REVIEW OF RECYCLED WATER PRICES FOR PUBLIC WATER UTILITIES

Hunter Water's response to IPART's Issues Paper

October 2018

HUNTER WATER

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TABLE OF CONTENTS

Executive Summary **3**

1 Introduction **6**

2 Recycled water in context **7**

2.1 Background 7
2.2 The importance of this review 9

3 Form of regulation and cost recovery framework **10**

3.1 Regulatory framework 11
3.2 Pricing objectives 11
3.2.1 Investment certainty is critical for achieving efficiency 13
3.2.2 Facilitating competition requires a level playing field 13
3.2.3 Risk management is critical to achieving revenue adequacy 14
3.2.4 Regulatory arrangements, not just prices, should be transparent and simple 14
3.2.5 Regulatory proposals should be evaluated against IPART's objectives 14
3.2.6 Pricing structures should have regard to customer preferences 15
3.3 Cost recovery framework 15
3.3.1 Regulatory treatment when recycled water is the least cost solution 15
3.3.2 Incremental or standalone costs 15
3.4 Base case 16
3.5 Pricing principles 17

4 Pricing arrangements for mandatory recycled water schemes **20**

4.1 Definition of mandatory schemes 21
4.2 Guidelines 21
4.3 Cost recovery for mandated schemes 22
4.4 Pricing structure 22
4.4.1 Usage charges 23
4.4.2 Fixed charges 24
4.4.3 Top-up pricing thresholds 24
4.5 Procedures 24

5 Recycled water developer charges methodology **26**

5.1 Form of regulation 27
5.2 Recycled water developer charges methodology 27
5.3 Procedural requirements 28
5.4 Management of uptake risk 28

6 Pricing arrangements for voluntary recycled water schemes **31**

6.1 Approach to regulation of voluntary schemes 31
6.2 Recovering costs from customers 32
6.2.1 The application of cost offsets to voluntary schemes 32
6.2.2 Cost offsets for voluntary schemes only where there is a funding shortfall 32
6.3 Price structures for voluntary schemes 33

7 Recycled water cost offsets **34**

7.1 Avoided and deferred costs 36
7.1.1 Nature of avoided and deferred costs 36

7.1.2 Calculation of avoided and deferred costs 37
7.1.3 Assessment of avoided and deferred cost claims 40
7.2 External benefits 42
7.2.1 Recovering cost offsets from the broader customer base 42
7.2.2 Estimating willingness-to-pay 44
7.2.3 Localised benefits 46
7.2.4 Post-adjustment reviews 46
8 References 47
Appendix A: Summary response to IPART Questions 48

FIGURES

Figure 2-1 Location of Hunter Water's recycled water schemes 8
Figure 3-1 Hierarchy of recycled water objectives, principles and guidelines 12

TABLES

Table 2-1 Hunter Water's recycled water schemes, end-uses and volumes 8
Table 3-1 Summary feedback on form of regulation for recycled water schemes 10
Table 3-2 Comparison of pricing principles for mandatory and voluntary schemes 18
Table 4-1 Summary feedback on pricing for mandatory recycled water schemes 20
Table 5-1 Summary feedback on recycled water developer charges 26
Table 6-1 Summary feedback on pricing for voluntary recycled water schemes 31
Table 7-1 Summary feedback on cost offsets 34

EXECUTIVE SUMMARY

Hunter Water's vision is to be a valued partner in delivering the aspirations for our region. We aim to enable the sustainable growth of the region, and the life our communities desire, with high quality, affordable services.

Integrated water cycle management and recycled water are important tools to help Hunter Water respond to the challenges and opportunities it will face over the next 20 years in delivering this vision. Recycled water end users, and our whole customer base, can benefit from cost-effective recycled water schemes. When appropriately located, recycled water can be the most efficient means of meeting some customers' water-related needs and the core water utility outcomes of adequately protecting public health and the environment (i.e. replacement of some water and wastewater services). Recycled water may be an efficient servicing approach where there is an imminent capacity constraint in the water or wastewater system. Recycled water can also produce broader benefits for all customers, such as building water resilience through diversity of supply, or physical and mental health improvements through increased accessible greenspace. We are committed to recycled water and have been actively exploring opportunities in the Lower Hunter region.

Hunter Water recognises that it is difficult to identify water recycling schemes that are financially viable. Traditional potable water solutions are generally less expensive than a purpose-built recycling alternative, especially when assessed from a purely financial perspective rather than seeking to maximise net benefits from a 'whole of society' perspective. That said, IPART should not put barriers in the way of effective servicing solutions, and should recognise that customers do value different types of water differently, where this is appropriately supported by robust empirical evidence.

The framework for pricing of recycled water services will be critical to underpinning efficient investment in recycled water schemes which promotes the long-term interests of customers and the community, recognising the role of recycled water in both the delivery of water and wastewater services to customers and external benefits to the wider community. The broader regulatory framework beyond the pricing arrangements, including for example reporting, approval and review requirements, will also have an important influence on the incentive to undertake efficient investment, and therefore promote the long-term interests of customers and the community.

Hunter Water welcomes IPART's review of its regulatory framework for recycled water: IPART set the Guidelines in 2006 and is now conducting a full review more than a decade later. It is important to get the regulatory regime right as it has an enduring influence on investment.

As IPART recognise, getting this framework right is challenging given the nature and role of recycled water as part of an integrated suite of services and its potential to provide benefits to the broader community. While in some cases recycled water is provided under conditions of market power, in other cases customers have choice between recycled water and traditional potable supplies. Similarly, there is now competition between the public water utilities such as Hunter Water and WIC Act licensees in providing recycled water and other services to end use customers. Under these circumstances simply rolling out the standard regulatory model for monopoly services is not appropriate: rather a carefully targeted approach is required which protects the interests of both recycled water customers and the broader customer base from the exercise of market power whilst at the same time facilitating the emergence of a dynamic market and enabling better environmental and liveability outcomes.

In this regard, Hunter Water strongly supports IPART's stated intention to establish a pricing framework that is non-intrusive, flexible, and administratively simple to implement yet promotes efficient investment in, and uptake of, recycled water.

Hunter Water agrees with the majority of IPART's preliminary positions outlined in its Issues Paper, including many of its proposed improvements to the 2006 Guidelines. In our view IPART has got most of the fundamentals right.

We support IPART's proposal to continue key elements of its current framework, namely:

- To regulate recycled water prices only where there is no effective choice for customers, and to adopt a light-handed approach where customers do have effective choice.
- IPART's cost recovery framework whereby the total scheme cost is recovered from the users of each scheme net of specific cost offsets (subject to the cost offsets for external benefits, as proposed by IPART).
- IPART allows the recovery of the prudent and efficient costs associated with the schemes from the regulated wastewater customer base in situations where it is the least cost option to meet EPA licence requirements. We do not see any need to change this approach - nor is IPART proposing material changes - although a clarifying statement of approach in the Guidelines would be useful.
- Hunter Water would like IPART to clarify whether it would allow the prudent and efficient costs of schemes included in the Lower Hunter Water Planto be recovered from the regulated water customer base.
- To regulate recycled water developer charges via a methodology rather than directly setting charges.

We also support many of IPART's proposed initiatives which will provide greater investment certainty, reduce prescription, and facilitate broader community benefits including:

- To refine the definition of mandatory schemes to focus directly on whether there is customer choice.
- The use of relevant estimates of long-run marginal cost (LRMC) of water which should help to streamline the estimation of avoided and deferred costs.
- Removing guidelines in relation to pricing of 'top-up' water that are unnecessarily prescriptive.
- Removal of various procedural requirements that are now superfluous.
- To allow utilities and developers to opt-out of the recycled water developer charges determination through bilateral agreements. This aligns with the approach of private water utilities and enables risks to be shared appropriately.
- Extension of allowed cost offsets to external environmental and liveability benefits where it can be demonstrated that the broader customer base is willing to pay for these benefits

Our experience of the regulatory framework for recycled water prices to date has highlighted some issues that need to be addressed to promote efficient investment in, and uptake of, recycled water:

- In our view the lack of investment certainty is a critical issue for recycled water developments, with the potential to undermine efficient investment in recycled water. Elements of the regulatory framework proposed by IPART create administrative burden and exacerbate the lack of investment certainty for recycled water projects, creating barriers to their development.
- Given the role of recycled water in integrated water management, any inconsistency between the regulatory arrangements for recycled water services and traditional services has the potential to distort efficient recycled water investment and uptake decisions. Creating a level playing field in the price regulation of recycled water services and water and wastewater services is therefore a key issue for this review.

Hunter Water is concerned that some elements of the regulatory arrangements proposed by IPART are overly intrusive and complex, difficult to implement, and will lead to asymmetric arrangements and uncertainty that will exacerbate risks and create barriers to the development of recycled water schemes. In particular, as we discuss in this submission, we consider some elements of IPART's proposals should be modified to:

- Better manage the uptake risk associated with recycled water projects.
- Adopt a less intrusive approach to regulating voluntary schemes.
- Mitigate the significant risks associated with the post-adjustment mechanism for cost offsets.
- Remove unnecessary limitations on providing for offsets associated with external benefits, particularly for voluntary schemes.

Specifically, we propose that:

- **Pricing arrangements for mandatory schemes**: It is not clear that constraints on tariff structures add value, given that the primary objective of protecting against possible abuse of market power is addressed by requiring that utilities can recover no more than the total efficient cost of the scheme (net of any cost offsets). It also reduces the influence of customers in determining recycled water charges that best meet their preferences. Hunter Water considers that it should have the flexibility to set usage and fixed charges for mandatory recycled water schemes, subject to the overall constraint that it recovers no more than the total efficient costs of each scheme (net of any cost offsets) from users of that scheme.
- **Pricing arrangements for voluntary schemes**: IPART should outline high-level pricing principles for voluntary schemes.
- **Cost offsets:** Hunter Water does not support IPART's proposal to allow cost offsets (for avoided/deferred costs and external benefits) only where there is a funding shortfall for voluntary schemes. In practice determining 'true' willingness-to-pay by the recycled water end-user, and the commercial viability of a voluntary scheme with reference to willingness-to-pay and cost offsets, is intrusive and impracticable. This approach is inconsistent with the regulatory principle of administrative simplicity and light-handed regulation. The full cost of cost offsets should be able to be claimed for all schemes, regardless of whether they are mandatory or voluntary.
- **External benefits**: While Hunter Water supports IPART's proposal that external benefits should be identified and treated similarly to avoided and deferred costs, it does not support the proposal to exclude 'localised' benefits from the scope of external benefits as the term 'localised' is insufficiently defined.
- **Post-adjustment mechanism for cost offsets**: the current arrangements for assessing and potentially reviewing claims for avoided/deferred costs represent a major impediment to the uptake of recycled water schemes. IPART's proposed amendments will do little to address the fundamental deficiencies with its approach. There should be no ex-post optimisation of this RAB allowance. Reviews should be limited to a once-off prudency test for capital expenditure at the next price determination – as they are for water and wastewater assets.

Hunter Water looks forward to engaging with IPART and other stakeholders further on these issues.

1 INTRODUCTION

Hunter Water welcomes the opportunity to respond to IPART's Issues Paper (Issues Paper) *Review of recycled water prices for public utilities – Sydney Water Corporation, Hunter Water Corporation, Central Coast Council and Essential Energy*, September 2018.

We consider it is timely to revisit the pricing arrangements for recycled water given the increasing importance of recycled water to meeting future demand and the track record of recycled water projects since IPART's 2006 Guidelines were developed.[1] We are well-placed to provide input to IPART's review of recycled water prices for public utilities (review) given our experience as a public utility providing water, wastewater and stormwater services and a proponent of recycled water projects that service a broad range of residential and non-residential customers for various end-uses.

Hunter Water appreciates the effort and analysis IPART has contributed to this review. We support most of IPART's proposals, which we believe are consistent with establishing a pricing framework for recycled water with potential to deliver IPART's objectives. However, we can see the potential for some of IPART's proposals – in their current form – to be difficult to implement in practice and could lead to administrative complexity, asymmetrical arrangements and uncertainty that will exacerbate risks and create barriers to the development of recycled water projects. We believe there is scope to simplify and streamline some of the proposed regulatory arrangements to avoid establishing unintended barriers to recycled water schemes.

This submission adopts a structure consistent with the Issues Paper:

1.	Introduction	
2.	Recycled water in context	Discusses Hunter Water's experience in delivering recycled water services and the focus of this review
3.	Form of regulation and cost recovery framework	Considers the regulatory framework, including the pricing objectives and principles
4.	Pricing arrangements for mandatory recycled water schemes	Addresses the pricing arrangements for mandatory recycled water schemes, including the definition, guidelines, pricing and procedures
5.	Recycled water developer charges methodology	Explores the recycled water developer charges methodology, including the uptake risk faced by public utilities developing recycled water schemes
6.	Pricing arrangements for voluntary recycled water schemes	Discusses the pricing arrangements for voluntary recycled water schemes, including accounting for offsets
7.	Cost offsets	Considers the estimation of cost offsets, including avoided and deferred costs, external benefits and post-adjustment reviews

Hunter Water's positions on each of the 32 questions in IPART's Issues Paper are summarised at the beginning of each section and listed in Appendix A.

[1] IPART, 2006.

2 RECYCLED WATER IN CONTEXT

This section discusses the context for the review. We begin by setting out our experience of recycled water projects as a public utility providing water, wastewater and stormwater services and a developer of recycled water projects, before commenting on the focus of this review.

2.1 Background

Hunter Water's vision is to be a valued partner in delivering the aspirations for our region. We aim to enable the sustainable growth of the region, and the life our communities desire, with high quality, affordable services.

Integrated water cycled management and recycled water are important tools to help Hunter Water respond to the challenges and opportunities it will face over the next 20 years in delivering this vision. We are committed to recycled water and have been actively exploring opportunities in the Lower Hunter region.

Hunter Water is the sixth largest water recycler amongst its cohort of similar sized utilities and third largest water recycler in NSW.[2] Water recycling facilities in the Lower Hunter region are operated by Hunter Water and others. Recycled water is provided to customers from eleven of our nineteen wastewater treatment works (see Table 2-1). The location of our current and proposed recycled water schemes are shown in Figure 2-1. Hunter Water's recycled water scheme can be divided into four categories:

- Residential use
- Municipal use
- Industrial use
- Agricultural use

In addition, wastewater is recycled on site within the wastewater treatment plants themselves and indirectly via waterways with downstream extraction.

Hunter Water has two dual reticulation schemes within its area of operations: Gillieston Heights and Thornton North (Chisholm). Hunter Water will soon begin supplying recycled water from the Morpeth wastewater treatment works (WWTW) to 355 homes in Chisholm and from Farley WWTW to 772 homes in Gillieston Heights. These homes were fitted with dual water/recycled water systems when they were constructed, enabling them to meet BASIX requirements. Residents have been receiving drinking water through the recycled water system, at the recycled water price (discounted relative to drinking water).

