Queensland Competition Authority

Final Report

SEQ Retail Water Long-Term Regulatory Framework - Annual Performance Monitoring - Part B

September 2014

Level 27, 145 Ann Street, Brisbane Q 4000
GPO Box 2257, Brisbane Q 4001
Tel (07) 3222 0555
www.qca.org.au

The QCA wishes to acknowledge the contribution of the following staff to this report:

Geetu Anthonisz, Catherine Barker, William Copeman, Les Godfrey, Fifi Gosali, Keith Hutchinson, Shannon Murphy, Kwabena Osei, George Passmore, Matthew Rintoul and Rick Stankiewicz

Table of Contents

1 INTRODUCTION

1.1 Ministers' Direction

The Ministers directed (**Appendix A**) the QCA to investigate and report on a long-term regulatory framework for the five SEQ distributor-retailers (the retailers). The retailers are Unitywater and Queensland Urban Utilities (QUU), and the former Allconnex Water (Allconnex) council distributor-retailers - Logan, Redland and Gold Coast City Councils. If accepted the framework would apply from 1 July 2015, subject to the QCA receiving a direction notice from the Treasurer.

The overarching regulatory objective is to protect the long-term interests of the users of SEQ water and sewerage services by ensuring that the prices of these services reflect prudent and efficient costs, while promoting efficient investment in and the use of these services, having regard to their reliability, safety and security over the long term.

The QCA is required to: set out the form of regulation; describe how the regulatory framework would be implemented; assist businesses to develop a strategic approach to long-term investment and an appropriate level of customer engagement; and establish service quality indicators to inform customers about the retailers' comparative performance.

The QCA is also required to set out pricing principles and recommend the treatment of certain regulatory parameters.

In doing so, the recommended regulatory framework must: ensure the costs of implementation do not exceed the benefits; take account of the different characteristics of the retailers; and be proportionate with the risk of misuse of market power.

The institutional arrangements are outside the Ministers' Direction.

1.2 Purpose of this report

The final report Part B comprises:

(a) the recommended regulatory framework for the SEQ retailers to operate from 1 July 2015 onwards, including the general approach to, and form of, economic regulation (Chapter 3)

(b) key regulatory parameters, including roll-forward of the regulatory asset base, return on and of capital, and assessing prudent and efficient operating and capital costs (Chapter 4)

(c) the appropriate levels of customer engagement (Chapter 5)

(d) the strategic approach to long term investment (Chapter 6)

(e) service quality performance reporting requirements (Chapter 7)

(f) implementation issues relating to information requirements (Chapter 8).

Pricing principles to apply to the industry, including water, sewerage, trade-waste, recycled water services and stormwater re-use services are in Part C.

The Ministers' Direction forms Appendix A.

Issues relating to WACC are considered in detail in Appendix B.

Appendix C provides a summary of National Performance Reports (NPR) service quality indicators.

Appendix D provides a summary of other non-NPR service quality indicators applied in other jurisdictions.

In May 2014, the QCA released draft assessments of whether retailers should transition to the light-handed annual performance monitoring framework. The final assessments are provided in Appendix E (Unitywater), Appendix F (QUU), Appendix G (Logan), Appendix H (Redland) and Appendix I (Gold Coast).

2 BACKGROUND

2.1 Institutional arrangements

Drinking water supply, sanitation and wastewater management are essential for community development. Water is a key input into energy production, industry and tourism as well as natural ecosystems.

In response to the drought conditions occurring in SEQ, investment in the storage, treatment and delivery of water increased significantly, as did the price of water. As a result, there have been significant institutional changes in the water sector over the past few years.

Until 2012 the water and sewerage distribution and retail services were delivered by three retailers - Unitywater, QUU and Allconnex.

In April 2011 the Government provided SEQ councils with the opportunity to opt out of their Distributor-Retailers (DRs) and re-establish council water businesses. As a result, Allconnex was de-amalgamated, with its services provided by Logan, Redland and Gold Coast City Councils.

Unitywater services the Moreton Bay, Sunshine Coast and Noosa communities. QUU services communities in Brisbane, Ipswich, Somerset, Lockyer Valley and Scenic Rim.

Other institutional changes were that:

(a) the SEQ bulk water industry was consolidated. LinkWater and the SEQ Water Grid Manager were merged with Seqwater to operate as one single statutory body responsible for bulk water service delivery, from 1 January 2013

(b) the Queensland Water Commission was abolished and its functions transferred to the Department of Energy and Water Supply (DEWS) and Seqwater.

2.2 Services

The distribution and retail water and sewerage activities of the SEQ water retailers incorporate a wide range of end services.

Distribution and retail water services include residential and non-residential reticulated water services, metered standpipes and tanker filling stations, and laboratory services.

Their delivery involves the distribution and reticulation of potable and recycled water, and water treatment or dosing.

Sewerage services include residential and non-residential reticulated sewage services and tankered discharge services. These include the collection and transmission of sewage through reticulated infrastructure, treatment and recycling, and disposal.

