



Australian
Competition &
Consumer
Commission

Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010

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Abbreviations

ACCC	Australian Competition and Consumer Commission
ACG	The Allen Consulting Group
ACT	Australian Capital Territory
AER	Australian Energy Regulator
Basin	Murray–Darling Basin
CAPM	Capital Asset Planning Model
CGS	Commonwealth Government Securities
Cwlth	Commonwealth
DRP	Debt premium
ESC	Essential Services Commission (Victoria)
GAWB	Gladstone Area Water Board
GL	gigalitre (1000 megalitres)
GMW	Goulburn-Murray Water
IPART	Independent Pricing and Regulatory Tribunal (New South Wales)
LMW	Lower Murray Water
MDB	Murray–Darling Basin
MRP	Market Risk Premium
NEO	National Electricity Objectives
NSW	New South Wales
RAB	Regulatory Asset Base
the Water Act	<i>Water Act 2007</i> (Cwlth)
WACC	Weighted Average Cost of Capital
WCIR	Water Charge (Infrastructure) Rules 2010

Summary

On 12 January 2011, the Water Charge (Infrastructure) Rules 2010 commenced after being made by the Minister for Sustainability, Environment, Water, Population and Communities. The rules create new regulation of charges for infrastructure services provided by rural water infrastructure operators in the Murray Darling Basin.

The rules provide for price approvals or determinations under two circumstances:

- price approvals or determinations for non-member owned operators that provide services in relation to more than 250 GL of entitlement (Part 6 of the rules)
- price approvals or determinations for member owned operators that provide services in relation to more than 10 GL of entitlement and that provide distributions to their member customers (Part 7 of the rules).

The pricing principles set out relevant aspects of the methodology to be followed by the regulator in conducting these price approvals or determinations. This document sets out both the pricing principles and the rationale for the ACCC's positions.

The regulator under the rules will either be the ACCC or an accredited state agency. The ACCC is responsible for accrediting state agencies. The pricing principles will apply to the ACCC when approving or determining regulated charges under the rules. The ACCC also proposes that accredited regulators be required to abide by the pricing principles as a term and condition of accreditation. This will help contribute to achieving consistent implementation of price approvals and determinations where there are multiple regulators.

The principles mainly relate to the determination of the costs on which regulated charges are to be based, as well as how revenue should be determined and, ultimately, how charges are levied to recover this revenue. For instance, principles relate to the approach a regulator should use to assess operating and capital expenditure proposed by an operator, the determination of the rate of return to be applied to assets, and the principles to be applied when assessing what tariff structures should be applied to regulated charges.

The principles have been formulated to achieve a basic level of regulatory certainty and consistency in approach, while providing regulators with an appropriate level of discretion to address pricing issues as they arise.

It is likely that the principles will require revision from time to time to reflect changes in market conditions or new regulatory approaches. For this reason, the ACCC will retain the discretion to amend the pricing principles if necessary. In making any substantive changes to the principles, the ACCC will seek the views of stakeholders, including regulated businesses and relevant state regulators. The ACCC will comprehensively review all pricing principles after 1 July 2014.

1 Introduction

The *Water Act 2007* (Cwlth) (the Water Act) creates new institutional and governance arrangements to address the sustainability and management of water resources in the Murray–Darling Basin (MDB).

Among other things, the Water Act gives the Minister for Sustainability, Environment Water, Population and Communities (the minister) the role of making water charge rules.

The Water Charge (Infrastructure) Rules 2010 (WCIR) are one subset of the water charge rules. The WCIR relate to water infrastructure fees and charges levied by bulk water and irrigation infrastructure operators.

The WCIR follow a three-tiered regulatory structure. This document outlines the pricing principles for the two price approval or determination processes under the WCIR, namely:

- Part 6 price approvals or determinations for non-member owned operators that provide services in relation to more than 250 GL of entitlement (a tier 1 rule).
- Part 7 price approvals or determinations for member owned operators that provide services in relation to more than 10 GL of entitlement and that provide distributions to their member customers (a tier 3 rule).

Under Parts 6 and 7 of the WCIR the ACCC is the default regulator. However, under Part 9 of the WCIR the ACCC can approve an accreditation arrangement under which a State agency can approve or determine regulated charges of Part 6 and Part 7 operators. If accredited, the relevant state agency will undertake the role of regulator under Part 6 and Part 7 of the WCIR.

An accredited state agency must also abide by the terms and conditions of accreditation. One condition that the ACCC proposes to apply upon accreditation is that the accredited agency follows the pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules. This document outlines the principles as they currently stand, and the rationale for these principles.

1.1 The three tiers of the WCIR

The three tiers of the WCIR apply to different operators depending on the ownership and size of each operator.

Tier 1 rules require all infrastructure operators in the MDB to publish regulated water charges, with wider publication requirements applying to infrastructure operators that provide services in relation to more than 10 GL of water from managed water resources.

Tier 1 rules also include non-discriminatory pricing requirements for member owned infrastructure operators.¹

Tier 2 rules require infrastructure operators to develop network service plans outlining the processes for determining charges, including approaches to asset management, every five years. Tier 2 rules apply to larger member owned infrastructure operators and medium-sized non-member owned infrastructure operators not captured under tier 3.

Tier 3 rules address the potential misuse of market power and require larger non-member owned infrastructure operators to have their regulated water charges approved or determined by an independent economic regulator.

There are several different guides relevant to the WCIR. These are summarised in table 1 below and will be applicable to the different types of infrastructure operators captured under the tiers of the WCIR. These guides are available on the ACCC's website.

In addition the ACCC will develop further guidance for Tier 3 operators on:

- details to be included in a pricing application
- a spreadsheet model for approving or determining prices.

Guidance material is to be used by Tier 3 operators where the ACCC is the regulator. Provided an accredited regulator is compliant with the terms and conditions of accreditation, it can use its own guidance material on information requirements and its own model for determining prices, or can use the material developed by the ACCC. However, as noted above, as a condition of accreditation, the ACCC proposes that an accredited agency be required to follow the pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules.

¹ Non-discriminatory charging requirements include a distribution triggered price approval or determination process.

Table 1: Guides under the WCIR

Type of operator	Relevant Guide
All infrastructure operators	<i>A guide to the water charge (infrastructure) rules: publishing and non-discriminatory charging requirements</i> provides guidance on the publishing and non-discriminatory charging requirements under Tier 1
Member owned operators that pay a distribution to members and provide services in relation to more than 10 GL of water	<p><i>A guide to the water charge (infrastructure) rules: publishing and non-discriminatory charging requirements</i></p> <p><i>A guide to the water charge (infrastructure) rules: distribution triggered price approvals or determinations (Part 7 rules)</i> — provides guidance on the process and information requirements for approvals or determinations under Part 7 of the WCIR</p> <p><i>ACCC pricing principles for price approvals or determinations under the water charge (infrastructure) rule</i>— provides guidance on technical pricing issues relevant to approvals or determinations under Parts 6 and 7 of the WCIR</p>
Member owned operators that provide services in relation to more than 125 GL of water and Non-member owned operators that provide services in relation to between 125 GL and 250 GL of water	<p><i>A guide to the water charge (infrastructure) rules: publishing and non-discriminatory charging requirements</i></p> <p><i>A guide to the water charge (infrastructure) rules: Tier 2 requirements</i> — -provides guidance on the processes for formulating and communicating network service plans under Part 5 of the WCIR</p>
Non-member owned operators that provide services in relation to more than 250 GL of water	<p><i>A guide to the water charge (infrastructure) rules: publishing and non-discriminatory charging requirements</i></p> <p><i>Pricing principles for price approvals or determinations under the water charge (infrastructure) rules</i></p>

1.2 The purpose of this guide

The aim of the pricing principles is to:

- achieve consistency of approach where different regulators are responsible for price approvals or determinations across states— it is proposed that accredited state agencies will be required to follow these pricing principles as a condition of accreditation
- provide greater certainty to regulated operators about the approach that the regulator will adopt in approving or determining charges under Parts 6 or 7 of the WCIR.

The pricing principles will outline aspects of the methodology that the relevant regulator will follow in approving or determining charges under Parts 6 and 7 of the WCIR. These are consistent with, and in addition to, any obligations that the regulator has under the WCIR. The pricing principles have been formulated to achieve a basic level of regulatory certainty and consistency in approach while providing the regulator with an appropriate level of discretion to deal with pricing issues on a case-by-case basis. Where a pricing issue is not discussed in the pricing principles a regulator will have full discretion in deciding an appropriate response - subject to the WCIR.

In formulating these principles the ACCC has sought to build on the considerable work undertaken by IPART in New South Wales (NSW) and the ESC in Victoria in regulating rural water businesses.² The ACCC has closely considered the methodologies used by these regulators in forming these pricing principles. Hence, the principles are largely similar to the approaches previously used by these regulators. A key factor that has informed the ACCC's approach has been the need to safeguard against any unnecessary price shocks in the transition to the new regulatory framework under the WCIR.

In some instances the ACCC has chosen to deviate from the approach currently used by IPART and the ESC. This is due, in part, to the fact that the WCIR need to contribute to achieving a more consistent approach to regulation across the Basin. It has also been necessary to deviate from current regulatory approaches in NSW and Victoria in some instances to contribute to achieving the Basin water charging objectives and principles under the Water Act.

This guide does not constitute legal advice. Ultimately, an accredited regulator or regulated organisation will need to make its own interpretation of its obligations under the WCIR.

1.3 Future changes to the pricing principles

This document will form the basis for price approvals and determinations under the WCIR. It is likely that the principles will require revision from time to time. For instance, several of the parameters used to calculate the weighted average cost of capital (section 3.3) are influenced by market conditions which can change over time. In these circumstances the

² The ACCC has also taken into account the National Water Initiative Pricing Principles agreed to by COAG.

pricing principles will be updated accordingly. The principles could also be updated where, because of new evidence, a change to any aspect of the regulatory approach is warranted.

The ACCC will comprehensively review all pricing principles after 1 July 2014.

1.4 Structure

The draft report is structured as follows:

- **Chapter 2** discusses the Part 6 process including the criteria used by regulators in approving or determining charges under Part 6.
- **Chapter 3** covers the pricing principles to be followed by the regulator in approving or determining charges under Part 6.
- **Chapter 4** covers the Part 7 process including the criteria used by regulators in approving or determining charges under Part 7.
- **Chapter 5** discusses the pricing principles to be followed by the regulator in approving or determining charges under Part 7.
- **Chapter 6** discusses other pricing issues that are not prescribed by the pricing principles.
- **Appendix A** outlines the issues raised in submissions to the draft pricing principles, released in January 2011, and the ACCC's consideration of these issues.
- **Appendix B** summarises the pricing principles to be followed in approving or determining charges under Part 6.
- **Appendix C** summarises the pricing principles to be followed in approving or determining charges under Part 7.

2 Process under Part 6

Part 6 applies to non-member owned operators that provide services in relation to more than 250 GL of entitlement within the Murray-Darling Basin (MDB) (Part 6 operators).³

Under Part 6, a regulator will be responsible for approving or determining the maximum regulated charges that Part 6 operators may charge. Part 6 outlines:

- a price approval or determination process being undertaken prior to the commencement of the regulatory period to approve or determine maximum charges for the first year of the regulatory period and an indicative price path for each subsequent year of the regulatory period—as prescribed under Division 2 of Part 6
- an annual update of these maximum charges, in light of any updated information on demand or consumption forecasts, for each year of a regulatory period excluding the first year—as prescribed under Division 3 of Part 6
- a provision for reopening a determination within a regulatory period— as prescribed under Division 4 of Part 6.

2.1 Initial approval or determination

An operator proposing to levy regulated charges must submit an application to the regulator for approval or determination of its regulated charges in respect of the first and each subsequent year of each relevant regulatory period.

For infrastructure operators that are regulated under the rules when the rules commence, the first regulatory period will be for three years. All subsequent regulatory periods will be for four years.

For businesses that become regulated under the Tier 3 rules at a later date all regulatory periods will last for four years.

2.1.1 What must the regulator consider in its decision?

The regulator must approve or determine the regulated charges proposed in a pricing application.

The regulator will approve charges if it is satisfied that those charges meet the relevant criteria. Rule 29(2) of Division 2 of Part 6 states that a regulator must not approve a Part 6 operator's proposed regulated charges unless it is satisfied:

- (a) that the determination of the applicant's regulatory asset base used to calculate those charges (where relevant) is in accordance with Schedule 2; and
- (b) that:

³ Or within a state where that state has referred power to the Water Act in respect of all of non-urban water in its state

- (i) the applicant's total forecast revenue (from all sources) for the regulatory period is reasonably likely to meet the prudent and efficient costs of providing infrastructure services in that regulatory period; and
- (ii) the forecast revenue from regulated charges is reasonably likely to meet that part of the prudent and efficient costs of providing infrastructure services that is not met from other revenue.

Where the regulator is not satisfied of the above, it must determine such charges as will satisfy these conditions.

In approving or determining a Part 6 operator's charges under Division 2 of Part 6, the regulator must also (under rule 29(4)):

... have regard to whether the regulated charges would contribute to achieving the Basin water charging objectives and principles set out in Schedule 2 of the [Water] Act.

This document provides guidance to operators on how the regulator will give effect to the above provisions.

2.1.2 Process for approvals or determinations

Pricing application

Prior to lodging a pricing application an operator is expected to seek input from customers on matters to be included in its price application. This includes:

- price and service trade-offs
- investment decisions
- proposed tariffs.

Details of consultation with customers must be provided in a pricing application, and in accordance with the pricing principles (see 3.14), consultation with customers will be taken into account by a regulator in approving or determining charges.

The operator is also expected to engage closely with the regulator on the content and format of its pricing application. This will help the operator to develop and provide information in its pricing application that meets the regulator's requirements.

Schedule 1 of the WCIR outlines information that must be included in a pricing application. An application must include information on:

- consultation
- regulatory and legislative obligations
- infrastructure service standards
- revenue
- regulatory asset base
- rate of return
- renewals annuity

- capital expenditure
- operating expenditure
- tax
- demand or consumption
- regulated charges.

The ACCC will provide guidance to operators on the ACCC's preferred format and content for a pricing application where the ACCC is the regulator. This includes the information specified in Schedule 1 of the WCIR. Accredited regulators may develop their own guidance material provided it includes the information in Schedule 1.

After receiving an application, subject to confidentiality, the regulator must publish on its internet site:

- a copy of the application, and
- an invitation to interested parties to make a submission.

The regulator will have thirteen months to make a determination/or approval but can take less time to make a decision if it wishes.

Submissions and public hearings

Regulators must invite submissions from interested parties on the operator's pricing application.

The regulator may also hold public hearings to receive feedback from customers and other stakeholders.

Request for further information

The regulator can write to the operator requesting further information.

Where information is requested by a regulator it must also be posted on the regulator's website.

If information is not provided within the time specified in the request the regulator can provide a written notice to the operator requesting further information. The assessment of the application will only restart once the information has been provided to the regulator.

Draft decision

After considering information in the submission and in response to any requests for further information the regulator will publish a draft approval or determination. The draft approval or determination will include draft regulated charges for each year of the regulatory period for which the application relates along with the reasons for the regulator's decision.

The draft decision must be posted on the regulator's website.

In making the draft decision a regulator may commission consultants to review material submitted by the operator. Subject to confidentiality these reports may also be posted on the regulator's website. (discussed in 2.4).

Submissions on draft decision

The regulator must invite submissions on its draft decision. The operator will be invited to make a submission as part of this process.

A regulator may also choose to hold public hearings on its draft decision.

Final decision

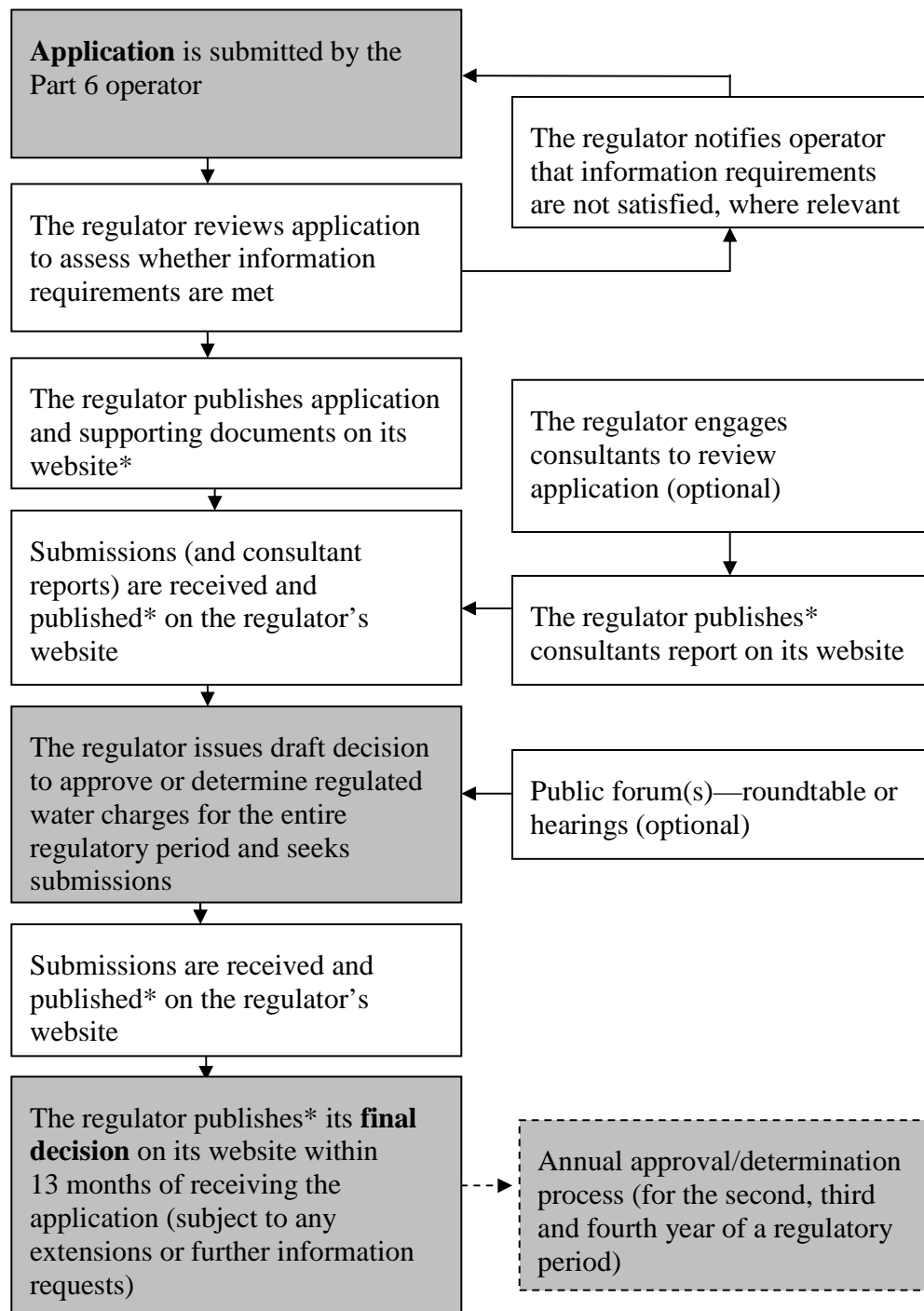
After the regulator has considered matters raised in submissions to the draft decision it will issue a final decision. As part of the decision there will be maximum charges approved or determined for the first year of the regulatory period and indicative maximum charges approved for the remaining years of the regulatory period.

