

Inquiry into the efficient costs and tariffs of the Water Corporation, Aqwest and Busselton Water

Issues Paper

December 2016

Economic Regulation Authority

WESTERN AUSTRALIA

Economic Regulation Authority

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About this water pricing inquiry

The Treasurer of Western Australia has asked the Economic Regulation Authority (**ERA**) to undertake an inquiry into the efficient costs and tariffs of the Water Corporation, Aqwest and Busselton Water. This is our fourth major review of Western Australia's three largest water corporations.

Our role, in conducting water inquiries, is to recommend revenues and tariffs for the water corporations to cover the efficient costs of providing water services to an appropriate standard. The terms of reference for this inquiry require us to recommend revenues and tariffs for the five year period starting from 1 July 2018.

Our assessment of the capital and operating costs the water corporations incur in providing water, wastewater and drainage services will inform our recommendations. The terms of reference for this inquiry also require us to assess the costs of meeting environmental and health regulations, and the Water Corporation's country schemes.

We will also recommend operating efficiency targets for the water corporations, and an approach for managing material variations in capital and operating expenditure over the five year period.

The purpose of this issues paper is to help interested parties make submissions to the inquiry. The issues paper explains the process we will follow and some of the key issues we will examine. We invite interested parties to make submissions on any matters of relevance to this inquiry.

Submissions are due by 4:00pm (WST) on Monday 23 January 2017. However, there will be a further opportunity to make a submission when we publish the draft report (in mid-2017). We may also hold workshops on key technical issues.

Submissions are preferred in electronic form and can be submitted to:

- (a) Online: www.erawa.com.au/consultation
- (b) Email address: publicsubmissions@erawa.com.au
- (c) Postal: PO Box 8469, PERTH BC WA 6849

We are required to provide our final report to the Treasurer by no later than 10 November 2017. The Treasurer will have 28 days to table the report in Parliament, after which a copy will be available from our website.

I encourage all interested parties to make submissions to this inquiry.

NICOLA CUSWORTH
CHAIR

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1 Introduction

The Treasurer of Western Australia asked the Economic Regulation Authority (**ERA**) on 21 October 2016 to undertake an inquiry into the efficient costs and tariffs of the Water Corporation, Aqwest and Busselton Water. The recommended tariffs, if adopted by the Government, would apply to the period beginning 1 July 2018 and ending 30 June 2023.

The inquiry has been referred to the ERA under section 32 of the *Economic Regulation Authority Act 2003*, which provides for the Treasurer to refer inquiries to the ERA on matters related to regulated industries (that is, water, gas, electricity and rail industries).

The ERA is to inquire into the efficient costs for the services of the Water Corporation, Aqwest and Busselton Water for the five year period commencing 2018-19.

The ERA must consider the following:

- the efficient costs of providing services, with a focus on:
 - cost effectiveness in the supply of services, including the services funded by operating subsidies;
 - resources necessary to meet the service standards;
 - operating efficiency targets appropriate for the growth scenarios expected over the regulatory period;
 - the impact of environmental and health regulations on efficient costs;
 - the Water Corporation's country schemes;
- a recommended approach for managing material variations in capital or operating expenditure that may be encountered over a five year regulatory period;
- the revenue requirement of each service provider for the five year period commencing 2018-19; and
- the efficient tariffs of each service provider for the five year period commencing 2018-19.

A copy of the terms of reference is provided in Appendix A of this issues paper.

1.1 Review process

Public consultation is a key part of this inquiry, and will help us to collect information, views and form our recommendations.

This issues paper is the first phase for public consultation. It is an open process to allow for anyone with an interest to make a submission to the inquiry. The issues paper explains the purpose of a water pricing inquiry, the methods we will use, and the issues we will examine. We invite interested parties to make submissions on any matters of relevance to this inquiry.

The ERA will also engage directly with stakeholders that are able to contribute specific or technical knowledge to the inquiry process. In particular, the ERA will:

- issue an information request to each of the three water corporations. This will set out the specific information that the ERA requires from the water corporations on their business operations, including their costs, key projects and infrastructure, and

decision-making processes. The ERA may publish the responses of the water corporations and seek feedback from the public; and

- engage with each of the agencies with responsibilities for applying environmental and health regulations to the water corporations. The ERA may issue specific information requests to better understand these regulations and how they are applied.

Other opportunities to contribute to the inquiry process will follow. This may include workshops on key technical and methodological issues. The ERA will publish notice of any workshops on its website.

The ERA will also engage with its Consumer Consultative Committee during the course of this inquiry. The Committee is composed of consumer and industry representatives and informs the ERA about issues that affect consumers.

Information from all of these processes will contribute to the development of a draft report. The ERA anticipates that it will publish the draft report in June 2017. The ERA will invite submissions in response to the draft report.

The ERA will prepare its final report after considering submissions to the draft report. The ERA is required to provide its final report to the Treasurer by no later than 10 November 2017. The Treasurer will have 28 days to table the report in Parliament, after which a copy will be available from our website.

1.2 About this issues paper

The remainder of this issues paper is set out as follows:

- *Chapter 2: Regulation of the water sector in Western Australia* – an overview of the regulatory arrangements applying to the three water corporations and the ERA’s role in water pricing.
- *Chapter 3: Estimating required revenues* – an overview of the ERA’s approach to estimating the required revenues of the water corporations, and the specific issues the ERA is required to consider in estimating efficient costs under the terms of reference.
- *Appendix A: Terms of Reference* – a copy of the terms of reference issued to the ERA by the Treasurer.
- *Appendix B: Building blocks* – an overview of the rate of return, and efficient capital and operating expenditure. Appendix B provides more detail on these areas, and material variations, than Chapter 3.