Also referenced in the Ministers' Direction are trade waste services and stormwater drainage and reuse services. QUU and Unitywater cannot under the *Water Supply (Safety and Reliability) Act 2008* (Water Supply Act) provide stormwater services, while Logan, Redland and Gold Coast City Councils do not recover the costs of stormwater from water and wastewater charges. However, the potential of harvesting stormwater for reuse is explicitly addressed in the Ministers' Direction.

The bulk water activities of Seqwater are not within the scope of the review.

2.3 Market power

The water and wastewater activities of SEQ water retailers which have the potential to exercise market power have not been identified in the Ministers' Direction. To ensure that appropriate price oversight arrangements are in place, the relevant activities need to be identified.

Market power represents an ability to raise and maintain prices above efficient costs for an extended period, and may be influenced by the institutional and legislative arrangements applying to, or the economic characteristics of, the service provider.

Economic characteristics which can give rise to such market power include economies of scale (when the average cost of production decreases as output increases, potentially creating a natural monopoly) and economies of scope (when two or more goods can be produced jointly at a lower total cost than separately). The presence of natural monopoly, where overall costs are most efficient if there is only one supplier, provides the main rationale for economic regulation.

Also relevant are: the extent of actual or potential competition; the availability of substitutes; any countervailing buyer power; the extent of vertical integration and opportunities for cross-subsidies.

A necessary condition for market power to exist is barriers to entry to potential competitors. Barriers to entry include: high fixed costs, the sunk cost of infrastructure investment and high transactions costs, and government regulation.

Market power can be evidenced by an entity:

(a) using too many inputs, such as paying staff excessive wages, or over-investing in infrastructure – *productive* inefficiency

(b) charging prices that are above efficient costs, restricting the quantity available to potential users or providing a lower quality of service - *allocative* inefficiency

(c) resisting responding to new demand, new low-cost technologies or improved managerial processes – *dynamic* inefficiency.

Essentially, an entity could be considered to exert market power when competitive pressures do not effectively constrain its commercial behaviour - that is, where there is either an absence of vigorous rivalry in the market and there are barriers to entry into the market; or there is evidence that it is exercising substantial market power - this may include earning an excessive return, or where an excessive return would be earned if operating inefficiently or if cross-subsidising (QCA 2000).

2.4 Relevant activities

The QCA is not aware of any explicit legal barrier to entry into the retail and distribution water and wastewater market in SEQ. However, there are strong institutional impediments to competition or contestability.

Local governments have approval powers as assessment managers under the *Sustainable Planning Act 2009* (SPA) relating to urban development, including the development of water infrastructure. The local council retailers could use this power to frustrate the ability of potential entrants to install infrastructure.

QUU and Unitywater also have powers under the SPA regarding development approvals as concurrence agencies. The *Water Supply Services Legislation Amendment Act 2014* established

a 'utility model' which removed the delegation of QUU's and Unitywater's powers to their participating local governments. Despite this, QUU's and Unitywater's participating councils, who are the beneficiaries of dividend and other payments, could use the SPA (under review) as a barrier to entry. This barrier to entry is particularly relevant for reticulated services.

The water retailers account for all of the reticulated distribution and retail water and sewage services (including trade waste) activities in SEQ and in each relevant council area. Their fixed costs are high, essentially sunk, and the costs of negotiating service delivery to the large number of customers are substantial.

Potential substitutes for distribution and retail water reticulated services are localised (rainwater tanks, tankered water and bores) and can often only substitute for some use. Most customers have no countervailing market power and are required to pay water charges even in the absence of receiving service (for example, on vacant lots). Some larger customers may have some limited countervailing power through on-site storage.

Metered standpipes are only available from the retailers.

Competition to tanker filling stations is possible by access to bores although this is also limited and only available in particular localities.

Laboratory services provided by retailers essentially operate for internal water quality testing purposes. These could also provide services for other customers and can be subject to competition.

Similar characteristics apply to reticulated sewage (including trade waste) services. Sewage can only be transported economically through pipelines connected to sewage treatment plants. These plants tend to be decentralised, with each serving a relatively small catchment area.

There may be some local limits on market power with respect to sewage due to the availability of on-site treatment and some opportunities for treatment plants to be established by other providers, particularly in growth areas where there are green-field developments. About 127,000 properties in SEQ are not connected to a sewer and the vast majority of these use septic tanks to treat waste. Tankered waste services may also provide some localised alternative.

Larger trade waste customers have greater scope for bypass options and could potentially use on-site treatment and disposal as a substitute for incurring trade waste charges. However, these constraints on overall market power are relatively minor.

There is also some potential for competition between water supply and sewerage services, where processed wastewater (recycled water) can replace potable water. For example, dual reticulation forms part of the Pimpama Coomera Waterfuture project by the Gold Coast City Council (QCA 2010a).

While technological changes are occurring, particularly in water production and metering, no changes have substantially undermined the retailers' market power.

Essentially, the retailers have substantial market power in their distribution and retail water and sewerage (including trade waste) activities.

Stormwater activities are also typically not able to be delivered by alternative parties due to their integration with the provision of roads.

The QCA considers that of these services, the regulatory framework is not intended to apply to laboratory and tankered waste discharge services (Table 1 refers).