Extensions of the deliberation period

If for some reason a regulator is unable to make a decision within the thirteen month period after the operator has submitted its pricing application, the regulator is able to extend the deliberation period by a period of three months. If so, the regulator must write to the operator explaining why they have been unable to make a decision within the thirteen month period. The written notice must be posted on the regulator's website.

When a regulator extends the deliberation period an operator can continue to levy fees and charges not exceeding its current fees and charges until the extension expires.

Figure 1 Process for the initial approval or determination of regulated charges



* subject to confidentiality

2.2 Annual review process

After setting charges for the first year of the regulatory period, the regulator may adjust charges for the second and subsequent years of a regulatory period through an annual review process.

As part of the annual review of charges the operator must submit an application each year prior to the start of the second regulatory year and all subsequent regulatory years. In the application the operator may propose a change to the indicative charges approved by the regulator prior to the start of the regulatory period.

When assessing whether a change to charges is warranted the regulator will consider the demand/consumption forecasts in the application for the forthcoming regulatory year, along with price stability. Charges can then be updated before the commencement of each year to reflect updated demand forecasts used in determining charges.

2.2.1 What must a regulator consider in the annual review process?

Under Division 3 of Part 6, the regulator's function is to adjust charges approved or determined under Division 2 of Part 6 (or as amended under Division 4) for changes in demand or consumption forecasts subject to the condition that those changes must maintain price stability. The regulator has three months from receiving an application under Division 3 of Part 6 to approve or determine the operator's charges for the relevant year.⁴ In this way, it is a short approval or determination process which focuses on updating charges to reflect any changes in demand forecasts.

Rule 37(2) states that a regulator must not approve a Part 6 operator's proposed regulated charges under Division 3 unless it is satisfied that those charges are those that have been:

approved or determined under Division 2 and, if varied under Division 4, as so varied, in respect of the year to which the application relates except to the extent, if any, that it is reasonably necessary to make variations to those charges having regard to—

- (a) the changes in the demand or consumption forecasts set out in the application under rule 34 [a Division 3 application]; and
- (b) price stability.

Where the regulator is not satisfied of the above, it must determine such charges that will satisfy these conditions. In this way, those charges approved or determined prior to the regulatory period commencing could be adjusted for any subsequent changes in demand or consumption forecasts.

An annual review of charges will allow operators to maintain greater revenue stability in the face of changing demand or consumption. However, in approving charges in subsequent years of a regulatory period, the regulator will also consider whether the proposed charges will impact on price stability so as to balance the interests of the operator and its customers.

⁴ However, the regulator may extend its decision period by one month at a time so long as it writes to operator giving its reasons for the extension.

2.2.2 Process for annual review

Upon receipt of the operators' application, the annual review will be undertaken in the second year and each subsequent year of the regulatory period and updated before the commencement of charges for each year.

Pricing application for annual review

The first step in the annual review process is for the operator to submit an application for an annual review of charges.

An application for the annual review of charges must include:

- the operator's forecast of demand for or consumption of infrastructure services for the year to which the application relates
- the operator's estimate of demand or consumption during the current year
- information about how the forecast and estimate was calculated
- proposed regulated charges to the year to which the application relates.

The regulator can also write to the operator requesting further information. The assessment of the application will only restart once the information has been provided to the regulator.

After receiving an application or additional information, subject to confidentiality the regulator must publish on its internet site a copy of the application.

Draft decision

After considering information in the application the regulator must publish a draft decision on the regulated charges for the year to which the application relates. The draft decision must be posted on the regulator's website.

Submissions on draft decision

The regulator must invite submissions on its draft decision.

Final decision

After the regulator has considered matters raised in submissions to the draft decision it will issue a final decision. As part of the decision there will be final charges approved or determined for each year of the regulatory period.

If information is provided by the operator in accordance with specified timeframes and the regulator has not extended its deliberation period, the final decision on the annual review of charges will be made within three months of when the operator submitted its application.

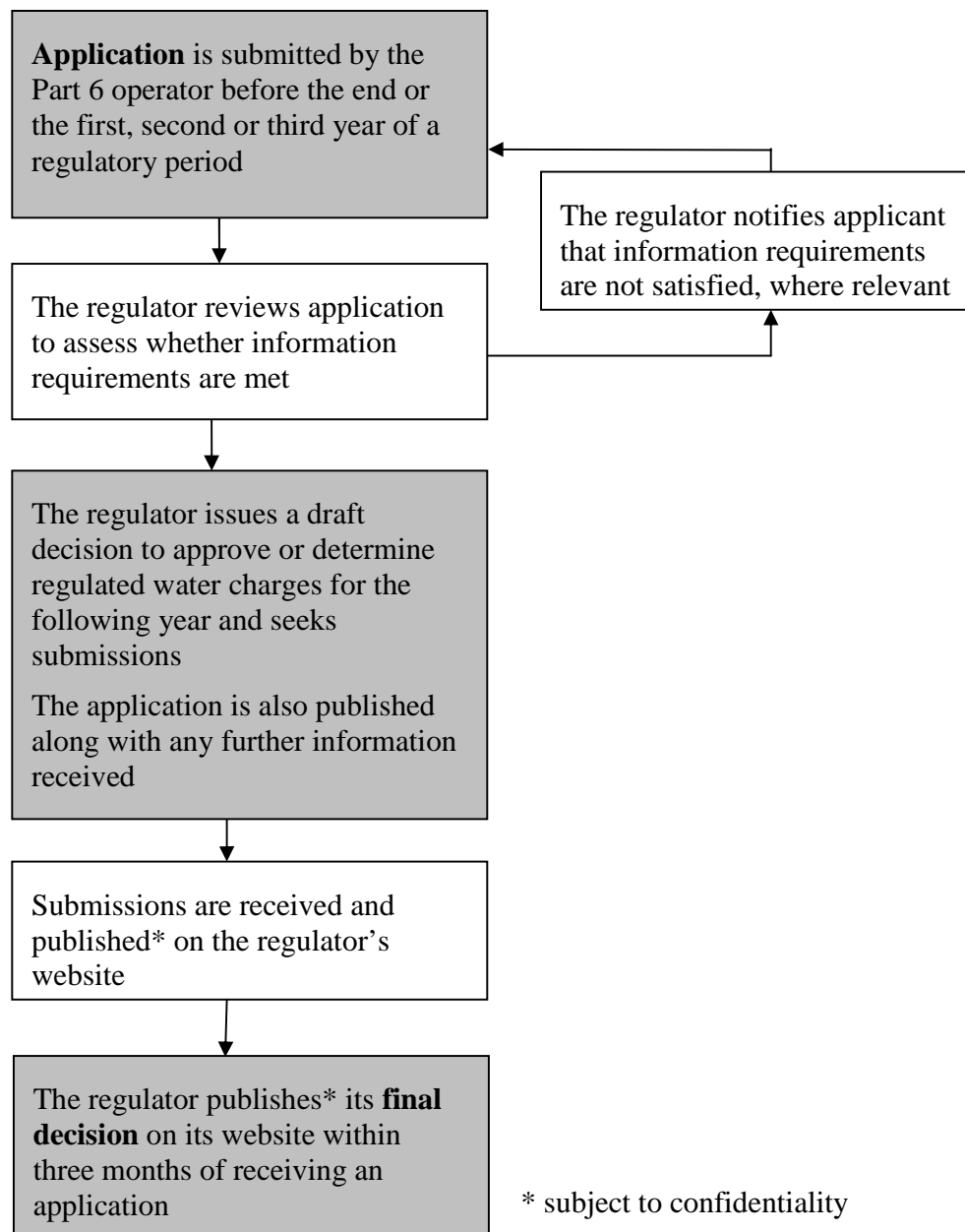
Extensions of the deliberation period

If for some reason a regulator is unable to make a decision within the three month period after the operator has submitted its pricing application, the regulator is able to extend the deliberation period by one month at a time. If so the regulator must write to the operator

explaining why they have been unable to make a decision within the regulatory period. The written notice must be posted on the regulator's website.

When a regulator extends the deliberation period an operator can continue to levy fees and charges not exceeding its current fees and charges until the extension expires.

Figure 2 Process for the annual review of prices



2.3 Reopening provisions

Under Division 4 of the WCIR, a Part 6 operator may apply for a variation of the approval or determination of its regulated water charges where an event occurs during the regulatory period that:

- materially and adversely affects the operator's water service infrastructure or otherwise materially and adversely affects the operator's business; and
- the operator could not reasonably have foreseen the event.

Contents of application

In order to apply for a variation of the approval or determination, the operator must submit an application to the regulator which sets out:

- details of the event(s)
- the operator's proposals to rectify the adverse affects of the event
- the total amount the operator requires to rectify the material and adverse effects of the event
- whether that amount is likely to exceed 5% of the value of the operator's regulatory asset base at the beginning of the period or \$15m, whichever is the lesser amount
- whether it is reasonably likely that the total expenditure during the remaining part of the regulatory period exceeds the total forecast expenditure over that time as forecast at the start of the regulatory period
- details of the variation to the operator's regulated charges.

The operator must also demonstrate that it is not able to reduce its expenditure to avoid the consequences resulting from the unforeseen event without materially and adversely affecting the reliability and safety of the operator's water services.

Regulator's response

After receiving the application, the regulator must publish on the regulator's internet site:

- a copy of the application
- a copy of any further information received in response to the regulator's request.

Before making a decision on the operator's application, the regulator may request further information relating to the application. The assessment of the application may pause until the information has been provided to the regulator.

Regulator to decide whether to vary its approval or determination

If information is provided by the operator in accordance with specified timeframes, and the regulator has not extended its deliberation period, the final decision on the annual review of charges will be made within three months of when the operator submitted its application.

The regulator will vary an approval or determination of regulated water charges where it is satisfied:

- an event has occurred which the operator could not have reasonably foreseen
- the adverse affects resulting from the event will materially affect the operators business and the reliability and safety of the operator's water services
- the total expenditure required to rectify the adverse affect will exceed \$15 million or 5 per cent of the operator's total asset base whichever is the lesser amount
- it is reasonably likely that the total expenditure during the remaining part of the regulatory period is likely to exceed the total forecast expenditure for the remaining part
- as a result of the unforeseen event the operator is unable to avoid it expenditure without materially adversely affecting the reliability and safety of the operator's water services.

The regulator must give notice in writing to the operator of its decision on the operator's application to vary the operator's regulated water charges.

The regulator's decision must also be made available, on or after the day which it gives notice to the operator, on the regulator's internet site.

Extensions of the deliberation period

If for some reason a regulator is unable to make a decision within the three month period after the operator has submitted its pricing application, the regulator is able to extend the deliberation period by a period of one month at a time. If so the regulator must write to the operator explaining why they have been unable to make a decision within the regulatory period. The written notice must be posted on the regulator's website.

When a regulator extends the deliberation period an operator can continue to levy fees and charges not exceeding its current fees and charges until the extension expires.

2.4 Confidentiality provisions

Part 8 of the rules contain a number of provisions relating to confidential information.

If both the regulator and the person making the submission or pricing application decide that the application of submission contains confidential information, then the regulator may publish the relevant document, with the confidential information omitted, and a note in the document where the confidential information would have been included.

However, if the regulator does not agree with the claim that the information is confidential, the regulator must provide a notice to the person making the claim to give them the option of withdrawing the claim, and outline the process that applies if they do or do not withdraw the claim.

If the person withdraws the claim the regulator may publish the entire application or submission. A withdrawal must occur within 10 business days of receiving the application.

If the person does not withdraw their claim, the regulator may publish the relevant document, with the confidential information omitted, and a note in the document where the confidential information would have been included. Under this scenario, the regulator must not have regard to the omitted information when approving or determining regulated charges.

Confidentiality must be assessed by the regulator on a case by case basis.

3 The Part 6 pricing principles

The pricing principles outline the approach the ACCC will take in approving or determining charges if it is the regulator under Part 6 of the WCIR. As a condition of accreditation the ACCC is also proposing to require accredited regulator to apply pricing principles. This section outlines the rationale for the principles.

At the end of each subsection the relevant principle is contained in a shaded box. The principles are also summarised in Appendix B.

The principles relate to:

- valuation of the opening Regulatory Asset Base
- roll-forward of the Regulatory Asset Base
- rate of return
- operating expenditure
- capital expenditure
- debt raising costs
- depreciation
- forecast taxation
- renewals annuities
- cost allocation principles
- form of price control
- tariff structures
- revenue from termination fees
- demand or consumption forecasts
- customer consultation.

3.1 Valuation of the opening regulatory asset base (RAB)

One of the principal components of the building block approach is a return on and of a regulatory asset base (RAB). The RAB should represent the value of all assets that have been funded directly by the operator and which are required for the provision of infrastructure services for which regulated charges are payable.

Once a RAB value is set it must not be subject to revaluation. Revaluation creates uncertainty for the regulated business and its customers and can result in price shocks and windfall gains or losses to the business. For this reason, the WCIR require that any RAB value in place for a Part 6 operator at the time that Part 6 commences, must be retained. Schedule 2 of the WCIR provides that where a Part 6 operator has already had its RAB

value set by an agency of a state under a law of the state, this is the value that must be used for the initial starting value under the Part 6 approval or determination process.

Victorian water businesses (including GMW and LMW) had initial RAB values determined by the Victorian Minister for Water following advice from the ESC in 2006. These RAB values have since been rolled forward by the ESC in subsequent price determinations. Similarly, IPART determined State Water's initial RAB in 2004 and State Water's RAB has been rolled forward by IPART in following price determinations. For these businesses the latest RAB value that has been approved by either the ESC or IPART, as relevant, would be used as the starting basis for rolling forward these businesses' RABs in undertaking Part 6 price approvals or determinations under the WCIR.

Where a RAB value has not yet been set, however, Schedule 2 of the WCIR states:

The regulatory asset base of a Part 6 operator, for the purposes of the first regulatory period ... is to be determined by applying a recognised valuation methodology.

As the existing asset base of an operator is a sunk investment, a RAB valuation somewhere between the scrap value of the asset base and its replacement cost will be appropriate on efficiency grounds, having regard to the need to balance allocative efficiency objectives and signals for efficient investment. However, in determining the initial RAB, the regulator must have regard to whether the resulting charges will contribute to achieving the Basin water charging objectives and principles. In particular, the resulting charges should avoid perverse or unintended pricing outcomes.

If the initial value of the RAB was to result in prices changing significantly from prior levels—that is, if it resulted in price shocks—this would be a perverse and generally unintended pricing outcome. Hence, the regulator should ensure that the initial RAB value does not result in price shocks.

There are also some restrictions on what types of assets can be included in the RAB value. Specifically, only assets that are used to provide infrastructure services may be included and any assets that have been funded upfront by customers or gifted by government or other third parties (with no expectation of a rate of return) cannot enter the operator's RAB.

In this way, any assets that are gifted to the operator must be excluded from the RAB. While legal ownership might rest with the operator (or its shareholders) there is no financial or equity requirement for the operator (or its shareholders) to earn a return on its value or an allowance to compensate for depreciation of the asset. Hence, such assets (or part thereof) must not be included in the operator's RAB.

In addition, any assets funded through a renewals annuity contributed by customers must be excluded from the operator's RAB. As these assets have already been funded outright by customers, these assets must not be used to provide a return on, or of, to the operator or its shareholders.

The only assets included in the RAB are those either internally or debt financed by the operator. These assets must be adjusted to account for depreciation and valued using a recognised valuation methodology.

If a Part 6 operator has had its RAB set by an agency of a state under a law of the state in the regulatory period preceding the commencement of the initial regulatory period under Part 6, this value must form the opening RAB value for the purposes of the initial approval or determination process under Part 6.

Where a RAB value has not been previously set by an agency of a state under a law of the state, the RAB must be determined by applying a recognised valuation methodology. The RAB may only include assets used to provide infrastructure services and may not include any assets:

- gifted by government or another third party, with no expectation of a rate of return on those assets
- funded by customers through charges, a renewals annuity or otherwise
- funded through other customer contributions.

The regulator must ensure that the initial RAB value does not result in price shocks.

3.2 Roll-forward of the RAB

As mentioned above, the opening RAB value, once set, must not be subject to revaluation. Once the opening RAB value has been set, the RAB will need to be updated before the commencement of each successive regulatory period (through the Division 2 approval or determination process) to account for capital expenditure incurred during the preceding regulatory period.

In order to meet the criteria under Division 2, the RAB must be calculated in accordance with Schedule 2 of the WCIR.

In the case of Part 6 operators that have already had their opening RAB value set by an independent regulator prior to the WCIR commencing, Schedule 2 sets the methodology to be used to roll forward the RAB for the purposes of the first regulatory period in which charges are approved or determined under the WCIR.

