately pre-specify these services and values in advance in a way which accommodates each scenario which might arise in practice.

Similar issues arise with respect to establishing and using typical or average net facilitation costs under this proposed option for implementing IPART's preferred approach. While some facilitation costs may be relatively uniform (e.g. costs of establishing an agreement for a standard type of wholesale service), in other cases they may vary significantly (e.g. negotiating arrangements for wholesale services which raise particular issues around maintaining quality). Perhaps the most significant potential facilitation costs relate to the costs of any additional infrastructure needed to connect the incumbent's existing system to the new entrant's infrastructure. These costs are likely to vary significantly on a case-to-case basis, so that an approach which simply averages such costs is likely to send inappropriate price signals to new entrants about the costs of entering at different locations.

4.2.3 Conclusion

In summary, this implementation option would not appear to be likely to achieve the stated policy objective of promoting efficient entry.

4.3 Option 2: A methodology for scheme-specific minus and net facilitation costs

4.3.1 Description

IPART's second option for calculating the minus and net facilitation cost components of its proposed formula for calculating default wholesale charges would require the wholesale service provider to calculate the minus and net facilitation costs components for each scheme in accordance with a methodology specified by IPART in the determination.

IPART further specifies that the wholesale service provider would need to apply the methodology through a structured, transparent process that includes consultation, and which would be outlined in IPART's determination. A wholesale customer who is dissatisfied with the way in which the wholesale service provider has applied the methodology would have access to dispute resolution processes.

IPART also states that under this option it would need to consider whether an interim or default price (e.g. an average price generated under Option 1 or Sydney Water or Hunter Water's non-residential retail charge) would apply until a scheme-specific price has been set.

According to IPART, this methodology would better allow for variations in costs and services between and would generally result in lower wholesale prices for schemes that have extensive water and/or sewerage infrastructure (providing a larger margin to accommodate the costs of the extensive infrastructure) than schemes with minimal infrastructure. The methodology would also seek to take account of scheme-specific net facilitation costs.

While IPART implicitly suggests this approach would provide better price signals for efficient entry, it also suggests this methodology is more complex than the simple averaging approach outlined in Option 1 and may impose higher administrative costs, particularly if there is a dispute surrounding the wholesale service provider's application of the methodology. It therefore proposes that the methodology would need to be as clear and specific as possible, to minimise uncertainty around prices generated by the methodology and the scope for dispute.

4.3.2 Assessment

We agree with the general proposition that reflecting different costs of individual schemes of different types or in different locations is likely to generate more

efficient price signals. However, we are concerned that the basis for estimating these costs, namely the 'reasonably efficient costs of a new competitor', may not result in efficient price signals. For example, as noted by IPART, its proposed methodology would generate lower wholesale prices for schemes where a new entrant would need to install extensive water and/or sewerage infrastructure, thus giving it sufficient headroom to accommodate these costs. However, if an incumbent already had existing infrastructure servicing the relevant development, there is a risk that IPART's methodology may simply encourage inefficient duplication of this infrastructure, if the (forward-looking) costs of the incumbent are not part of the equation.

This again highlights the need for a focus on *forward-looking* costs in establishing wholesale charges which encourage efficient entry. In this regard, it is not clear that the proposed formula set out on page 48 of IPART's Discussion Paper is intended to be applied in such a forward-looking manner or is based on past or current costs. If IPART proposes to apply this formula according to a 'building block' methodology using a fixed regulatory asset base, the resultant wholesale charges will be inconsistent with facilitating efficient entry wherever these vary from forward-looking costs.

Frontier also agrees with IPART that scheme-specific facilitation costs should reflect the cost of providing water and/or sewerage services to different locations and schemes to ensure that entry occurs where it is efficient. However, in our view including 'cost savings' or avoided capital costs accruing to the wholesale service provider as part of net facilitation may risks double-counting with the 'minus' component of the retail-minus formula. Our preferred approach is to account for these in a retail minus avoidable costs approach (see section V).

In applying this approach to implementation, IPART proposes to set out a structured process along similar lines to that included in its current developer charges determinations. This would require wholesale service providers to develop Wholesale Servicing Plans (WSPs) outlining:

- proposed prices
- the infrastructure and operating requirements to provide end-users retail services from the wholesale service provided
- the net facilitation costs of supplying the wholesale customer
- the wholesale service provider's relevant growth plans.

Under this proposal, the wholesale service provider could only levy wholesale charges using the methodology if it had first registered a WSP with IPART. Before doing so, the wholesale service provider would be required to publicly exhibit and consult on draft wholesale prices, and the inputs and calculations for those prices (including key supporting or explanatory documentation, such as the wholesale

service provider's relevant growth plans), and consider stakeholder submissions before registering the WSP.

While it is not clear from IPART's Discussion Paper when these WSPs would need to be prepared and exactly what they would be required to include, it would be important that they do not impose an excessive administrative cost on wholesale service providers (which would be subsequently passed on to potential new entrants). For example, developing such WSPs for areas which may never be the subject of potential new entry would seem to be excessive.

It may also be useful for a more general document which broadly outlined and explained the methodology for calculating wholesale charges and how this would apply under some typical scenarios to be made available in order to provide general guidance to potential new entrants at earlier stages of their business case development.