Submissions should be made by **4:00pm (WST) on Monday, 23 January 2017**, preferably in electronic form.

Online: www.erawa.com.au/consultation

Email address: publicsubmissions@erawa.com.au

Postal: PO Box 8469, PERTH BC WA 6849

CONFIDENTIALITY

In general, all submissions from interested parties will be treated as being in the public domain and placed on the ERA's website. Where an interested party wishes to make a submission in confidence, it should clearly indicate the parts of the submission for which confidentiality is claimed, and specify in reasonable detail the basis for the claim. Any claim of confidentiality will be considered in accordance with the provisions of the *Economic Regulation Act 2003*.

The publication of a submission on the ERA's website shall not be taken as indicating that the ERA has knowledge either actual or constructive of the contents of a particular submission and, in particular, whether the submission in whole or part contains information of a confidential nature and no duty of confidence will arise for the ERA.

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2 Regulation of the water sector in Western Australia

The purpose of this chapter is to provide some contextual information for this water pricing inquiry. The chapter begins with an overview of regulation of the water sector in Western Australia, and then describes the ERA's role in water pricing and the purpose of a pricing inquiry.

2.1 Overview of the water sector

A number of agencies and officials have roles in the water sector in Western Australia. This section outlines the role of each of these bodies, and the legislation that prescribes their functions and powers.

Three main bodies influence the performance of the water sector: the water corporations, the Government and the regulatory agencies. Legislation prescribes the roles and powers of the water corporations and regulatory agencies. Figure 1 provides an illustration of how these bodies and legislation interact.

2.1.1 State Government

The State Government is the owner of the Water Corporation, Aqwest and Busselton Water. The Government also determines the prices the water corporations charge for their services through the state budget process.

Within government, the Minister for Water is responsible for administering the *Water Services Act 2012* and the *Water Corporations Act 1995*. These acts provide the Minister with powers relating to the operation of the water sector and the ability to give directions to the water corporations.

The Department of Water reports to the Minister for Water, providing advice on water policy. The Department of Water's main function is planning and managing water resources in Western Australia. The Department of Water also has a regulatory role, which includes setting abstraction limits for individual water sources.

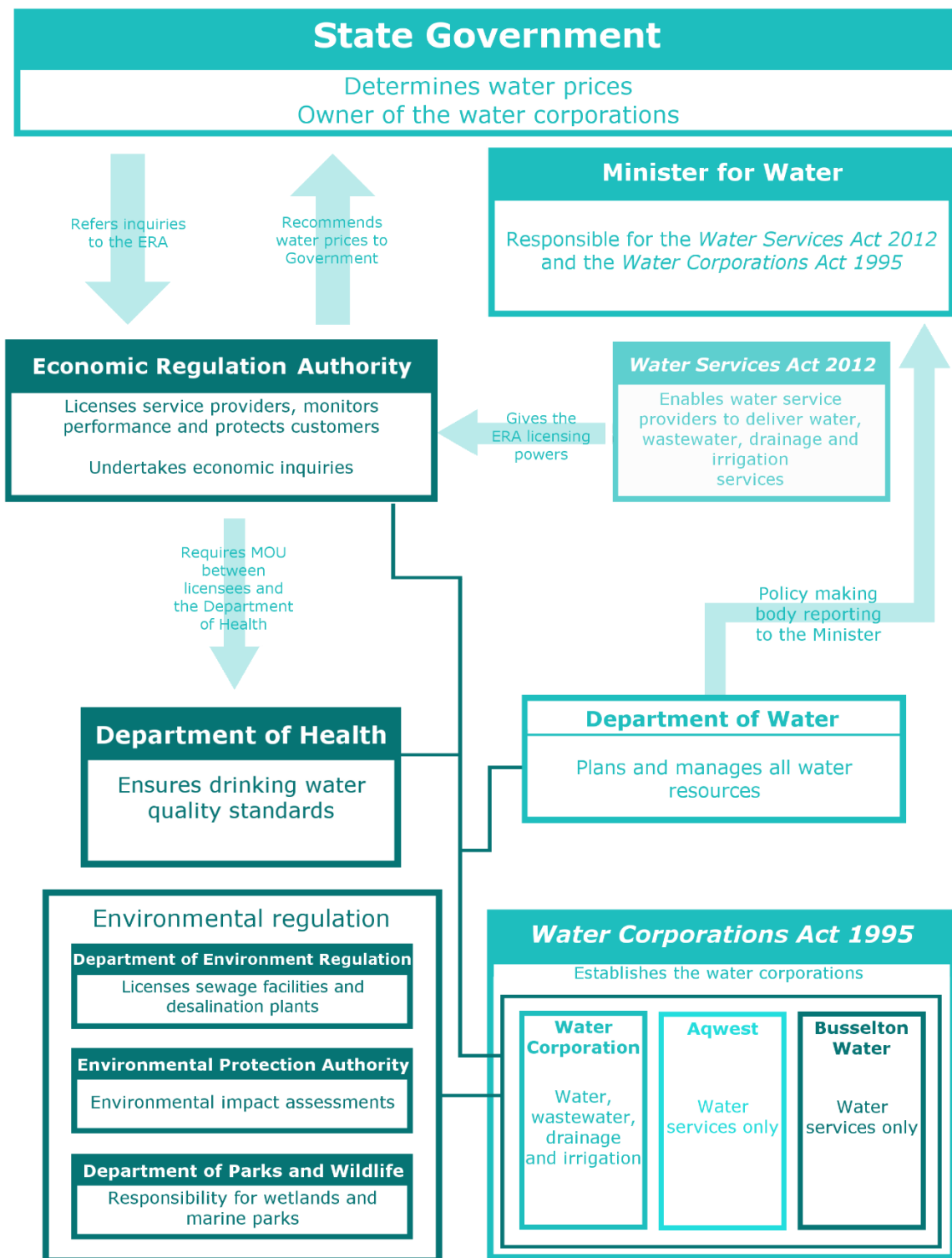
2.1.2 Regulatory agencies

Six agencies provide most of the oversight and regulation of the water corporations.