Table 1 Services

Service provided	*Level of Market Power*
Residential reticulated water	Extremely High
Residential reticulated sewerage and treatment	Extremely High
Non-residential reticulated water	Very High
Non-residential reticulated sewerage and treatment	Very High
Metered standpipe water	High
Tanker filling stations	High
Laboratory services	Low
Trade waste	High
Tankered discharge waste services	High
Stormwater	Extremely High

2.5 Past economic regulation of the water sector in SEQ

Monopoly prices oversight is intended to ensure monopolies do not abuse their market power (Queensland Commission of Audit 2013).

The Queensland Commission of Audit (2013) noted that the distribution-retail businesses have been subjected to a significant level of regulatory uncertainty since their creation in 2010.

2.5.1 Price monitoring 2008–15

Monitoring

Over 2008-10, the QCA was required to annually monitor prices and report on:

(a) the extent to which increases in retail water prices were attributed by the local governments to increases in bulk water grid costs and other costs

(b) whether the attributed increases went beyond those required to recover the increase in bulk Water grid costs advised by the Government, and other costs.

Over 2010-13 the QCA was required annually to:

(a) provide timely and transparent information to customers about the costs and other factors underlying the provision of water and wastewater services

(b) monitor the change in prices for households and small business customers having regard to a CPI price limit

(c) monitor the change in prices for services not included in the CPI price limit against the total prudent and efficient cost of the relevant activity

(d) monitor the maximum allowable revenue (MAR) based on the total prudent and efficient costs of carrying on the activity.

In 2013-14, the QCA monitored the 2013-15 actual (2013-14) and proposed (2014-15) prices, costs and revenues of the distribution and retail water and sewerage activities, for residential and non-residential customers, of the five SEQ retailers.

The QCA also monitored the retailers' revenues against the MAR based on the prudent and efficient costs of water and sewerage services, including operating and capital expenditure, depreciation, and return on capital.

Findings

Exercise of market power

The QCA (2011, 2012a, 2013a) found no evidence of an exercise of monopoly power by Unitywater and QUU and that these retailers complied with the CPI cap in 2011-12 and 2012-13. Expected revenues were below the QCA's estimate of prudent and efficient costs.

For the 2013-15 monitoring review (QCA 2014a), despite significant increases in prices, Unitywater, QUU, Logan Water and Gold Coast Water's aggregate revenues were found to lie below the QCA's estimates of their prudent and efficient costs.

As a result, the QCA found no evidence of an exercise of monopoly power for these retailers in 2013-15.

For Redland Water, the QCA found that 2013-15 revenues exceed MAR. In part, this resulted from its approach to smoothing prices over 10 years, whereby over-recovery in earlier years is returned to users in under-recovery in later years. While supporting the principle of price smoothing, the QCA had concerns with the 10-year model applied by Redland Water and negative retail-distribution prices in future years. In view of these concerns, the QCA was unable to establish whether Redland Water is exercising its monopoly power. See Appendix H.

Benefits of oversight

The QCA's monitoring of the ten SEQ councils in 2008-09 and 2009-10 did not involve prudency and efficiency reviews and consequently, no efficiency savings were quantified.

The QCA (2013a) observed that the retailers (including Allconnex) had significantly reduced their forecast costs over 2010-13 from those originally forecast. In total, capital expenditure forecasts were reduced by around $1.09 billion, while operating expenditure forecasts were reduced by $127 million over this period.

The QCA (2013a) concluded that this achievement was a response to an environment and policies (which included price monitoring) which constrained the retailers from exercising market power and led to the reduction of the forecast cost of service delivery.

Based on retailers' submissions, the QCA (2014a, 2013a) found further efficiency gains. The QCA estimated the total prudent and efficient costs of the reviewed retailers to be $211.85 million below those submitted for 2010-15. For 2010-13 where QUU, Unitywater and Allconnex (only for 2 years) were reviewed, savings of $77.51 million were identified. For 2013-15, for the five retailers, the QCA concluded that costs could be reduced by $134.34 million (over the two-year period).

Customer concerns about water price increases were a major contributor to the dissolution of Allconnex.

Limitations

In the past, the QCA (2013a, 2014a) has not reviewed the:

(a) initial regulatory asset base (RAB) used for pricing purposes as the QCA was required to accept the value advised by the government

(b) appropriateness of the retailers' prices for particular services or the price structures

(c) service standards and performance framework which underpin costs.

Opportunities were identified to improve demand forecasting, consideration of regional initiatives, decision-making processes and implementation strategies for major projects (QCA 2011).

Previous reviews were not required to address many of the requirements of the Ministers' Direction to:

(a) assist SEQ water retailers to develop a strategic approach to long term investment

(b) address best practice stakeholder engagement

(c) seek to ensure coordination with other regulatory and regulatory review processes

(d) encourage whole-of-sector approaches.