In most cases, expenditures associated with producing and providing recycled water to non-residential customers are effectively driven by the imperative to achieve wastewater, environmental and regulatory objectives. That is, there are either no additional expenditures incurred in producing and providing recycled water, or the provision of recycled water is an essential part of the operations to achieve acceptable wastewater treatment outcomes at the particular wastewater treatment works (WWTW). In these cases, the expenditures are recognised as wastewater expenditures and recovered through wastewater prices.

[2] Bureau of Meteorology, 2017, indicator W26 Total recycled water supplied.

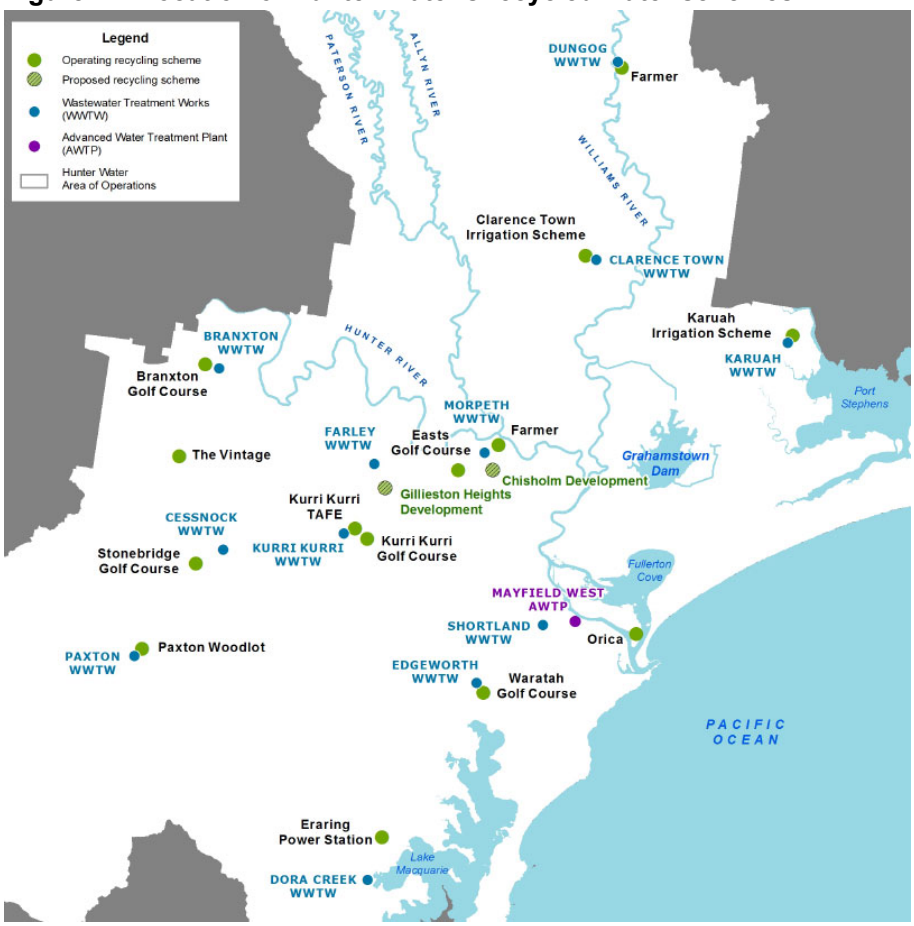
Table 2-1 Hunter Water's recycled water schemes, end-uses and volumes

Recycled water source	Recycled water use	2017-18 reuse volumes (ML)
Branxton WWTW	Branxton Golf Course and The Vintage Golf Course	270
Cessnock WWTW	Cessnock Golf Course	130
Clarence Town WWTW	Clarence Town Irrigation Scheme	49
Dora Creek WWTW	Eraring Power Station	872
Dungog WWTW	Local farmer	269
Edgeworth WWTW	Waratah Golf Course	87
Karuah WWTW	Karuah Irrigation Scheme	148
Kurri Kurri WWTW	Kurri Kurri Golf Course and Kurri Kurri TAFE	66
Mayfield West Advanced WTP	Orica Australia Pty Ltd	964 [b]
Shortland WWTW	Water Utilities Australia	1530 [b]
Morpeth WWTW	Easts Golf Course and local farmer	163
Paxton WWTW	Paxton woodlot	19
Total		**4,567** [a]

a) Excludes use by Hunter Water onsite at WWTW and indirect agricultural reuse.

b) On 27 November 2017 the Mayfield West AWTP was sold to Water Utilities Australia. Following this date the AWTP has been maintained and operated by Water Utilities Australia. Hunter Water now supplies recycled water from Shortland WWTW to Water Utilities Australia at the Mayfield West AWTP.

Figure 2-1 Location of Hunter Water's recycled water schemes



2.2 The importance of this review

Although a range of further recycled water opportunities have been identified, implementation remains challenging as recycled water schemes are generally expensive compared to the relatively low cost of potable water or other substitutes.[3]

This underlines the need to ensure the economic regulatory framework does not inadvertently impose additional barriers to the uptake of recycled water, where it is efficient. Our key concerns for this review are improving investment certainty for recycled water projects by:

- Ensuring a level playing field between recycled water projects and traditional service delivery methods – asymmetric scrutiny and regulatory treatments can act as a barrier to the development of recycled water projects
- Ensuring a level playing field between private and public water utilities – WIC Act licensees[4] do not face price regulation, even for mandatory schemes, while public utilities face significant regulatory burden and risk
- Developing practical methods to recognise the benefits of recycled water projects as part of the business case – facilitating the identification and development of recycled water projects
- Ensuring regulation is not onerous or overly intrusive – which can undermine investment certainty and act as a barrier to the development of recycled water projects.

[3] In the case of some municipal irrigation, industrial and agricultural end-uses there may be low cost substitutes for recycled water such as groundwater or direct extraction of raw water from rivers.

4 A WIC Act licensee is a private water utility licenced under the *Water Industry Competition Act 2006 (NSW)* to construct, maintain or operate any water industry infrastructure, to supply water (potable or non-potable) or provide sewerage services by means of any water industry infrastructure.

3 FORM OF REGULATION AND COST RECOVERY FRAMEWORK

This section considers the form of regulation and the cost recovery framework. We begin by discussing the regulatory framework before considering IPART's pricing objectives and principles.

Table 3-1 Summary feedback on form of regulation for recycled water schemes

Issue	Our assessment	Comment	Relevant section
1. Regulatory framework		We support IPART's proposal to regulate recycled water prices only where there is no effective choice for customers, and adopt a light-handed approach where customers do have effective choice.	3.1
2. Pricing objectives		We support IPART's pricing objectives, subject to the following comments: • Investment certainty is critical for achieving efficiency • Facilitating competition requires a level playing field • Risk management is critical to achieving revenue adequacy • Regulatory arrangements, not just prices, should be transparent and simple. We suggest that each of IPART's proposals should be systematically tested against IPART's objectives, to ensure they will achieve the intended outcome.	3.2
3. Recycled water scheme costs		We agree with the classification of scheme costs as set out by IPART.	3.3
4. Incremental costs		Hunter Water agrees with the use of incremental cost as an appropriate benchmark for calculating scheme costs (net of cost offsets) to be recovered from recycled water users, subject to recovering an appropriate share of joint or common costs from recycled water schemes.	3.3
5. Base case		Hunter Water supports the concept of using a base case for the cost recovery framework but is concerned the integrated water resource plans are not always appropriate in practice. See also, response to issue 23.	3.4

3.1 Regulatory framework

IPART proposes what it terms a “less intrusive” approach to regulating prices for recycled water services based on the extent of effective choice available to end-use customers, entailing:

- Setting recycled water prices for mandatory schemes as part of the utility’s broader retail price review, based on guidelines established by IPART.
- Deferring regulation of prices for voluntary recycled water schemes by encouraging the parties to enter into unregulated pricing agreements and only regulating when such agreements cannot be reached by undertaking a scheme-specific review.

We support IPART’s proposal to regulate recycled water prices only where there is no effective choice for customers, and adopt a light-handed approach where customers do have effective choice. This is consistent with the approach set out in the 2006 Guidelines.

IPART is proposing a number of changes to the regulatory arrangements for mandatory and voluntary recycled water schemes. We provide some comments on the extent to which IPART’s proposals are consistent with this broad regulatory framework.

We discuss the definition of mandatory schemes subject to price regulation and the applicable regulatory arrangements in Section 4.

We address the approach for voluntary schemes in Section 6. We support the broad approach of allowing unregulated pricing agreements for voluntary schemes and only setting prices when IPART receives a request for a scheme-specific review, however we note that:

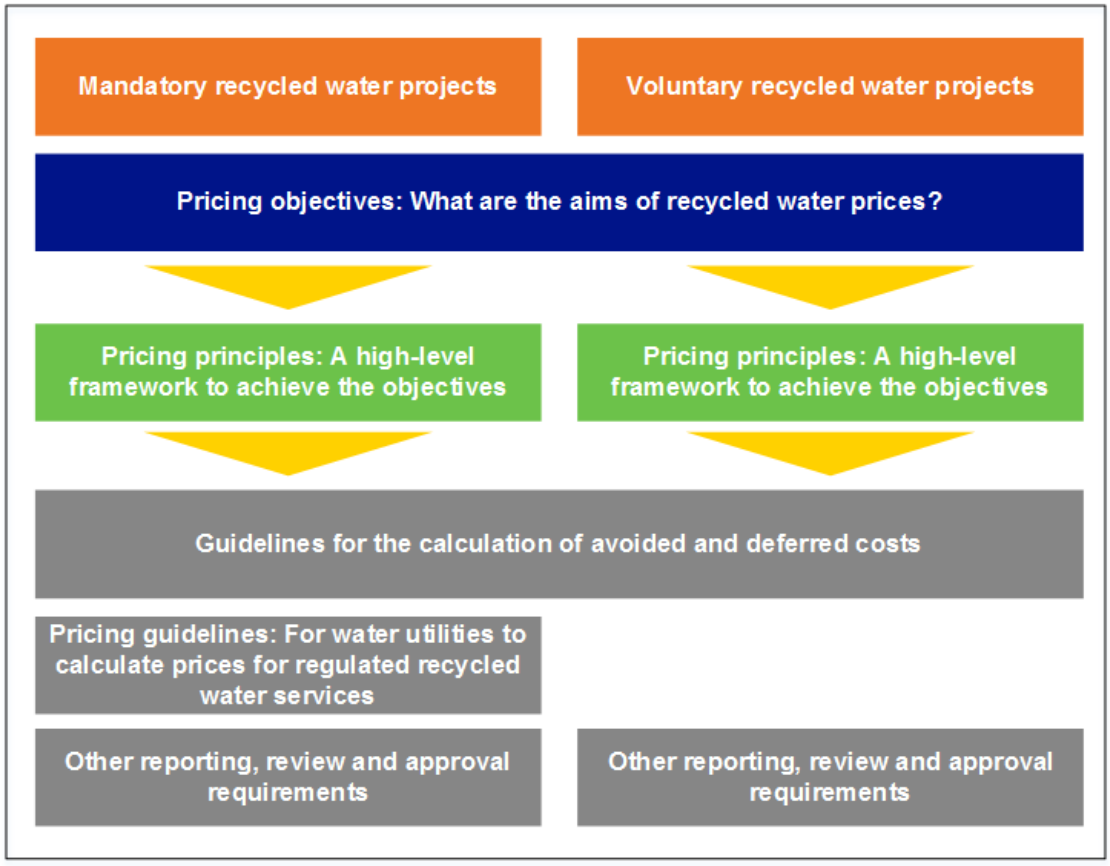
- IPART’s proposal for the publication of a methodology and estimates of LRMC - which we support (for water) - may reduce or eliminate the need for scheme-specific reviews.
- IPART’s proposed approach to verifying willingness-to-pay (by the end-use recycled water customer) when assessing whether to allow cost offsets for voluntary schemes is not consistent with a less intrusive approach.

3.2 Pricing objectives

IPART’s objectives for pricing recycled water are established in the 2006 Guidelines and discussed in the Issues Paper. The objectives for pricing recycled water establish the fundamental aim of the regulatory framework for recycled water projects, which is then implemented via a series of principles, guidelines and supporting arrangements (illustrated in Figure 3-1):

- The pricing objectives establish the aim of recycled water prices
- The pricing principles provide a high-level framework to deliver the objectives, including:
  - Underpinning IPART’s approach to regulating prices for recycled water services where there is no effective choice
  - Guiding the negotiations between water utilities and voluntary customers
- Guidelines provide further detail on the calculation of recycled water prices for regulated recycled water services and the calculation of avoided and deferred costs in accordance with the pricing principles:
  - Pricing guidelines for mandatory recycled water schemes
  - Guidelines for the calculation of avoided and deferred costs of recycled water schemes.

Figure 3-1 Hierarchy of recycled water objectives, principles and guidelines



Achieving the pricing objectives therefore depends on the underpinning principles, guidelines and supporting arrangements. In particular, the pricing objectives establish that recycled water prices should:[5]

- Achieve economic efficiency
- Facilitate competition
- Provide revenue adequacy
- Have regard to customer impacts
- Be transparent and simple
- Reflect the National Water Initiative (NWI) principles and other relevant water reviews.

We support the pricing objectives articulated by IPART, subject to the following comments.

[5] IPART, 2018(a), pp 32-36.

3.2.1 Investment certainty is critical for achieving efficiency

The Issues Paper and 2006 Guidelines focus on the role of recycled water prices in achieving productive efficiency (ensuring recycled water is provided at least cost) and allocative efficiency (ensuring customers face appropriate signals about the cost of their consumption). However, dynamic efficiency (ensuring efficient investment in recycled water takes place) is critical to promoting the long-term interests of customers.

IPART has recognised investment certainty as a necessary condition for promoting dynamic efficiency and a key issue for this review. Achieving IPART's pricing objectives therefore requires consideration of the way the proposed regulatory arrangements influence investment certainty.

3.2.2 Facilitating competition requires a level playing field

The Issues Paper and 2006 Guidelines recognise the importance of competition in promoting innovation and economic efficiency, and the importance of a level playing field to promoting competition. The Issues Paper sets out IPART's concern regarding the capacity for regulated water utilities to cross-subsidise the costs of recycled water schemes using its broader water and wastewater customer base, and its proposals are intended to address that risk.