The ERA undertakes economic inquiries at the request of the Treasurer, including water pricing inquiries. The ERA's role in water pricing is described in more detail later in this chapter. The ERA also regulates and is responsible for licensing water service providers. This includes monitoring and reporting to the Minister for Water on the operation of the licensing scheme, and compliance by licensees with their licence. The ERA administers the water services code of conduct, which prescribes a minimum set of customer service standards, and approves licensees' financial hardship policies.

The Department of Water determines, manages and protects public drinking water sources. The Department of Water also imposes groundwater abstraction restrictions, which limit the volume of groundwater that businesses can use.

Figure 1 Overview of the water sector



The water service providers that the ERA licenses are required to enter into a Memorandum of Understanding with the Department of Health. The Department of Health requires licensees to demonstrate compliance with the Australian Drinking Water Guidelines through independent audits at agreed intervals. The Department of Health is responsible for approving sewerage treatment systems.

Three agencies have a role in environmental regulation of the water corporations. The Department of Environment Regulation's main role is to license the discharges from sewage facilities and desalination plants. The Environmental Protection Authority conducts environmental impact assessments, which consider the effect of the activities of the water corporations on the environment. The Department of Parks and Wildlife is responsible for the conservation of wetlands, and marine parks. Groundwater abstraction, desalination plants, or wastewater treatment and disposal can affect these environments.

2.1.3 Legislation

The *Water Corporations Act 1995* and the *Water Services Act 2012* are the legislation governing the water sector in Western Australia. These acts prescribe the functions and powers of individuals and agencies in the water sector.

The *Water Corporations Act 1995* establishes the Water Corporation, Aqwest and Busselton Water and their functions and powers. The amendment of the *Water Corporations Act 1995* established Aqwest and Busselton Water as corporatised entities. The water corporations are required to act on commercial principles, develop strategic development plans and statements of corporate intent. The water corporations report to the Minister for Water.

The *Water Services Act 2012* provides for the licensing of providers of water, wastewater, drainage and irrigation services. It stipulates requirements for licensing water service providers and gives the ERA the power to administer the licenses. The Act also requires licensees to:

- comply with the code of conduct made by the ERA;
- comply with codes of practice made by the Minister for Water;
- have an asset management system, and provide the ERA with an independent report on the effectiveness of the system at least once every two years; and
- provide the ERA with an independent report on their compliance with the licence at least once every two years.

The *Water Services Act 2012* gives the Minister for Water a number of powers, including to:

- make codes of practice on a variety matters (for example, the Minister may require water service providers to abide by certain service standards);
- grant licence exemptions to water service providers; and
- recommend the Governor cancel a licence if the licensee is in serious default.

2.1.4 The water corporations

The Water Corporation, Aqwest and Busselton Water provide water services to customers in Western Australia. The Water Corporation provides water (potable and non-potable), wastewater, drainage and irrigation services to Perth and the majority of regional Western Australia. Aqwest and Busselton Water provide potable water to the areas around Bunbury and Busselton respectively. The Water Corporation provides wastewater and drainage services to those areas.

The three water corporations are statutory corporations operating under the *Water Corporations Act 1995*. A board of directors, which is accountable to the Minister for Water,

govern the water corporations. The water corporations are required to pay a dividend to the State Government.

Other businesses also provide water services, mostly to regional areas of Western Australia. In total, the ERA licenses 21 water service providers (excluding the three water corporations). This inquiry will not consider the efficiency of these service providers in this inquiry.

Figure 2 provides an overview of the Water Corporation, Aqwest and Busselton Water, and the services they provide in Western Australia.

2.2 Our role in economic regulation

The ERA is the State's independent economic regulator. The ERA has a role in the economic regulation of the water, electricity, gas, and rail industries.