3 THE LONG-TERM REGULATORY FRAMEWORK

3.1 Ministers' Direction

The Ministers' Direction requires a long-term framework which:

(a) protects the long-term interest of the users of SEQ water and sewerage services by ensuring the prices of these services reflect prudent and efficient costs having regard to service reliability, safety and security

(b) ensures appropriate levels of customer engagement, co-ordination with other regulatory processes, promoting whole of sector solutions, and incorporates incentive mechanisms and service quality performance monitoring (including specific information)

(c) assists customers' understanding of how the costs of water and sewerage services influence prices

(d) incorporates aggregate annual revenue under/over-recoveries in relation to core water and sewerage services in a manner that balances the interests of the SEQ retailers and their customers

(e) is administratively cost-effective

(f) reflects the risk of misuse of market power and different characteristics and size of the retailers.

The QCA is also required to facilitate the retailers moving to more light-handed prices oversight over time.

3.2 Approaches to economic regulation

3.2.1 Position paper

In Australia, the general approaches to price regulation are typically characterised as direct and indirect regulation (Queensland Commission of Audit 2013). These represent the manner by which the desired outcomes are to be achieved.

There are also many forms of regulation. These are more detailed regulatory arrangements designed to alter retailers' behaviour in a particular manner. They are broadly, but not necessarily, associated with each general approach.

Direct regulation

Direct regulation occurs where either an independent regulator sets prices (or allowable revenues) with legal effect or makes recommendations to Ministers who set prices.

To facilitate such decisions, direct regulation focuses upon the nature of costs, revenues and often the proposed prices and their structure.

Indirect regulation

Indirect regulation occurs where an agency of government observes and reports on pricing behaviour. Its main advantages are reduced regulatory intrusion, lower costs of regulation and compliance, and greater flexibility for the regulated entity to adapt its pricing to changing circumstances.

Other approaches

It is arguable that there are other approaches to regulation such as arbitrary control (where prices of a monopoly service are determined regardless of demonstrable evidence of a need to apply any regulatory intervention) or franchise auctions.

These could be classified as direct or indirect approaches, respectively.

In any case, arbitrary control is associated with a high degree of uncertainty while the franchise auctions would have significant institutional implications. For these reasons, they are not addressed further.

Other jurisdictions

All major urban water providers in other states are subject to direct regulation. Where applied, price determination powers rest with the economic regulator (Queensland Commission of Audit 2013). For example:

(a) in New South Wales, IPART has a standing reference to conduct investigations and determine prices for the state's major water entities (Sydney Water Corporation, Sydney Catchment Authority, Hunter Water Corporation and some local councils)

(b) in Victoria, a Water Industry Regulatory Order (WIRO) made under the *Water Industry Act 1994* provides the ESC with an ongoing responsibility to approve or set pricing for numerous regulated metropolitan, regional and rural water entities.

An overview of the approaches adopted in various jurisdictions appears below.

Table 2 Approach to regulation in other jurisdictions

Jurisdiction	***Water entities***	***Approach to regulation***
New South Wales	Sydney Water Corporation Sydney Catchment Authority Some local councils	**Direct** - IPART determines prices
ACT	ACTEW	**Direct** - ICRC determines prices
Victoria	Numerous metropolitan, regional and rural water entities	**Direct** - ESC approves/ determines prices
South Australia	SA Water	**Direct** - ESCOSA determines average revenue caps
	Intermediate and minor water entities	**Indirect** - annual price monitoring
Western Australia	Water Corporation	**Direct** - ERA recommends prices to be set by the Minister

QCA analysis

Objectives

Neither the overarching objective nor the specified elements of the Ministers' Direction provide definitive guidance on the appropriate approach to regulation.

Some requirements, such as the need to address the treatment of aggregate annual revenue under- or over-recoveries are associated with forms of regulation that would suggest a direct

approach. The requirement that the long-term framework should facilitate the retailers moving to more light-handed prices oversight over time would suggest an indirect approach.

Principles, characteristics and criteria

The Queensland Commission of Audit (2013) considered that a set of guiding principles based on the OECD Guiding Principles for Regulatory Quality and Performance (2005) should be developed to guide regulatory arrangements.

The OECD principles require that good regulation should serve clearly identified policy goals and: be cost-effective; promote innovation through market incentives and goal-based approaches; be consistent with other regulations; and be compatible with competition, trade and investment facilitating principles.

The desirable characteristics of a regulatory process being conducted openly, transparently, consistently, predictably, independently, and competently are also widely noted (NERA 2004, COAG 2004, Ballance and Taylor 2005).

These general principles and characteristics of good regulation, however, are not implicit to any particular approach *per se* (NERA 2004).

The Queensland Commission of Audit (2013) also observed that deterministic [direct] approaches can be justified where there is a real risk and concern of unreasonable pricing practices for an essential service.

Such a risk and concern can arise where there is substantial market power, significant potential for efficiency gain (NZCC 2006, IPART 2002, PC 2002, NERA 2004, Ballance and Taylor 2005) and service providers have a low predisposition to respond to concerns about performance.

It is also relevant to note that regulators usually have far less information about the cost and demand conditions facing the entities they regulate than do the entities themselves. Without complete information, regulators cannot set optimal prices or direct entities to produce optimal outputs. Regulatory mechanisms (approaches and forms) are required, therefore, that induce entities to produce optimal outputs with optimal inputs (Train 1991).