Hunter Water agrees with IPART that facilitating competition requires consistent treatment between public and private sector service providers. In this regard, we note that private suppliers have risk management options that are not currently available to public water utilities due to the regulatory framework (e.g. cross-subsidies between water, wastewater and recycled water services). WIC Act licensees are also able to enter into contractual arrangements with developers that are more flexible than those public water utilities can establish given IPART's regulation of recycled water developer charges.[6]

Facilitating competition also requires a consistent treatment between alternative servicing options. Asymmetric regulatory treatment of water and wastewater investment, including for example more onerous post-adjustment reviews, disadvantages recycled water projects compared to traditional servicing solutions, creating a barrier to the development of recycled water projects.

Facilitating competition therefore requires a level playing field in the regulatory treatment of:

- public and private service providers, and
- recycled water and water and wastewater services.

There is another consideration in the context of this objective which is not addressed in the Issues Paper – the scope for regulation to stifle innovation. The provision of recycled water services occurs in a dynamic and rapidly evolving market. Regulatory arrangements that are overly prescriptive, or do not facilitate timely decisions, run the risk of deterring the significant potential for innovative arrangements that drive economic efficiency, benefiting customers and the broader community. Care must therefore be taken to ensure regulation is in place to prevent the exercise of monopoly power, while avoiding the creation of regulatory risk and barriers that may constrain the significant potential of this market.

[6] IPART's proposal to allow bilateral agreements somewhat addresses this issue. Refer to section 5.2 for further detail.

3.2.3 Risk management is critical to achieving revenue adequacy

The Issues Paper and 2006 Guidelines establish the objective that the prices of water services, including recycled water, should enable the water utility to recover the full efficient costs associated with providing that service. We agree with this objective, and IPART's position that it is appropriate to recover a contribution from the broader customer base where the provision of recycled water services results in avoided or deferred costs elsewhere in the system or provides broader external benefits.

However, when considering revenue adequacy it is important to consider the risk-adjusted revenue a recycled water project is likely to recover. The ring-fencing of recycled water projects imposes significant demand risk on water utilities. In our experience there is considerable risk associated with development of recycled water projects, including for example the uptake risk and the resulting delay in the collection of developer charges for greenfield projects. This risk is exacerbated by the potential revaluation of avoided and deferred costs associated with post-project reviews.

Achieving the necessary objective of revenue adequacy for recycled water projects therefore requires a comprehensive set of arrangements that recognise and address these risks.

3.2.4 Regulatory arrangements, not just prices, should be transparent and simple

The objectives set out in the Issues Paper and 2006 Guidelines focus on ensuring prices for recycled water projects are transparent and simple. We agree this is an important objective which facilitates allocative efficiency.

However, the objective of transparency and simplicity should extend beyond regulated prices to consider the broader regulatory framework. In particular, Hunter Water consider this objective should have regard to whether the regulatory arrangements are transparent and simple, and whether they impose an onerous regulatory burden on recycled water proponents. Regulatory arrangements that are overly complex or impose an undue administrative burden have the potential to deter investment.

3.2.5 Regulatory proposals should be evaluated against IPART's objectives

The implementation arrangements are key to determining the extent to which the regulatory arrangements for recycled water projects achieve IPART's objectives. While we support IPART's objectives, subject to the comments set out above, we are concerned that the implementation arrangements for some of IPART's proposals do not support the achievement of these objectives.

We suggest that each of IPART's proposals should be systematically tested against the IPART's objectives, to ensure they will achieve the intended outcome. Our comments on IPART's proposals in this paper (and our suggested alternatives) are informed by our assessment of the extent to which they achieve IPART's objectives in principle and in practice.

3.2.6 Pricing structures should have regard to customer preferences

Water utilities are transforming from technically-driven organisations to customer-driven organisations where customers are encouraged to have a real say on the decisions the businesses make. In recent years there has been an increasing focus on understanding customers' views and preferences, then using this understanding to inform decision making and pricing proposals to economic regulators. IPART's *Guidelines for Water Agency Pricing Submissions* encourage public utilities to engage with their customers in formulating proposed price structures for water, wastewater and stormwater drainage.[7] As previously mentioned, consistent pricing frameworks between recycled water services and traditional services are desirable. Therefore, in addition to IPART's recycled water pricing objective "to have regard to customer impacts", Hunter Water considers that pricing structures should also have regard to customer preferences.

3.3 Cost recovery framework

3.3.1 Regulatory treatment when recycled water is the least cost solution

As noted in the Issues Paper, there are situations where the provision of recycled water services is driven by the need to meet EPA requirements. In these situations, IPART treats the recycled water assets as wastewater assets and includes the associated costs in the wastewater regulatory asset base (RAB). Hunter Water agrees this is an appropriate approach. However, we are not aware of the principles or guidelines that establish this approach. Documenting this intention will help to improve investor certainty by clarifying revenue adequacy, particular in respect of facilities that provide both wastewater treatment and recycled water services.

Similar situations may arise for water. The Lower Hunter Water Plan is a whole of government approach to ensure the Lower Hunter has sufficient water supplies to enable a sustainable future for our region.[8] Hunter Water is currently working with the NSW Department of Industry and other regional stakeholders to undertake a major review of the Lower Hunter Water Plan. The revised Plan may include recycled water services as part of the portfolio of solutions to balance water supply and demand. We request clarification from IPART on the regulatory treatment of recycled water expenditures for those schemes. Treating the recycled water assets as water assets and including the associated costs in the water RAB may be appropriate in these circumstances.

3.3.2 Incremental or standalone costs

A key element of IPART's regulatory approach is its cost recovery framework which involves:

- The prices of a recycled water scheme should recover the full efficient costs from recycled water end users (net of any cost offsets reflecting avoided and deferred costs and external benefits)
- Full efficient scheme cost should lie between a lower bound of incremental cost and stand-alone cost, where:
  - Incremental cost is calculated as the sum of direct capital and operating costs relating directly and exclusively to the provision of recycled water; facilitation costs, reticulation costs and incremental overhead costs
  - Stand-alone costs are the costs a new and efficient competitor would incur in providing only recycled water services

IPART notes that the difference between incremental and stand-alone costs reflects the level of joint or common costs that are allocated to a recycled water scheme, which is a judgement call.

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[7] IPART, 2018(b), pp 20, 21.
[8] For further description of the Lower Hunter water Plan see section 3.4.

We agree with the classification of scheme costs as set out by IPART and the use of incremental cost as an appropriate benchmark for calculating scheme costs (net of cost offsets) to be recovered from recycled water users, plus an appropriate share of joint or common costs should be allocated to a recycled water scheme.

Hunter Water has a robust activity-based costing framework to allocate direct costs and joint or common costs between water, wastewater, stormwater and recycled water services. During IPART last review of Hunter Water's retail prices, IPART's expenditure review consultant was *"of the opinion that the measures and ring fencing arrangements HW has put in place are appropriate and sufficiently robust to ensure that expenditure related to recycled water is adequately ring fenced from its other products which are price regulated"*.[9]

3.4 Base case

IPART's 2006 Guidelines require water utilities to develop integrated water resource plans if they intend to recover avoided costs associated with recycled water plants from their broader customer base. The integrated water resource plans represent the least cost suite of options to balance water supply and demand, which in turn forms the base case for the assessment of the incremental costs and benefits of recycled water schemes. The relevant integrated water resource plan in our region is the Lower Hunter Water Plan.

Hunter Water agrees with IPART that it is important to have a base case that represents the least cost alternative when assessing the incremental costs and benefits of recycled water projects. Integrated water resource plans provide an appropriate basis for calculation of a the long run marginal cost (LRMC) for water, which could be used as a basis for calculating avoided or deferred costs to the water system arising from recycled water projects. We would be concerned if integrated water resource plans were used to conduct with and without analysis, because:

- The integrated water resource plans may not to have the level of detail or locational granularity required to assess individual recycled water projects.
- The development of one recycled water facility can have implications for the base case of other recycled water developments, but it is impractical to update the integrated water plan on an ongoing basis.
- Their development involves various areas of government, for example the Department of Industry (Water)[10], adding administrative complexity.

We do not consider that an integrated water resource plan would be the appropriate base case for assessment of avoided or deferred costs in the wastewater system. Aside from addressing asset condition, Hunter Water's investment in the wastewater system is largely driven by: WWTW upgrades to address the risk of non-compliance with EPA licence requirements due to servicing growth and wastewater network upgrades to address capacity deficiencies that present a high risk of wet weather overflow to customer properties and the environment. The investment required to cater for growth is often informed by comprehensive strategy studies that include receiving water monitoring and modelling, along with assessment of options in conjunction with the EPA. The sequencing and nature of WWTW upgrades is not comprehensively described in a single document, since "headroom" in meeting EPA licence requirements and growth rates vary significantly across WWTW catchments.

[9] Jacobs, 2016, p 96.
[10] Formerly the Metropolitan Water Directorate.

3.5 Pricing principles

IPART has developed a set of pricing principles intended to provide a high-level framework to achieve its objectives. Pricing principles have been developed for both mandatory and voluntary recycled water schemes.

We support the development of pricing principles to guide the development of recycled water projects. However, we are concerned that the pricing principles established in the 2006 Guidelines and discussed in the Issues Paper require some amendments to ensure they support IPART's objectives. In particular:

- It is not clear why separate pricing principles are required for mandatory and voluntary recycled water schemes. The table below sets out the pricing principles for mandatory and voluntary recycled water schemes. It is clear that several of the principles are similar, but are worded slightly differently. We believe there may be benefit from harmonising the pricing principles for mandatory and voluntary schemes to the extent possible.
- In order to deliver the level playing field required to achieve the pricing objectives the pricing principles (for both mandatory and voluntary) should be amended to include the following principles:
  - Pricing arrangements for recycled water must promote investment certainty
  - Pricing arrangements for recycled water must promote consistent treatment of alternative servicing options and service providers.

In addition, as recognised by IPART in the Issues Paper, the pricing principles for both mandatory and voluntary schemes will need to be updated to reflect IPART's proposed changes to offsets to account for external benefits where there is demonstrated willingness-to-pay by the broader customer base for these external benefits.

Table 3-2 Comparison of pricing principles for mandatory and voluntary schemes

Pricing principles for mandatory schemes	Pricing principles for voluntary schemes	Comment
1. IPART should regulate prices for recycled water services and sewer mining only if there is an opportunity for water agencies to exercise monopoly power and it is confident that price regulation would improve economic efficiency.	NA	May need to be updated to reflect IPART's proposed definition of mandatory schemes. Aligns with IPART pricing objectives to achieve economic efficiency, have regard for customer impacts and reflect NWI principles (Principle 1 Flexible regulation).
2. Pricing arrangements should reflect the specific market and other characteristics of recycled water and sewer mining schemes.	NA	
3. Pricing arrangements for recycled water and sewer mining must be consistent with maintaining the current framework for water and sewerage pricing.	NA	
4. Pricing arrangements for recycled water should reflect the fact that the services form part of an integrated urban water system.	NA	Aligns with IPART pricing objectives to achieve economic efficiency and to reflect NWI principles (Principle 6 Integrated water resource planning).
5. Recycled water prices should recover the full direct cost of implementing the recycled water scheme concerned unless: – the scheme gives rise to avoided costs that benefit the water agencies and users other than the direct users of the recycled water, and/or – the scheme gives rise to broader external benefits for which external funding is received, and/or – the Government formally directs IPART to allow a portion of recycled water costs to be passed on to a water utility's broader customer base.	2. Recycled water prices should recover the costs of providing the recycled water service, unless there are clearly identified avoided costs or public benefits. 3. Costs of recycled water schemes are to be recovered from recycled water customers unless: – costs of investment in water and sewerage systems are deferred or avoided due to the implementation of the scheme, and/or – a subsidy has been paid to reflect public benefits resulting from the recycled water scheme, and/or – the Government formally directs the Tribunal to allow a portion of the recycled water costs to be recovered from non-recycled water customers.	Aligns with IPART pricing objectives to provide revenue adequacy, have regard for customer impacts and reflect NWI principles (Principle 2: Cost allocation and Principle 7: Cost recovery)). There is scope to harmonise the language here for mandatory and voluntary schemes and explicitly recognise IPART's proposal to allow funding of external benefits from the PWU's broader customer base.

Pricing principles for mandatory schemes	Pricing principles for voluntary schemes	Comment
6. The structure of prices should ensure that appropriate signals are sent to recycled water users and should entail appropriate allocation of risk.	4. The structure of prices should ensure that appropriate price signals are sent to recycled water users with the aim of balancing supply and demand, and should entail an appropriate allocation of risk.	Aligns with IPART pricing objectives to achieve economic efficiency. There is scope to harmonise the language here for mandatory and voluntary schemes.
Addressed in *Pricing guidelines for mandatory recycled water schemes* rather than principles: If the agency wises to recover the avoided or deferred costs from water or sewerage customers, it will be required to demonstrate to IPART that costs have been calculated and allocated in accordance with the *Guideline for Calculation and Treatment of Avoided and Deferred Costs for Recycled Water*.	5. Any costs to be recovered from parties other than recycled water customers must be calculated in accordance with the *Guideline for Calculation and Treatment of Avoided and Deferred Costs for Recycled Water*.	There is scope to harmonise the language here for mandatory and voluntary schemes.

Source: IPART, 2018(a), pp 41, 45, 66, 89, 90. Hunter Water analysis

4 PRICING ARRANGEMENTS FOR MANDATORY RECYCLED WATER SCHEMES

IPART's current framework provides for direct regulation of recycled water prices in schemes where customers have no choice about whether to be supplied with recycled water (termed 'mandatory recycled water schemes') and thus there may be potential for the exercise of market power.

In its Issues Paper, IPART proposes to largely retain the current framework for regulating mandatory schemes but seeks views on potential refinements. Below we outline our views on:

- The definition of mandatory schemes
- The pricing guidelines for mandatory recycled water schemes
- Recovery of scheme costs
- The structure of recycled water prices
- The procedural requirements around setting prices.

Table 4-1 Summary feedback on pricing for mandatory recycled water schemes

Issue	Our assessment	Comment	Relevant section
6. Mandatory scheme definition	✓	Hunter Water supports IPART's proposal to refine the definition of mandatory schemes to focus directly on whether there is customer choice.	4.1
7. Recovery of scheme costs	✓	Hunter Water supports the key element of IPART's cost recovery framework (i.e. that the total scheme cost is recovered from the users of each scheme net of specified cost offsets), subject to the cost offsets for external benefits being extended as proposed by IPART.	4.3
8. Capping of recycled water prices	?	In Hunter Water's view it is not clear that constraints on tariff structures add value, given that the primary objective of protecting against possible abuse of market power is addressed by requiring that utilities can recover no more than the total efficient cost of the scheme (net of any cost offsets). It also reduces the influence of customers in determining recycled water charges that best meet their preferences.	4.4
9. 'Top up' pricing thresholds	✓	We agree IPART's existing guidelines are too prescriptive in relation to 'top up'. The guidelines should define the intention/objective and allow businesses to have the flexibility to set the thresholds.	4.4
10. Fixed charges	?	Hunter Water considers that it should have the flexibility to set fixed charges for mandatory recycled water schemes, subject to the overall constraint that it recovers no more than the total efficient costs of each scheme (net of any cost offsets) from users of that scheme.	4.4
11. Procedural guidelines	✓	Hunter Water agrees that these procedural requirements are administratively burdensome and unnecessary, and supports the removal of these requirements.	4.5

4.1 Definition of mandatory schemes

Under its 2006 Guidelines, IPART defines mandatory schemes as recycled water schemes to which customers are required to connect due to a Government policy (such as BASIX or the Metropolitan Water Plan).