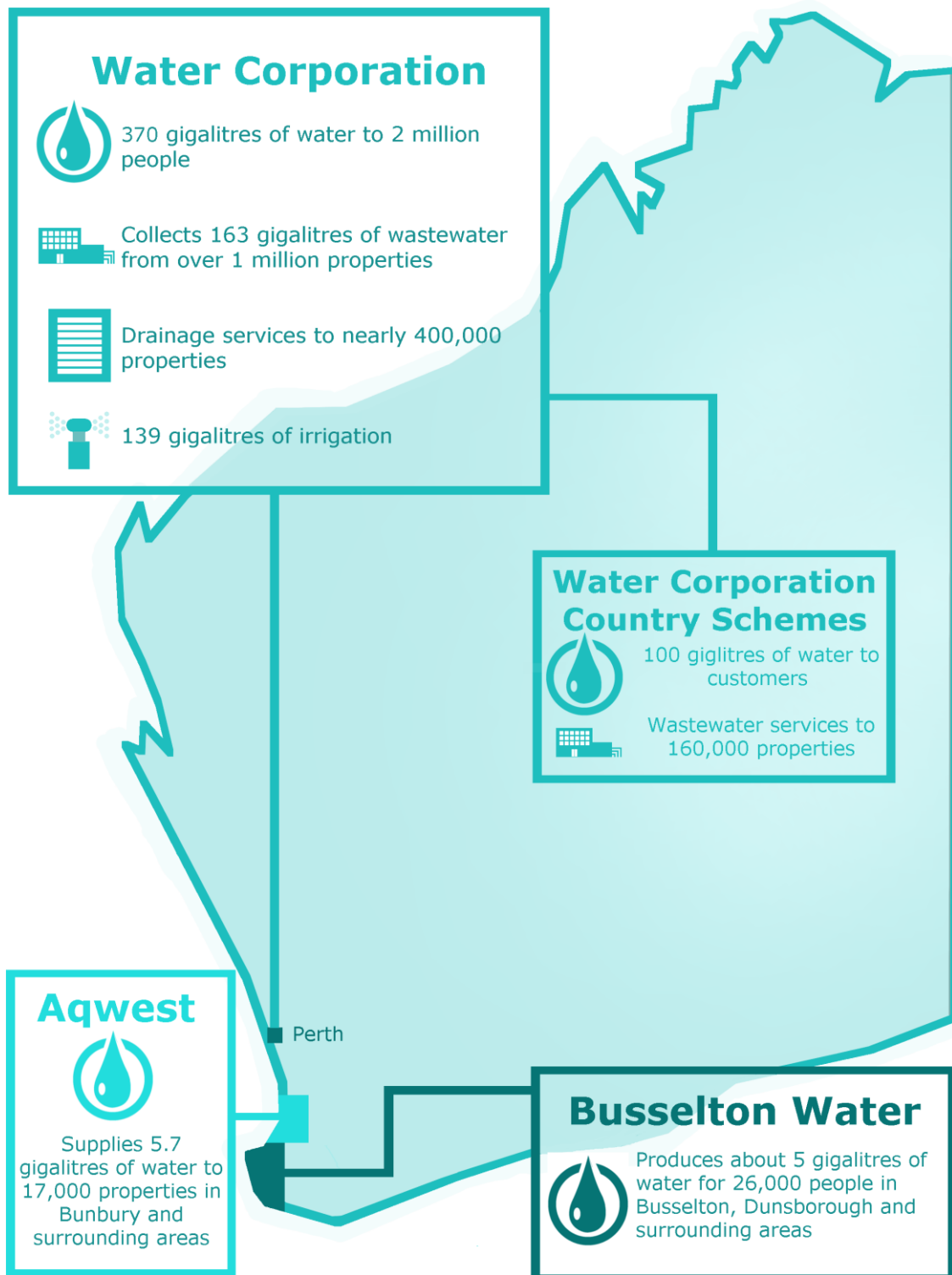
These industries provide essential services to households and businesses. Economic regulation of these industries is crucial because their customers are not able to choose their service provider. As natural monopolies (sole providers of services), these businesses do not face competition from other businesses. They have market power.

The aim of economic regulation is ensure that regulated businesses with market power operate efficiently, provide reliable services, and do not earn large profits. Effective economic regulation seeks to impose discipline on regulated businesses in the absence of a competitive market. This prevents them from charging more or less than it costs to provide an efficient service.

The ERA regulates to ensure the supply of water is reliable and customers have basic financial protections in place. We therefore license and monitor water service providers for compliance with their licence conditions.

The ERA also advises the State Government on water prices through inquiries such as this. The following section outlines the ERA's approach.

Figure 2 Overview of the water corporations¹



¹ Information sourced from: Water Corporation, *2016 Annual Report*, Perth, Government of Western Australia, 2016; Aqwest, *Annual report 2016*, Bunbury, Government of Western Australia, 2016; and Busselton Water, *Annual report 2015*, Busselton, Government of Western Australia, 2015.

2.2.1 Advising on water prices

In Western Australia, the State Government is responsible for setting the prices paid by households and businesses for water, wastewater and drainage services. The Treasurer gives the ERA terms of reference on a regular basis to inquire into and advise on water prices.

The ERA can undertake an inquiry only at the direction of the Treasurer. When undertaking an inquiry, the ERA recommends water prices to the Treasurer, taking into account the efficient costs of supplying water services. The Government decides whether to accept those recommendations and may implement different prices.

The ERA makes recommendations guided by principles set out in section 26 of the *Economic Regulation Authority Act 2003*. This section requires the ERA, in performing its functions, to have regard to:

- the need to promote regulatory outcomes that are in the public interest;
- the long term interests of consumers in relation to the price, quality and reliability of goods and services provided in relevant markets;
- the need to encourage investment in relevant markets;
- the legitimate business interests of investors and service providers in relevant markets;
- the need to promote competitive and fair market conduct;
- the need to prevent abuse of monopoly or market power; and
- the need to promote transparent decision-making processes that involve public consultation.

Generally, the ERA undertakes inquiries into the cost and price of water every four years. The last water pricing inquiry was completed in 2013. This is the fourth major water pricing inquiry conducted by the ERA.

Water price regulation in Western Australia is different to most other jurisdictions in Australia, and the regulation of the gas and electricity industries in Western Australia. In most states, the government does not determine water prices. Rather, the regulator has the power to determine prices and is able to implement other measures, such as service standards or efficiency mechanisms, to improve the performance of water businesses over time.

The ERA makes recommendations to the State Government. The Government considers the ERA's recommendations and decides the tariffs to be implemented.