Market power

The potential for SEQ retailers to exercise substantial market power for certain services has been noted above.

Potential efficiency gains

The potential for efficiency gains from regulation is a function of both the size of the entity and the size of potential inefficiencies relative to the costs of regulation.

The economic size of the SEQ retailers is considered significant as outlined below.

Table 3 Economic size of the SEQ retailers (2012-13)

	Regulatory asset base $m	*Capital expenditure $m*	*Operating expenditure $m*	*Revenue $m*	*Population served*	*Non-residential connections*
Unitywater	2,835	150	260	507	722,030	16,018
QUU	4,461	363	572	836	1,354,429	34,665
Logan	1,152	68	93	160	246,232	5,053
Redland	482	12	42	91	148,053	3,071
Gold Coast	2,605	125	232	403	541,079	13,612

Source: Retailers' submissions

Following the several reviews to 2012-13, the difference between Unitywater and QUU's estimates, and the QCA's estimates of total prudent and efficient operating costs for the water and sewerage activities, was about 1.5% (QCA 2013a).

However, this does not reflect the potential gains that may result from further improvements to decision-making processes, the adoption of regional investment perspectives, and attention to other limitations of past reviews. Essentially, the benefit that can be gained from these is not yet quantifiable.

Predisposition

A monopoly's predisposition to exercise market power depends on:

(a) the possible consequences of reactions from customers or regulators

(b) the magnitude of the potential commercial benefit to the retailer which may be affected by prior exposure to regulation

(c) the relative commercial maturity of the retailers (and ability of the retailers and customers to make informed commercial decisions).

To date the main consequences faced by the retailers have been the potential adverse publicity associated with any reported excessive costs. In the case of Allconnex, the customer response to proposed higher increases in prices is considered to be a substantial cause of the subsequent de-amalgamation.

No evidence of an exercise of market power has been found in the reviews of Unitywater or QUU over the 2010-15 period. However, the QCA had concerns with Redland Water's approach and modelling that remained to be resolved. As a result, the QCA was unable to establish whether Redland Water is exercising its monopoly power.

Both Unitywater and QUU have indicated a willingness to further improve the cost-effectiveness of service delivery, including through adopting many of the recommendations of the QCA's past reviews and progressively improving expenditure decision-making processes.

Costs

In considering the potential gains, the costs of regulation can also be significant and can include:

(a) compliance and administration costs of the retailer and regulator, which can involve:

  (i) management and staff time

  (ii) hiring of external expertise

(iii) training costs

(b) costs associated with imperfect information and limited flexibility

(c) lobbying or 'rent seeking' costs

(d) costs associated with investment distortions (PC 2009).

Any change from one form of regulation to another is also costly. It is likely to be less costly to move from direct to indirect regulation, rather than from no regulation to some.

Heavy- v light-handed regulation

The PC (2003) defined the extent to which regulatory intervention is heavy- or light-handed by the:

(a) substantiveness of the variables the regulator attempts to control

(b) extent to which the regulator attempts to control the relevant variables

(c) compliance costs imposed on businesses.

Direct regulation typically focuses upon the service standards, costs, revenues and often the proposed prices and their structure. Under direct regulation the Minister or independent regulator establishes the price or maximum allowable revenue (and is thus intrusive). To inform such decisions, direct regulation requires substantial information, external independent review (and therefore is considered intrusive), and is costly to administer or costly to comply with.

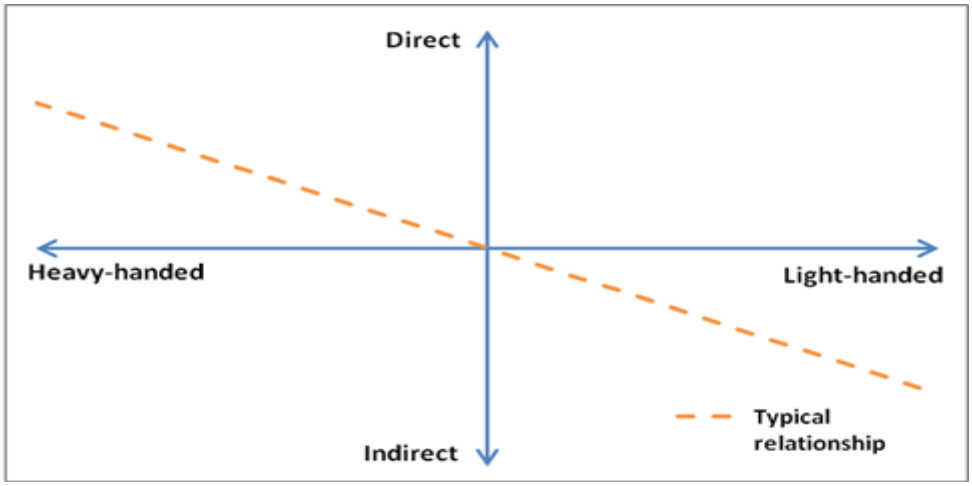
Direct regulation is therefore generally considered to be heavy-handed.