In its Issues Paper IPART states that it is considering refining its definition of 'mandatory scheme' so that the element of effective choice is the principal criteria in determining whether it considers a scheme mandatory. This would mean that all new developments that have a recycled water connection to every home would be defined as mandatory.

Hunter Water supports IPART's proposal to refine the definition of mandatory schemes to focus directly on whether there is customer choice on the basis that:

- The definition is straightforward
- It avoids problematic issues with applying the current definition (e.g. whether BASIX can be seen as requiring connection to recycled water when alternative options such as rainwater tanks can also meet BASIX requirements and reference to the Metropolitan Water Plan which does not apply to Hunter Water)
- It better aligns with the recycled water developer charges determination and with the definition of voluntary schemes which is already based on the concept of customer choice.

4.2 Guidelines

Under its 2006 Guidelines, IPART decided that it would only set prices for mandatory schemes where there was sufficient information for it to do so. For mandatory schemes where there is insufficient information, IPART established pricing guidelines for the water utilities to calculate prices for recycled water services provided by these schemes.

The Guidelines set out:

- the maximum cost that should be recovered from a recycled water scheme
- any offsets against this total cost to account for avoided costs or deferred costs, subsidies received, a government directive that costs of recycled water projects should be recovered from potable water or sewer customers, or up-front costs paid by a party other than the water utility or the customer
- the total cost that can be recovered from recycled water customers, and
- how costs should be recovered through the structure of prices.

Hunter Water supports the continued use of guidelines for the pricing of recycled water schemes provided by mandatory schemes rather than direct setting of prices by IPART. However, as discussed below, we consider that a number of aspects of these guidelines need to be updated (particularly those on cost offsets) or relaxed.

4.3 Cost recovery for mandated schemes

IPART's 2006 Guidelines set out a funding hierarchy for mandatory schemes whereby:

- The total 'efficient cost' of the scheme is established (including a share of joint and common costs and the cost of potable top-up required)
- The total efficient cost of each recycled water scheme is recovered from users of that scheme (net of certain cost offsets) through recycled water charges (usage and fixed) and recycled water developer charges
- Some caps are imposed on usage and fixed recycled water charges
- The remaining costs are recovered via recycled water developer charges.

In its Issues Paper IPART suggests that this funding hierarchy for mandatory schemes remains appropriate, as it as it protects the interests of recycled water customers, while also signalling the net costs that recycled water provision creates. In particular, IPART notes that offsetting total scheme costs with the full value of avoided and deferred costs signals to developers where recycled water is most beneficial in terms of alleviating capacity constraints on the exiting water and wastewater network.

Hunter Water supports the key element of IPART's cost recovery framework (i.e. that the total scheme cost is recovered from the users of each scheme net of specified cost offsets) subject to several qualifications:

- The cost offsets for external benefits is extended as proposed by IPART to enable the value of these external benefits to be deducted from scheme costs to be recovered from recycled water users where Hunter Water can demonstrate customer willingness-to-pay (see further discussion in section 7)
- The additional caps placed on usage and fixed recycled water charges are relaxed (see further discussion below).

4.4 Pricing structure

In addition to capping the total costs which can be recovered from users of a mandatory recycled water scheme, IPART's guidelines also impose some additional constraints on the structure of recycled water prices:

- Recycled water charges are to include a usage component that does not exceed the potable water price, unless IPART's prior approval has been obtained. The usage charge is to be set at such a level that it sends appropriate consumption signals aimed at equating the demand for recycled water with the available supply.
- Prices may include a fixed component, which should not be set so high as to act as an incentive for customer to disconnect from the recycled water scheme.
- If potable water 'top-up' of the recycled water supply exceeds more than 10% by volume on an annual basis, the recycled water usage charge is to be calculated as a percentage of the potable water price in accordance with a schedule specified by IPART (unless the utility can demonstrate to IPART that an alternative approach will yield prices which are economically efficient and will balance demand for recycled water with supply).

IPART suggests that these constraints remain generally appropriate, although it canvasses whether the top-up pricing thresholds should be amended or removed and whether additional constraints should be placed on the setting of fixed charges.

In Hunter Water's view it is not clear that these additional constraints on tariff structures add value, given that the primary objective of protecting against possible abuse of market power is addressed through the requirement that utilities can recover no more than the total efficient cost of the scheme (net of any cost offsets). Rather, the guidelines have potential to inadvertently constrain pricing options which promote economically efficient outcomes. Removing one type of charge will drive up one or both of the other two charge types. For example, if service charges are set to zero and the usage charge for recycled water is capped at the level of the potable water usage charges, then recycled water developer charges will increase. Moreover, these additional constraints limit the scope for customers to influence pricing structures that best meet their objectives and preferences.

The following discussion outlines our views on each of these elements of the tariff structure.

4.4.1 Usage charges

As noted above, IPART's guidelines require the recycled water usage charge to not exceed the potable water price.

The primary stated intention of this cap is to protect customers from the potential abuse of market power.[11] However, this is unnecessary given that IPART's cost recovery framework already explicitly prevents the utility from recovering more than the efficient cost of the scheme from users.

It is possible IPART's desire to regulate tariff structures may relate to the role of prices in providing signals to users to influence their decisions (i.e. IPART wants to ensure prices send signals which promote the economically efficient use and allocation of scarce resources). IPART appears to have a concern that recycled water usage charges set higher than the potable water price may encourage bypass of recycled water for potable water, suggesting that the choice of the potable water price as an appropriate benchmark depends on the substitutability of recycled and potable water.[12]

Finally, being prescriptive about the form of recycled water prices limits the role for customers in determining recycled water charges that best meet their objectives and preferences. This is inconsistent with IPART's encouraging public water utilities to have a strong and up to date understanding of customer preferences and use those insights to inform service provision and prices for water, wastewater and stormwater drainage services.[13]

Hunter Water therefore considers it should have the flexibility to set usage charges for mandatory recycled water schemes, subject to the overall constraint that it recovers no more than the total efficient costs of each scheme (net of any cost offsets) from users of that scheme. One option would be to allow Hunter Water to set these prices subject to demonstrating they are consistent with some high-level principles (e.g. the structure of prices should ensure that appropriate price signals are sent to recycled water users with the aim of balancing supply and demand, and should entail an appropriate allocation of risk).

[11] IPART, 2018(a), p 46.
[12] IPART, 2018(a), p 48.
[13] IPART, 2018(b), pp 20, 21.

4.4.2 Fixed charges

The pricing guidelines specify that the fixed charge should not be set so high as to act as an incentive for customer to disconnect from the recycled water scheme. However, given the mandatory schemes are, by definition, those where customers have no choice than to receive a recycled water supply, it is not clear that disconnection is an option available to customers in such schemes. This suggests that the proposed cap on the fixed charge may in many cases serve no useful purpose.

In its Issues Paper IPART contemplates whether the water utilities should retain flexibility in setting the fixed charge or whether they should be capped so that the combined charges for recycled water and potable water sum to no more than the potable water charges that would otherwise have been levied for the same level of consumption. This type of cap would need to be calculated on the basis of average household consumption because it would be impractical to calculate (and implement) fixed recycled water charges applying to each possible level of consumption. We currently use a fairness test to help set recycled water prices for our dual reticulation schemes at Gillieston Heights and Thornton North (Chisholm), customers are not disadvantaged by living in a dual reticulation area. The fairness test checks that an average customer in a dual reticulation area using both recycled and drinking water has the same total water bill as customers with the same total usage of drinking water only. This test is based on 40 per cent of the total use being recycled water and 60 per cent being drinking water. We regularly receive feedback from customers who are concerned that the fairness test disadvantages customers that use less water than average (across both potable water and recycled water).

We consider that prescribing a fairness test may be less beneficial than understanding recycled water customers' preferences for price structures. Hunter Water considers that it would be more appropriate for the guidelines to allow public water utilities the flexibility to set fixed charges for mandatory recycled water schemes, subject to the overall constraint that it recovers no more than the total efficient costs of each scheme (net of any cost offsets) from users.

4.4.3 Top-up pricing thresholds

As noted above, IPART's current guidelines require that if potable water 'top-up' of the recycled water supply exceeds more than 10% by volume on an annual basis, the recycled water usage charge is to be calculated as a percentage of the potable water price (in accordance with a schedule specified by IPART), unless the utility can demonstrate to IPART that an alternative approach will yield prices which are economically efficient and will balance demand for recycled water with supply.

In its Issues Paper IPART suggest that the specific prices for each range of top-up could be overly prescriptive and may not necessarily send appropriate price signals.

Hunter Water agrees that this approach is excessively prescriptive and supports removal of these requirements from the guidelines.

4.5 Procedures

The existing guidelines contain two procedural items on setting prices to recycled water customers:

- Utilities are to review recycled water prices at least once every 3 years, with provision for recycled water prices to be indexed for inflation between reviews.
- Utilities are required to publish and publicly exhibit their calculations of recycled water prices (including information on the costs of the scheme, avoided or deferred costs and assumptions used to calculate the prices).

In its Issues Paper IPART states that it considers the procedural guidelines are redundant. It observes that IPART would set recycled water prices for mandatory schemes at a utility's price review and that it would expect these prices to be made available to customers on the utility's website.

Hunter Water agrees that these procedural requirements are administratively burdensome and unnecessary and supports the removal of these requirements.

5 RECYCLED WATER DEVELOPER CHARGES METHODOLOGY

Recycled water developer charges are upfront charges water utilities levy on developers to recover the costs of providing recycled water infrastructure to new developments (or redevelopments). They recover any costs the water utility does not recover through periodic charges to recycled water customers of mandatory schemes, or recovered through cost offsets

Under IPART's 2006 determination of recycled water developer charges, water utilities calculate recycled water developer charges for each scheme based on a methodology specified by IPART and must also follow a set of procedural requirements. As noted by IPART, the basic principles underlying recycled water developer charges are that they should recover the costs of providing recycled water services to the new development, net of what is recovered from periodic charges and cost offsets, and reflect variations in the costs of servicing different development areas.

This section considers in turn the form of regulation, recycled water developer charges methodology, procedural requirements and management of uptake risk.

Table 5-1 Summary feedback on recycled water developer charges

Issue	Our assessment	Comment	Relevant section
12. Methodology	✓	Hunter Water agrees that a methodology, rather than fixing individual developer charges, is an appropriate approach to regulating recycled water developer charges.	5.1
13. Methodology components	?	Hunter Water broadly supports IPART's proposal to retain most elements of the current methodology for recycled water developer charges. We would note, however that the prevailing WACC does not reflect riskiness of cashflows and other mechanisms are required to better manage uptake risk.	5.2
14. Annual consumption	✓	Hunter Water supports IPART's proposal to update the annual consumption for an equivalent tenement to be equal to the average consumption values that would be established at each water utility's prevailing periodic retail price determinations.	5.2
15. March-on-March CPI adjustment	✓	Hunter Water supports IPART's proposal to apply the March-on-March CPI adjustment factor, as used in IPART's retail price determinations, to index recycled water developer charges over time.	5.2
16. Negative developer charges	✓	Hunter Water supports IPART's proposal to preclude setting negative developer charges by setting any such charges to zero.	5.2
17. Opt-out	✓	Hunter Water supports IPART's proposal to allow utilities and developers to opt-out of the recycled water developer charges determination through bilateral agreements (subject to appropriate ring-fencing of costs) in order to allow developers to deliver additional infrastructure that may benefit their development and/or the wider community, and to encourage public water utilities to understand and meet their customers' needs.	5.2

Issue	Our assessment	Comment	Relevant section
18. Procedural requirements		Hunter Water supports IPART's proposed changes to the procedural requirements.	5.3
19. Barriers		While this is an issue beyond IPART's control, Hunter Water notes that imposing recycled water developer charges while there are zero water and wastewater developer charges represents a significant disincentive to recycled water projects. The key issue of concern to Hunter Water in relation to the framework for recycled water developer charges is the disproportionate burden of uptake and demand risk it bears, which acts as a disincentive for it to pursue recycled water schemes relative to traditional water and wastewater solutions. While Hunter Water supports updating the fixed demand assumption to allow the utility more flexibility, this initiative on its own will not address the risks. Hunter Water supports IPART's suggestion that more flexibility in the way developer charges are levied.	5.2, 5.4

5.1 Form of regulation

Hunter Water agrees that a methodology, rather than fixing individual developer charges, is an appropriate approach to regulating recycled water developer charges.

5.2 Recycled water developer charges methodology

In its Issues Paper, IPART proposes to largely maintain the current recycled water developer charges methodology, as it remains theoretically sound and is consistent with the methodology IPART would adopt for water, wastewater and stormwater services.

In practice, however, this methodology is not applied to water and wastewater due to these developer charges being set to zero. While this is an issue beyond IPART's control, Hunter Water notes that imposing recycled water developer charges while there are zero water and wastewater developer charges represents a significant disincentive to recycled water projects.

That said, Hunter Water broadly supports IPART's proposal to retain most elements of the current methodology for recycled water developer charges and to update a number of elements and parameters in the methodology such as equivalent tenement consumption and inflation adjustment. In particular, Hunter Water supports IPART's proposals:

- To update the annual consumption for an equivalent tenement to be equal to the average consumption values that would be established at each water utility's prevailing periodic retail price determinations
- To apply the March-on-March CPI adjustment factor, as used in IPART's retail price determinations, to index recycled water developer charges over time
- To preclude setting negative developer charges by setting any such charges to zero.

We note, however that the prevailing WACC does not reflect riskiness of cash flows and other mechanisms are required to better manage uptake risk (see further discussion in section 5.4).

Hunter Water also supports IPART's proposal to allow utilities and developers to opt-out of the recycled water developer charges determination through bilateral agreements (subject to appropriate ring-fencing of costs) in order to allow developers to deliver additional infrastructure that may benefit their development and/or the wider community, and to encourage public water utilities to understand and meet their customers' needs. This is consistent with IPART's objectives and is also consistent with IPART's developer charges framework for water and wastewater.

Our understanding is that WIC Act licensees negotiate and agree servicing arrangements with developers, including the magnitude and timing of any upfront contributions towards the recycled water infrastructure and risk of initial connection by properties. This approach provides mutual benefits in allocating costs and risks to the party best able to bear those risks rather than an inflexible formula applied to all situations. IPART's proposal to allow public water utilities to enter into bilateral agreements enables utilities to be more customer-oriented and places public and private service providers on an even footing.