2.2.2 What a water inquiry involves

The purpose of a water pricing inquiry is to establish the efficient costs of supplying water services. The ERA establishes the efficient costs of the services provided by each of the individual water corporations – the Water Corporation, Aqwest and Busselton Water. Costs are determined separately for water, wastewater, drainage and irrigation services.

The water corporations submit estimates of their efficient costs. Efficient costs are the costs incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering services.

The estimates of efficient costs take account of forecast demand for water services, and the service standards and other requirements to which the water corporations must adhere.

The role of the ERA is to assess the costs of the water corporations to ensure they are efficient. As part of this assessment, the ERA is able to engage technical engineering consultants to scrutinise the cost estimates of the water corporations.

The ERA then calculates tariffs for each water service and for each water corporation to recover the efficient costs. This process ensures that water prices reflect the efficient costs incurred by water corporations in providing services. The ERA generally also provides advice about the best way to structure tariffs to encourage customers to use water services efficiently.

In practical terms, the ERA's role is to recommend revenue such that the water corporations have the amount they need to achieve given service standards for water. This ensures that customers do not pay more than they need to for water services.

The next chapter describes the ERA's approach to calculating efficient costs and required revenue for the water corporations.

3 Estimating required revenues

The objective of this inquiry is to estimate the revenues each of the three water corporations require that cover the efficient capital and operating costs of providing water, wastewater and sewerage services. The ERA then calculates tariffs for each water service and for each water corporation to recover the efficient costs.

In determining the efficient costs of providing services, the terms of reference for this inquiry specifically require the ERA to focus on:

- resources necessary to meet service standards;
- operating efficiency targets appropriate for the growth scenarios expected over the regulatory period;
- the impact of environmental and health regulations on efficient costs; and
- the Water Corporation's country schemes.

The ERA is also required to provide advice on options for managing material variations in operating and capital expenditure between regulatory periods.

The purpose of this chapter is to provide a high-level description of the approach the ERA will apply in considering each component.

3.1 Regulatory approach for determining the revenue requirement

The ERA applies the 'building block' approach in determining the revenue requirement for utilities, including water, gas, and electricity. Under this approach, cost components (building blocks) are calculated individually and then aggregated to determine the total revenue requirement. The building block method is comprised of the following core components:

Revenue requirement = return on capital *plus*
return of capital (depreciation) *plus*
operating and maintenance costs *plus*
taxation

where the return on capital = rate of return *multiplied by*
the regulated asset base (which is rolled forward each year by adding capital expenditure and subtracting depreciation).

A return *on* capital is necessary to ensure that the business receives a return on its investment commensurate with the level of risk faced. The return *of* capital, also referred to as depreciation, allows the business to recover capital invested over the life of the investment. Operating and maintenance costs are recurrent costs required for the ongoing operation of the business. Appendix B provides some additional information on these building blocks.

The water corporations recover their costs through the tariffs they charge to customers. Once the revenue requirement is determined, the ERA will calculate tariffs for each of the services provided by the water corporations. The ERA uses the building block approach to balance revenues and costs of service across the review period, allowing the water corporations to recover their revenue requirement.

There is some flexibility in how the water corporations recover their revenue requirement. Tariffs can be structured in different ways. Currently, there are different tariff structures for residential and commercial customers and metropolitan and country customers. There are also different tariff structures for wastewater, drainage and irrigation services.

The ERA has not determined, in detail, how it will calculate each of the building blocks. The ERA may publish working papers and hold workshops on technical aspects of the building blocks or tariff structure during this inquiry.

3.2 Operating efficiency targets

The ERA is required to consider operating efficiency targets appropriate for the growth scenarios expected over the regulatory period. The aim of an efficiency target is to incentivise the water corporations to reduce their operating expenditures, while maintaining or improving service levels to customers. These savings in operating expenditures should result in lower tariffs charged to consumers.

Since 2005, the ERA has recommended that the Water Corporation's tariffs be set assuming the Water Corporation can reduce its real base operating costs per connection by 2.0 per cent per year.

The ERA has not recommended operating efficiency targets for Aqwest and Busselton Water in previous inquiries. Since the last inquiry, Aqwest and Busselton Water have become statutory corporations. The ERA will consider recommending operating efficiency targets for Aqwest and Busselton Water in this inquiry.

In conducting the 2016 inquiry, the ERA will need to determine an appropriate efficiency target for each of the water corporations. The ERA may again engage engineering consultants to assess the extent to which the water corporations can achieve efficiency savings.

The ERA may also benchmark each of the water corporations against their own past performance (to assess how their performance is changing over time), and against the performance of their peers in other Australian jurisdictions. The benchmarks used could include key measures such as operating costs for water and sewerage services per property, operating costs per customer, and operating costs per kilometre of pipeline.

Comparing benchmark costs between water service providers is not straightforward. Australia has only a small number of water service providers. Difficulties arise in determining whether differences in operating costs reflect efficiency or other factors (such as availability of water sources, geography, demography, hydrology, climate, technology and social factors).

3.3 Supply and demand projections

The cost of water is influenced by the effectiveness of strategies employed to keep demand and supply in balance (that is, demand management strategies and water source developments). This is because:

- different water sources have different costs per gigalitre; and
- additional investment in water sources will be required as demand for water increases.

Water corporations will generally draw from their lowest cost water sources first, and increase their reliance on higher cost water sources, or make additional investments in water sources (such as desalination plants), as demand for water increases. This increases the cost of providing water services. Reflecting this, the ERA considers forecasts of demand and supply of water in recommending tariffs.