Indirect regulation occurs where an agency of government observes and reports on pricing behaviour, but does not usually involve the direct regulation of prices. Details of the components of prices are therefore not typically required.

Indirect regulation is therefore generally considered to be light-handed.

The relationship between the general approach and the heavy- or light-handedness is depicted in Figure 1.

Figure 1 Direct and indirect approaches to regulation



Conclusion

Overall a *prima facie* case for directly setting prices for at least Unitywater and QUU was not evident at the time the regulatory framework position paper (QCA 2014e) was released for comment.

A government may, through Ministerial determination, wish to retain the option to exercise its judgement on prices to ensure certain public interest matters are addressed. However, no such concerns are indicated in the Ministers' Direction or are evident in submissions.

Moreover, Ministerial involvement in price determinations should only be the avenue of last resort - that is, if there was an imperative to manage short-term cost pressures in essential services that are not substitutable (Queensland Commission of Audit 2013).

The QCA therefore does not recommend the adoption of a direct approach to economic regulation for the SEQ water retailers in the long-term, unless retailers' performance deteriorates.

Having regard to the significant economic size of the retailers, and the potential but as yet unquantifiable gains from matters not previously addressed, an indirect approach to regulation would seem preferable.

Moreover, as many of the potential gains follow from process and pricing improvements, it is likely that over time less regulatory oversight would be required.

The QCA's recommended transition path for each retailer is documented in Appendices E to I.

3.2.2 Final report

Submissions

Relevant submissions and responses to the QCA's (2014e) regulatory framework position paper are summarised below.

Table 4 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Approaches to past regulation	QUU (2014a) disagreed that reviews undertaken from 2010-13 were 'limited'. QUU considered they were detailed and extensive, and required QUU to devote significant resources to demonstrate that it was operating prudently and efficiently.	Past reviews did require substantial detailed investigation. They were however limited in scope. The QCA could not, for example, review price structures or service quality.

Issue	*Comment*	*QCA response*
Approaches to regulation Draft recommendation 3.1: "An indirect approach to economic regulation is recommended for the longer term".	QUU (2014a), LCC (2013d, 2014) and other stakeholders agreed with the light-handed approach but stated that a clear governance structure needs to be established and documented. That is, QUU considered the framework requires rules for procedural fairness, accountability and consistency in decision-making and associated obligations on the retailers to be established and documented.	The QCA Act (and any relevant Ministerial Direction) provides the overarching governance framework. Natural justice and procedural fairness applies. Obligations on which retailers require further guidance would be addressed in a guidance paper to be released following the Minister's Decision. They have in part been outlined in a technical paper on implementation released subsequent to the position paper being commented upon.
	Mr Koerner (2014) and Ms AR West (2014) submitted that recommending that Unitywater be allowed to be subject to light-handed price monitoring is an insult to Coolum Beach pensioners and other residents.	Mr Koerner and Ms West are critical of the QCA for accepting the Ministers' advised RAB. A review of the initial asset base (established for the purposes of 2010-13 price monitoring) is explicitly prohibited under the Ministers' Direction.
Defining unacceptable performance Draft recommendation 3.2: "Where an entity's performance is unacceptable, the QCA determine prices unless there is an imperative to manage short-term cost pressures. In the latter instance prices should be determined by the Minister".	QUU (2014a) and RCC (2014a) considered that QCA should provide further detail on how it would define 'unacceptable performance' in recommendation 3.2.	Unacceptable or unsatisfactory performance occurs where there is sufficient evidence that a retailer's performance involves a potential exercise of market power. Possible scenarios which might trigger a review are outlined in table 20. The QCA would seek to provide further details in a guidance paper in response to any specific concerns identified by retailers.
Defining cost pressures Draft recommendation 3.2.	QUU (2014a) sought clarification as to what the QCA meant by short-term cost pressures. QUU also suggested that the reference to the Minister setting prices in the short-term be removed as the Minister already has powers to set prices outside the proposed framework.	'Short-term cost pressures' refer to costs incurred to respond to situations that warrant Government intervention, for example, emergency scenarios of supply failure. The reference is included for clarity.
Determination by the Minister Draft recommendation 3.2.	LCC (2014) considered that it is not appropriate for the QCA to determine price for a local government where rates and charges are considered in a total community perspective.	The obligation for councils to have cost-reflective prices for water services is incorporated under the *Local Government Act 2009* (Local Government Regulation 2012, s22).

For the final report, the QCA recommends that it develop a guidance paper (recommendation 3.3) setting out relevant details and procedures for the regulatory framework.

Recommendations

3.1 An indirect approach to economic regulation is recommended for the longer term.

3.2 A direct approach only be adopted where there is sufficient evidence that a retailer's performance involves a potential exercise of market power, or where required to manage short-term (emergency) cost pressures. In the latter instance prices should be determined by the Minister.

3.3 The QCA issue a guidance paper to address implementation issues that follow from the Minister's Decision relating to the QCA recommendations.

3.3 Form of regulation

There are many forms of regulation, some broadly associated with each of the general approaches.