Under Schedule 2(1) the RAB for the first regulatory period must be rolled forward in accordance with the formula $\{(A-B)+C\}-(D+E)$ where:

- A is the value of the operator's assets that were used for the preceding period
- B is the value of those assets that were not used by the operator to provide infrastructure services during the preceding period and any assets contributed by customers or government
- C is the actual (or, in the case of the last year of the preceding period, forecast) capital expenditure on assets used by the operator to provide infrastructure services (net of actual customer and government capital expenditure contributions) in respect of each year of the preceding period

- D is the regulatory depreciation in respect of assets used to provide infrastructure services (as determined for each year of the preceding period)
- E is the actual (or, in the case of the last year of the preceding period, forecast) revenue received by the operator from disposal of assets used to provide infrastructure services in the preceding period.

For all following regulatory periods, Schedule 2 of the draft rules states that a RAB must be rolled forward in accordance with the formula $(A+B)-(C+D)$ where:

- A is the regulatory asset base of the operator determined in respect of the preceding regulatory period
- B is the total of the actual (or, in the case of the last year of the preceding regulatory period, forecast) capital expenditure on assets used by the operator to provide infrastructure services (net of customer and government capital expenditure contributions) in respect of each year of the preceding regulatory period
- C is the regulatory depreciation in respect of assets used to provide infrastructure services in respect of each year of the preceding regulatory period
- D is the actual (or, in the case of the last year of the preceding regulatory period, forecast) revenue received by the operator from disposal of assets used to provide infrastructure services in respect of each year of the preceding regulatory period.

The RAB must be rolled forward as per Schedule 2 of the rules.

3.3 Rate of return

The most common method used by regulators to determine the rate of return for pricing purposes is the weighted average cost of capital (WACC). The WACC represents the required rate of return on an investment and is the overall cost of capital for a firm that uses a mixture of debt and equity financing.

The WACC is one of the key components in the building block model in deriving the required revenue and associated price paths for regulated entities. Where the rate of return is set too low it may deter businesses from making the necessary investments to maintain their infrastructure. Where the rate of return is set too high businesses may recover revenues that exceed costs which may encourage inefficient investment.

In determining the WACC, it will be necessary to ensure the rate of return is commensurate with the commercial risk associated with the business' regulated activities such that the business recovers its efficient costs.

Table 1 below summarises the approach to the WACC prescribed by the pricing principles, the approach used by the ESC in setting regional and rural water prices from 2008 to 2013, and IPART's approach to setting bulk water prices for State Water from 2010 to 2014.

The remainder of this section outlines the ACCC's reasoning for adopting the individual parameters values to be used in calculating the WACC.

Several of the parameters used to calculate the WACC are influenced by market conditions which can change over time. In these circumstances the pricing principles will be updated accordingly.

As stated above, the principles could also be updated where, because of new evidence, a change to an aspect of the regulatory approach is warranted. This includes the approach to determining WACC parameters.

Table 1 - Summary of approaches to the WACC

	Price determinations under the WCIR	2008 ESC determination of regional and rural water prices	2010 IPART determination of bulk water prices
Form of WACC	Post-tax WACC	Real post-tax WACC	Real pre-tax WACC
Risk free rate	Based on the yield of a 10 year Commonwealth Government Securities (CGS) bond, using an averaging period of between 10-40 business day period commencing as close as practically possible to the start of the regulatory period.	Based on the yield of a 10 year CGS bond averaged over 20 business days. The real risk free rate is calculated after adjusting for forecast inflation.	Based on the yield of a 10 year CGS bond averaged over 20 business days.
Market risk premium	6 per cent	6 per cent	5.5 per cent to 6.5 per cent
Equity beta	0.7	0.65	0.8 to 1.0
Debt risk premium	Based on the yields of BBB+ rated corporate bonds with 10 year maturity.	Based on debt issued by the Treasury Corporation of Victoria with a 10 year maturity and a credit rating of BBB+ Included an allowance for an establishment fee.	Range based on a 20-day average of fair value yield curve data for BBB rated Australian corporate bonds with a maturity of 10 years, as well as actual bond yields for BBB and BBB+ rated securities. An allowance was made for transaction costs associated with debt raising.
Gearing level	60 per cent	60 per cent	60 per cent
Gamma⁵	No value specified	0.5	0.5 to 0.3

⁵ Note that gamma is not a direct input into the WACC

3.3.1 Form of WACC

The ACCC has historically adopted a nominal post-tax WACC. In the post-tax WACC used by the ACCC (known as a vanilla WACC) tax liabilities are explicitly included in the cash flows and a separate tax cost block is included in the building block model. The cash flows are adjusted to account for the utilisation of imputation credits. The advantage of this model is that it allows for modelling of taxes based on the estimated cash flows of the businesses. This is likely to be a more accurate representation of the tax obligations of a regulated business over a regulatory period.

The main advantage of a nominal WACC is simplicity. As most costs are fixed in nominal terms—for example, depreciation, interest, charges, cash flows, financial reporting items and taxes—a nominal approach is generally preferred. However, the ACCC recognise that other regulators may prefer to use a real WACC. As the choice between nominal and real should not matter provided there is consistency in the parameter estimates and the cash flows, accredited regulators will have the flexibility to choose a real or nominal WACC.

The WACC must be derived by summing up the weighted average of debt and equity held by a company multiplied by the cost of debt and equity:

$$(1) \quad WACC = k_e \frac{E}{V} + k_d \frac{D}{V}$$

Where:

- K_e = the cost of equity
- K_d = the cost of debt
- E/V = market value of equity as a proportion of the total market value of the firm
- D/V = the market value of debt as a proportion of the total market value of the firm

The cost of capital is to be calculated on the basis of a WACC determined in accordance with the following formula:

$$WACC = k_e \frac{E}{V} + k_d \frac{D}{V}$$

3.3.2 Cost of equity

The cost of equity is a direct input to the WACC formula and needs to be estimated to derive the overall cost of capital for the regulated firm. The cost of equity should compensate an investor for the opportunity cost of not investing in another investment with

equivalent risk. Therefore, investors will be remunerated for bearing the risk associated with investing in the firm's equity.

The cost of equity can be estimated by using the capital asset pricing model (CAPM). The ACCC considers the CAPM to be most appropriate model for estimating the return on equity due to its wide use in the finance industry along with the considerable amount of theoretical and empirical findings that support its use.

The CAPM is given as the risk free rate (r_f) plus a market risk premium ($E(r_m) - r_f$) above the risk free rate which is multiplied by an equity beta (β) which represents the covariance of the business'/asset's return with that of the market:

$$(2) \quad E(r_e) = r_f + \beta(E(r_m) - r_f)$$

Where:

$E(r_e)$	=	the expected return on equity
R_f	=	risk free rate
$E(r_m) - r_f$	=	market risk premium
β	=	measure of systematic risk of the individuals company/assets return relative to the market

The CAPM specifies a relationship between the expected return of an individual risky asset or business and the level of systematic (or non-diversifiable) risk.⁶

The ACCC has historically adopted a CAPM based on the Officer model (1994)⁷ which is an adaptation of the standard CAPM that assumes the equity market is entirely segregated and the marginal investor is purely the domestic investor. This version of the CAPM will account for imputation credits by redefining the return on equity and the market risk premium to reflect the value of imputation credits.

The cost of equity is to be estimated using the domestic CAPM based on the Officer model.

Risk free rate (r_f)

The risk free rate is the minimum rate of return an investor will expect when investing in a riskless asset. The risk free rate should compensate the investor for the opportunity cost of not investing in the next best equivalent riskless asset.

The risk free rate is a direct input in both the CAPM formula for estimating the return on equity as well as being a direct input in the calculation of the cost of debt. A single

⁶ Systematic risk refers to risk that is inherent in the asset (or the business) that cannot be diversified away. Systematic risk includes market wide factors which affect all companies for example, changes in interest rates and inflation. Hence, systematic risks faced by investors are those risks that are common to the market as a whole.

⁷ Officer, R. R., The Cost of Capital of a Company under an Imputation Tax system, Accounting and Finance, May 1994, pp. 1-17.

consistent value of the risk free rate must be applied when estimating both the return on equity and the cost of debt.

The ACCC and Australian Energy Regulator (AER) use the yield on Commonwealth Government Securities (CGS) bonds as the proxy for the nominal risk free asset because there is considered to be no risk of default on government bonds. Following from the Australian Competition Tribunal's decision in relation to GasNet's access arrangements⁸ in 2003, the ACCC has generally used 10 year CGS bonds to determine the risk free rate. An average rate for 10 to 40 days leading up to the start of the regulatory period is generally calculated (as opposed to an 'on the day' estimate) to address the day-to-day market volatility.⁹

The risk free rate is to be based on the yield of a 10 year CGS bond, using an averaging period of between 10-40 business day period commencing as close as practically possible to the start of the regulatory period.

Market risk premium

The market risk premium (MRP) is the return on the market portfolio. Under the CAPM model investors will only be compensated for systematic risk. Investors are expected to hold a market portfolio that consists of all risky assets in the market for diversification. The MRP represents the additional return above the risk free rate required by an investor to invest in a well diversified portfolio as opposed to investing in a risk free asset and can be seen as a reward to investors for bearing additional market risks. The MRP is a market-wide rather than industry-specific parameter.

As the MRP is an expected, or 'forward looking', premium, it is not directly observable. Estimates based on the historical difference between the return of the stock market and the risk free rate have been used to forecast the forward looking MRP.¹⁰ The MRP can be determined with reference to historical estimates of the MRP, current studies of Australian market practitioners and regulatory precedent.

In terms of historical estimates of the MRP, use of an MRP of 6.0 per cent is supported by various long term historical estimates.¹¹

Survey measures also indicate that a MRP of 6 per cent is the most commonly adopted value by market practitioners.¹² Studies of Australian financial market practitioners involved in capital budgeting show they most commonly use 6 per cent per annum as an

8 Australian Competition Tribunal, Application by GasNet Australia (Operation) Pty Ltd [2003] AcomPT 6.

9 AER, Electricity transmission and distribution network service providers - Review of the weighted average cost of capital (WACC) parameters – Final decision, May 2009, p. 171.

10 AER, Electricity transmission and distribution network service providers - Review of the weighted average cost of capital (WACC) parameters – Final decision, May 2009, p. 191.

11 J.C. Handley prepared a report to the AER on the historical equity risk premium for the AER's review of the WACC parameter. The report used estimates for the periods 1883-2008, 1937-2008, and 1958-2008, 'grossed-up' for a 0.65 value of imputation credits, produced an MRP range of 5.7 to 6.2 per cent.

12 AER, Electricity transmission and distribution network service providers - Review of the weighted average cost of capital (WACC) parameters – Final decision, May 2009, p. xiv.

MRP for asset or investment valuations.¹³ In addition, survey data¹⁴ has supported an MRP of 6 per cent as the most commonly adopted value by market practitioners before the global financial crisis. As current Australian market conditions appear to be returning to pre-global financial crisis conditions, the MRP estimates in these surveys are unlikely to be significantly downward biased.

In terms of regulatory precedents, apart from the AER's most recent WACC review, where a MRP of 6.5 per cent was adopted¹⁵, the ACCC has generally used an MRP of 6 per cent.¹⁶ In recent decisions made by other Australian regulators, an MRP of 6 per cent or lower has been used, with an MRP of 6 per cent being the most commonly used value.¹⁷

The AER's most recent WACC review occurred in late April 2009 at a time when capital market and global economic conditions were extremely uncertain and turbulent. The increase in the MRP to 6.5 per cent at this time reflected these prevailing conditions. However, economic and capital market conditions appear to be improving to pre-global financial crisis levels¹⁸, meaning that an MRP of 6 per cent, reflecting long term average values of the MRP, appears appropriate over the period to which these principles will apply. As these pricing principles are not likely to come into effect until 2013, it is appropriate to give more focus to historic rather than current market conditions.

Therefore, a long term historic estimate of the MRP appears appropriate on the basis that:

- the first approval or determination that will be made under these pricing principles will not be until 2013, meaning that a longer term estimate is a more robust measure at this juncture
- economic conditions appear to be returning to pre-global financial conditions.

Hence, an MRP of 6 per cent appears the most appropriate estimate of the cost of equity at this point in time.

13 Truong G., Partington, G. and Peat, M. (2008) "Cost of Capital Estimation and Capital Budgeting Practice in Australia" Australian Journal of Management, Vol. 33, No. 1, June 2008, p.155.

14 KPMG (2005), Cost of capital – market practice in relation to imputation credits, August, p.15; Telstra's WACCs for Network ULLS and the ULLS and SSS Businesses, 2006, Capital Research, Neville Hathaway.

15 AER (2009) Final Decision: Electricity transmission and distribution network service providers – Review of the weighted average cost of capital (WACC) parameters, May.

16 AER, Statement of Principles for the Regulation of Electricity Transmission Revenues, 2004; ACCC, Assessment of Telstra's Unconditioned Local Loop Service Band 2 monthly charge undertaking – Final decision (public version), April 2009, pp. 231-233; ACCC, A Report on the Assessment of Telstra's Undertaking for the Domestic PSTN Originating and Terminating Access Services, July 2000, p. 74-77.

17 AER (2009) Final Decision: Electricity transmission and distribution network service providers – Review of the weighted average cost of capital (WACC) parameters, May, p. 176, AER (2009) South Australia: Draft Distribution Determination 2010-11 to 2014-15, p. 317.

18 This was detailed in the AER decision for ETSA Utilities in November 2009, which considered that increases in both CGS yields and stock prices and decreases in implied volatilities show significant signs of improvement. See AER (2009), South Australia – Draft Distribution Determination 2010-11 to 2014-15, November, p. 309 – 310. This was also supported by the OECD, see OECD (2009) The financial industry and challenges related to post-crises exit strategies, Financial Market Trends No. 97 Volume 2009/2, November, p. 2. <http://www.oecd.org/dataoecd/17/56/44563803.pdf>, accessed 17 February 2010.

The cost of equity is to be calculated using a MRP of 6 per cent.

Equity beta

The equity beta represents the systematic or non-diversifiable risk of an asset or equity relative to equity investments in the market as a whole.¹⁹ Systematic risk may include changes or volatility in relation to market variables such as inflation, economic growth, interest rates, exchange rates and taxation. It does not take into account diversifiable risks or business specific risks.

Equity beta is measured by estimating the covariance between the return on the relevant assets or investments with the return of a portfolio representative of the market. The equity beta of the market portfolio is standardised at an average of one. Where equity beta equals one, it indicates that the return of the investments has the same sensitivity to systematic risk as the overall market. If beta is less than one, then the sensitivity of the investments to systematic risk is less than the overall market. Conversely, where the value is greater than one, the systematic risk of the asset is greater than the market and investors would expect a higher return for bearing greater risk.

For the WCIR, it is appropriate for a regulator to use a value of equity beta that is expected to best represent the systematic risk profile of an efficient infrastructure operator over the relevant regulatory period. As with all WACC parameters, estimating the systematic risk profile of an efficient business provides the regulated operator with the necessary incentives to earn a reasonable return on its capital investment.

In practice, a regulator normally chooses the equity beta by basing it on the historical equity betas of a selection of businesses which are deemed to be close comparators to the regulated businesses. This information is available only for entities listed on the stock exchange. As no Australian water business is listed on the Australian stock exchange, it is necessary to consider other available evidence in determining the appropriate equity beta for regulating infrastructure operators.

In determining its preferred value for equity beta the ACCC has:

- concluded that the systematic risk of energy businesses is comparable to the systematic risk faced by rural water businesses
- considered evidence from the most recent Australian regulatory decisions for energy
- reviewed estimates of betas adopted by other regulators of water businesses in Australia.

Equity beta for comparative businesses

Choosing a comparator

¹⁹ The asset beta or 'de-leveraged beta' is a theoretical representation of the beta that would apply if the firm or asset was financed with 100 per cent equity. As a result the asset beta does not include any financial risk. The asset beta and equity beta are inter-related. The equity beta can be derived through 're-levering' the asset beta with respect to the firm's capital structure.

Based on a number of underlying industry characteristics, the ACCC considers that rural water businesses are likely to face similar levels of systematic risk to energy distribution and transmission businesses. Analysis undertaken by Frontier Economics for the ACCC found that, while not perfect, equity betas for energy transmission and distribution providers are adequate proxies for the purpose of establishing a benchmark equity beta for regulating rural water businesses.²⁰

Evidence from comparative businesses

As energy businesses are deemed to be reasonable comparators to water businesses in Australia, it is instructive to assess recent regulatory decisions in energy and the supporting reasons to determine their relevance for water infrastructure operators regulated under the WCIR.

Recently, the AER reviewed WACC parameters for electricity transmission and distribution network service providers. The outcomes of this review apply to electricity transmission and distribution determinations where the proposal is submitted after 1 May 2009 and before the completion of the next review (scheduled to be completed 31 May 2014).

The AER examined market evidence from the businesses which are considered to be close comparators to regulated network service providers. In choosing comparators, the AER selected businesses operating in Australia that predominantly provide energy network services (electricity and gas businesses providing transmission and distribution services).²¹

The AER mainly considered estimates from 1 January 2002 to 1 September 2008. The estimates considered by AER were point estimates generated from a portfolio of comparator utility stocks. Several different equity beta estimates were then calculated from portfolios constructed by using different variables including:

- different stocks within the hypothetical portfolio
- different weighting of stocks within the portfolio (equal weighted and value weighted portfolios)
- different estimation techniques (Ordinary Least Squares and Least Absolute Deviation methods)
- different estimation periods within the post ‘technology bubble’ time frame
- different observation periods (weekly and monthly)
- different methods of calculating returns (average and median).

20 Frontier Economics, The cross sectoral application of equity betas: energy to water, a report prepared for the Australian Competition and Consumer Commission, April 2010.

21 Australian Energy Regulator, 2009, Electricity transmission and distribution network service providers – Review of the Weighted Average Cost of Capital - explanatory statement, Canberra, p. 78.

Empirical evidence was provided to the AER by Associate Professor Olan Henry, a consultant to the AER, and Allen Consulting Group (ACG), a consultant to the Joint Industry Associations', an organisation representing energy network businesses. Of the evidence submitted by Henry and ACG, the AER concluded '(the) balance of the evidence points towards the point estimate of the equity beta of the benchmark efficient NSP lying in the range of 0.4 to 0.7'.²²

However, the AER did not solely rely on the empirical evidence from comparator businesses. In choosing an equity beta of 0.8, the AER also cited other factors. This view was first put forward in the explanatory statement, and also maintained in the final decision.