The water corporations develop projections of forecast demand growth, which assist in forecasting capital and operating expenditure. Forecast demand growth is the product of projected population growth and projected per capita demand. The ERA will examine the demand projections of the water corporations to ensure the forecast expenditures are based on a reasonable estimate of future demand growth.

The Department of Water is responsible for regulating water use through water licences and setting sustainable limits on water resource allocations. The Department has worked with the three water corporations to develop 50 year plans that project scheme water demand, set water use efficiency targets and growth projections, and identify the timeframe and options to meet future water supply needs.²

3.4 Service standards

The ERA is required to consider whether the water corporations have the resources necessary to meet service standards. Required revenue should allow the water corporations, acting efficiently, to meet these service standards.

There are two main types of service standard. Infrastructure standards are focussed on ensuring that the water corporations maintain their assets in good working order to avoid disrupting and inconveniencing customers. Customer protection standards are focussed on ensuring that customers have basic financial protections in place. Environmental and health standards are discussed in the following section.

Section 26 of the *Water Services Act 2012* allows for the relevant minister to introduce codes of practice on service standards. The Government has not established service standards for water infrastructure. The water corporations are largely responsible for determining infrastructure service standards.

The ERA removed many of the infrastructure service standards from licences when it issued new licences under the *Water Services Act 2012* in November 2013.³ The ERA did retain some infrastructure standards at the request of the water corporations. These standards

² Department of Water, *Securing water resources for the South West*, Perth, Government of Western Australia, 2015, p. 1.

³ The ERA needed to issue new licences to the licensees because the *Water Services Act 2012* repealed and replaced the licensing provisions in the *Water Services Licensing Act 1995*.

set pressure and flow for potable water systems. Standards for drainage, irrigation and farmland areas water systems apply to the Water Corporation. The service standards are set out in Schedule 2 of the licences for each of the water corporations, which are available on the [licence holders'](#) section of the ERA website.

In conducting this inquiry, the ERA will need to decide the appropriate service standards on which to base its assessment of efficient costs. The ERA will apply the service standards adopted by the water corporations, unless there are reasons not to. The ERA will request information from the water corporations on the service standards they apply as part of its information request.

The Government has established minimum standards for customer protection under the *Water Services Code of Conduct (Customer Service Standards) 2013 (water code)*. The water code establishes minimum customer service standards for matters such as the connection and restriction of water services, billing and payments, assistance for customers in financial hardship, complaints, and the provision of information to customers.

The ERA commenced its first review of the water code in July 2016. The service standards established under the water code are expected to change as part of this review process. The ERA will base its cost estimates on the standards established in the new water code. The ERA will need to consider whether the water corporations will experience any one-off costs as a consequence of implementing the new standards.

The ERA published a [consultation paper](#) on changes to the water code, which contains a number of proposals to add new provisions and amend or delete existing provisions of the water code. The ERA intends to publish a draft report recommending amendments to the water code in March 2017. This will provide a further opportunity for public submissions. The ERA anticipates that the new water code will be implemented by July 2017.

3.5 Environmental and health regulations

The terms of reference require the ERA to consider the effect of environmental and health regulations on efficient costs.

Environmental and health regulations exist to ensure the water corporations do not act in a way that has a negative effect on the health of water customers, sustainability of water sources and the environment. Some activities undertaken by water corporations have the potential to harm peoples' health or the environment. As discussed in Chapter 2, the Departments of Water, Environment Regulation, Health, and Parks and Wildlife, and the Environmental Protection Authority are responsible for environmental and health regulations.

All of these agencies impose requirements on the water corporations. The water corporations face increased operating and capital expenditure to comply with environmental and health standards.

The ERA will conduct a high-level regulatory impact assessment of a sample of environmental and health regulations to assess whether the costs are proportionate to the benefits. The ERA intends to prioritise the regulations that are estimated to impose the highest costs on the water corporations. The ERA will not have the capacity to conduct a full regulatory impact assessment of all environmental and health regulations applied to the water corporations in this inquiry. However, it will seek to identify some areas for improvement, and areas for further analysis.

The ERA will engage with each of the regulatory agencies about the legislation, regulation and other legal instruments they administer that have implications for the costs incurred by the water corporations. This may include issuing requests to the regulatory agencies for information on the requirements imposed on the water corporations, how these requirements were determined, and any assessments of the relative costs and benefits of these requirements.

The ERA will also seek information from the water corporations on how they comply with the environmental and health regulations, the costs of compliance, and their views on whether there are more cost-effective compliance options.

3.6 Water Corporation country schemes

The Water Corporation operates discrete schemes that provide water and sewerage services to customers in regional and remote towns.⁴ These schemes operate in the south west, great southern, goldfields and agricultural, north-west and mid-west regions. In addition to the Water Corporation's country schemes, some small towns manage their own schemes, which are mainly wastewater schemes.

The Water Corporation receives an operating subsidy from the State Government to cover the difference in the cost of providing the service and the revenue it receives from customers in country towns. In 2015/16, the Water Corporation received an operating subsidy of \$390 million to provide water and wastewater services to country towns.⁵

In this inquiry, the ERA will consider the cost of providing water services through country schemes and recommend tariffs for country customers.

3.7 Managing material variations

The ERA is required to provide advice on options for managing material variations in operating and capital expenditure between regulatory periods.

Material variations can occur in operating and capital expenditures when outcomes vary from the assumptions used in forecasting the revenue requirement of the water corporations. For example, under-recovery of revenue can occur when a water service provider has sold less than was forecast at the time the tariffs were calculated. From time to time, water corporations may also incur unanticipated items of capital expenditure during a regulatory period .