For example, direct regulation is typically considered to involve cost of service (or rate of return) regulation and incentive regulation. Indirect regulation is typically considered to include pricing principles and price monitoring. Some forms of regulation are not unique to a particular approach.

For presentational purposes, the forms of regulation are addressed within the category of general approach with which they are associated.

3.3.1 Direct approaches

Cost of service

Under cost of service (or rate of return) regulation prices are set by the regulator to cover the entity's costs. Such regulation has been applied in many jurisdictions in the USA.

The cost of service comprises a return on capital, a return of capital (depreciation), and operating costs, which together with a supporting case, is submitted to the regulator for review.

The regulated entity, or the regulator, can request a review when prices are inadequate to recover costs by way of:

(a) cost pass-through mechanisms which allow costs beyond the entity's control to be passed through to users prior to the next formal regulatory review

(b) review triggers which bring forward or re-open a review as a result of a pre-specified event

(c) an 'unders-and-overs' account to ensure revenue adequacy.

The key advantage of cost of service regulation is that it ensures sufficient revenue for the business. It also provides consumers with assurance that the prices paid for water reflect the costs of providing a service.

The main concern is that it induces businesses to use inputs inefficiently (Baumol and Klevorich 1970) as:

(a) the entity has no incentive to reveal the true cost of services (information asymmetry)

(b) the entity has little incentive to pursue efficiencies as savings are passed to customers

(c) there are significant information requirements (and costs) for the regulator and the entity

(d) there is an incentive to over-invest to maximise revenue from the allowed rate of return which would generally exceed the cost of debt (Averch and Johnson 1962).

Cost of service regulation therefore has not been applied to water retailers on its own in Australia, and is not considered to have suitable incentive properties to meet, in particular, the prudency and efficiency requirements of the Ministers' Direction's overarching regulatory objective.

Profit sharing

Earnings or profit sharing regimes are a form of cost of service but represent a shift towards incentive regulation. These allow the entity to keep only a portion of the earnings it receives in excess of a given level. The remainder must go back to customers.

Regulators in the US have used earning-sharing controls (Frontier Economics 2010).

These mechanisms have stronger productive efficiency incentive properties than conventional cost of service regimes. However, a profit-related mechanism can be information-intensive and difficult to implement, if only for the need to establish an agreed definition of profit.

The information costs are, therefore, considered excessive (relative to other forms of incentive regulation). On its own it does not address pricing and service quality performance reporting.

Incentive regulation

Incentive regulation responds to the deficiencies of cost of service regulation. It seeks to provide incentives for service providers to continuously seek out cost efficiencies.

In the Australian urban water sector, independent regulators generally establish a cost of service and then apply incentives for improved performance – typically by reference to changes to CPI less an X-factor to reflect expected efficiency gains.

The X-factor may be based on an appraisal of the entity's ability to achieve cost savings (cost-linked incentive regulation), or it may be 'unlinked' from costs, and based on broader productivity assessments. Sometimes a Y-factor is incorporated to account for pass-through of specific cost items out of the control of the regulated entity (Vogelsang 2001).

Unlinked incentive regulation is widely accepted because it encourages the businesses to use cost information unavailable to the regulator.

Industries with a history of cost of service regulation may be particularly suited as the existing prices should provide a suitable starting point for further efficiency gains.

If initial prices are not based on efficient costs, or significant cost changes occur in the future, legacy prices may entrench existing pricing inefficiencies (NERA 2004).

The main concerns are that:

(a) there is an incentive to run down assets or reduce service quality to achieve designated cost savings. Service quality monitoring is therefore necessary

(b) there can be a high regulatory burden (Fearon 2006)

(c) it can impinge on the entity's commercial focus (with a risk of regulatory error)

(d) in mature industries where efficiency gains may be limited there is a tendency for it to converge to cost-based regulation (Ergas et al 2001).

The effectiveness of the incentives also depends on the associated mechanisms, including the form of price control, correction mechanisms, review triggers and cost pass-throughs.

Yardstick competition

Under yardstick regulation, prices are set on the basis of comparisons of various measures with those of other comparable service providers. It can provide incentives for service providers to seek lower costs by competing with other service providers for cost reductions.

Typically, if an entity can achieve cost savings lower than the group benchmark (adjusted if necessary for entity differences), it can retain the savings for a period. Over time, the benchmark may be further reduced as efficiency gains are made.

A range of measures can be used to compare performance, including:

(a) partial productivity measures – where output is related to a quantity of a single input and, therefore, may not provide reliable information

(b) total factor productivity (TFP) – TFP indicators require aggregation of the entity's outputs and inputs, with appropriate weightings and can therefore be difficult to apply

(c) data envelopment analysis (DEA) – involves determining an efficiency frontier using linear programming and identifies how far the entity is from the frontier

(d) stochastic frontier analysis (SFA) – similar to DEA but allows for assessment of probabilistic events on efficiency.

Yardstick regulation in its pure form is not widely used in Australia. Ofwat (2008) uses a form of company specific yardstick regulation for 21 regional water monopolies in England and Wales.