In the explanatory statement, the AER concluded that:

(T)he AER does not propose to change the equity beta value as far as the market data would suggest, even though the market data suggests the value is substantially different to the previously adopted value(s). In reviewing the equity beta, as for the other parameters, the AER has given consideration to other factors, such as the importance of regulatory stability, in order to promote efficient investment, so as to contribute to the National Electricity Objectives. Consequently, whilst the market data in isolation presents a strong case for establishing an equity beta at a point consistent with above range, the AER has taken a broader view in the context of the National Electricity Objectives [NEO] and having regard to the current financial environment.²³

In the final decision AER stated:

In determining the value of the equity beta, the AER has also taken into account the revenue and pricing principles. The market data suggests a value lower than 0.8, however, the AER has given consideration to other factors, such as the need to achieve an outcome that is consistent with the NEO (in particular, the need for efficient investment in electricity services for the long term interests of consumers of electricity). The AER has also taken into account the revenue and pricing principles and the importance of regulatory stability. Having a taken broad view, the AER considers that an equity beta of 0.8 for a benchmark efficient NSP is appropriate.²⁴

As these factors are largely industry specific or determined by the regulatory framework under which AER is required to operate, the ACCC does not consider that these factors are relevant to setting the equity beta for regulated water infrastructure operators under the WCIR. Hence, the ACCC will restrict its consideration to the empirical evidence.

Regulatory decisions for Australian water businesses

The ACCC has also considered recent regulatory decisions in water in Australia. Table 2 below provides a summary of historical regulatory decisions on the value of equity beta used in Australia for water businesses.

²² Op. cit., p. 326

²³ AER WACC review explanatory statement, p. 252

²⁴ AER WACC review final decision, p. 344

There has been a broad range of equity beta values adopted in regulatory decisions, ranging from 0.5 to 1.19. These decisions, in isolation, are of limited value in choosing an appropriate equity beta value for rural water businesses regulated under the WCIR. It is worth noting that a number of these decisions relate to urban water businesses and, in many cases, energy sector comparators have been used as a proxy for estimating the equity beta.

However, given that State Water, GMW and LMW will be regulated under these rules, the ACCC has considered evidence from recent rural water decisions made by IPART and ESC in more detail.

Table 2 - Regulatory decision on equity beta for water businesses

Regulatory Decision	Adjusted Equity Beta
IPART 2010 Bulk Water Prices	0.8 – 1.0
ESC 2008 Metropolitan and Regional Price Review Final	0.65
IPART 2006 Bulk Water Prices	0.8 – 1.0
Economic Regulation Authority (Western Australia) 2005 Metropolitan Water Final Decision	0.8
IPART 2005 Metropolitan Water Final Decision	0.8 – 1.0
ESC 2005 Metropolitan and Regional Final Decision	0.75
Queensland Competition Authority 2005 Gladstone Final Decision	0.83 ²⁵
Independent Competition and Regulatory Commission (ACT) 2004 Metropolitan Water Final Decision	0.9
Queensland Competition Authority 2004 Gladstone Final Decision	0.81
Government Prices Oversight Commission 2004 Bulk Water Final Decision	0.62 – 1.19
IPART 2003 Metropolitan Water Final Decision	0.65 – 0.90
Queensland Competition Authority 2003 Burdekin Final Decision	0.5
IPART 2001 Bulk Water Final Decision	0.65 – 1.02

IPART decision on bulk water prices

In its 2010 review of bulk water prices for State Water, IPART used a range of 0.8 to 1.0 for the equity beta. This was used along with other WACC parameters to calculate a range for the cost of capital. The mid-point of this range was then used as State Water's WACC.

In determining the range of the equity beta, IPART considered what equity beta would apply to a benchmark efficient bulk water business and considered that a range of 0.8 to 1.0 was appropriate.

²⁵ QCA equity beta is adjusted using the assumed gearing level of 60% debt. The equity beta using QCA gearing level assumption of 50% debt is 0.65.

The equity beta range of 0.8 to 1.0 was also adopted for the 2006 determination of State Water's prices. In making this decision IPART considered equity beta values for other regulated industries and values used by other regulators for regulated water businesses. IPART also considered the systematic risk faced by State Water, relative to the metropolitan water businesses, and found that there was no evidence to warrant a different equity beta than that used for metropolitan water businesses.²⁶

In choosing the range for metropolitan water businesses in 2005, IPART considered there was no evidence to suggest that water agencies face more or less systematic risk than the Australian gas and electricity network businesses.²⁷ A range of equity beta of 0.8 to 1.0 was consistent with IPART's 2004 access decision for AGL's gas network.

ESC decision on bulk water prices

In its 2008 water price review for rural and regional businesses, the ESC adopted an equity beta of 0.65. In arriving at this value, the ESC had regard to the equity beta applied to gas distribution businesses as part of its recently completed gas access arrangement review where the ESC set an equity beta of 0.7 for gas access arrangements.²⁸ The ESC had previously considered in its decision for all water businesses that the non-diversifiable risk for regulated water sector activities is likely to be slightly lower than that for the energy sector.²⁹

ACCC conclusion on equity beta

In considering the level of systematic risk faced by rural water businesses, the ACCC notes the level of systematic risk faced by rural water businesses is likely be similar to that faced by energy businesses. This is similar to conclusions previously reached by the ESC and IPART in determining an equity beta for water businesses.

Based on the most recent empirical data collected as part of the AER WACC review, the historical equity betas of energy transmission and distribution businesses were estimated to be between 0.4 and 0.7. Taking a conservative view of the likely equity beta estimate of operators regulated under the WCIR, the ACCC considers it appropriate to choose a value in the higher end of this range. The ACCC considers 0.7 to be an appropriate value.

The cost of equity is to be calculated using an equity beta of 0.7.

3.3.3 Cost of Debt

The cost of debt is typically given as the sum of the risk free rate and a margin for debt:

$$k_d = r_f + DRP \quad (3)$$

26 IPART, Bulk Water prices for State Water corporation and Water administration Ministerial Corporation, From 1 October 2006 to 30 June 2010, p. 184

27 IPART, Sydney Water Corporation, 2005, Hunter Water Corporation, Sydney Catchment Authority, Prices of Water Supply, Wastewater and Stormwater Services – Final Determination and Report, June, p. 75

28 Essential Services Commission 2008, 2008 Water Price Review, Regional and Rural Businesses' Water Plans 2008-2013 — Draft Decision, March., p.86

29 Essential Services Commission, Metropolitan and Regional Businesses' Water Plans 2005-06 to 2007-08, March, p. 90-91

Where:

k_d	=	cost of debt
r_f	=	risk free rate
DRP	=	Margin/premium for debt

To maintain consistency within the WACC formula, the risk free rate used to estimate the cost of debt must be equal to the risk free rate used in the CAPM for the return on equity.

The debt margin (DRP) represents the premium required by lenders and is the difference between the fair yield on a proxy corporate bond and the risk free rate. The DRP is dependent on the firms gearing level, credit rating and term of the debt.

In order to remain consistent with the principles of competitive neutrality, the DRP is generally determined with reference to benchmarks of the gearing level and stand-alone credit rating of a commercially operated business.

The correct approach to estimating the DRP is being considered by a number of Australian regulators, including the ACCC/AER, in light of both practical and theoretical problems with existing approaches.³⁰ The ACCC/AER has used a BBB+ rated corporate bond with a 10 year term in its calculation of the DRP. The approach is broadly consistent with that previously used by the ESC and IPART for water businesses. It is based on the assumption that a BBB+ rated corporate bond is an appropriate credit rating for a commercially operated business, and the approach that the term of the debt should be consistent with the 10 year CGS bond used to calculate the risk free rate (see 3.3.2).

However this approach has significant problems. Firstly, the ACCC notes that, at the time of preparing these pricing principles, there is a lack of market information on BBB+ rated corporate bonds with 10 year terms. This means that it is difficult to determine the benchmark DRP with certainty. Secondly, while conceptually convenient, the approach is unlikely to reflect the actual debt portfolios and financing practices of water service providers. The ACCC/AER is considering the appropriate approach to estimating the DRP in light of these issues. While it has retained the use of a BBB+ rated corporate bond with a 10 year term in the pricing principles at this time in order to achieve a basic level of regulatory certainty and consistency in approach, the ACCC may revise the pricing principles following its further consideration of how to best estimate the DRP.

Gearing level

The gearing level of a firm refers to the ratio of debt to equity that a firm uses to finance its capital. The gearing level is used to weight the return on equity and cost of debt in the WACC formula. Where the firm's capital structure is highly geared (i.e. the firm has a high level of debt) this implies greater financial risk for the firm and therefore a greater return will be required for both equity and debt holders.

³⁰ See, e.g., Reeves (AER Chairman), Finding the balance—the rules, prices and network investment, speech to Energy Users Association of Australia energy price and market update seminar, 20 June 2011, p. 9; IPART, Developing the approach to estimating the debt margin—other industries, final decision, April 2011.

Finance theory assumes the choice of financing structure will not affect the overall cost of capital of a firm. This is because even though a decrease in gearing will weight the WACC more heavily towards the cost of equity (which is typically higher than the cost of debt), the cost of equity will decline when facing less risk.³¹ Theory predicts that on the whole the two effects cancel each other out.

It is standard practice amongst Australian regulators to adopt a benchmark assumption on the gearing levels of an efficiently financed business rather than the actual gearing level of regulated firms. Adopting a benchmark gearing ratio in the pricing principles is also consistent with the general approach for estimating other WACC parameters in the pricing principles. It would be internally inconsistent to adopt a benchmark approach to estimating some WACC parameters and to calculate actual values when estimating other WACC parameters.

In regulatory decisions for the water sector, both IPART and ESC have adopted a benchmark gearing ratio. Both IPART and ESC had regards to the gearing ratios of comparable utilities businesses in Australia as well UK water businesses to establish an appropriate benchmark.³² Based on this assessment, both regulators adopted a benchmark gearing ratio of 60:40 debt to equity in their regulatory decisions for the water sector. A benchmark ratio of 60:40 has also been adopted by the ACCC and AER in regulating many infrastructure businesses.

The benchmark DRP is to be estimated on the basis of a benchmark gearing level of 60:40 debt to equity on the yields of BBB+ rated corporate bonds with 10 year maturity.

3.4 Operating and capital expenditure assessments

A regulator must not approve the regulated charges set out in a pricing application unless the regulator is satisfied that the total forecast revenue used to calculate those charges for each year of the regulatory period recovers the prudent and efficient costs of providing infrastructure services, including costs incurred in complying with regulatory obligations and requirements.

A forecast of the prudent and efficient cost of providing infrastructure services means, based on forward estimates of operating and capital expenditure, the operator would be expected to:

- a) cost-effectively meet regulatory, legislative and other obligations and requirements
- b) define reasonable service standards, and cost-effectively comply with these standards, and

31 The cost of capital is invariant over a broad range of gearing possibilities under the assumptions of perfect information, no taxes and no transactions cost. See F Modigliani, and M H Miller, 'The Cost of Capital, Corporation Finance and theory of Investment'. American Economic Review, Vol. 48, No. 3, 1958, pp. 261-297.

32 Essential Services Commission, Workshop Discussion Economic Regulation of the Victorian Water Sector: Estimating a return on and of Capital Investment, April 2004; IPART, Draft Determination and Draft Report - Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation - From 1 August 2006 to 30 June 2010, May 2006, p. 154.

- c) make decisions on providing goods and services expected of a commercially successful infrastructure operator in the same position, and cost-effectively deliver these goods and services.

3.4.1 Operating expenditure

Operating expenditure includes all expenditure related to the operation, maintenance and administration of infrastructure services provided by a Part 6 operator.

A Part 6 operator will need to include in its application under Part 6 details of its forecast operating expenditure for the relevant regulatory period. In particular, under Schedule 1 of the draft rules, Part 6 operators will be required to include in their applications under Division 2 of Part 6, information on their:

- forecast and actual operating expenditure
- the key reasons for the expenditure
- a justification of the forecast and actual operating expenditure
- evidence of productivity improvements.

This information is to be provided for each year of the relevant regulatory periods. Further detail on how information is to be provided will be available in the tier 3 guidelines.

The regulator will need to assess the information provided by a Part 6 operator in their pricing application for the purpose of determining the operating expenditure allowance for the regulatory period.³³

The regulator will need to take into account the prudence and efficiency of past operating expenditure of the operator and the reasons and evidence supporting any changes in operating expenditure in the next regulatory period. Productivity improvements must be taken into account and cost estimates must be based on reasonable assumptions on the efficient costs likely to be incurred over the next regulatory period.

The regulator may wish to engage an external engineering consultant to assist in reviewing an operator's pricing application and/or in determining an operator's forecast operating expenditure. As is the existing practice of Australian regulators, any external review would generally be made public on the regulator's website.

In making an assessment of the prudent and efficient operating expenditure for the next regulatory period, the regulator must assess:

- the prudence and efficiency of operating expenditure in the previous regulatory period
- the reasons and evidence supporting changes to service standards in the next regulatory period
- the reasons and evidence supporting changes to operating expenditure in

³³ However, where information pertains to a confidential matter relating to the operator's business, the regulator will not be required to publish this information.

the next regulatory period

- reasonable productivity improvements in providing services over the next regulatory period.

Where relevant, a regulator must compare and take into account operating expenditure of similar businesses.

Forecasts must be based on reasonable assumptions of the efficient costs likely to be incurred in this period.

3.4.2 Capital expenditure

Capital expenditure includes all expenditure that augments or replaces the existing assets used by a Part 6 operator to provide infrastructure services. Net capital expenditure that has been funded by the operator is added to the operator's RAB and is recovered through a return on the RAB (i.e. the WACC multiplied by the RAB) and a return of the RAB (i.e. regulatory depreciation).

Under Schedule 1 of the draft rules, Part 6 operators will be required to include in their applications under Division 2 of Part 6, information on:

- forecast and actual capital expenditure
- evidence of an ability by the business to deliver its capital program within the same time constraints as those proposed
- the major projects completed or to be completed over the period including the actual or forecast cost and timing of these projects
- the expected outcomes of these projects and their justification
- evidence that the expected levels of expenditure are prudent and efficient—for example, the results of an independent engineer's assessment.

As with the assessment of operating expenditure, the regulator will need to review an operator's proposed capital expenditure in the application.

In determining prudent and efficient capital expenditure, the regulator will take into account the detailed reasons and evidence supporting major new capital projects both within the regulatory period under consideration and, where relevant, future regulatory periods.

The regulator will also consider the operator's asset management practices, and, where relevant, the prudence and efficiency of capital expenditure in the previous regulatory period. Cost estimates are to be based on reasonable assumptions on the efficient costs likely to be incurred over the current regulatory period.

As with the assessment of operating expenditure, the regulator may also wish to engage an external engineering consultant to assist in determining the operator's proposed capital expenditure.

In making an assessment of the prudent and efficient capital expenditure for the next regulatory period, the regulator must assess:

- the prudence and efficiency of capital expenditure in the previous regulatory period (where relevant to proposed capital expenditure in the next regulatory period)
- the reasons and evidence supporting the commencement of new major capital expenditure projects in the next regulatory period, including whether such projects are consistent with efficient long term expenditure on infrastructure services.
- the reasons and evidence supporting levels of capital expenditure in the next regulatory period
- whether the timeframe for delivering the proposed capital expenditure program is reasonable, having regard to the operator's delivery of major projects in the past
- whether the asset management and planning framework of the operator reflects best practice.

Forecasts must be based on reasonable assumptions of the efficient costs likely to be incurred across the regulatory period.

Subject to confidentiality, any external review of an operator's proposed capital expenditure must be made public on the regulator's website.

3.5 Debt raising costs

Debt raising costs are incurred each time debt is rolled over and may include underwriting fees, legal fees, company credit rating fees and other transaction costs. The ACCC recognises this as a legitimate expense incurred in the process of raising debt; therefore the ACCC considers it appropriate to provide an allowance to businesses to recover these costs where they are incurred.

The ACCC and AER have accounted for debt raising costs as part of general expenses in the building block model or by incorporating them into the cost of capital through an adjustment to the cost of debt.

Given that the pricing principles apply to rural water businesses which do not regularly access external debt markets, the ACCC believes it is more transparent to allow the business to recover its debt raising costs as part of its operating expenditure as opposed to making adjustments to their cost of capital.

Where businesses do access external debt markets the ACCC recognises that there will be costs associated with raising debt which are legitimate expenses incurred in operating the business. Accordingly, a regulator must provide an allowance for debt raising costs, where they are incurred, as part of operating expenditure and will be recovered through the building block revenue.

The regulator must treat any forecast debt raising costs as operating expenditure.

3.6 Depreciation

Depreciation represents the reduction in the value of an asset due to usage, wear and tear of the asset over time and other factors. In a regulatory context, depreciation is referred to as the 'return of capital'. The purpose is to return capital to investors through depreciation to compensate for capital invested over the life of the asset. Hence, customers who benefit from the asset are required to contribute to the asset's costs over its useful life.

There are two broad types of depreciation:

- economic depreciation
- accounting depreciation.

Economic depreciation is defined as the change in market value of an asset over a given period of time. This can be calculated by the market value of the asset at the start of the period minus the market value of the asset at the end of the period.

Accounting depreciation is defined as the allocation of the fixed cost of an asset to the periods in which services are provided by the asset. This represents the theory that, in generating revenue, the value of the asset is reduced over time due to wear and tear.

Although economic depreciation provides a more theoretically accurate depreciation profile for an asset, accounting depreciation is more widely used due to its simplicity. This is especially relevant in a regulatory context as it provides a fixed component for the rate of return and thus provides some degree of price stability in regulated charges.

There are several methods for calculating depreciation but the simplest and most widely adopted method is the straight-line method where the value of the asset is depreciated in equal increments over the life of an asset. The ACCC and AER have generally applied straight-line depreciation in regulating businesses in various industries. Similarly, this method of depreciation has been adopted by the ESC and IPART in regulating water businesses.