The ERA intends to make recommendations about how to treat material variations in operating and capital expenditure. These may include recommendations about the level of variation that is material, processes for considering material variations and criteria for deciding whether variations may be recovered through regulated tariffs.

Appendix B provides more information on managing material variations.

⁴ A water supply scheme is a system of pipes and facilities that delivers water sourced from surface water (rivers and dams), groundwater (bores), desalination and recycling to customers. A sewerage scheme is a system of pipes and facilities that remove sewage from property and treats it so that it can be safely disposed.

⁵ Water Corporation, *2016 Annual Report*, Perth, Government of Western Australia, 2016, p. 11.

Appendix A Terms of Reference

INQUIRY INTO THE EFFICIENT COSTS AND TARIFFS OF THE WATER CORPORATION, AQWEST AND BUSSELTON WATER TERMS OF REFERENCE

I, Dr Michael Dennis Nahan, Treasurer and pursuant to section 32(1) of the Economic Regulation Authority Act 2003, request that the Economic Regulation Authority (the ERA) undertake an inquiry into the efficient costs and tariffs for the services of the Water Corporation, Aqwest and Busselton Water for the five year period commencing 2018-19.

The ERA must give consideration to the following:

- the efficient costs of providing services, with a focus on:
 - cost effectiveness in the supply of services, including the services funded by operating subsidies;
 - resources necessary to meet the service standards;
 - operating efficiency targets appropriate for the growth scenarios expected over the regulatory period;
 - the impact of environmental and health regulations on efficient costs;
 - the Water Corporation's country schemes;
- a recommended approach for managing material variations in capital or operating expenditure that may be encountered over a five year regulatory period;
- the revenue requirement of each service provider for the five year period commencing 2018-19; and
- the efficient tariffs of each service provider for the five year period commencing 2018-19.

The ERA will release an issues paper as soon as possible after receiving this terms of reference. The paper is to facilitate public consultation on the basis of invitations for written submissions from government, industry, and all other stakeholder groups, including the general community.

A draft report is to be made available for further public consultation on the basis of invitations for written submissions. The ERA will complete a final report, including recommendations, no later than the close of business on 10 November 2017.

**HON DR. MICHAEL DENNIS NAHAN MLA
TREASURER, MINISTER FOR ENERGY; CITIZENSHIP AND MULTICULTURAL
INTERESTS**

Appendix B Building blocks

The ERA applies the 'building block' approach in determining the revenue requirement for utilities including water, gas, and electricity. Under this approach, each cost component is calculated individually to determine the total revenue requirement. The building block method has the following core components:

Revenue requirement = return on capital *plus*
return of capital (depreciation) *plus*
operating and maintenance costs *plus*
taxation

where the return on capital = rate of return *multiplied by*
the regulated asset base (which is rolled forward each year by adding capital expenditure and subtracting depreciation).

This appendix provides a brief overview of the rate of return on capital and efficient capital and operating expenditure. The ERA has not yet determined the methodology it will apply to calculating each component. The ERA may produce working papers and conduct workshops on these technical issues throughout the inquiry.

Rate of return

The ERA recommends the rate of return that the water corporations can earn on their regulated asset base. This is one of the building blocks in determining the required revenue of each of the water corporations.

Investors have a right to expect a return on the value of their investments equal to the efficient opportunity cost of capital associated with the regulated activities. Assets are often financed by a combination of debt and equity. Thus, the returns from an asset must compensate both the providers of debt and the equity holders. For this reason, the term "Weighted Average Cost of Capital" is often used to refer to the average cost of debt and equity capital, weighted by a proportion of debt and equity to reflect the financing arrangements for the assets.

The rate of return for each water corporation should be based on the level of risk it faces, and its appropriate cost of debt. The ERA will recommend separate rates of return for the Water Corporation, Aqwest and Busselton Water.

The ERA has refined its approach to calculating the rate of return in its three recent gas access decisions for ATCO Gas Pty Ltd, Goldfields Gas Transmission Pty Ltd, and DBNGP Transmission Pty Ltd. The ERA intends to draw on the approach it used in these access arrangements, so as to apply a similar method to the water corporations. The ERA's approach to calculating the rate of return is explained in the gas access arrangement decisions, which are available on the ERA's website.

In previous water inquiries, the ERA has applied real pre-tax rates of return. Under the pre-tax approach, an allowance is included in the rate of return to compensate an organisation for taxation liabilities. The pre-tax rate of return provides sufficient revenue for an

organisation to provide a return to its equity investors, pay its debt financing costs, and meet its tax obligations.

There are some merits in setting regulatory rates of return on a post-tax basis, rather than a pre-tax basis. Post-tax modelling involves estimating the taxation liability of the regulated business as a separate building block of the revenue requirement, based on the taxation liability that would be incurred by a similar, well-managed, privately-owned business. It more accurately reflects actual tax liabilities, which are often lower than the statutory rate assumed when estimating rates of return on a pre-tax basis. Most other Australian regulators have adopted a post-tax approach to determining the rate of return.

The ERA will consider whether to apply a pre-tax or post-tax approach in this water inquiry.

Capital costs

Capital costs are the costs of buying and constructing new assets used to provide services. In order to assess the prudence of capital expenditure by the water corporations, the ERA will examine:

- Capital expenditure for the period 2012/13 to 2015/16 to determine if there were significant variations between actual expenditure and the capital expenditure forecasts at the time of the 2012 inquiry. The reasons for any differences will be examined to determine the appropriateness of past capital expenditure over this period.
- The processes used by the water corporations to procure and deliver capital projects, including corporate and strategic planning, assessment of alternative investment, business cases and approval processes for significant investments, and processes to ensure efficient project delivery.
- Planned expenditure to determine the appropriateness of capital expenditure forecasts. This will include consideration of the cost drivers of the investment program, and whether the investments are necessary to meet projected demand, are consistent with strategic planning objectives and minimum cost principles, and are determined through robust analysis.