5.3 Procedural requirements

The existing determination for recycled water developer charges includes procedural requirements for utilities making, reviewing and consulting on Development Service Plans (DSPs) to ensure sufficient transparency and scrutiny around the calculation of developer charges.

IPART proposes to make a number of minor changes to these procedural requirements to mirror those which emerged from its recent review of water and wastewater developer charges (e.g. to modernise the requirements to take advantage of the internet). Hunter Water supports IPART's proposed changes to the procedural requirements.

5.4 Management of uptake risk

The key issue of concern to Hunter Water in relation to the framework for recycled water developer charges is the disproportionate burden of uptake and demand risk it bears, which acts as a disincentive for it to pursue recycled water schemes relative to traditional water and wastewater solutions.

As noted by IPART in its Issues Paper, the ring-fencing of recycled water schemes means that capital costs are not added to a utility's RAB (except the part eligible to be recovered from water or wastewater customers due to avoided or deferred costs). As such, water utilities may be at risk of under-recovery should forecast growth (ie, equivalent tenements) and demand for recycled water not eventuate.

In addition, as also noted by IPART, the absence of a RAB for recycled water also means that water utilities bear the holding costs associated with any timing delay between the time when capital costs are incurred and when recycled water developer charges are received from developers. This contrasts to potable water, wastewater and stormwater developer charges where these risks, and hence costs, are borne by the broader customer base.

Hunter Water has had first hand experienced of such risks materialising:

- Uptake (and therefore collection of developer charges) may be slower than planned, increasing working capital costs
- Development plans may change over time, exposing Hunter Water to stranding risk (e.g. Gillieston Heights)

These risks are exacerbated by the potential for post-project reviews (discussed in more detail in section 6).

Box 1: Uptake risk for recycled water projects subject to recycled water developer charges

Hunter Water pursued dual reticulation schemes within the residential development precincts of Chisholm and Gillieston Heights based on:

- An assessment that recycled water systems at these locations would be more cost-effective than rainwater tanks to meet the NSW Building and Sustainability Index (BASIX) requirement for new residential properties to use 40% less potable water than the average NSW home 'pre-BASIX' benchmark.
- Support from developers
- Support from the local government.

The original dual reticulation schemes were sized to service over 5,000 properties but were later revised to service approximately 1,100 properties across the two schemes. Factors affecting the uptake included:

- Changes in land ownership by developers over time, which can occur several times between the proponent's decision to proceed with a recycled water scheme and actual development occurring. Ongoing developer support for a recycled water scheme is therefore uncertain.
- Regarding who has the authority to mandate a water recycling scheme for a new development and thereby enable various cost recovery mechanisms.
- The retention of recycled water developer charges when the NSW Government set developer charges for wastewater and water to zero in 2008. Developer charges are payable upfront and are viewed by developers are a cash flow barrier. The regulatory framework did not allow for bilateral agreements on different terms.
- Developers' incentive structures in terms of the cost and cash flow implications for them of alternative water infrastructure solutions. In Hunter Water's experience the incentives may vary depending upon marketing strategies and the type of packages they are selling (e.g. house and land versus land only). For house and land packages, both recycled water developer charges and rainwater tanks are costs initially borne by developer and passed on to the property owner on sale. For land only packages, recycled water developer charges are an upfront cost borne by the developer immediately for all developed lots (which affects cash flows) whereas rainwater tanks are a cost borne by each property owner when they build a house (no cash flow issues and potentially a higher profit if it is assumed that the land sale price does not vary depending on the means of meeting BASIX). The potential for changes in land ownership by developers over time can exacerbate this issue, and the associated uptake risk, particularly if a "house and land" developer sells to a "land only" developer. The regulatory framework applying at the time did not allow for bilateral agreements on different terms that may mitigate the cash flow barrier for land-only developers.

While IPART recognises that the risk profile of recycled water may be adversely affected by the regulatory pricing regime, it does not propose introducing a RAB for recycled water on the grounds that this would advantage public water utilities over private water providers. IPART's view is that public water utilities should also be exposed to these commercial risks, and not be able to shift all these risks to its broader customers. Demand risk should be appropriately shared between the water utility, its recycled water customers, and developers.

At the same time, however, IPART observes that is also important that the developer charges methodology does not put the public water utilities at an advantage or disadvantage relative to private sector providers, in terms of the commercial risk they face when making decisions to invest in recycled water. While a public water utility can only recover from developers its costs as individual lots are released, private water providers are able to address this source of demand risk contractually, when negotiating payment terms with developers.

IPART propose a number of options to address these issues:

- Remove the fixed assumption that residential properties will use 110 kL per annum, and instead allow the average consumption per annum of a residential customer in the recycled water scheme to be established and updated at the prevailing retail price determinations.
- Provide more flexibility in its methodology around the way developer charges for recycled water can be levied and therefore when the costs of the schemes are recovered from developers (e.g. to allow for part payments independent of growth, such that there is scope to levy upfront contributions to pay for the capital expenditure or include 'take or pay' arrangements to recover fixed operating costs).
- Allow a more flexible review process for DSPs which may allow forecast errors and growth risk to be addressed in a more timely manner than is currently the case.

While Hunter Water supports updating the fixed demand assumption to allow the utility more flexibility, this initiative on its own will not address the risks.

Hunter Water supports IPART's suggestion that more flexibility in the way developer charges are levied is needed. We agree with all of the options suggested by IPART – allowing public utilities more scope to negotiate arrangements that share uptake risk with developers, consistent with the flexibility afforded to private utilities. For example, public utilities could request upfront or staged payments and share the demand risk associated with usage.

6 PRICING ARRANGEMENTS FOR VOLUNTARY RECYCLED WATER SCHEMES

IPART's current framework provides for less intrusive regulation of recycled water prices in schemes where customers have a choice about whether to be supplied with recycled water (termed 'voluntary recycled water schemes') and thus there may be less potential for the exercise of market power.

In its Issues Paper, IPART proposes to largely retain the current framework for regulating voluntary schemes but seeks views on potential refinements. Below we outline our views on:

- The approach to regulation of voluntary recycled water schemes
- Recovery of scheme costs
- The structure of recycled water prices.

Table 6-1 Summary feedback on pricing for voluntary recycled water schemes

Issue	Our assessment	Comment	Relevant section
1. Regulatory framework		As discussed in Section 3, we support IPART's proposal to regulate recycled water prices only where there is no effective choice for customers, and adopt a light-handed approach where customers do have effective choice.	6.1
20. Cost offsets only where there is funding shortfall		Hunter Water does not support this proposal. In practice determining 'true' willingness-to-pay and the commercially viability of a voluntary scheme with reference to willingness-to-pay and cost offsets is invasive and impracticable. In Hunter Water's view this approach is inconsistent with the regulatory principle of administrative simplicity and non-intrusive regulation. The full cost of cost offsets should be able to be claimed for all schemes, regardless of if they are mandatory or voluntary.	6.2

6.1 Approach to regulation of voluntary schemes

The 2006 Guidelines established a set of high-level pricing principles to guide price negotiations between the water utilities and voluntary customers:

- Recycled water prices should recover the costs of providing the recycled water service, unless there are clearly identified avoided costs or public benefits.
- Costs of recycled water schemes are to be recovered from recycled water customers unless:
    - costs of investment in water and sewerage systems are deferred or avoided due to the implementation of the scheme, and/or
    - a subsidy has been paid to reflect public benefits resulting from the recycled water scheme, and/or
    - the Government formally directs the Tribunal to allow a portion of the recycled water costs to be recovered from non-recycled water customers.

- The structure of prices should ensure that appropriate price signals are sent to recycled water users with the aim of balancing supply and demand, and should entail an appropriate allocation of risk.
- Any costs to be recovered from parties other than recycled water customers must be calculated in accordance with the Guideline for Calculation and Treatment of Avoided and Deferred Costs for Recycled Water.

In addition to these pricing principles, water utilities must ring-fence the costs and revenues of voluntary recycled water schemes from the other parts of their businesses. IPART's stated intention is to ensure that water utilities do not recover the costs of voluntary schemes from their broader customer bases (unless there is an explicit allowance for the recovery of avoided costs).

IPART proposes to largely retain the current approach and high-level pricing principles, but seeks views on whether cost offsets should only be available for voluntary schemes where there would otherwise be a shortfall in funding.

Hunter Water supports a light-handed approach for regulating voluntary schemes through establishing high-level principles to guide negotiations, rather than IPART directly setting recycled water prices. We consider it appropriate to provide for a scheme specific review as a fall-back for this negotiate-arbitrate approach, subject to the need to recognise there are significant administrative costs that need to be recovered.

However, as discussed below Hunter Water also considers that some refinements to the pricing principles themselves are required, particularly with regard to the nature of cost offsets and the circumstances in which they are permitted.

6.2 Recovering costs from customers

Hunter Water supports IPART's key principle that recycled water prices (including for voluntary recycled water schemes) should recover the costs of providing the recycled water service, unless there are clearly identified avoided costs or public benefits.

However, Hunter Water considers that the current and proposed conditions on the availability of cost offsets for voluntary schemes is too restrictive and may inadvertently impede recycled water schemes which would benefit direct users, the broader customer base and the community.

6.2.1 The application of cost offsets to voluntary schemes

The first issue is that under the current pricing principles for voluntary recycled water schemes, cost offsets in respect of public external public benefits are permitted only where a subsidy has been received to reflect these benefits. As discussed further in section 7, IPART is proposing to extend cost offsets for external benefits when the utility can demonstrate customer willingness-to-pay for such external benefits. Hunter Water supports this proposal, and considers it should apply equally to mandatory and voluntary schemes.

6.2.2 Cost offsets for voluntary schemes only where there is a funding shortfall

The second issue relates to IPART's proposal to amend the pricing principles for cost recovery for voluntary schemes to provide cost offsets (reflecting avoided and deferred cost and/or external benefits) only to schemes where there would otherwise be a funding shortfall (i.e. access to cost offsets would not be available for commercially viable voluntary schemes).[14]

[14] IPART, 2018(a), p 67.

IPART suggests that this can ensure that recycled water schemes for voluntary schemes "are not set unnecessarily low and that system-wide cost are minimised."[15] Hunter Water does not support this proposal.

The principal reason for this is that, as acknowledged by IPART, assessing willingness-to-pay is "inherently difficult". In practice, determining the 'true' willingness-to-pay for recycled water, and then establishing whether a voluntary scheme is commercially viable or not based on customer willingness-to-pay with and without access to cost offsets, is likely to impracticable. It is not clear how well-placed IPART is to review willingness-to-pay by different potential recycled water users reflecting the circumstances of different industries and businesses. It is also not clear that IPART has the power to obtain data from end customers which it may need to undertake the assessment of willingness-to-pay it is proposing. In Hunter Water's view this approach is impracticable, and fundamentally inconsistent with the regulatory principle of administrative simplicity and non-intrusive regulation.

IPART's proposed approach makes any commercial negotiation subject to IPART's subjective assessment of willingness-to-pay, in effect making the economic regulator a party in commercial negotiations between the utility and potential voluntary scheme users. In other words, in seeking to ensure that recycled water users receive none of the benefits from cost offsets, this approach may inadvertently impede such negotiations even commencing and thus prevent socially beneficial recycled water schemes going ahead.

In Hunter Water's view, the full value of cost offsets should be able to claimed even when there is no funding shortfall. IPART's role should be limited to protecting the interests of regulated customers through verifying any claims for cost offsets, given that regulated customers will be not be worse off even all of the cost offsets are claimed.

A corollary of this is that only the avoided costs/external benefits should be assessed by IPART, not the business case (required to assess funding shortfall). Assessing the business case is overly intrusive and inconsistent with light-handed regulation. There are many assumptions and variables which are developed and reviewed by our experts and approved by our Board, and review of the business case by the regulator creates additional uncertainty

One possible alternative would be to impose an arbitrary benefit sharing rule along the lines of IPART's recent guidance on allowing Hunter Water to retain 90% of the revenue from biodiversity offset credits, with 10% of revenue to be shared with the broader customer base (e.g. 10% of avoided costs should be recovered from recycled water users). This is consistent with the shared asset guidelines applied by the AER.

6.3 Price structures for voluntary schemes

IPART's pricing principles for voluntary schemes are deliberately not prescriptive. They require only that the structure of prices should ensure that appropriate price signals are sent to recycled water users with the aim of balancing supply and demand, and should entail an appropriate allocation of risk.

Hunter Water supports this less intrusive approach where price structures are negotiated between the public water utility and its voluntary recycled water customers.

[15] IPART, 2018(a), p 67.

7 RECYCLED WATER COST OFFSETS

The existence of recycled water schemes may give rise to positive benefits beyond the recycled water scheme itself – in the form of potable water and wastewater system costs that are (or are expected to be) offset by the existence of such schemes, and/or external benefits such as improved liveability. IPART defines these broader economic benefits as cost offsets.

The regulatory framework provides for these cost offsets to be deducted from the costs to be recovered from recycled water users in some circumstances. This is spelt out in two sets of IPART guidelines covering both the calculation and treatment of cost offsets[16] and the process for assessing the cost offsets[17].

In its Issues Paper, IPART state that while it considers the objectives of these guidelines remain relevant, there may be scope for improvements.

This section considers the calculation and assessment of avoided and deferred costs before discussing external benefits.