Due to the steady-state nature of assets in the water sector, the ACCC believes that straight-line depreciation is normally the most appropriate methodology in allocating the cost of an asset over time and promoting price stability in regulating water charges. Accordingly, the ACCC considers a straight line methodology should be used to derive regulatory depreciation unless the operator is able to provide reasonable justification for a departure from this method. However, where a different approach is used, the net present value to the business must be the same as under a straight line methodology.

However, a regulator or might also wish to use different depreciation profiles for other reasons. For instance it is possible that in some instances price stability could be better achieved through an alternative depreciation profile to straight-line. Accordingly, the regulator has the discretion to adopt a different depreciation methodology where it considers it appropriate.

Fixed assets should be depreciated using a straight line methodology. However, the regulator or the operator may adopt a different approach to depreciation where an operator can justify departure from this method or where it is appropriate for the regulator to do so. Where a different approach is used, the net present value to the business must be the same as under a straight line methodology.

3.6.1 Timing of depreciation

To ensure that the operator is only being compensated for capital expenditure once the related asset is available for use, regulators must only allow an operator to recover depreciation after the asset is available for use. In this way, customers will only be required to compensate for the cost of an asset once the associated service is available for use.

Investors should have adequate forecasting methodologies to ensure that they have enough revenue to finance their capital expenditure over time and the building block model provides for this.

Depreciation of an asset must only be recovered once that asset is providing infrastructure services.

3.7 Forecast taxation

The pricing principles require regulators to use a post-tax building block model to set regulated charges. As a result, forecast taxation must form a separate building block of the total revenue requirement of an infrastructure operator.

The forecast taxation payable by the infrastructure operator must be calculated in reference to both the forecast corporate income tax payable by the operator less the estimated value of imputation credits that would be received by a hypothetical private investor in that operator.

Forecast corporate income tax

Australian businesses pay taxation at the company rate on taxable income earned in a financial year. Taxable income is typically calculated by revenue less any deductible expenses, including operating expenditure, interest and depreciation on capital expenditure. Where a company makes a loss, that loss is rolled forward to the next financial year and deducted from taxable income in that financial year.

Under the National Tax Equivalents Regime (NTER), the same provisions typically apply to government owned corporations. However, instead of paying taxation subject to income tax laws, the entity pays an equivalent income tax liability to the Treasury or Revenue Office of the State or Territory to which the NTER entity belongs.

In forecasting the corporate income taxation payable by the infrastructure operator, under the pricing principles the regulator must forecast the actual taxation bill to be incurred by the firm over the regulatory period. This must be done in accordance with either Australian tax law, or provisions such as the NTER.

Estimated value of imputation credits

Under an imputation tax system in Australia, dividends distributed by a company from post tax earnings carry imputation credits that can be used by local residents to offset their personal tax liabilities. Credits reflect the tax that has already been paid by those companies and credits represent a benefit of the investment in addition to dividends or capital gains. This system avoids double taxation on dividends for income tax already paid by the company.

As Australian resident taxpayers can claim a tax credit against the income tax they pay on dividends received from Australian companies, they reflect a benefit to investors.³⁴ Imputation is therefore relevant to the modelling of tax payments in cash flows/allowable revenue.

While franked dividends are not generally paid by government businesses, in order to maintain competitive neutrality, it is necessary to make an assumption of the value of imputation credits for a hypothetical private investor in the infrastructure operator. Therefore it will be necessary to assume a value of imputation credits in the pricing principles.

*Imputation factor (gamma)*³⁵

In the CAPM, the proportional value of imputation credits is represented by the value of gamma. The imputation factor, or gamma, represents the proportion of these credits which can, on average, be used, and their value to investors.

Gamma has a value of between zero and one. A gamma of one means that shareholders receive income tax credits equivalent to the value of tax paid at the company level. Gamma would be equal to one where imputation credits are fully distributed and fully valued by investors.³⁶ A gamma of zero means that shareholders receive no value from the imputation credits. Where the investor is not a local resident and pays no Australian taxes, the value of imputation credits to such an investor would equate to zero.

The general regulatory approach in Australia is to define the gamma as the utilisation rate multiplied by the imputation payout ratio:

$$\gamma = \theta * F \quad (4)$$

Where:

θ = the utilisation rate of imputation credits is the value of distributed imputation credits to investors as a proportion of their face value.³⁷

34 Imputation credits arise only from payment of Australian company tax.

35 With a vanilla WACC, imputation is also relevant in CAPM for the equations for re-levering and de-levering beta estimates, and by redefining the return on equity and the market risk premium to reflect the value of imputation credits.

36 AER, Review of the weighted average cost of capital (WACC) parameters for electricity transmission and distribution – Issues Paper, August 2008, p. 72

37 Where the domestic CAPM is used, the utilisation rate is the utilisation rate of the average Australian investor.

F = Imputation payout ratio is the face value of imputation credits distributed by the firm as a proportion of the face value of imputation credits generated by the firm: $(IC \div Tax\ paid\ by\ the\ firm)$.

It is anticipated that water infrastructure operators regulated under Part 6 of the WCIR will not be required to pay income tax and therefore will gain no explicit value for imputation credits. In light of this, the ACCC has revised its approach from the draft pricing principles and does not intend to determine a value for gamma to apply in the context of price approvals or determinations under Part 6 of the WCIR unless a business is forecast to pay income tax.

In estimating the annual taxation building block, the regulator must estimate the annual actual corporate income taxation to be paid by the operator less the imputation credits that would be received by a hypothetical private investor in the operator.

In estimating the value of imputation credits the regulator must multiply the annual estimated corporate income tax bill of the operator by an imputation factor (gamma). If required, the imputation factor will be determined by the ACCC.

3.8 Renewals annuities

Part 6 operators may choose to fund capital and/or operating expenditure through a renewals annuity. Where a renewals annuity is used, it must:

- provide sufficient revenue to fund all required expenditure
- reflect efficient expenditure forecasts
- be set across a long term planning horizon (beyond the period to which the application applies)
- be transparently calculated
- be reviewed regularly.

Where an annuity payment is made by all customers, assets purchased with the annuity must not be included in the RAB (see section 3.1).

Under Schedule 1, Part 6 operators that use a renewals annuity will be required to provide information in their Division 2 application on:

- the nature of the assets included in the annuities calculation
- the basis of the long term capital expenditure forecasts that support the calculation—when and on what basis the forecasts were made
- the service levels that underpin the capital expenditure forecasts
- the annuity term
- the discount rate used to calculate the annuity

- from the above, the actual or forecast balance of the renewals annuity
- evidence of how the annuity is managed and how often the annuity is reviewed.

These details are to be provided for each year of the regulatory period that is set to expire and for each year of the following regulatory period.

Where a renewals annuity is used, the regulator must be satisfied that it:

- provides sufficient revenue to fund all required expenditure
- reflects prudent and efficient expenditure forecasts
- the discount rate used to calculate the annuity is reasonable
- is set across a long term planning horizon beyond the period to which the application applies and that the length of the annuity is determined by the capital expenditure program so that all material expenditure is captured.

3.9 Cost allocation principles

Cost allocation refers to the allocation of an operator's various costs to each of its various services and consequently, to the charges it levies for those services. In general, costs will be directly attributable or shared. That is, some costs will only arise due to a particular service being provided (direct costs) while other costs will be incurred in providing a number of services (shared costs). While the allocation of direct costs is relatively straightforward, the allocation of shared costs can be more difficult.

Initially, operators will need to identify which costs are associated with providing infrastructure services, as opposed to other costs borne by the operator (i.e. their regulated costs/services as opposed to their unregulated costs/services). The costs associated with providing infrastructure services will be the costs to which a regulated charge applies.

Those costs that are associated with providing infrastructure services to which a regulated charge applies will then need to be allocated as either direct or shared costs.

In the case of direct costs, only costs that are directly attributable to the provision of a particular category of service may be directly attributed to that category of service. The operator will have some discretion in determining the level to which it identifies direct costs; these could be to the customer level, to the category of service level or to the irrigation district level, for example. Generally, the level of cost identification and allocation should align with the level to which charges are determined. For example, if charges are levied by valley, direct costs should be identified and allocated at the valley level.

Shared costs incurred in providing several categories of service must be allocated between those categories. Where there is an identifiable relationship between the shared costs and the services being provided, a causal allocator should be used to share those costs between services. For example, if costs increase with the number of megalitres delivered, the causal allocator could be the number of megalitres delivered. Where shared costs are immaterial

or a causal relationship cannot be established without undue cost and effort, the operator may use a non-causal allocator to allocate costs between services.

A Part 6 operator's methodology for allocating costs to different services must be sufficiently detailed so that the regulator could replicate the operator's methodology. In particular, the operator should include in its Part 6 application information:

- For directly attributable costs:
 - the nature of each cost item
 - the category of service to which the cost item is to be directly attributed
 - the characteristics of the cost item that associate it uniquely with a particular category of service in order to make it a directly attributable cost.
- For shared costs that are allocated between services using a causal allocator:
 - the nature of each cost item
 - the categories of service to which the cost items are being attributed
 - the nature of the causal allocator(s) being used to allocate costs
 - the reasons for selecting the allocator(s) and an explanation of why it is the most appropriate allocator for the cost item
 - details of the numeric quantity or percentage of the allocator(s) including how these have been determined
 - whether the numeric quantity or percentage of the allocator(s) is likely to remain constant over time.
- For shared costs that are allocated between services using a non-causal allocator:
 - the basis of allocation
 - the reason for that basis
 - an explanation of why the shared cost is immaterial or why no causal relationship could be established without undue cost and effort
 - the numeric quantity or percentage of the non-causal allocator applied to each category of service and in total.

In allocating costs between various categories of services, the same cost is not to be allocated more than once. Namely:

- the same cost may not be treated as both a direct cost and a shared cost
- a direct cost may only be attributed once to a single category of service
- the allocation of a shared cost must not exceed more than 100 per cent of the cost.

An operator is not locked into using particular types of charges and tariff structures (see section 3.11). However, transparency around how costs are allocated between different activities will assist the regulator in assessing:

- the efficiency and prudence of the cost base of the operator
- the extent to which the proposed charges and tariff structures recover the underlying costs of providing infrastructure services.

Charges are to be approved or determined on the basis of a cost allocation methodology that:

- identifies which costs arise from providing infrastructure services (to which regulated charges apply) and which costs arise from other activities undertaken by the operator
- attributes direct costs to the service to which they relate and not more than once to any category of service
- uses an appropriate allocator when a causal allocator for shared costs can be identified
- only uses a non-causal allocator for shared costs where those costs are immaterial or no causal relationship could be established without undue cost and effort
- allocates shared costs such that the full amount of those costs, no more or no less, is allocated to the services to which it relates.

The same cost must not be allocated more than once in any instance.

3.10 Form of price control

In general the forms of price control available to a regulator include price caps and revenue caps, although regulators often adopt approaches that utilise both elements of price and revenue caps. This is known as a hybrid approach.

Under a price cap approach, a regulator would determine the maximum charges an operator could levy. This may be done in reference to individual tariffs or a 'basket' of tariffs. Under a price cap the regulator typically would regulate charges to increase by a fixed percentage in each regulatory year.

Under a revenue cap approach a regulator would determine the maximum amount of revenue while the operator would remain responsible for determining prices in accordance with the cap. Therefore if the operator under-recovered in any one year, prices could be raised in subsequent years to recover this shortfall. If the operator over-recovered in any one year, prices would have to be reduced in subsequent years to ensure the revenue cap was not exceeded.

In theory, under a price cap, an operator would have a strong incentive to determine a tariff structure that aligned with the costs of its business. Otherwise where tariff structures

deviate from cost structures, a business would face increased revenue risks. Under a price cap, it would be possible for a regulator to determine relatively stable prices.

On the other hand under a revenue cap a business would have greater flexibility to offer alternative tariff structures as it would be subject greater protection against revenue risks. However, under this form of price control, customers would be at risk of greater price instability as operators could change prices over time to address revenue shortfalls or windfalls that occurred in the past.

Therefore, the decision in applying a form of price control will largely reflect a decision about achieving revenue stability for the operator and price stability for customers. The ACCC considers that the regulator will be in the best position to decide on how to make this trade-off between different objectives. In making this decision the regulator may choose to seek input from the regulated business.

A regulator may apply any form of price control – subject to meeting the requirements of the Water Charge (Infrastructure Rules) 2010.

3.11 Tariff structures

Given the multitude of supply scenarios across the Basin, it is neither practical nor desirable to prescribe particular tariff structures for different types of infrastructure services. Nevertheless, in approving or determining regulated charges, the regulator must have regard to the Basin water charging objectives and principles.

For example, charges must promote the economically efficient use of water infrastructure assets. In practice, this can be best achieved where the fixed and variable components of a charge recover the fixed and variable costs of providing services.

Charges must also be sufficient to ensure that the required infrastructure services continue to be efficiently delivered. That is, charges must be designed so that businesses earn a sufficient revenue stream in order to meet their regulatory, legal and other obligations.

It will also be important that customers can readily understand the tariffs they are likely to face and the amount they would pay under different scenarios. Therefore charges should be clear to customers and promote pricing transparency.

Tariff structures should:

- promote the economically efficient use of water infrastructure assets
- ensure sufficient revenue streams to allow efficient delivery of the required services
- give effect to the principles of user pays in respect of water storage and delivery in irrigation systems
- achieve pricing transparency
- facilitate efficient water use and efficient functioning of water markets.

3.12 Revenue from termination fees

Termination fees are levied on customers who wish to terminate their right of access to the operator's irrigation network. The Water Charge (Termination Fees) Rules 2009 caps the maximum termination fee that can be imposed by an operator at 10 times the irrigator's total network access charge payable to the operator in a financial year.³⁸

The rationale for levying termination fees is to address the fact that operators face ongoing costs for maintaining irrigation infrastructure. Many of the costs associated with maintaining the viable use of irrigation infrastructure are fixed costs – they are incurred by the operator regardless of whether or not an irrigator chooses to terminate its access.

Where termination fees are not charged to terminating irrigators, irrigation infrastructure charges for remaining customers are likely to rise. This is because the fixed cost of operating and maintaining the network would be shared between less entitlements of access to that network. Therefore, remaining irrigators would expect that any termination fee revenue already collected by an irrigation infrastructure operator is used to contribute to the ongoing costs of operating and maintaining the network. This would in-turn help to reduce any upward pressure on irrigation charges. A regulator under the WCIR has a role in ensuring this occurs.

There are various mechanisms by which termination fee revenue could be reflected in regulated charges.

For instance one method would be to treat termination fees as a customer contribution for the roll forward of the RAB. This would be done by recording termination fee revenue within the pricing model as negative capital expenditure with a time period for returning the revenue to customers. When capital expenditure is positive, customers pay for the expenditure through a higher RAB and a higher depreciation allowance until the asset life is exhausted. By recording the revenue as negative capital expenditure customers would

38 Water Charge (Termination Fees) Rules 2009 – explanatory statement

receive the benefits of the revenue through a lower RAB and a lower depreciation allowance until the revenue has been fully returned to customers.

Alternatively, the operator could operate a hypothetical ‘termination fee revenue bank’ that would record termination fee as it was received by the operator, a provision for interest earned on the revenue, and record when the revenue is used to reduce the revenue that would otherwise be required from regulated charges. In approving or determining revenue from regulated charges the regulator would be responsible for:

- approving or determining how revenue would be used from the ‘bank’ to reduce the revenue from regulated charges during the regulatory period
- approving or determining an appropriate interest rate on the revenue.

The regulator has flexibility in deciding which mechanism is appropriate. However, whatever mechanism chosen by the regulator it must be transparent and promote price stability.

The regulator must take into account the revenue already received by the operator from termination fees when determining the required revenue from regulated charges in the forthcoming regulatory period.

The method for addressing revenue from termination fees must be transparent to customers and promote price stability.

3.13 Demand or consumption forecasts

As part of their application under Division 2 of Part 6, Part 6 operators will need to provide information on their methodology for estimating demand/consumption forecasts. In particular, under Schedule 1, the operator will be required to provide data on:

- forecast and actual demand or consumption
- a description of the methodology used to forecast demand or consumption
- assumptions on which the forecasts are based
- consistency with historical data.

This information is to be provided for each year of the relevant regulatory periods (the regulatory period that is set to expire the following regulatory period).

In addition, as part of the annual review of charges (under Division 3 of Part 6), Part 6 operators will be required to submit additional information on their demand or consumption forecasts. In particular, they will have to submit information on:

- forecast demand for, or consumption of, infrastructure services for the year to which the application relates
- estimated demand or consumption during the current year
- how the forecast and estimate were calculated.

Demand/consumption forecasts are important because the charges necessary for operators to meet their revenue requirement depend on the forecast demand for the operator's services. Hence, any overestimate of demand could result in a revenue shortfall for the regulator and any underestimate could result in higher than necessary charges being levied on customers.

There are a number of approaches to demand/consumption forecasting that have been used in the rural water sector. These include utilising actual sales and/or extraction data, the Integrated Quantity and Quality Model and adopting a time-series approach.

In assessing a Part 6 operator's demand or consumption forecasts the regulator should apply the following criteria:

- Have the forecasts been developed using appropriate forecasting methodologies?
- Are the forecasts based on reasonable assumptions about the key drivers of demand, including:
 - supply restrictions
 - environmental conditions including inflows and the availability of water
 - commodities, including the treatment of water as a derived demand
 - any elasticity assumptions
 - demographic impacts, where appropriate.
- Do the forecasts utilise the best available information, including historical data that can identify trends in demand?
- Do the forecasts take account of current demand and economic conditions?

The regulator may engage an independent consultant to undertake this analysis where that consultant has experience in assessing demand or consumption forecasts for rural water businesses. Any consultant report should be made public, subject to confidentiality.

An assessment of a Part 6 operator's demand or consumption forecasts is to involve an assessment of whether the demand or consumption forecasts:

- are based on appropriate forecasting methodology
- are based on reasonable assumptions about the key drivers of demand, including:
 - supply restrictions
 - environmental conditions, including inflows and the availability of water
 - commodities, including the treatment of water as a derived demand

- any elasticity assumptions
- demographic impacts, where appropriate.
- utilise the best available information, including historical data that can identify trends in demand
- take account of current demand and economic conditions.