In the 2012 inquiry, the ERA did not identify any major concerns with the Water Corporation or Aqwest's proposed capital expenditure. The ERA used the proposed forecast capital expenditure to set the revenue requirement. The ERA adjusted Busselton Water's forecast capital expenditure for 2012/13 because it deemed the proposed expansion of supply to be unnecessary.

Operating costs

Operating costs cover all expenditure on the overall operation of the water corporations and include water and wastewater treatment plant operation (for example, power, chemicals, labour, materials), plant and equipment, administration, salaries, contracted services, and overheads.

The ERA will use the 'base-step-trend' approach to forecast operating expenditure. This involves assessing the efficiency of one year of actual operating expenditure, excluding any one-off costs. These costs form the 'base' for each year of the forecast period. The base is adjusted for any specific new permanent changes in costs ('step' changes). The ERA

then determines the expected 'trend' in operating expenditures and applies this to the base year and step changes to forecast operating expenditures. The ERA will also assess the efficiency of any one-off costs in a particular year and add or subtract these costs from estimates developed under the 'base-step-trend' forecast approach.

In November 2013, Aqwest and Busselton Water were corporatised under the *Water Corporations Act 1995*. Corporatisation will have imposed additional obligations on Aqwest and Busselton Water, which could have implications for the efficient costs of these organisations.

Managing material variations

The ERA is required to provide advice on options for managing material variations in operating and capital expenditure between regulatory periods.

As a general principle, the ERA should assess an efficient level of revenue at the beginning of a regulatory period and the water corporations should aim to operate within that revenue allowance. Water corporations would still have discretion to vary their operating and capital expenditures within the revenue allowance by making trade-offs. This could mean, for example, choosing to prioritise one capital project over another as circumstances change.

In past inquiries, the ERA has adjusted the total revenue requirements of the water service providers to account for an under or over recovery of revenue that had eventuated from the previous pricing period.⁶ Prior to the 2012 inquiry, the ERA also updated tariffs through an annual review process that took into account revised forecasts of demand and efficient costs. (The ERA does annual tariff variations for the gas pipeline owners and the electricity network service providers that it regulates.)

In the 2012 inquiry, the ERA recommended the water services providers bear demand forecast risk as is the case in normal business practice. The ERA considered this approach ensures that water service providers have a greater incentive to ensure their demand forecasts are accurate. The ERA will re-examine this issue, consistent with the terms of reference for this inquiry.

Unexpected capital expenditures within a regulatory period could be subject to an ex-post review. Under this approach, if significant unexpected expenditure was incurred within a regulatory period, it would be reviewed by the ERA in the next price review and the cost passed on to consumers only if the ERA deemed the expenditure efficient.

Such a mechanism would be similar to those applied by the ERA to Western Power. The ERA can apply two tests when assessing new capital expenditure by Western Power: the regulatory test and the new facilities investment test.

The regulatory test is used to identify the best solution to the constraint faced by Western Power (which may be a capital solution, or other solution). The regulatory test is designed to ensure that Western Power has analysed appropriate options and selected the best possible solution to its problem. Western Power is required to demonstrate that a major capital expenditure meets the regulatory test before it can commit to the expenditure.

⁶ Under such an approach, any under recovered revenue from the previous period is added to the total revenue requirement for the current period. Similarly, any over recovery of revenue would be subtracted from the revenue requirement.

If a capital solution is determined to be the best solution, the ERA may apply a '[new facilities investment test](#)' to the capital expenditure. The purpose of the new facilities investment test is to determine the extent to which investment in a capital solution is efficient and can be added to the capital base and recovered through regulated tariffs. Any amount that does not meet the test would need to be financed through other means (such as capital contributions). The new facilities investment test is described in more detail below.

New facilities investment test

To pass the new facilities investment test, a facility *must* meet an efficiency test *and* one or more of the other three tests.

- The efficiency test establishes that an investment in new facilities may be added to the capital base if the investment does not exceed the amount that would be invested by a service provider efficiently minimising costs.
- The incremental revenue test requires that the anticipated incremental revenue for the new facility is expected to at least recover the new facilities investment.
- The net benefits test requires that the new facility provides a net benefit in the regulated network over a reasonable period of time that justifies the approval of higher reference tariffs.
- The safety and reliability test requires a demonstration that the new facility is necessary to maintain the safety or reliability of the regulated network, or its ability to provide contracted regulated services.

Western Power may apply to the ERA at any time for it to determine whether actual (or forecast) new facilities made (or proposed) by Western Power meets (or will meet) the new facilities investment test. Where the ERA makes a determination outside an access arrangement review process, the determination binds the ERA in allowing the addition of the actual new facilities to the capital base, provided the investment is made consistent with the ERA's determination.

These tests may be undertaken as part of or between reviews of Western Power's access arrangements, and can be undertaken before expenditure is incurred. This helps to provide certainty to Western Power in making investment decisions.

If such an approach were to be implemented, consideration may need to be given to setting a threshold value for in-period assessment. Consideration may also need to be given to the criteria that should be used to determine whether a change in capital expenditure may be recovered through tariffs. For example, in conducting a new facilities investment test, the ERA is required to consider tests of efficiency, incremental revenue, net benefits and safety and reliability. There may be other relevant considerations for the water corporations.