Table 7-1 Summary feedback on cost offsets

Issue	Our assessment	Comment	Relevant section
21. Avoided and deferred costs		Hunter Water agrees with IPART's characterisation of avoided or deferred costs.	7.1
22. WACC		In principle it could be argued that the discount rate should reflect the riskiness of the cashflows of the specific project in question. In the case of some individual recycled water schemes, this might imply a WACC higher than the prevailing WACC for the business as a whole.	7.1
23. LRMC		Hunter Water supports the use of LRMC estimates for water as a means to value avoided or deferred costs in the water system. Hunter Water considers that it would be more appropriate to value avoided or deferred costs in the wastewater system by undertaking with and without analysis for each project.	7.1
24. Published LRMC methodology and estimates		Hunter Water supports having a published LRMC methodology and updating these estimates at each price review.	7.1
25. Reduced potable water demand		We agree there is a case for the avoided cost of reduced potable water demand to be adjusted to account for foregone postage-stamp price revenue from the recycled water customer base.	7.1
26. Avoided and deferred cost claims		Hunter Water is of the view that IPART should make a decision on avoided costs for recycled water schemes at the start of the project.	7.1

[16] IPART, 2006
[17] IPART, 2011

Issue	Our assessment	Comment	Relevant section
27. Avoided and deferred business case		We agree the arrangements for determining avoided and deferred costs remain appropriate. We suggest the arrangements are called an avoided and deferred costs claim, to differentiate the analysis from the project business case which is the responsibility of the project proponents.	7.1
28. Post-adjustment mechanism		Hunter Water considers that the current arrangements for assessing and potentially reviewing claims for avoided/deferred costs represent a major impediment to the uptake of recycled water schemes, and that IPART's proposed amendments will do little to address the fundamental deficiencies with its approach. There should be no ex-post optimisation of this RAB allowance. Reviews should be limited to a once-off prudency test for capex at the next price determination – as they are for water and wastewater assets.	7.1
29. External benefits		Hunter Water supports the proposal that external benefits should be identified and treated similarly to avoided and deferred costs, with the value of external benefits recovered from the broader customer base where a water utility is able to demonstrate their existence through evidence of the broader customer base's willingness-to-pay. This will correct an anomaly with the treatment of recycled water schemes vis-à-vis traditional water and wastewater investments. Hunter Water agrees that claims for external benefits should demonstrate a clear link to causality and plausibility, and that evidence of willingness-to-pay should be based on robust studies which are representative and minimise bias. However, Hunter Water does not support the proposal to exclude 'localised' benefits from the scope of external benefits. This will raise problematic definitional issues around what is a 'localised' versus a 'wider' external benefit, which will add administrative complexity and risk. Demonstration that the broader customer base is willing to pay for an external benefit should in itself be sufficient to establish the link to the broader customer base.	7.2
30. Calculation of external benefits		We agree that the calculation of external benefits should adopt a consistent approach to that for avoided and deferred costs, however there are a number of implementation issues to resolve.	7.2
31. Assessment of external benefits		Hunter Water agrees that the process for assessment of external benefits should be consistent with that for avoided and deferred costs. Importantly, however, Hunter Water considers this should entail a one-off assessment at the time of investment. Post-adjustment reviews are impractical in the context of external benefits, and should not apply to either avoided/deferred costs or external benefits.	7.2

Issue	Our assessment	Comment	Relevant section
32. Other factors		Hunter Water agrees that claims for external benefits should demonstrate a clear link to causality and plausibility, and that evidence of willingness-to-pay should be based on robust studies which are representative and minimise bias.	7.2

7.1 Avoided and deferred costs

The following discussion outlines our views on the identification, measurement and assessment of avoided and deferred costs.

7.1.1 Nature of avoided and deferred costs

IPART note that in broad terms, avoided and deferred costs refer to cost savings of delaying or averting the need for augmentation of a water utility's potable water and/or wastewater systems.

As IPART observes, avoided or deferred costs in the potable water network (e.g. deferral of water source augmentation) generally relate to enduring reductions in potable water demand attributable to displacement of potable water with recycled water volumes.

In considering the scope for avoided or deferred potable water costs it is important to recognise not just the need for top-up but the nature of the top-up arrangement for planned and unplanned outages of recycled water (e.g. peak day, peak week). Hunter Water's design of water network assets and headwork treatment and delivery assets (i.e. excluding sources such as dams) is based on peak demand conditions, rather than average annual demand conditions.

In the case of our largest voluntary recycled water scheme supplying an industrial customer on Kooragang Island, IPART initially accepted cost offsets for:[18]

- Deferment of a water treatment plant upgrade
- Deferment of the need to upgrade a trunk delivery main from the water treatment plant
- Operating cost savings at the water treatment plant.

Recycled water schemes may also give rise to avoided or deferred costs in the wastewater network to the extent they reduce the volumes and/or pollutant content of wastewater which would otherwise be transported and treated through the wastewater network. Since wastewater systems typically comprise distinct systems, these avoided or deferred costs may vary depending on the location of the recycled water plant, the sensitivity of receiving waters to discharges of treated effluent and the interplay between "headroom" relative to EPA licence conditions and forecast housing and business growth in the wastewater catchment.

It should also be noted however that the ability to avoid or defer costs in the wastewater network may be limited to the extent that expenditure is driven by the need to manage wet weather overflows.

[18] IPART, 2013.

7.1.2 Calculation of avoided and deferred costs

IPART has developed detailed guidelines which set out both the principles and methodology for the calculation of avoided and deferred costs associated with recycled water. They provide for avoided /deferred costs to be calculated by comparing the NPV of total costs both with and without the recycled water scheme water scheme, with all other factors held constant.

In its Issues Paper IPART states that both the calculation principles and methodology outlined in its 2006 Guidelines remain relevant and appropriate, but seeks views on:

- The appropriate discount rate to apply
- How to value expected changes in demand or avoided costs and in particular whether these should be estimated with regard to the utility's LRMC
- Whether the current approach involves potential double-counting.

We comment on each of these issues in turn below.

Discount rate

IPART proposes that the prevailing post-tax WACC should continue to be used for discounting the future value of avoided/deferred costs to present value dollars, on the basis that this is the market rate of return utilities earn on the regulatory asset base and thus represent the opportunity cost of capital that could have been earned on all alternative investments available to a water utility.

In principle it could be argued that the discount rate should reflect the riskiness of the cash flows of the specific project in question. In the case of some individual recycled water schemes, this might imply a WACC higher than the prevailing WACC for the business as a whole. This in turn would imply a lower NPV for the risk-adjusted value of cost offsets for avoided/deferred costs. This represents another possible means of addressing the risk of under- or over-estimating the value of avoided or deferred costs rather than applying a post-adjustment mechanism (see discussion below), as the cost offset would already take into account the risk of the avoided /deferred costs materialising.

Valuing expected changes in demand or costs

In its Issues Paper IPART suggest that avoided water and sewerage costs should be calculated using the respective estimates of the LRMC of water and sewerage supply (taking into account the geographic differences across the sewerage supply network). While this is not currently specifically required under the avoided cost guidelines, IPART consider that this would introduce consistency with its broader price reviews and with water conservation benchmarks such as the Economic Level of Water Conservation (ELWC).

However, IPART notes that there may be some issue and limitations with using LRMC as a proxy for valuing changes in demand and hence avoided costs, including:

- currently LRMC for water reflects only water source costs (i.e. does not include network distribution and other costs)
- estimating LRMC for wastewater is more complex because costs can vary by wastewater treatment catchment
- it is a valid proxy only for sustained change to potable water demand

- at present estimates of current of LRMC are specific to the timing and modelling assumptions adopted at each price review.

Hunter Water supports the use of water LRMC estimates for the purposes of valuing expected changes in water demand or costs to underpin calculation of avoided/deferred costs as it would:

- Provide a transparent, consistent and administratively simple way of calculating avoided/deferred costs
- Reduce the need for scheme-specific reviews
- Be useful in other parts of the regulatory arrangements.

There are a number of features that distinguish wastewater services from water services and consequently make wastewater LRMC estimates less suitable for use in calculating avoided/deferred costs in the wastewater system.[19]

- The cost driver for treating effluent is closely related to pollutant load and the extent of treatment required to meet environmental licence conditions, including load limits. The environmental licence conditions reflect the sensitivity of receiving waters.
- Hunter Water's potable water system is interconnected, which means it is appropriate to calculate a single LRMC. The costs and benefits are shared by all potable water customers.
- Hunter Water's wastewater system is comprised of nineteen wastewater treatment works (WWTW). Most of the WWTW have a single wastewater catchment that is not connected to other WWTW or wastewater transport networks. The wastewater catchments and WWTW vary in size from about 800 people to 190,000 people. Each wastewater catchment and WWTW would approach a capacity constraint at a different time and the options available to address the capacity constraint would also vary. It would not be appropriate to calculate a single wastewater LRMC as it would fail to reflect the location-based avoided/deferred costs and therefore fail to incentivise provision of recycled water services when and where they are most efficient. That is, it would compromise IPART's recycled water pricing objective to be economically efficient.
- The potable water LRMC is used as an input to potable water usage prices whereas the wastewater LRMC is not used in wastewater pricing.
- There are various ways to calculate marginal costs.
- There is 10 years of experience in calculating the potable water LRMC through retail price reviews. This has included opportunities for all stakeholders (including PWUs, competitors and other stakeholders) to comment on methodological issues and input assumptions. The same open, transparent review has not occurred for wastewater
- Some of our wastewater catchments are unlikely to support cost-effective recycled water schemes in the foreseeable future. It would be resource intensive and administratively inefficient to regularly calculate and publish a wastewater LRMC for each wastewater catchment even if it is unlikely to be used.
- We need to think through complexities for wastewater, such as partial interconnection between wastewater catchments. Other complexities may include instability between price reviews; relationships with current EPLs and studies/negotiations on future EPLs.

[19] Some of these features are recognised by IPART and have been described in IPART, 2012, Appendix A Practical issues with water utility pricing and Appendix B Theory of monopoly pricing.

On balance, we recommend that with and without analysis be undertaken for each project for the purpose of calculating avoided/deferred costs in the wastewater system.

We recognise the case for signalling the location and timing of forecast wastewater system constraints to WIC Act licensees and thereby identify areas where recycled water services could be cost-effective due to the avoided/deferred cost of alleviating those constraints. As an interim or alternative option, Hunter Water could regularly publish a constraints report identifying emerging capacity and operational limits within each wastewater catchment.

Avoiding double-counting of avoided and deferred costs

In its Issues Paper IPART notes that where a recycled water scheme reduces potable water demand and therefore the avoided cost offsets to be recovered from the broader water customer base, the customer base is further impacted by the loss of revenue which the recycled water customers would otherwise have made to postage-stamp price revenue, had they been served by potable water instead. IPART proposes that the avoided costs therefore should be adjusted to reflect the foregone revenue from recycled water.

Hunter Water agrees that conceptually there appears to be potential for double-counting of avoided and deferred potable water and/or wastewater costs, given the reduced contribution to potable water and/or wastewater revenues by some recycled water customers. This is a complex issue that we would like to further consider with IPART and other stakeholders. Some considerations include:

- The appropriate balance between IPART's recycled water pricing objectives "achieve economic efficiency" and "be transparent and simple", such as whether the additional complexity of making an adjustment provides a commensurate benefit.
- Symmetry with the retail pricing framework for potable water, such as IPART's dead band of +/- 5% for its demand volatility adjustment mechanism for potable water revenue.[20]
- Symmetry with the wholesale pricing framework, such as whether this issue is addressed in IPART's concept of net facilitation costs for wholesale pricing arrangements involving provision of recycled water by a WIC Act licensee.
- The nature of different recycled water projects. For example, residential dual reticulation customers are also connected to potable water and therefore continue to contribute to postage-stamp price revenues from water service charges even if their contribution to revenues from water usage charges is lower than other customers (on average).
- Postage-stamp price structures for water and wastewater, such as the balance between fixed and variable charges and therefore the ability for residential or non-residential recycled water customers to affect postage-stamp revenues if they maintain a connection to potable water and wastewater services.

[20] IPART, 2016, p 97. IPART has stated that it would consider, at the next determination of Hunter Water's retail prices, adjusting the revenue requirement to address over- or under-recovery of revenue during the 2016 determination period, only where the difference in revenue exceeds 5% of water sales over the whole determination period. The equivalent volume of water is approximately 11,000,000 kL; which is equivalent to approximately $26 million ($2018-19) of under- or over-recovered revenue. In 2017-18, Hunter Water provided approximately 3,250,000 kL for potable substitution (equivalent to 13,000,000 kL over a four year price period). This is 2,000,000 kL higher than the minimum demand volatility required for an adjustment to potable water revenue requirements by IPART and equivalent to $4 million ($2018-19) over four years or less than one per cent of the potable water revenue requirement over the same period.

- The nature of the LRMC for water and LRMC for wastewater, such as the location-specific LRMC for wastewater and how this compares with postage-stamp wastewater prices.

We look forward to further engagement in relation to this issue.

7.1.3 Assessment of avoided and deferred cost claims

IPART's assessment process for recycled water scheme avoided and deferred costs (as set out in its 2011 Guidelines) entails:

- Assessing avoided and deferred costs claims of water utilities as part of the price determination process in order to allow IPART to consider claims in the context of broader stakeholder consultation and a broader review of forecast operating and capital expenditure. The guidelines also allow for IPART conduct informal or preliminary reviews of avoided and deferred cost claims to provide feedback to a water utility on the reasonableness of their claim before it is formally assessed as part of the price determination process.
- Requiring water utilities to submit business cases setting out all data and assumptions underpinning an avoided and deferred cost claim.
- Allowing IPART to conduct a retrospective adjustment at a future price determination "to correct instances where water utilities over or understate the length and cost of a deferral, and hence the value of an avoided cost".

In its Issues Paper IPART noted that the assessment approach outlined in the 2011 Guidelines could benefit from amendments, with the aim of reducing uncertainty for water utilities. However, it considered that both the need for water utilities to submit a detailed business case and the need to provide for a post-adjustment mechanism remains relevant and appropriate.

Hunter Water considers that the current arrangements for assessing and potentially reviewing claims for avoided/deferred costs represent a major impediment to the uptake of recycled water schemes, and that IPART's proposed amendments will do little to address the fundamental deficiencies with its approach.

The major problem is that the scope for post-adjustment reviews creates an unmanageable risk of asset stranding and constitute a significant disincentive for investment in prospective recycled water schemes. Hunter Water's experience with the Kooragang Industrial Water Scheme (KIWS) illustrates the risk of ex-post removal of the revenue stream associated with the inclusion of avoided costs in the regulatory asset base (see the Box 1).

Hunter Water would like to highlight three issues with the KIWS case study:

- First, putting together a recycling project of the scale of KIWS scheme was a major undertaking for Hunter Water. The avoided cost element was an important component of the various revenue streams associated with the project. At the time, Hunter Water was of the understanding that, based on IPART's 2008-09 review, there was a firm case to include avoided costs in the financial analysis.
- Second, an ex-post review adds regulatory uncertainty to any recycling project. Hunter Water made a business decision using the best available information at the time. The financial viability of KIWS may have been different if there was a question over the recovery of the RAB allowance for avoided costs.

- Thirdly, IPART's expenditure reviews take place every four years. The Jacobs review occurred at a time with the major industrial customer was taking less recycled water than previously budgeted. This customer has increased the use of recycled water in the period following the review, materially above the levels when the Jacobs' assessment was undertaken. In addition, Hunter Water does not consider that ownership of KIWS should have any bearing on the calculation of deferral benefits elsewhere in Hunter Water's system.

Box 2: Kooragang Industrial Water Scheme (KIWS)

IPART's 2006 Pricing Arrangements for Recycled Water and Sewer Mining, Final Report, set out a process and methodology for calculating avoided costs associated with voluntary recycling schemes. In the period since 2006, Hunter Water sought to recover avoided costs from regulated customers for one project – the Kooragang Industrial Water Scheme (KIWS). A short description of the KIWS recycling project is provided below.