The regulator may engage an independent consultant to assist in determining the above. All reports from consultants should be made public, subject to confidentiality.

3.14 Customer consultation

In a pricing application an operator must provide an overview of how the business has consulted with its customers. It is expected that in seeking input from customers an operator would consult on issues of significance to its customer base. This is likely to include the trade-off between pricing and service outcomes, major investment decisions, significant maintenance works, and proposed tariffs.

There are a number of forms that consultation can take and the ACCC would expect businesses to use a mix of consultation approaches to provide customers with sufficient opportunities to be involved in the process.

Options for customer consultation include:

- market research
- satisfaction surveys
- willingness to pay surveys
- customer committees
- meeting with interest and community groups
- customer focus groups
- meetings with large customers
- project specific consultation with customers and local community groups
- inviting customer comment on proposals
- public meetings, information sessions and workshops
- newsletters and media releases.

While the WCIR do not specify the consultation approaches that an operator must use and when they are to be used, the regulator must have regard to the consultation that has been undertaken by an operator. For instance, where a regulator deems consultation to be insufficient or unsatisfactory it may influence the regulator's views on whether proposed expenditure is prudent or efficient.

The regulator must have regard to consultation undertaken by an operator in approving or determining regulated charges.

4 Process under Part 7

This chapter and the following chapter deal with the processes and principles to be followed in undertaking price approvals under Part 7 of the WCIR.

Part 7 applies to member owned operators that:

- provide services in relation to over 10 GL of entitlement within the MDB³⁹
- makes a distribution to all of its member customers

Operators that satisfy the above are called Part 7 operators.

The purpose of Part 7 is to ensure that Part 7 operators do not use member distributions as a means to discriminate against their non-member customers. As the boards of member owned operators are directly accountable to their member customers there are adequate incentives for these operators to pursue efficient pricing, investment and appropriate levels of service for their member customers.

However, there is a risk that member owned operators could set access charges at levels greater than those consistent with full cost recovery so as to return monopoly rents to their members in the form of a distribution. Hence Part 7 has been introduced as a limited price approval or determination process which is focussed on ensuring that all distributions are based on a rate of return which reflects the commercial risks faced by the operator. This is discussed in more detail below.

An overview of the Part 7 process is provided in figure 3 below.

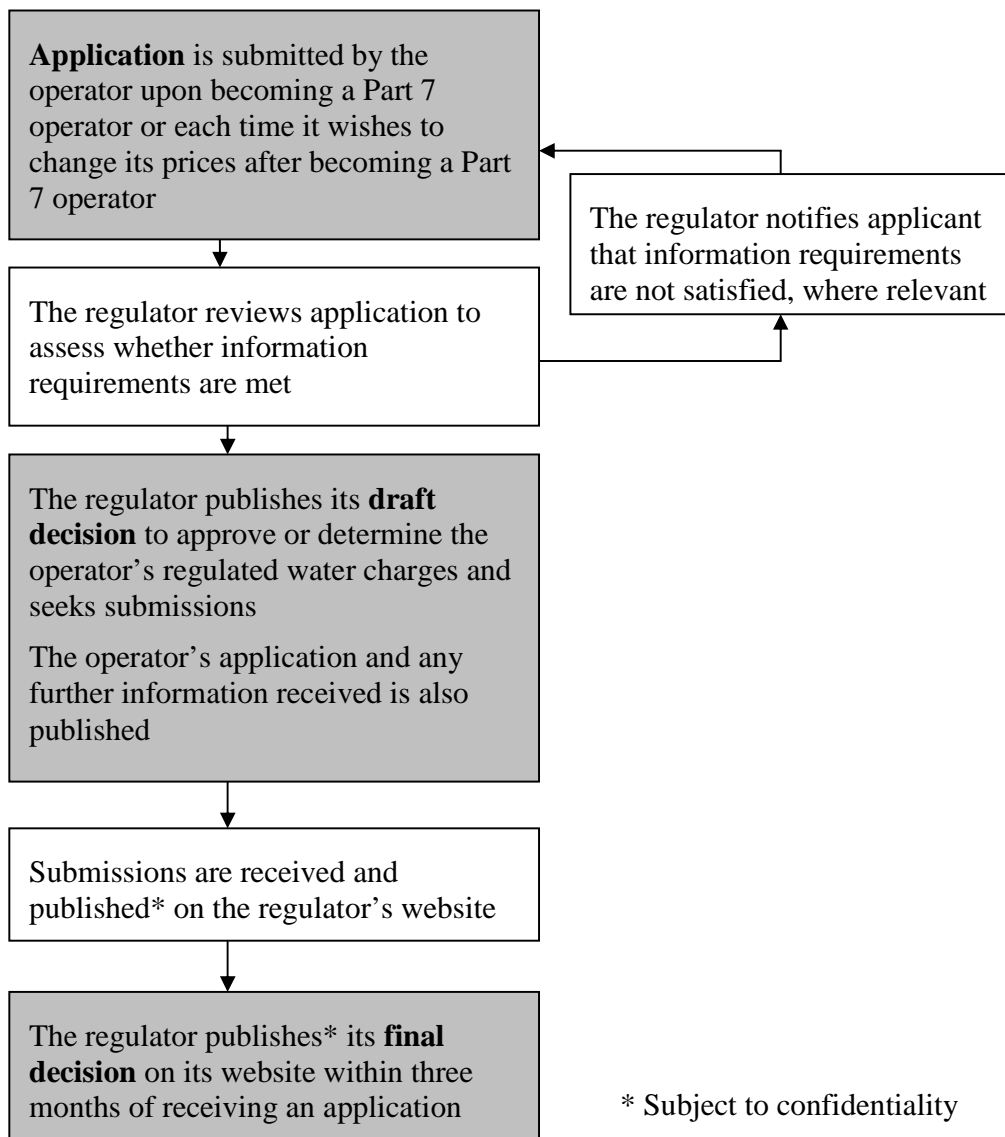
A Part 7 operator that makes a distribution to all of its member customers will have three months from this date to apply to have their charges approved or determined by the relevant regulator from the date.

Part 7 operators will be required to provide a pricing application to the relevant regulator for approval or determination:

- For new Part 7 operators this application should be provided to the regulator as soon as possible after becoming a Part 7 operator.
- For operators that have been through at least one approval or determination process under this Part, the application should be made to the regulator at least three months before the operator is planning to make changes to their charges.

39 Or within a state where that state has referred power to the Water Act in respect of all of non-urban water in its state.

Figure 3 Part 7 process



As required under Schedule 3, the application must include details of the operator's:

- Regulated charges including current charges, charges for which approval is being sought and the period for which those regulated charges will apply, where relevant.
- Asset base, including:
 - the nature and type of assets on which returns to investors have been, or will be, paid
 - the valuation of the assets on which returns to investors have been, or will be, paid
 - the method and assumptions used to calculate the valuation of those assets including estimated remaining economic lives and the basis for past and future depreciation
 - the financing of those assets showing the proportion contributed or financed by its members, the proportion of assets contributed or financed by government, the proportion financed through renewals annuity charges and the proportion financed through non-annuity charges and whether or not debt funding is used
 - the operator's method and assumptions used to calculate the return on those assets.
- Costs recovered through regulated charges, including:
 - total operating costs incurred in providing infrastructure services
 - depreciation of capital assets required for provision of infrastructure services
 - taxation in relation to the provision of infrastructure services
 - rate of return on investment in relation to the provision of infrastructure services.
- Demand or consumption forecasts, including:
 - the methodology used to determine that forecast demand or consumption
 - the assumptions on which the forecast is based.
- Distributions that the operator has made, or will make, to related customers including
 - the amount of the distribution pool and the source of the reserve or surplus from which the distribution is, or was, drawn
 - for each class of related customer, the methodology used to determine a related customer's share of the distribution pool
 - the timing of the distribution

- details of how the distribution is made to related customers
- any terms, conditions or obligations associated with the distribution.⁴⁰

After receiving a Part 7 operator's application, the regulator may request further information from the operator. Such information must be provided by the operator to the regulator within the period specified by the regulator in the request.

In making its decision the regulator must prepare a draft decision which either approves or determines the operator's regulated charges. The draft decision must be published on the regulator's website along with:

- a copy of the application
- a copy of any further information received in response to an information request
- an invitation for submissions to the regulator's draft decision before a date specified in the notice.

The regulator will then consider whether to approve or determine the Part 7 operator's proposed charges as required under rule 49:

- (2) The Regulator must not approve regulated charges set out in an application under this Part that include a return on investment unless the Regulator is satisfied that the return is commensurate with the commercial risks involved.
- (3) If the Regulator is not satisfied as to the matters referred to in subrule (2), the Regulator must determine such changes to the regulated charges as will enable the Regulator to be satisfied as to the matters referred to in that subrule.
- (4) In approving or determining regulated charges set out in an application under this Part, the Regulator may have regard to whether or not the regulated charges would contribute to achieving the Basin water charging objectives and principles set out in Schedule 2 of the Act.

Hence, a regulator must not approve an operator's proposed charges unless the regulator is satisfied that any rate of return included in the charges is commensurate with the commercial risks involved. In approving or determining an operator's charges the regulator may also consider whether the charges would contribute to achieving the Basin water charging objectives and principles.

In particular, this will require the regulator to assess whether the operator has used an appropriate rate of return and whether the asset base upon which the rate of return is levied is also appropriate.

The regulator may take up to three months to approve or determine an operator's charges after receiving the operator's application. This three month period does not include any day or part day in which a request for further information remains unfulfilled. The regulator may extend this three month period if it provides a written notice to the relevant

40 Part 7 operators should refer to the ACCC's Tier 1 Guidelines for details of their information requirements under Part 7.

operator which explains why it has been unable to make a decision within the three months. The extension may only be for one month at a time.

When the regulator has made its final decision, it must give written notice of the decision to the relevant operator and publish its decision on its website.

5 The Part 7 pricing principles

This chapter presents the pricing principles to be applied by the relevant regulator in applying the Part 7 rules.

Given the criteria under rule 49, there are two key pricing inputs that the regulator will need to scrutinise in approving or determining a Part 7 operator's regulated charges:

- the RAB
- the rate of return used for pricing purposes.

5.1 Valuation of the initial RAB

As mentioned in chapter 3, the RAB is the asset base upon which an operator is able to earn a rate of return. It represents the value of all assets that have been funded directly by the operator (through explicit member contributions or debt financing) and which are required for the provision of infrastructure services for which regulated charges are payable.

Unlike Part 6 operators, no Part 7 operators (or potential Part 7 operators) have yet had their RAB set by an agency of a state under a law of the state. Hence, initial RAB values will need to be calculated as part of the first Part 7 approval or determination process undertaken for each Part 7 operator.

In setting initial RAB values there are a number of categories of assets that must be excluded from the valuation. These include:

- Assets that are gifted to the operator—for example, assets that have been gifted by government. While legal ownership might rest with the operator (or its members) there is no financial or equity requirement for the operator (or its members) to earn a return on its value or an allowance to compensate for depreciation of the asset.
- Assets funded through a renewals annuity that is contributed by all customers. As these assets were funded outright by all customers, these assets should not also be used to provide a return to the operator or its members.
- Assets funded by all customers through a means other than a renewals annuity.

Hence, the first step in determining a Part 7 operator's RAB is to identify any explicit member contributions or debt financing by the operator that has been used to fund capital expenditure. Only these assets may be included in the RAB but should be adjusted to account for depreciation. In valuing these assets the regulator must use a recognised valuation methodology.

As the existing asset base of an operator is a sunk investment, a RAB valuation somewhere between the scrap value of the asset base and its replacement cost will be appropriate on efficiency grounds, having regard to the need to balance allocative efficiency objectives

and signals for efficient investment. However, in determining the initial RAB, the regulator must have regard to whether the resulting charges will contribute to achieving the Basin water charging objectives and principles. In particular, the resulting charges should avoid perverse or unintended pricing outcomes.

If the initial value of the RAB was to result in prices changing significantly from prior levels—that is, if it resulted in a price shock—this would be a perverse and unintended pricing outcome. Hence, the regulator should ensure that the initial RAB value does not result in price shocks.

The initial RAB is to be determined by applying a recognised valuation methodology. However, in determining which methodology to use, the regulator must ensure that the valuation methodology it uses to set the initial RAB does not result in price shocks. The RAB may only include assets funded by the operator and used to provide infrastructure services. The RAB may not include any assets that have been:

- gifted by government or another third party, with no expectation of a rate of return on those assets
- funded by all customers through a renewals annuity
- funded through other customer contributions.

5.2 Roll-forward of the RAB

The RAB value, once set, must not be subject to revaluation. Revaluation of an existing RAB can create uncertainty for the regulated business and its customers and can result in price shocks and windfall gains or losses to the business. Moreover, the periodic revaluation of sunk assets can result in regulated operators facing an unpredictable revenue stream which could deter efficient investment.

Once the opening RAB value has been set, the value of the RAB will need to be updated each time changes are to be made to an operator's regulated charges. In particular, the value of the RAB will be rolled forward based on the following calculation:

- starting with the RAB value approved or determined the last time charges were set under Part 7 of the rules
- adding all actual capital expenditure (net of customer or government contributions) undertaken since charges were last determined or approved under Part 7 where that capital expenditure was necessary to provide the required infrastructure services
- subtracting all regulatory depreciation since charges were last determined or approved under Part 7
- subtracting all actual revenue from asset disposals recovered since charges were last determined or approved under Part 7.

The RAB must be rolled forward in this way for each subsequent approval or determination under Part 7 following the initial approval or determination under Part 7.

A Part 7 operator's RAB is to be rolled forward by:

- starting with the RAB value approved or determined the last time charges were set under Part 7 of the rules
- adding all actual capital expenditure (net of customer or government contributions) undertaken since charges were last determined or approved under Part 7 where that capital expenditure was necessary to provide the required infrastructure services
- subtracting all regulatory depreciation since charges were last determined or approved under Part 7
- subtracting all actual revenue from asset disposals recovered since charges were last determined or approved under Part 7.

5.3 Rate of return

The same methodology as outlined in section 3.3 above must be used by the regulator in undertaking Part 7 approvals or determinations.

The cost of capital is to be calculated on the basis of a WACC determined in accordance with formula (1).

The cost of equity is to be estimated using the domestic CAPM based on the Officer model.

The risk free rate is to be based on the yield of a 10 year CGS bond, using an averaging period of between 10-40 business day period commencing as close as practically possible to the start of the regulatory period.

The cost of equity is to be calculated using a MRP of 6 per cent.

The cost of equity is to be calculated using an equity beta of 0.7.

The benchmark DRP is to be estimated on the basis of based on a benchmark gearing level of 60:40 debt to equity on the yields of BBB+ rated corporate bonds with 10 year maturity to match the term of the risk free rate.

5.4 Common approaches across Part 6 and Part 7

The remaining components of the pricing principles in respect of Part 7 approvals or determinations are common across Part 6 and Part 7. Generally, the following issues will be subject to greater scrutiny under Part 6 price approvals or determinations where the regulator will be more concerned with ensuring that the operator is operating efficiently than under Part 7 price approvals or determinations. These issues will only be considered under Part 7 to the extent that the proposed charges put forward by the Part 7 operator raise concerns in relation to the Basin water charging objectives and principles in Schedule 2 of the Water Act. Consequently, in undertaking Part 7 price approvals or determinations, the

regulator is to treat the following issues in the same manner as has been prescribed for Part 6:

- operating expenditure
- capital expenditure
- debt raising costs.
- depreciation
- forecast taxation
- renewals annuities
- cost allocation principles
- form of price control
- tariff structures
- treatment of termination fees
- demand or consumption forecasts.

6 Other issues

There are some pricing issues that are not explicitly prescribed under these pricing principles. These issues are either beyond the scope of the WCIR or matters in which the regulator will necessarily need to exercise its discretion on a case-by-case basis.

6.1 User shares—treatment of government contributions

As noted in chapter 2, Part 6 applies in respect of regulated charges levied by Part 6 operators. As such, a regulator operating under Part 6 of the rules may only approve or determine regulated charges as defined under the rules and the Water Act.

In approving or determining an operator's charges under Part 6 of the WCIR the regulator will be required to assess whether the operator's costs associated with providing infrastructure services are prudent and efficient. The regulator will then use these efficient costs to determine the operator's total revenue requirement. Any revenue received outside of charges (for example, from government or customer contributions or from asset sales) will then be subtracted from the total required revenue to determine the amount of revenue that charges need to recover. This will be used to determine regulated charges.

In this way, while the costs associated with an activity that is not funded through regulated charges will be assessed for prudence and efficiency, the source or amount of that funding will not be determined by the regulator. The regulator can only determine regulated charges.

Hence, any government (or other) contribution to a Part 6 operator's costs will be taken as an independent input to the price approval or determination process. This includes any share of costs relating to certain activities, full or part funding of certain infrastructure projects or assets, or lump sum contributions from government.

To the extent that a government is contributing to a Part 6 operator's costs this is independent of the Part 6 price approval or determination process. A government contribution is a government policy decision, rather than being determined by a regulator under the WCIR.

6.2 Carry forward of revenue shortfalls or windfalls from a state regulatory period

At the end of a regulatory period the actual revenue earned by an operator is unlikely to exactly equal the revenue forecast prior to the start of that period. In which case, without further adjustments, over the regulatory period, the business would earn less revenue than it anticipated or more revenue than it anticipated. This is likely to occur for a water infrastructure business where it levies charges that vary in water consumed or delivered.

In transitioning to the new regulatory framework under the WCIR, there may be shortfalls or windfalls arising from over-forecasting or under-forecasting in the previous state regulatory period. To ensure an infrastructure operator has sufficient revenue streams to deliver its infrastructure services in the first regulatory period under the WCIR, a regulator

can take these shortfall losses or windfall gains into account when determining revenue requirements for the first regulatory period under the WCIR. In assessing how to address the carry forward of revenue shortfalls or windfalls the regulator will need to consider whether it would contribute to achieving the Basin water charging objectives and principles in Schedule 2 of the Water Act.