Another issue raised by IPART under this option for implementation of its preferred approach is the need for an interim or default price to apply in certain circumstances (e.g. when the WSP is not registered or a dispute has been raised). It is not clear to us that a scheme should go ahead unless and until there is agreement or resolution on price, as this might lead to inefficient outcomes in the interim. Depending on how this default price is set, it may also encourage new entrants to deliberately extend the process (e.g. if the default price is set equal to the standard non-residential charge which offers scope for 'cherry-picking', new entrants may have an incentive to extend the process as long as possible. Of the two default options proposed by IPART, the system-wide average approach is preferable to the standard retail non-residential charge but neither is likely to provide efficient price signals.

4.3.3 Conclusion

Option 2 is superior to Option 1, although IPART needs to give further consideration to how to make this approach not unduly burdensome.

4.4 Option 3: IPART determining scheme-specific prices

4.4.1 Description

The third option identified by IPART for implementing its preferred approach is for IPART to directly determine the minus and net facilitation cost components of each scheme.

This option appears to involve the same scheme-based approach to estimating 'reasonably efficient competitor costs' and facilitation costs as for Option 2, except

that these calculations would be undertaken by IPART rather than by the wholesale service provider.

4.4.2 Assessment

In our view, this approach is likely to be excessively prescriptive. Further, it may undermine the ability of the wholesale service provider and prospective wholesale customer to reach agreement (i.e. opt out of the regulated price) as envisaged by IPART's approach.

5 The way forward

As noted in section 3.1, we support IPART's conclusion that a retail minus approach to determining wholesale prices is the only feasible option in the presence of postage stamp pricing.

The issue then becomes which particular form of retail minus would best achieve the underlying policy objective of promoting efficient entry.

For the reasons outlined earlier in this report, Frontier Economics does not consider that IPART's preferred approach to pricing of wholesale water and sewerage services outlined in its Discussion Paper will achieve either the primary underlying policy objective of facilitating efficient entry or the secondary objective of ensuring that the administrative burden placed on the parties involved is proportional to the potential benefits of competition.

In our view the suggested reasons for shifting away from a retail minus avoidable cost approach to a 'reasonably efficient new competitor' approach are not convincing. There are also major doubts about the practicality of this approach.

In our view, therefore, IPART should revert to a retail minus avoidable cost approach it favoured in its earlier issues paper.

However, in applying the retail minus avoidable cost approach, the focus should be on long-term forward-looking costs rather than historic or building block costs. This will help to ensure that new entrants are not disadvantaged by, for example, low regulatory asset valuations. Where new entrants can service new or infill developments at lower cost or with a better value for money solution, this approach ensures that they will be able to do so. However, this approach will also protect against inefficient entry in situations where the activity is characterised by significant economies of scale and incumbents already have infrastructure in place such that new entry would only raise total costs and dissipate the benefits such scale economies offer to customers.

We propose an avoidable cost or equally efficient operator approach, applied in a pragmatic way. This would include scope for adjustments to ensure a level playing field between the incumbent and new entrants consistent with economically efficient outcomes where certain disadvantages can be demonstrated to exist and are material.

The key elements of this approach include:

- A retail minus avoidable costs methodology apply for wholesale water and sewage sewerage service prices whereby:
  - Wholesale price = Retail price - Avoidable costs + Facilitation costs
- In applying the retail minus avoidable costs methodology to these wholesale services:

- The starting point 'retail price' be established by 'looking through' the access seeker to end users to ascertain the retail tariffs which would apply to those customers if served by Hunter Water. Any CSO payments or cross-subsidies currently received by Hunter Water for a retail water or sewerage service (reflecting the difference between the uniform price and the actual costs to Hunter Water of providing the service in high-cost areas) would be effectively passed on to new entrants via the starting point retail price.
- Avoidable costs be identified and calculated by reference to the costs Hunter Water would avoid over the long run (covering a 25 year planning period) as a result of the activities of the entrant as an alternative supplier, as distinct from costs avoided in the short run or average historic or building block costs.
- A hybrid approach which uses both standardised and bespoke elements of avoidable costs depending on the nature of the wholesale customer's activities:
  - Standardised estimates be used for avoidable cost elements which can be seen as system-wide and not varying with location such as retail costs (which for simplicity should be based on average retail costs per customer).
  - Individual bespoke elements of avoidable costs be added to the calculation of avoidable costs where they arise from proposals which entail the new entrant putting in their own infrastructure to bypass some element of Hunter Water's infrastructure (e.g. a treatment plant).

- Any facilitation costs incurred by Hunter Water in providing access should be added to determine a wholesale price. These facilitation costs could include:
  - Transactions costs (e.g. negotiation, ongoing monitoring, metering at the offtake point). This may include both standardised and bespoke costs depending on the nature of the wholesale customer's application.
  - Costs of any additional infrastructure needed to extend the network to service a new entrant but which would only apply under circumstances where developer charges were also in place.
- A case-by-case approach to converting the wholesale customer 'revenue requirement' into a wholesale tariff structure which takes into account the relevant retail tariff structure, the availability of metering at the access seeker's injection/offtake points, the appropriate allocation of risks, customer preferences, and incentives for efficient usage and investment decisions.

In order to provide certainty to potential new entrants and to guide negotiations, values of the standardised elements of this methodology could be published in

advance (and updated as appropriate) by the public water utilities. In addition, detailed guidance material could be provided on how the bespoke elements would be calculated, using typical scenarios to illustrate how this would apply.

FRONTIER ECONOMICS
MELBOURNE | SYDNEY | BRISBANE
Frontier Economics Pty Ltd 395 Collins Street Melbourne Victoria 3000
Tel: +61 (0)3 9620 4488 Fax: +61 (0)3 9620 4499 www.frontier-economics.com.au
ACN: 087 553 124 ABN: 13 087 553 124