Hunter Water's Board considered and approved the full business case to deliver the KIWS project in 2011. This followed five years of project planning, including negotiations with the key industrial customer, detailed scheme design and costings, regulatory approvals for infrastructure, as well as pursuing separate funding commitments from the NSW Government and Federal Government.

Hunter Water had sought IPART's position on avoided costs associated with the KIWS scheme as part of IPART's 2009 review of Hunter Water's prices. IPART engaged Atkins Cardno to review the costings by Hunter Water on the KIWS scheme, including the proposed avoided costs. IPART's final report noted the expenditure consultant's agreement with the methodology and calculation of the avoided cost estimates

Hunter Water's 2011 business case included approximately $13 million ($2010-11) in avoided costs from the Grahamstown water treatment plant deferral and $2.6 million from the deferral of other water network investments. The Board was reassured by the earlier IPART comments on the calculation of these costs and the 2009 review by Atkins Cardno review.

Hunter Water submitted a 45 page commercial-in-confidence business case to IPART's 2012-13 price review (as part of the 2012 Price Submission). This KIWS business case provided a detailed breakdown of all scheme costs and revenues, including additional government funding mechanisms and the calculation of the proposed avoided cost. These costs were again reviewed by Atkins Cardno in 2012. IPART's 2013 Determination included $9.5 million in avoided costs, recovered through the addition of that amount to Hunter Water's regulatory asset base, which was recovered through water charges to regulated customers.

IPART's 2015-16 review of Hunter Water's prices revisited the calculation of avoided costs associated with the KIWS schemes. IPART engaged Jacobs as the expenditure consultants for the review, which included a specific assessment of KIWS scheme as part of the engagement terms of reference. Jacobs recalculated the avoided costs based on a lower level of recycled water and lower deferral benefits. IPART's 2016 Final Report removed the avoided costs for the KIWS scheme, noting that Hunter Water was in the process of selling the scheme and the lower volumes of recycled water at that time.

The prospect of a post-adjustment review adds a level of financial uncertainty that may be impossible to manage given the multiple factors that drive later decisions about investments in assets included in deferral assessments. In our view, post-adjustment reviews are inconsistent with the principle of investment certainty and create asymmetry between alternative methods of service delivery (which limit ex post review of traditional water and wastewater investments to questions of prudency and efficiency) and service providers.

From the proponent's perspective, there comes a time when the decision to proceed with the recycled water scheme becomes irreversible. Unlimited subsequent reviews mean the review could be taking place a significant period of time after committing to the scheme and post-construction and operation (e.g. 15 to 20 years). Capital planning and delivery is a dynamic process (acknowledged by IPART in its prudency test for water and wastewater capex) and the further away from the initial decision the harder it will be to test against the base case.

The interests of regulated customers are appropriately protected – as they are in respect of water and wastewater investments – by undertaking robust assessments of the prudency and efficiency of the investment at the time it is made, and with best information available at that time. Undertaking a post-adjustment review of avoided/deferred costs with the benefit of hindsight applies a different regulatory standard to traditional water and wastewater investments, which is inconsistent with promoting a level playing field across alternative servicing solutions. While IPART partly acknowledges the commercial risks introduced by post-adjustment reviews, none of the options canvassed by IPART effectively address this fundamental concern.

Hunter Water is therefore of the view that IPART should make a decision on avoided costs for recycled water schemes at the start of the project. There should be no ex-post optimisation of this RAB allowance. Reviews should be limited to a once-off prudency test for capex at the next price determination – as they are for water and wastewater assets. A benefits realisation assessment could be undertaken at a suitable stage for each project, to ensure learnings are identified and incorporated into future analysis and assessments.

7.2 External benefits

A key feature of recycled water schemes is that they can often generate external benefits such as environmental, health and liveability benefits. Given the objective of ensuring investment in recycled water occurs where it is economically efficient, it is important that the regulatory framework provides for appropriate recognition and funding of these external benefits.

7.2.1 Recovering cost offsets from the broader customer base

IPART's 2006 Guidelines provide for cost offsets to be applied to the costs recovered from recycled water users only where an explicit payment is made by Government (such as a CSO payment), or where there is an explicit directive from Government for these costs to be recovered from the broader customer base. Unlike traditional water or wastewater investments, the guidelines do not provide for the value of external benefits to be recovered from the broader customer base where a water utility is able to demonstrate evidence of the broader customer base's willingness-to-pay.

In its Issues Paper, IPART proposes some amendments to the treatment of external benefits. Specifically it proposes that:

- The value of external benefits should be able to be recovered from the broader customer base where a water utility is able to demonstrate their existence through evidence of the broader customer base's willingness-to-pay. However, it is important that willingness-to-pay studies are conducted robustly: they should be representative and minimise likely biases.
- External benefits should be limited to improved health, environmental or liveability outcomes which are additional to those already mandated by Parliament and/or government. They should also be additional to (i.e. exclude) 'localised' benefits, with a clear relationship to the wider customer base as demonstrated through willingness-to-pay.
- Claims for external benefits should clearly articulate causality, and demonstrate a level of plausibility consistent with avoided and deferred costs.
- Assessments of external benefits should be subject to a post-adjustment mechanism.

Hunter Water supports the proposal that external benefits should be identified and treated similarly to avoided and deferred costs, with the value of external benefits recovered from the broader customer base where a water utility is able to demonstrate their existence through evidence of the broader customer base's willingness-to-pay. This should apply to both mandatory and voluntary recycling schemes. This will correct an anomaly with the treatment of recycled water schemes vis-à-vis traditional water and wastewater investments. There are a number of implementation issues to be resolved, including for example:

- The approach to estimating external benefits, including the respective roles of benefits transfer and original research
- The way the external benefits would be reflected – including for example whether they should be included in the water or wastewater RAB.

Hunter Water also agrees that claims for external benefits should demonstrate a clear link to causality and plausibility, and that evidence of willingness-to-pay should be based on robust studies which are representative and minimise bias.

7.2.2 Estimating willingness-to-pay

As noted by IPART, it is important that willingness-to-pay studies are conducted robustly, are representative and minimise likely biases such as hypothetical bias (where respondents to a stated preference survey overstate their actual willingness-to-pay).

Hunter Water has recently commissioned a willingness-to-pay study to explore whether its residential customer have the capacity and willingness-to-pay more in return for Hunter Water delivering higher liveability and environmental services standards over the next price period (see the box below). The survey was explicitly designed to minimise hypothetical and other forms of response bias by:

- Satisfying conditions for good design that minimize hypothetical bias, including:
    - ensuring that subjects are familiar with the commodity being valued
    - ensuring that subjects have had prior choice experience with the good
    - minimising uncertainty in the survey's scenario, outcomes, and provision rules
    - eliciting willingness-to-pay not willingness-to-accept preferences.
- Using procedures that emphasised the consequentiality and incentive compatibility of the survey
- Using an incentive compatible payment vehicle that gives a precise understanding of how Hunter Water residential customers would pay for the discretionary services
- Allowing survey respondents to change their willingness-to-pay once they understood the full budget implication of their choices
- Using de-briefing questions and ex post approaches to identify respondents with response bias.

  Hunter Water considers that these techniques represent an appropriate checklist for demonstrating the robustness of willingness-to-pay surveys to IPART in support of claims for external benefits.

Box 3: Hunter Water community survey of willingness-to-pay for discretionary liveability and environmental services

Hunter Water wanted to assess whether its residential customer have the capacity and willingness-to-pay more in return for Hunter Water delivering higher liveability and environmental services standards in its area of operations over the next price period (2020-25). It commissioned a survey of almost 700 Hunter Water residential customers in the first half of 2018 undertaken by Marsden Jacob Associates. The customer survey was designed to meet best-practice requirements and recommendations of IPART and the NSW Government, including around customer consultation:

- The survey was based on a large sample of 680 Hunter Water residential customers which achieves a better than +/-5 percent margin of error at a 95 percent confidence level.
- The survey sample population results were re-weighted to be representative of the Hunter Water customer base based on: age of respondents, gender, household dwelling type, income, ownership, language spoken at home (English or other), and local government area.
- The survey used a split sample design to test if there were material differences in customer preferences and willingness-to-pay between the two samples after controlling for socioeconomic and other household characteristics. This is a type of convergent validity test that NSW Treasury recommends in assessing the validity of stated preference surveys.
- The invitation to participate in the survey was information neutral to limit response bias risk.
- The survey was about discretionary services and expenditure that Hunter Water could supply in the next price period.
- The survey was about ranges of services that Hunter Water could start supplying at some time in the next price period, and ranges of cost. This allows Hunter Water customers surveyed to form their willingness-to-pay accounting for this uncertainty.
- Customers were told that the discretionary services would only be provided if Hunter Water customers demonstrated they were willing to pay for the higher service levels. This provision rule made it clear to survey respondents that provision of the services was contingent on the Hunter Water customer base being willing and able to pay for the services to be provided.
- Service levels and costs are based on Hunter Water forward look estimates of what services and levels of service can be delivered during 2020-25, and estimated costs of delivering these services.
- The bill presentation format allowed respondents to understand the full budgetary implications of their choices on their future Hunter Water bills that would be incurred during 2020-25 if Hunter Water proceeded with their preferred investments.
- The survey design was set up using best-practice guidelines for willingness-to-pay surveys.
- Realism and consequentiality of the survey of the survey was high.

The Hunter Water community survey results provide clear evidence that most Hunter Water customers are currently willing to pay higher water bills during 2020-25 for Hunter Water to deliver higher levels of some amenity and environmental services.

7.2.3 Localised benefits

Hunter Water does not support the proposal to exclude 'localised' benefits from the scope of external benefits. This will raise problematic definitional issues around what is a 'localised' versus a 'wider' external benefit, which will add administrative complexity and risk. Demonstration that the broader customer base is willing to pay for an external benefit should in itself be sufficient to establish the link to the broader customer base: if the customer base is made aware that the external benefits may be concentrated in a particular geographic area, but are nevertheless willing to pay for these benefits, there seems little to be gained from further regulatory intervention.

In addition, we do not agree with IPART's contention that localised benefits primarily accrue to recycled water end-use customers in the form of higher land prices, and that at least some of this premium will be transferred to the water utility via recycled water developer charges. Developer charges may reduce these premiums, but are based on the differences in costs and revenue of servicing these developments rather than land premiums.

7.2.4 Post-adjustment reviews

Hunter Water agrees that the process for assessment of external benefits should be consistent with that for avoided and deferred costs. Importantly, however, as discussed in section 7.1, Hunter Water considers this should entail a one-off assessment at the time of investment. Post-adjustment reviews should not apply to either avoided/deferred costs or external benefits. Hunter Water accepts that the results of any particular willingness-to-pay study have a limited shelf life, and that it would need to refresh those studies periodically.

8 REFERENCES

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APPENDIX A: SUMMARY RESPONSE TO IPART QUESTIONS

Form of regulation and cost recovery framework

1 **For voluntary recycled water schemes (where customers have effective choice), sewer mining and stormwater harvesting services, is our proposed approach of allowing unregulated pricing agreements and only setting prices when we receive a request for a scheme-specific review appropriate?**
– Is an approach similar to the scheme-specific review process used in wholesale pricing appropriate?
– Do we need to establish pricing principles for these services? If so, what should these be?

We support IPART's proposal to regulate recycled water prices only where there is no effective choice for customers, and adopt a light-handed approach where customers do have effective choice. While we support the broad approach of allowing unregulated pricing agreements and only setting prices when IPART receives a request for a scheme-specific review, we note that:

- IPART's proposal for the publication of a methodology and estimates of long-run marginal cost (LRMC) of water at each price review - which we support - may reduce or eliminate the need for scheme-specific reviews
- IPART's proposed approach to verify the willingness-to-pay of recycled water customers for recycled water when assessing whether to allow cost offsets for voluntary schemes is not consistent with a less intrusive approach.
- The difficulty in inferring the end-use customer's willingness-to-pay for recycled water may be understated.
- Commercial considerations would incentivise the customer to withhold provision of information that would help IPART to determine a price that reflects their willingness-to-pay. IPART has no regulatory power to compel information provision by a voluntary recycled water customer, to address this information asymmetry.

See also our response to question 20.

More detailed discussion of the basis for our views is at section 3.1.

2 **Are our pricing objectives for pricing recycled water relevant and appropriate? If not, why, and which aspect(s) needs amending or removal?**

We support the pricing objectives articulated by IPART, subject to the following comments:

- Investment certainty is critical for achieving efficiency
- Facilitating competition requires a level playing field
- Risk management is critical to achieving revenue adequacy
- Regulatory arrangements, not just prices, should be transparent and simple.

We suggest that each of IPART's proposals should be systematically tested against IPART's objectives, to ensure they will achieve the intended outcome.

More detailed discussion of the basis for our views is at section 3.2.

3 **Do you agree with our classification of recycled water scheme costs? If not, why and what changes are required?**

We agree with the classification of scheme costs as set out by IPART.

More detailed discussion of the basis for our views is at section 3.3.

4 **Do you consider recycled water prices should be set with reference to incremental costs? If not, why, and what proportion of a utility's joint or common costs should be recovered through recycled water prices?**

Hunter Water agrees with the use of incremental cost as an appropriate benchmark for calculating scheme costs (net of cost offsets) to be recovered from recycled water users.

Hunter Water also considers that an appropriate share of joint or common costs should be allocated to a recycled water scheme and has a robust activity-based costing framework to do so.

More detailed discussion of the basis for our views is at section 3.3.

5 **Do you consider our requirement that the cost recovery framework must consider the 'base case', as defined by an integrated water resource plan, appropriate and relevant? If not, why, and what alternative approaches are superior?**

Hunter Water supports the concept of a base case for the cost recovery framework. Integrated water resource plans provide an appropriate basis for calculation of an LRMC for water, which could be used as a basis for calculating avoided or deferred costs. Hunter Water does not consider that an integrated water resource plan would be an appropriate base case for assessment of avoided or deferred costs in the wastewater system.

More detailed discussion of the basis for our views is at section 3.4.

Pricing arrangements for mandatory recycled water schemes

6 **Should the definition of mandatory recycled water schemes be refined to refer to a customer's level of effective choice (ie, ability to opt-in to recycled water)? If not, how should we amend our definition of mandatory recycled water schemes (if at all)?**

Hunter Water supports IPART's proposal to refine the definition of mandatory schemes to focus directly on whether there is customer choice on the basis that:

- The definition is straightforward
- It avoids problematic issues with applying the current definition (e.g. whether BASIX can be seen as requiring connection to recycled water when alternative options such as rainwater tanks can also meet BASIX requirements and reference to the Metropolitan Water Plan which does not apply to Hunter Water). Hunter Water understands that a legal mandate can only be created by local councils (e.g. in LEPs and DCPs) or NSW Planning (in SEPP).
- It better aligns with the recycled water developer charges determination and with the definition of voluntary schemes, which is already based on the concept of customer choice.