It is noted that regulators have the flexibility to use a revenue cap - subject to meeting the requirements in the WCIR (see 3.10). Therefore, the regulator can take into account revenue shortfalls or windfalls from one regulatory period in the WCIR when determining the revenue requirement for a subsequent regulatory period in the WCIR.

6.3 Other mechanisms for managing revenue volatility

The WCIR and pricing principles provides regulators with flexibility on a range of different mechanisms that can be used to address potential revenue volatility. Measures available to a regulator include:

- choosing the form of price control (see section 3.10)
- setting tariff structures (see section 3.11)
- changing charges during a regulatory period to reflect changes in forecast demand or consumption (see section 2.2).

However, in some circumstances a regulator may wish to introduce other mechanisms to manage likely revenue volatility over the regulatory period. For instance, a regulator could estimate the opportunity costs associated with bearing the risk of revenue volatility over the period, or could estimate the likely cost of purchasing insurance to manage revenue volatility.

Any other mechanisms can also be applied by a regulator on a case by case basis, subject to meeting the requirements in the rules. This must include an assessment of whether the approach would contribute to achieving the Basin water charging objectives and principles under Schedule 2 of the Water Act.

6.4 Price stability

Under 92(1)(c) of the Water Act, the water charge rules are to contribute to achieving the Basin water charging objectives and principles. Further, the regulator is required to consider these objectives and principles in undertaking approvals or determinations under Parts 6 and may have regard to these objectives and principles in undertaking approvals or determinations under Part 7.

One of the Basin water charging objectives and principles is the efficient use of water and water related infrastructure. Price stability is important to encourage efficient water use and efficient investment in on-farm water infrastructure assets. Hence, the regulator has the ability to consider price stability in approving or determining charges under Part 6 or 7 of the WCIR. To do so is consistent with the Basin water charging objectives and principles.

In this way, the WCIR provide enough flexibility for a regulator to smooth price changes within a regulatory period. .

6.5 Efficiency incentive schemes

The regulatory framework should provide the business with the appropriate incentives to only commit such capital and operating expenditure as is necessary to provide the required services. To this end, the framework for approving determining charges under Part 6 contains built-in efficiency incentive mechanisms.

In undertaking an approval or determination, the regulator will (among other things) assess the operator's proposed capital expenditure (for the entire regulatory period in the case of Part 6) before that expenditure is undertaken. It will be an ex ante approval process whereby capital expenditure projects are effectively pre-approved by the regulator.

In this way, there will be a lag between the time when the expenditure is undertaken and the time when the RAB is updated for actual efficient capital expenditure. Charges in the period during which the expenditure is actually incurred will be set on the basis of the forecast capital expenditure that the regulator has pre-approved before the commencement of the regulatory period. Where the operator can deliver the capital project for less than the forecast cost of the project, the operator will be able to recover the difference between the forecast and actual capital expenditure through charges until the start of the next regulatory period (when the RAB is adjusted for actual expenditure).

At the start of the next regulatory period, the RAB will be adjusted by the actual amount of capital expenditure and, in this way, if the operator has been able to spend less than the forecast amount, the customers will also benefit through lower prices into the future (through a lower RAB).

Because operating expenditure is also assessed ex ante, similar incentives exist as for capital expenditure. Namely, if the operator is able to spend less than the forecast amount of operating expenditure, it will be able to recover through prices the difference between the actual and forecast operating expenditure. In this way, operators are faced with the incentive to spend less than the forecast level of operating expenditure.

Outside of the built-in efficiency incentive mechanisms discussed above, the regulator may choose to incorporate other incentive schemes into their regulatory framework provided that these are not inconsistent with the WCIR.

6.6 Timing assumptions of cash flows

The ACCC normally adopts a year-end assumption for operating expenditure and revenue cash flows. Accordingly, it is expected that expenditure and revenue all occur on the final day of each regulatory year; therefore no adjustments to cash flow are required for operating and revenue.

However, given that State regulators have adopted different timing assumptions in the past, the ACCC believes it is appropriate to allow the regulator full discretion in deciding an appropriate timing assumption of cash flows in their pricing models. Where a different timing assumption is adopted, it is expected that proper adjustments to opex and revenue will be made accordingly.

Where an alternative cash flow assumption is adopted, the ACCC believes it is then appropriate to allow an explicit allowance for working capital to account for potential

misalignment in expenditure and revenue. The regulator is given full discretion in determining the quantum of the working capital allowance so long it is fully transparent.

Appendix A - Issues raised by submissions

On 17 January 2011 the ACCC released a draft version of the pricing principles. In response the ACCC received submissions from the following parties:

- The Essential Services Commission of Victoria (ESC)
- Goulburn-Murray Water (GMW)
- The Independent Pricing and Regulatory Tribunal of New South Wales (IPART)
- Lower Murray Water (LMW)
- State Water.

This section discusses the main issues raised by stakeholders, and the ACCC's consideration of these issues.

A.1 Management of revenue volatility

Views raised in submissions

In response to the draft pricing principles, stakeholders questioned whether alternative mechanisms could also be applied to manage revenue volatility.

For instance ESC and GMW both questioned whether they could be allowed to apply a revenue cap under the pricing principles. The ESC emphasised that revenue caps and hybrid control systems had been used in the past at the request of rural businesses to help them deal with the variability of revenue and rainfall. Its view was that price caps do not have the same flexibility.

Fixed prices could lead to large under or over-recoveries of revenue. Given that the variability of rainfall and revenue cannot be controlled by water businesses, it is inappropriate to apply the incentive properties of a price cap regime to them. Providing businesses with the option of a revenue cap or hybrid cap has proven in practice to be the most prudent choice.⁴¹

GMW stated that:

Customers are used to and accept the current pricing arrangements for a rural water business (in Victoria). The current pricing method enables G-MW to manage risk jointly with customers, which ultimately arrives at a more stable price over time and customers only paying for the cost of the service.⁴²

Under the revenue cap approach in Victoria, water businesses have also been able to carry forward under-recovery of costs from previous regulatory periods. Therefore stakeholders also questioned whether this would also be allowed under the pricing principles.

⁴¹ ESC submission, p.2

⁴² GMW submission, p. 1

For instance LMW were concerned the flexibility to vary tariffs within a regulatory period would be 'lost' and also believe there should be a mechanism 'to enable water agencies to recoup any revenue shortfall moving into the new ACCC regime'.⁴³

A similar point was made by GMW:

The WCIR and Guidance Materials are currently silent on the ability to carry-over under recovered revenue between regulatory periods. This is a significant concern for G-MW as it has currently under recovered revenue of \$20m. These shortfalls have been due to significant supply constraints (during drought) and reduced demand (during flood)...GMW considers it appropriate to address this transitional issue in the WCIR or guidance materials, as significant losses of revenue will have an impact on regulated businesses.⁴⁴

IPART, on the other hand, questioned whether they could continue to apply the approach they have used to manage revenue volatility faced by State Water. IPART have used price caps to regulate State Water and have set tariffs so that approximately 60% revenue is recovered through usage charges. In the most recent determination of State Water's prices IPART added an additional building block to State Water's revenue requirement. This was designed to reflect the forecast holding costs that State Water will incur in borrowing funds in years of revenue shortfalls.⁴⁵

We have found middle ground by using a price structure which recovers less than 100% of costs from fixed charges, but, to partly compensate State Water for the risk of revenue volatility includes a revenue volatility allowance...The building block approach should...provide the capacity to include a revenue volatility allowance if warranted.⁴⁶

State Water also requested compensation through a revenue volatility allowance, but its first preference for obtaining compensation for revenue volatility would be through a higher WACC.

Given difficulties associated with quantifying such costs (i.e State Water cannot insure against volumetric risk), there is a strong argument for compensation through the WACC.⁴⁷

Their submission suggests that an equity beta of 1 is more appropriate for rural bulk water operators.

ACCC assessment

The pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules aim to contribute to achieving the Basin water charging objectives and principles set out in Schedule 2 of the Water Act.

To achieve the Basin water charging objectives and principles, amongst other things, a regulator will need to ensure that a business regulated under Part 6 of the WCIR has sufficient revenue to allow efficient delivery of the required services. In other words, regulated revenue streams must be based on costs assessed as prudent and efficient, and it

⁴³ LMW submission, p. 2

⁴⁴ GMW submission, p. 2

⁴⁵ IPART, Review of bulk water charges for State Water Corporation, June 2010, p. 57

⁴⁶ IPART submission, p. 5

⁴⁷ State Water submission, p. 16

must be likely from the charges levied by an operator that there will be enough revenue available to provide the infrastructure services.

There is a risk that a business will not have sufficient revenue to recover its costs where it imposes a charge structure that is misaligned with the underlying cost structure of the operations of its business. This might arise where the costs of operating a water business are largely fixed but a high proportion of revenue is to be recovered through charges that vary in water consumed or delivered.

The draft pricing principles outlined a price cap form of control. That is, in determining regulated water charges, the regulator would cap the maximum amount an operator could charge. Under this approach, to ensure an operator has sufficient revenue to deliver the required services, a relatively high percentage of revenue could be recovered through fixed charges.

The regulatory framework also allows for revenue risks to be addressed by requiring charges to be updated during a regulatory period to account for changes in demand or consumption forecasts. This approach recognises that operators may still wish to impose usage charges, and that it is difficult to predict water usage in advance for several years into the future.

Further, the regulatory framework allows for flexibility in choosing the methods for setting demand and consumption forecasts. For instance if the regulator was concerned that a particular demand or consumption estimate proposed by the regulator was not accurate, the regulator has flexibility to choose an alternative estimate.

In response to submissions the ACCC recognises that other mechanisms may also be appropriate to manage potential revenue volatility. This includes a revenue cap, whereby a regulator sets a maximum amount of revenue that can be earned through charges over several years. Accordingly, a regulator will be given the flexibility under the pricing principles (subject to meeting the requirements under the WCIR) to determine the form of price control. This is discussed in Section 3.10 of the pricing principles.

Other mechanisms would need to be assessed by a regulator on a case by case basis. For instance a regulator will also have the flexibility to apply any other mechanisms to address forecast revenue volatility where it considers that applying those mechanisms would contribute to achieving the Basin water charging objectives and principles in Schedule 2 of the Water Act. For instance, a regulator could apply a revenue volatility allowance subject to this assessment. The flexibility available to a regulator in addressing forecast revenue volatility is outlined in section 6.3.

The ACCC also recognises that there may be revenue shortfalls and windfalls from the current state regulatory period that a regulator may wish to consider when determining the revenue requirement for the first regulatory period under the WCIR. This is discussed in section 6.2.

In deciding whether carry-forward of windfalls or shortfalls would be appropriate, the regulator would also need to assess whether this would contribute to achieving the Basin water charging and objectives in Schedule 2 of the Water Act. For instance the regulator would need to assess whether in the absence of the roll-forward of shortfalls or windfalls,

an operator's revenue streams would be 'sufficient to allow efficient delivery of the required services' and 'give effect to the principle of user pays'.

However the ACCC considers that a change to the WACC is not an appropriate means for compensating an operator for bearing revenue volatility risk. The WACC is intended to provide a rate of return which is commensurate with the risk faced by a benchmark efficient service provider. This ensures that the firm under regulation is provided with adequate incentives and receives adequate returns for undertaking capital investments. The equity beta in the WACC only compensates an operator for bearing risk that is by nature systematic. That is, risk that a firm cannot efficiently address through other means.

Revenue volatility on the other hand mainly arises for water infrastructure operators because variable charges have been levied. This form of volatility can be addressed by altering the tariff structure or through other mechanisms available to the regulator. Increasing the WACC in response to such a tariff structure would lead to a WACC that is higher than would be demanded by a hypothetical benchmark efficient provider and therefore may provide too great an incentive to the regulated business to invest in capital expenditure.

A.2 Timing of annual review process

Views raised in submissions

Several submissions raised questions about the timing requirements of the annual review process.

For instance GMW were concerned that the timeframe would require lodgement of an application in the middle of the peak irrigation season and forecasts would be less accurate than if it were provided a few months later.

(T)he process defined in the guidance materials (should be) shortened, so that more timely and accurate information can be provided.⁴⁸

This was a similar point made by LMW.

The requirement to submit the annual review 5 months prior to the end of the period is excessive, particularly when most usage occurs between November and April.⁴⁹

State Water also noted the difficulty in providing accurate data at this stage of the irrigation season.

Irrigation water sales have traditionally continued into March and then levelled out from April to July. Such sales patterns mean it is difficult to predict current year and forecast extractions before March each year.⁵⁰

Views raised in submissions

The WCIR outlines timing requirements in relation to an approval or determination undertaken prior to the start of a regulatory period, reopening of an approval/determination

⁴⁸ GMW submission, p. 2

⁴⁹ LMW submission, p. 1

⁵⁰ State Water submission, p. 23

mid-period, and the annual review of charges. For instance in each year during a regulatory period (other than the final year) the operator must provide an application for the annual review of charges. The regulator must approve or determine those charges within 3 months of receiving the application. The timing obligations are summarised in Section 2 of this document.

However a regulator has some flexibility as to when to ask operators for an application for either an initial approval or determination or for the annual review of charges. For instance, a regulator may wish to take less time to approve or determine charges than it is allocated under the rules to approve or determine charges. In such a case, the regulator can ask for an application later than it may otherwise do. A regulator may seek input from the operator in deciding when it is appropriate for the operator to provide an application.

A.3 Revenue from termination fees

Views raised in submissions

The approach proposed by the ACCC in the draft pricing termination fees would have in effect required regulators to treat termination fee revenue as negative capital expenditure.

GMW raised a query about how this approach would work but did not express a view on whether they supported the approach.⁵¹

LMW were of the view that the approach proposed by the ACCC in the draft pricing principles would provide too great a revenue impact.

Instead they proposed that

The termination fee...should be applied on an annualised basis to the total revenue received and not deducted from the RAB.⁵²

ACCC assessment

The ACCC recognises that there are a number of ways in which termination fee revenue can be reflected in regulated revenues. Different approaches will lead to different impacts between different customers and across time and there are a number of ways to give effect to price stability and transparency. Given that these questions will be of interest to current customers, the ACCC considers it appropriate that customers be given full opportunity to provide feedback on these issues. Consequently the pricing principles now reflect higher level principles about how termination fees should be addressed rather than the mechanics of the approach. The principles include that the regulator must consider revenue from termination fees in determining regulated revenue and that the method for recovering revenue must be transparent and promote price stability.

The revised position will allow an operator to propose how to address termination fee revenue in their pricing application prior to the start of a regulatory period. It is expected that customers will be consulted prior to this submission. Customers will also have an

⁵¹ GMW submission, p. 3

⁵² LMW submission, p. 3

opportunity to provide feedback after a regulator makes a draft decision, and during any other consultation process the regulator conducts.

A.4 Customer consultation

Views raised in submissions

The ESC submitted that the draft pricing principles should include a requirement that the accredited regulator consider whether a water business has properly consulted with its customers about tariff structures.

Unlike some other regulated industries, rural water businesses have fewer customers, and consultation with them regarding tariff changes and transition strategies is a vital means of ensuring that efficiently-set tariffs are arrived at and that there is a proper and full consideration of tariffs and their impacts.⁵³

The ESC noted that in the past the ESC has rejected an application from a regulated business on the basis that proper consultation with customers had not been undertaken.

ACCC assessment

The WCIR ensure affected stakeholders will have a minimum level of input prior to a regulator's decision. For instance in providing a pricing application, the operator must provide detail on the consultation it has undertaken with its customers prior to submitting its application.

Prior to submitting a pricing application, the ACCC expects that operators would consult with customers on issues of significance. This is likely to include the trade-off between pricing and service outcomes, consideration major investment decisions and maintenance works, and proposed tariffs.

A regulator will need take the consultation into account when assessing the pricing application. This has been included in section 3.14 as a pricing principle. The inclusion of this principle intends to signal to the operator the importance of customer consultation. For instance where an operator has not undertaken consultation on major expenditure proposals, it would be difficult for a regulator to assess the relative merits of that proposal where it would materially impact on prices and/or service outcomes and for the regulator to approve such expenditure.

It is noted that the rules or pricing principles do not preclude a shareholder of a regulated business requiring particular consultation prior to the submission of a pricing application. Customers will also have the opportunity to provide feedback to the regulator on a draft decision.

A.5 WACC

Views raised in submissions

53 ESC submission, p. 6

State Water's submission noted its concerns around the value of the WACC citing that the WACC parameters under the pricing principles do not reflect the underlying commercial risk of rural water operators.

State Water is concerned that the draft pricing principles do not explicitly recognise the unique operating characteristics and business risk profile of the rural water industry. Rather, the WACC parameters are based on previously established principles for the metropolitan water and energy network sectors that benefit from stable and predictable cash flows. In contrast, rural water operators are exposed to significant volumetric risk.⁵⁴

State Water has highlighted that the impact of the ACCC's proposed WACC parameters as it stands will translate to a 150 basis point reduction in regulated returns compared with IPART's 2010 Bulk Water determination for State Water.⁵⁵

State Water also raised concerns around the form of WACC and would prefer to retain the real pre-tax WACC formula that IPART has previously adopted for State Water's price reviews.

The use of a post tax rate (or more importantly the use of an actual expected tax liability instead of a statutory tax rate) effectively translates to a zero tax rate for State Water due a tax office ruling which allows accelerated depreciation of most of State Water's capital expenditure. The accelerated depreciation will result in accumulated tax losses beyond the next determination period. The tax incentive promotes efficient investment in rural water infrastructure with flow on economic benefits to these areas.⁵⁶

State Water considers that by adopting a post-tax rate of return, it is effectively undermining State Water's initiatives undertaken to minimise tax liability since any tax savings will effectively be transferred to customers via a reduction in operating revenue.

State Water also noted that the benchmark gearing level implied in the pricing principles is well above the actual gearing level for rural water operators. State Water considers that the unique risk characteristics for rural water operators warrants a more conservative gearing assumption relative to the 60 per cent gearing level adopted for energy and metropolitan water businesses. State Water proposed that a gearing range of 30 per cent to 40 per cent more accurately represents the efficient capital structure for rural water businesses.⁵⁷

GMW on the other hand, noted that the current gearing ratio is set at the assumed default ratio of 60:40 debt to equity. GMW believes that as this does not recognise the highly geared equity to debt ratio of regulated businesses, it should be adjusted.⁵⁸

GMW has also noted that the WACC adopted by the ESC has been in real terms, while the ACCC has proposed to adopt a nominal WACC.