More detailed discussion of the basis for our views is at section 4.1.

7 **Do you agree that recycled water and developer charges should recover total scheme costs net of cost offsets? If not, why, and what other approach should we adopt?**

Hunter Water supports the key element of IPART's cost recovery framework (i.e. that the total scheme cost is recovered from the users of each scheme net of specified cost offsets) and that cost offsets for external benefits is extended as proposed by IPART to enable the value of these external benefits to be deducted from scheme costs to be recovered from recycled water users where Hunter Water can demonstrate customer willingness-to-pay by the broader customer base.

More detailed discussion of the basis for our views is at section 4.3.

8 **Should the recycled water prices of mandatory schemes be capped at the prevailing potable water price or be allowed to reflect the willingness-to-pay of recycled water customers?**

In Hunter Water's view it is not clear that these additional constraints on tariff structures add value, given that the primary objective of protecting against possible abuse of market power is addressed through the requirement that utilities can recover no more than the total efficient cost of the scheme (net of any cost offsets). Rather, they have potential to inadvertently constrain pricing options which promote economically efficient outcomes. In addition, it reduces the scope for customers to provide meaningful input to determining recycled water charges that best meet their preferences.

More detailed discussion of the basis for our views is at section 4.4.

9 **Do 'top-up' pricing thresholds remain appropriate for mandatory schemes where demand for recycled water exceeds supply? If so, what should the thresholds be amended to (if kept at all)?**

We agree with IPART's preliminary view that the 2006 Guidelines are too prescriptive. The guidelines should define the intention/objective and allow businesses to have the flexibility to set the thresholds.

More detailed discussion of the basis for our views is at section 4.4.3.

10 **Should the water utility still be able to set fixed charges for recycled water, within a reasonable limit? Or, should they be capped so that the combined charges for recycled water and potable water sum to no more than the potable water charges that would otherwise have been levied for the same level of consumption?**

Hunter Water considers that it should have the flexibility to set fixed charges for mandatory recycled water schemes, subject to the overall constraint that it recovers no more than the total efficient costs of each scheme (net of any cost offsets) from users of that scheme. In Hunter Water's view it is not clear that these additional constraints on tariff structures add value, given that the primary objective of protecting against possible abuse of market power is addressed through the requirement that utilities can recover no more than the total efficient cost of the scheme (net of any cost offsets). Rather, they have potential to inadvertently constrain pricing options which promote economically efficient outcomes.

More detailed discussion of the basis for our views is at section 4.4.2.

11 **Are the procedural guidelines for mandatory schemes needed, given that IPART would be determining these prices at each utility's respective price review?**

Hunter Water agrees that these procedural requirements are administratively burdensome and unnecessary. We support the removal of these requirements.

More detailed discussion of the basis for our views is at section 4.5.

Recycled water developer charges methodology

12 **Does a methodology remain fit for purpose in setting recycled water developer charges?**

Hunter Water agrees that a methodology, rather than fixing individual developer charges, is an appropriate approach to regulating recycled water developer charges.

More detailed discussion of the basis for our views is at section

13 **Do the components of the methodology that we propose to maintain continue to be appropriate for the purposes of calculating recycled water developer charges? If not, how should these be updated?**

Hunter Water broadly supports IPART's proposal to retain most elements of the current methodology for recycled water developer charges.

We would note, however that the prevailing WACC does not reflect riskiness of cash flows and other mechanisms are required to better manage uptake risk.

More detailed discussion of the basis for our views is at section 5.1.

14 **Should we update the annual consumption for an equivalent tenement to be equal to the average consumption values that would be established at each water utility's prevailing periodic retail price determinations?**

Hunter Water supports IPART's proposal to update the annual consumption for an equivalent tenement to be equal to the average consumption values that would be established at each water utility's prevailing periodic retail price determinations.

More detailed discussion of the basis for our views is at section 5.2.

15 **Should the March-on-March CPI adjustment factor, as used in our retail price determinations, be applied to index recycled water developer charges over time?**

Hunter Water supports IPART's proposal to apply the March-on-March CPI adjustment factor, as used in IPART's retail price determinations, to index recycled water developer charges over time.

More detailed discussion of the basis for our views is at section 5.2.

16 **Are negative recycled water developer charges likely to arise? Should we preclude negative charges?**

Hunter Water supports IPART's proposal to preclude setting negative developer charges by setting any such charges to zero.

More detailed discussion of the basis for our views is at section 5.2.

17 **Should we allow utilities and developers to opt-out of the recycled water developer charges determination through bilateral agreements? If so, why?**

Hunter Water supports IPART's proposal to allow utilities and developers to opt-out of the recycled water developer charges determination through bilateral agreements (subject to appropriate ring-fencing of costs) in order to allow developers to deliver additional infrastructure that may benefit their development and/or the wider community, and to encourage public water utilities to understand and meet their customers' needs. This is consistent with IPART's objectives and is also consistent with IPART's developer charges framework for water and wastewater.

More detailed discussion of the basis for our views is at section 5.2.

18 **Do the current procedural requirements, including DSP content requirements and IPART's role in reviewing and registering DSPs, remain appropriate?**

Hunter Water supports IPART's proposed changes to the procedural requirements, which are consistent with changes IPART is currently making for water and wastewater developer charges.

More detailed discussion of the basis for our views is at section 5.3.

19 **Does the developer charges methodology create any undue barriers to the uptake of recycled water?**

While this is an issue beyond IPART's control, Hunter Water notes that imposing recycled water developer charges while there are zero water and wastewater developer charges represents a significant disincentive to the uptake of recycled water provided by public water utilities.

The key issue of concern to Hunter Water in relation to the framework for recycled water developer charges is the disproportionate burden of uptake and demand risk it bears, which acts as a disincentive for it to pursue recycled water schemes relative to traditional water and wastewater solutions.

While Hunter Water supports updating the fixed demand assumption to allow the utility more flexibility, this initiative on its own will not address the risks.

Hunter Water supports IPART's suggestion that more flexibility in the way developer charges are levied is needed.

More detailed discussion of the basis for our views is at section 5.4.

Pricing arrangements for voluntary recycled water schemes

20 **There are arguments for and against allowing cost offsets for voluntary recycled water schemes, particularly given our proposed less intrusive form of regulation for such schemes:**

- **Should cost offsets be claimed for voluntary recycled schemes only where there is a shortfall in funding from users? Or, is there a case to allow for cost offsets to fund commercially viable recycled water schemes?**
- **Does our proposed process for allowing cost offsets appropriately incentivise participants of voluntary recycled water schemes – that is, to allow cost offsets to**

be claimed only where the scheme costs and willingness-to-pay are subjected to an efficiency review by IPART?

Hunter Water does not support this proposal. In practice determining:

- 'true' willingness-to-pay, and then
- the commercially viability of a voluntary scheme based on customer willingness-to-pay with and without access to cost offsets

is likely to impracticable. It is not clear IPART is well-placed to review willingness-to-pay by different potential recycled water users reflecting the circumstances of different industries and businesses. In Hunter Water's view this approach is inconsistent with the regulatory principle of administrative simplicity and non-intrusive regulation. It is also not clear that IPART has the power to obtain data from end customers which it may need to undertake the proposed assessment of willingness-to-pay.

See also our response to question 1.

More detailed discussion of the basis for our views is at section 6.2.

Cost offsets – avoided and deferred costs

21 **What is the nature of avoided and deferred costs for the potable water and wastewater network? How should these elements affect our assessment and calculation of avoided and deferred costs?**

As IPART observes, avoided or deferred costs in the potable water network (e.g. deferral of water source augmentation) generally relate to reductions in potable water demand attributable to displacement of potable water with recycled water volumes. Given the integrated nature of the bulk water supply networks, such avoided costs typically arise regardless of the location of the recycled water plant.

Recycled water schemes may also give rise to avoided or deferred costs in the wastewater network to the extent they reduce the volumes and/or pollutant content of wastewater which would otherwise be transported and treated through the wastewater network. Since wastewater systems typically comprise distinct systems, these avoided or deferred costs may vary depending on the location of the recycled water plant. It should also be noted however that the ability to avoid or defer costs in the wastewater network may be limited to the extent that expenditure is driven by the need to manage wet weather overflows.

More detailed discussion of the basis for our views is at section 7.1.1.

22 **Do you consider the prevailing WACC to be the most appropriate discount rate for water utilities to calculate avoided and deferred costs? If not, why and what alternative would you recommend?**

In principle it could be argued that the discount rate should reflect the riskiness of the cash flows of the specific project in question. In the case of some individual recycled water schemes, this might imply a WACC higher than the prevailing WACC for the business as a whole. This in turn would imply a lower NPV for the risk-adjusted value of cost offsets for avoided/deferred costs. This represents another possible means of addressing the risk of under- or over-estimating the value of avoided or deferred costs rather than applying a post-adjustment mechanism, as the cost offset would already take into account the risk of the avoided /deferred costs materialising.

More detailed discussion of the basis for our views is at section 7.1.2.

23 **Is the LRMC the appropriate basis to value avoided costs relating to the provision of potable water and wastewater? If not, why and what alternative would you suggest?**

Hunter Water supports the use of water LRMC estimates for the purposes of valuing expected changes in potable water demand or costs to underpin calculation of avoided/deferred costs as it would:

- Provide a transparent, consistent and administratively simple way of calculating avoided/deferred costs
- Reduce the need for scheme-specific reviews
- Be useful in other parts of the regulatory arrangements (e.g. wholesale pricing)

Hunter Water does not support the use of wastewater LRMC estimates for the purposes of calculating avoided/deferred costs in the wastewater system and instead recommends that:

- With and without analysis be undertaken for each project.
- Each public water utility regularly publishes a report identifying the location and timing of forecast wastewater system constraints to enable WIC Act licensees to identify areas where recycled water services could be cost-effective due to the avoided/deferred cost of alleviating those constraints.

More detailed discussion of the basis for our views is at section 7.1.2.

24 **Would stakeholders benefit from a published LRMC methodology and regularly published LRMC estimates? If not, what other approach could we adopt to ensure that reliable and frequent estimates of LRMC are made publicly available?**

Hunter Water supports having a published LRMC methodology and LRMC estimates for potable water published at each price review. Given that the LRMC is by-definition a long term construct we would expect that it would not vary sufficiently on an annual basis to warrant frequent update. The price review is also a consultative process that offers all stakeholders an opportunity to provide input to the assumptions underpinning the LRMC estimate. This is considered appropriate since the LRMC water may be used in multiple regulatory contexts e.g. wholesale pricing, potable water usage charges and Economic Level of Water Conservation operating licence obligations.

More detailed discussion of the basis for our views is at section 7.1.2.

25 **Do you agree that the avoided cost of reduced potable water demand should be adjusted to account for foregone postage-stamp price revenue from the recycled water customer base?**

Hunter Water agrees that conceptually there appears to be potential for double-counting of avoided and deferred potable water and/or wastewater costs, given the reduced contribution to potable water and/or wastewater revenues by some recycled water customers. This is a complex issue that we would like to further consider with IPART and other stakeholders.

More detailed discussion of the basis for our views is at section 7.1.2

26 **Should we assess avoided and deferred cost claims as part of the price determination process?**

Hunter Water is of the view that IPART should make a decision on avoided costs for recycled water schemes at the start of the project.

More detailed discussion of the basis for our views is at section 7.1.3.

27 **Do our requirements for submission of an avoided and deferred cost business case remain appropriate? If not, why, and what amendments do you recommend?**

Hunter Water agrees the requirements for the submission of an avoided and deferred cost claim is appropriate. We suggest it is referred to as a claim rather than a business case to avoid confusion with the project business case developed by project proponents.

More detailed discussion of the basis for our views is at section 7.1.3.

28 **Does our current post-adjustment mechanism remain appropriate? If not, what revisions do you recommend?**

Hunter Water considers that the current arrangements for assessing and potentially reviewing claims for avoided/deferred costs represent a major impediment to the uptake of recycled water schemes and that IPART's proposed amendments will do little to address the fundamental deficiencies with its approach.

There should be no ex-post optimisation of this RAB allowance. Reviews should be limited to a once-off prudency test for capex at the next price determination – as they are for water and wastewater assets.

More detailed discussion of the basis for our views is at section 7.1.3.

Cost offsets – external benefits

29 **Do you agree that, for the purpose of determining cost offsets to be paid for by the broader customer base, external benefits should only represent non-use benefits experienced by the broader customer base (ie, not localised benefits) as demonstrated by evidence of customer willingness-to-pay?**

Hunter Water supports the proposal that external benefits should be identified and treated similarly to avoided and deferred costs, with the value of external benefits recovered from the broader customer base where a water utility is able to demonstrate their existence through evidence of the broader customer base's willingness-to-pay. This will correct an anomaly with the treatment of recycled water schemes vis-à-vis traditional water and wastewater investments.

Hunter Water agrees that claims for external benefits should demonstrate a clear link to causality and plausibility, and that evidence of willingness-to-pay should be based on robust studies that are representative and minimise bias.

However, Hunter Water does not support the proposal to exclude 'localised' benefits from the scope of external benefits. This will raise problematic definitional issues around what is a 'localised' versus a 'wider' external benefit, which will add administrative complexity and risk. Demonstration that the broader customer base is willing to pay for an external benefit should in itself be sufficient to establish the link to the broader customer base: if the customer base is made aware that the external benefits may be concentrated in a particular geographic area but are nevertheless willing to pay for these benefits there seems little to be gained in IPART imposing its view of the equitable distribution of these benefits.

More detailed discussion of the basis for our views is at section 7.2.

30 **Do you agree with our view that the NPV calculations for external benefits should adopt an approach consistent with how we value avoided and deferred costs? If not, why, and what alternative approach should we adopt?**

Hunter Water agrees with IPART that the calculation of external benefits should be consistent with that for avoided and deferred costs.

More detailed discussion of the basis for our views is at section 7.2.

31 **Do you agree that the assessment of external benefits should be consistent with the approach for avoided and deferred costs?**

Hunter Water agrees that the process for assessment of external benefits should be consistent with that for avoided and deferred costs. Importantly, however, Hunter Water considers this should entail a one-off assessment at the time of investment. Moreover we question whether ex-post reviews are practical, given the nature of willingness-to-pay surveys and their relevance at a specific point in time. Post-adjustment reviews should not apply to either avoided/deferred costs or external benefits.

More detailed discussion of the basis for our views is at section 7.2.4.

32 **What factors should we consider in assessing external benefits? Why should we consider these factors?**

Hunter Water agrees that claims for external benefits should demonstrate a clear link to causality and plausibility, and that evidence of willingness-to-pay should be based on robust studies that are representative and minimise bias.

More detailed discussion of the basis for our views is at section 7.2.