The ESC expressed concerns around the level of prescription to the setting of the WACC several years out from a regulatory review. The ESC states:

⁵⁴ State Water submission, p. 1-2

⁵⁵ Ibid, p. 1

⁵⁶ Ibid, p. 5

⁵⁷ Ibid, p. 18

⁵⁸ GMW submission, p. 3

It is obviously preferable to set WACC parameters based on data at the time of the regulatory review. When this does not happen, WACC values might not reflect the actual borrowing costs of a business when it plans its expenditure.⁵⁹

The ESC also stated that it would be better to maintain the parameters in the draft pricing principles as guidance, or set a range, and then review the parameters closer to the date of the price review.

IPART also expressed concerns that the draft pricing principles fixed the parameter to be used to determine the WACC.⁶⁰

ACCC assessment

The ACCC considers that the WACC parameters under the draft pricing principle are consistent with the rate of return for benchmark efficient infrastructure operators and is consistent with parameters adopted by Australian regulatory authorities in regulating monopoly businesses, including rural water businesses.

The ACCC believes volumetric risk is a business specific risk and therefore should not be addressed via the rate of return. The ACCC's views on how a regulator can respond to forecast revenue volatility is discussed in section A.1.

In regards to the form of WACC, the ACCC is of the view that a post-tax form is an appropriate methodology to determine a suitable rate of return for regulated businesses and is consistent with the approach generally favoured by the ACCC and the AER. The ACCC considers that it is not possible to justify on economic grounds the provision of an allowance for tax liability when it is not likely to be incurred by a business, as can occur if adopting a pre-tax form.⁶¹ The ACCC notes that by adopting the post tax form, forecast tax liability will be recovered through an explicit cash flow within the building block model. This will increase transparency, and provide an adequate avenue for regulated businesses to recover forecast tax liabilities.

However the ACCC notes that the choice between a nominal and real should not matter provided there is consistency in the parameter estimates and the cash flows. If there is consistency in the application then there should be little difference from using either form of WACC. All else being equal, the nominal WACC should provide a similar result to the real WACC. Therefore the ACCC considers that it is appropriate to allow accredited regulators the flexibility to choose a real or nominal WACC.

On debt to equity ratios the draft pricing principles proposed a benchmark ratio of 60:40. This assumption is consistent with the gearing ratio of an efficient benchmark business and is the gearing ratio generally adopted by regulatory practitioners. The ACCC notes that where any changes to the gearing ratio were made it would not be viewed in isolation from other WACC parameters. That is, if the gearing ratio decreased then cost of capital would

⁵⁹ ESC submission, p. 6-7

⁶⁰ IPART submission, p. 3

⁶¹ As is the case for State Water

be more heavily weighted towards equity.⁶² However, where the overall debt ratio decreases, equity holders will require a lower return as equity would be less risky. Therefore the ACCC would need to readjust the equity beta downwards.

The ACCC agrees with the views expressed by the ESC and IPART in regards to the pricing principles locking in the parameters for the WACC. As a result, the ACCC believes it is important to continue to review and update the pricing principles to reflect the most current information. The ACCC will undertake a comprehensive review of all pricing principles after 1 July 2014.

A.6 Timing assumptions of cash flows

Views raised in submissions

IPART's submission to the ACCC raised the idea of allowing an explicit working capital allowance in the cost building block. IPART has noted that differences in payment cycles from creditors and debtors will mean most businesses, at some time, will need to invest in working capital so that a business is able to meet its current liabilities. As a result they believe a working capital allowance should be included to allow businesses to meet the daily transactions engaged by a business and that regulatory working capital should consist of some current assets less some current liabilities.⁶³

ACCC assessment

Under IPART's pricing model, a mid-year assumption is made for both operating expenditure and revenue. Under this assumption, expenditure occurs evenly throughout the year; as a result cash flow misalignment may occur resulting in the need for working capital to be used to cover any expenditure that may occur during the year. In doing so it is expected that businesses would need to accommodate this by borrowing funds. Furthermore, as the business incurs a cost for borrowing funds, IPART also provides a return on working capital so that the business is adequately reimbursed for accruing extra borrowing costs.

While the ACCC has generally adopted a year-end assumption for operating expenditure and revenue, the ACCC recognises other regulators have adopted different timing assumptions. Therefore the ACCC consider it appropriate that regulators be allowed to adopt different timing assumptions in their pricing models. Accordingly, adjustments to operating expenditure and revenue may be required where timing assumptions differ from from a year-end assumption.

Where the regulator chooses to adopt an alternate timing assumption for cash flows it can allow a working capital allowance under the building block model. This is discussed in section 6.6.

⁶² This is because the proportion of debt in the WACC formula will have decreased and the equity portion will have increased. Since debt is a cheaper source of financing compared to equity the overall WACC, ceteris paribus, would therefore increase.

⁶³ IPART submission, p. 4-5

A.7 Depreciation

In its submission to the ACCC, IPART noted that the draft pricing principles limit the depreciation profile that the regulator is able to consider, as non-straight line depreciation can only be applied if it is requested by the operator. IPART has suggested that the pricing principles be modified to allow consideration of alternative depreciation methodologies at the discretion of the regulator or if requested by the operator.⁶⁴

Due to the steady state nature of assets in the rural water sector, straight-line depreciation is the generally the most appropriate methodology in allocating the cost of assets over time and also for promoting price stability in water charges.

However, if using different depreciation methodology, the full cost of assets can still be recovered. Therefore, the pricing principles also provide regulators with flexibility to adopt a different depreciation methods. Accordingly, section 3.5 of the pricing principles has been amended to reflect this change.

A.8 Additional issues

Other issues raised by stakeholders related to the following:

- the length of regulatory periods
- reopening provisions
- valuation of the opening RAB
- confidentiality provisions.

In part, some of the submissions on these issues reflected confusion as to the requirements imposed on regulators and operators through the WCIR, and any additional requirements or issues addressed by the pricing principles.

The ACCC has addressed these concerns in part by providing greater detail about the process requirements under the WCIR in this document, and outlining the flexibility that applies to all regulators. This is addressed in Section 2 of this document.

However, some issues could not be addressed as they related to the requirements specified in the WCIR. The ACCC notes that, before the WCIR took effect, they were the subject of consultation process both by the ACCC and the Minister.

The ACCC also notes that, in this version of the pricing principles, no value has been specified for gamma, in contrast to the draft pricing principles. Instead, gamma will be determined by the ACCC at a later time if businesses regulated under Part 6 or Part 7 are forecast to pay tax. The ACCC understands that this is unlikely for the foreseeable future so considers there is little benefit from putting forward a view in these pricing principles on what an appropriate value for gamma should be.

⁶⁴ IPART submission, p. 4

Appendix B – Pricing principles for Part 6 approvals or determinations

Valuation of the opening Regulatory Asset Base (RAB)

- If a Part 6 operator has had its RAB set by an agency of a state under a law of the state in the regulatory period preceding the commencement of the initial regulatory period under Part 6, this value must form the opening RAB value for the purposes of the initial approval or determination process under Part 6.
- Where a RAB value has not been previously set by an agency of a state under a law of the state, the RAB must be determined by applying a recognised valuation methodology. The RAB may only include assets used to provide infrastructure services and may not include any assets:
 - gifted by government or another third party, with no expectation of a rate of return on those assets
 - funded by customers through charges, a renewals annuity or otherwise
 - funded through other customer contributions.
- The regulator must ensure that the initial RAB value does not result in price shocks.

Roll forward of the RAB

- The RAB must be rolled forward as per Schedule 2 of the rules.

Rate of return

- The cost of capital is to be calculated on the basis of a WACC determined in accordance with the following formula:

$$WACC = k_e \frac{E}{V} + k_d \frac{D}{V}$$

- The cost of equity is to be estimated using the domestic CAPM based on the Officer model.
- The cost of equity is to be calculated using a MRP of 6 per cent.
- The risk free rate is to be based on the yield of a 10 year CGS bond, using an averaging period of between 10-40 business day period commencing as close as practically possible to the start of the regulatory period.
- The cost of equity is to be calculated using an equity beta of 0.7.

- The benchmark DRP is to be estimated on the basis of a benchmark gearing level of 60:40 debt to equity on the yields of BBB+ rated corporate bonds with 10 year maturity.

Assessment of operating expenditure

- In making an assessment of the prudent and efficient operating expenditure for the next regulatory period, the regulator must assess:
 - the prudence and efficiency of operating expenditure in the previous regulatory period
 - the reasons and evidence supporting changes to service standards in the next regulatory period
 - the reasons and evidence supporting changes to operating expenditure in the next regulatory period
 - reasonable productivity improvements in providing services over the next regulatory period.
- Where relevant, a regulator must compare and take into account operating expenditure of similar businesses.
- Forecasts must be based on reasonable assumptions of the efficient costs likely to be incurred in this period.

Assessment of capital expenditure

- In making an assessment of the prudent and efficient capital expenditure for the next regulatory period, the regulator must assess:
 - the prudence and efficiency of capital expenditure in the previous regulatory period (where relevant to proposed capital expenditure in the next regulatory period)
 - the reasons and evidence supporting the commencement of new major capital expenditure projects in the next regulatory period, including whether such projects are consistent with efficient long term expenditure on infrastructure services
 - the reasons and evidence supporting levels of capital expenditure in the next regulatory period
 - whether the timeframe for delivering the proposed capital expenditure program is reasonable, having regard to the operator's delivery of major projects in the past
 - whether the asset management and planning framework of the operator reflects best practice.
- Forecasts must be based on reasonable assumptions of the efficient costs likely to be incurred in this period.

- Subject to confidentiality, external review of an operator's proposed capital expenditure must be made public on the regulator's website.

Debt raising costs

- The regulator must treat any forecast debt raising costs as operating expenditure.

Depreciation

- Fixed assets should be depreciated using a straight line methodology. However, the regulator or the operator may adopt a different approach to depreciation where an operator can justify departure from this method or where it is appropriate for the regulator to do so. Where a different approach is used, the net present value to the business must be the same as under a straight line methodology.
- Depreciation for an asset must only be recovered once that asset is providing infrastructure services.

Taxation

- In estimating the annual taxation building block, the regulator must estimate the annual actual corporate income taxation to be paid by the operator less the imputation credits that would be received by a hypothetical private investor in the operator.
- In estimating the value of imputation credits the regulator must multiply the annual estimated corporate income tax bill of the operator by an imputation factor (γ).
- If required, the imputation factor will be determined by the ACCC.

Renewals annuities

- Where a renewals annuity is used, the regulator must be satisfied that it:
 - provides sufficient revenue to fund all required expenditure
 - reflects prudent and efficient expenditure forecasts
 - the discount rate used to calculate the annuity is reasonable
 - is set across a long term planning horizon beyond the period to which the application applies and that the length of the annuity is determined by the capital expenditure program so that all material expenditure is captured.

Cost allocation principles

- Charges are to be approved or determined on the basis of a cost allocation methodology that:

- identifies which costs arise from providing infrastructure services (to which regulated charges apply) and which costs arise from other activities undertaken by the operator
- attributes direct costs to the service to which they relate and not more than once to any category of service
- uses an appropriate allocator when a causal allocator for shared costs can be identified
- only uses a non-causal allocator for shared costs where those costs are immaterial or no causal relationship could be established without undue cost and effort
- allocates shared costs such that the full amount of those costs, no more or no less, is allocated to the services to which it relates.
- The same cost must not be allocated more than once in any instance.

Form of price control

- A regulator may apply any form of price control – subject to meeting the requirements of the Water Charge (Infrastructure) Rules 2010.

Tariff structures

- Tariff structures should:
 - promote the economically efficient use of water infrastructure assets
 - ensure sufficient revenue streams to allow efficient delivery of the required services
 - give effect to the principles of user pays in respect of water storage and delivery in irrigation systems
 - achieve pricing transparency
 - facilitate efficient water use and trade in water entitlements.

Revenue from termination fees

- The regulator must take into account the revenue already received by the operator from termination fees when determining the required revenue from regulated charges in the forthcoming regulatory period.
- The method for addressing revenue from termination fees must be transparent to customers and promote price stability.

Demand or consumption forecasts

- An assessment of a Part 6 operator's demand or consumption forecasts is to involve an assessment of whether the demand or consumption forecasts:
 - are based on appropriate forecasting methodology

- are based on reasonable assumptions about the key drivers of demand, including:
 - supply restrictions
 - environmental conditions, including inflows and the availability of water
 - commodities, including the treatment of water as a derived demand
 - any elasticity assumptions
 - demographic impacts, where appropriate.
- utilise the best available information, including historical data that can identify trends in demand
- take account of current demand and economic conditions.
- The regulator may engage an independent consultant to assist in determining the above. All reports from consultants should be made public, subject to confidentiality.

Customer consultation

- The regulator must have regard to consultation undertaken by an operator in approving or determining regulated charges.

Appendix C – Pricing principles for Part 7 approvals or determinations

Valuation of the opening Regulatory Asset Base (RAB)

- The initial RAB is to be determined by applying a recognised valuation methodology. However, in determining which methodology to use, the regulator must ensure that the valuation methodology it uses to set the initial RAB does not result in price shocks. The RAB may only include assets funded by the operator and used to provide infrastructure services. The RAB may not include any assets that have been:
 - gifted by government or another third party, with no expectation of a rate of return on those assets
 - funded by all customers through a renewals annuity
 - funded through other customer contributions.

Roll forward of the RAB

- A Part 7 operator's RAB is to be rolled forward by:
 - starting with the RAB value approved or determined the last time charges were set under Part 7 of the rules
 - adding all actual capital expenditure (net of customer or government contributions) undertaken since charges were last determined or approved under Part 7 where that capital expenditure was necessary to provide the required infrastructure services
 - subtracting all regulatory depreciation since charges were last determined or approved under Part 7

Rate of return

- The cost of capital is to be calculated on the basis of a WACC determined in accordance with the following formula:

$$WACC = k_e \frac{E}{V} + k_d \frac{D}{V}$$

- The cost of equity is to be estimated using the domestic CAPM based on the Officer model.
- The risk free rate is to be based on the yield of a 10 year CGS bond, using an averaging period of between 10-40 business day period commencing as close as practically possible to the start of the regulatory period.
- The cost of equity is to be calculated using a MRP of 6 per cent.

- The cost of equity is to be calculated using an equity beta of 0.7.
- The benchmark DRP is to be estimated on the basis of a benchmark gearing level of 60:40 debt to equity on the yields of BBB+ rated corporate bonds with 10 year maturity

Assessment of operating expenditure

- In making an assessment of the prudent and efficient operating expenditure for the next regulatory period, the regulator must assess:
 - the prudence and efficiency of operating expenditure in the previous regulatory period
 - the reasons and evidence supporting changes to service standards in the next regulatory period
 - the reasons and evidence supporting changes to operating expenditure in the next regulatory period
 - reasonable productivity improvements in providing services over the next regulatory period.
- Where relevant, a regulator must compare and take into account operating expenditure of similar businesses.
- Forecasts must be based on reasonable assumptions of the efficient costs likely to be incurred in this period.

Assessment of capital expenditure

- In making an assessment of the prudent and efficient capital expenditure for the next regulatory period, the regulator must assess:
 - the prudence and efficiency of capital expenditure in the previous regulatory period (where relevant to proposed capital expenditure in the next regulatory period)
 - the reasons and evidence supporting the commencement of new major capital expenditure projects in the next regulatory period, including whether such projects are consistent with efficient long term expenditure on infrastructure services.
 - the reasons and evidence supporting levels of capital expenditure in the next regulatory period
 - whether the timeframe for delivering the proposed capital expenditure program is reasonable, having regard to the operator's delivery of major projects in the past
 - whether the asset management and planning framework of the operator reflects best practice.

- Forecasts must be based on reasonable assumptions of the efficient costs likely to be incurred in this period.
- Subject to confidentiality, external review of an operator's proposed capital expenditure must be made public on the regulator's website.

Debt raising costs

- The regulator must treat any forecast debt raising costs as operating expenditure.

Depreciation

- Fixed assets should be depreciated using a straight line methodology. However, the regulator or the operator may adopt a different approach to depreciation where an operator can justify departure from this method or where it is appropriate for the regulator to do so. Where a different approach is used, the net present value to the business must be the same as under a straight line methodology.
- Depreciation for an asset must only be recovered once that asset is providing infrastructure services.

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- In estimating the annual taxation building block, the regulator must estimate the annual actual corporate income taxation to be paid by the operator less the imputation credits that would be received by a hypothetical private investor in the operator.
- In estimating the value of imputation credits the regulator must multiply the annual estimated corporate income tax bill of the operator by an imputation factor (γ).
- If required, the imputation factor will be determined by the ACCC.

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 - provides sufficient revenue to fund all required expenditure
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 - the discount rate used to calculate the annuity is reasonable
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 - attributes direct costs to the service to which they relate and not more than once to any category of service
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 - only uses a non-causal allocator for shared costs where those costs are immaterial or no causal relationship could be established without undue cost and effort
 - allocates shared costs such that the full amount of those costs, no more or no less, is allocated to the services to which it relates.
- The same cost must not be allocated more than once in any instance.

Form of price control

- A regulator may apply any form of price control – subject to meeting the requirements of the Water Charge Infrastructure Rules 2010.

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- Tariff structures should:
 - promote the economically efficient use of water infrastructure assets
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- An assessment of a Part 6 operator's demand or consumption forecasts is to involve an assessment of whether the demand or consumption forecasts:
 - are based on appropriate forecasting methodology
 - are based on reasonable assumptions about the key drivers of demand, including:
 - supply restrictions
 - environmental conditions, including inflows and the availability of water
 - commodities, including the treatment of water as a derived demand
 - any elasticity assumptions
 - demographic impacts, where appropriate.
 - utilise the best available information, including historical data that can identify trends in demand
 - take account of current demand and economic conditions.
- The regulator may engage an independent consultant to assist in determining the above. All reports from consultants should be made public, subject to confidentiality.