The main concerns are that:

(a) it requires a number of similar and similarly regulated businesses - or, it must be feasible to account for differences (requiring additional information, subjectivity and complexity)

(b) it relies on past performance and makes no assessment of future capital and operating expenditure requirements and thus is not forward-looking

(c) there is a possibility of regulatory error as prices do not reflect costs (Frontier Economics 2010).

The absence of a suitable number of comparable organisations in SEQ makes yardstick regulation inexact. The QCA's experience in several reviews - SunWater (QCA 2012b), Seqwater (QCA 2013c) and price monitoring distribution-retailers in SEQ - have provided only a broad basis for comparison of service providers' performance.

3.3.2 Indirect approaches

Pricing principles

This involves the specification of pricing principles with which service providers must comply.

Appropriate pricing principles are necessary to ensure relevant signals to customers about the cost of services, and their responses provide relevant signals to service providers about the demand for those services.

The QCA's *Statement of Regulatory Pricing Principles for the Water Sector* (QCA 2000) has been found to be useful for guiding service providers in setting water prices.

However, pricing principles alone cannot ensure that prices reflect prudent and efficient costs and thus are more useful as a supplement to other forms of regulation.

Price disclosure

Price disclosure involves the publication of key information to increase scrutiny of prices and market performance.

Disclosure enhances transparency and can improve understanding of performance and underlying costs sufficient to deter unfair discriminatory pricing.

Information disclosure has been implemented by the ACCC (2011a) as Tier 1 rules that require all bulk water operators in the Murray Darling Basin to publish their schedule of fees and charges. Public disclosure is all that is required for smaller Tier 1 entities. This approach minimises regulatory costs but relies on an active and informed customer body to provide scrutiny.

The QCA has relied on disclosure (albeit via detailed Network Service Plans) to assist in ensuring SunWater (QCA 2012b) and Seqwater (QCA 2013c) irrigation expenditure proposals between price reviews are prudent and efficient. Irrigation customers are very familiar with various options and validity of proposed costs and can associate to raise concerns. Such customer engagement is not envisaged to be possible by residential customers and small businesses in SEQ.

Price monitoring

Price monitoring seeks to provide sufficient transparency and information for stakeholders to respond and to establish whether a *prima facie* market power is likely to be a concern. It involves a regulator 'tracking' prices, profits and/or quality over time (NERA 2004).

Price monitoring allows a business to operate commercially without intrusive regulatory intervention (Queensland Commission of Audit 2013) and at lower compliance cost. The ACCC (2012a) has warned, however, that attempts to improve price monitoring over time are likely to result in expanded data requirements and higher compliance costs.

COAG (2006) has considered the role of price monitoring in the context of the regulation of significant infrastructure facilities and concluded that price monitoring should be considered:

(a) where it can improve the level of price transparency

(b) as a first step where price regulation may be required

(c) when scaling back from more intrusive regulation.

Price monitoring has been adopted for ports and airports in Australia and New Zealand:

(a) the ACCC (2012b) considers that the monitoring of Australian ports provides useful information to stakeholders and, as a consequence, there is no consideration being given to adopting a different approach

(b) the PC (2011b) recommended the Australian airports regime be maintained as there was:

  (i) little evidence of systematic failure in the delivery of investment
  (ii) no evidence of misuse of market power

(c) ESCOSA (2012a) noted that since 2007 there has been no evidence of misuse of market power in South Australian ports and recommended continuing price monitoring for another five years

(d) a prospect of more prescriptive regulation of Victorian ports was removed in the absence of any evidence of a misuse of market power (ESC 2009).

Airport and port businesses face a degree of countervailing market power as their customers are typically few in number and well-resourced. In contrast, price monitoring is a less common form of regulation for Australian network industries, such as electricity and water.

However, ESCOSA (2013b) is applying a pricing principles/price monitoring approach to intermediate sized and minor retailers of potable water and sewerage services. A revenue determination has been applied to SA Water for the three-year period from 1 July 2013.

Light-handed regulation of electricity that applied in Germany from 1998 was considered to have failed (Oxera 2012). This failure was primarily due to:

(a) the economic regulator's informational disadvantages compared to electricity operators which included legal constraints on access to cost data

(b) a lack of the necessary instruments to sanction inadequate behaviour.

Price monitoring may therefore be appropriate where, in the absence of countervailing market power:

(a) stakeholders are able to understand the information provided – either of their own volition or with the assistance of a regulator's analysis

(b) there is in place some prospect of more detailed direct regulation.

Performance monitoring

Performance monitoring focuses upon a business performance and allows service providers the flexibility to seek the lowest-cost means for achieving the level of performance desired.

It tends to be more accommodating to technological change that can improve performance (Coglianese 2003) and can reduce the need for prescriptive regulation (Oxera 2012).

Performance monitoring can focus solely on outcomes (of which price may be one), or incorporate other measures on which performance is required.

Outcome-based regulation (OBR), being progressed in the United Kingdom (Ofwat 2013a), focuses on the delivery of high-level 'outcomes' rather than the regulation of inputs. Ofwat proposes to determine some industry-wide minimum outcomes, with the remainder, and associated outcome delivery incentives, set by companies in consultation with their customers.

Oxera (2013) suggests the following elements should also be undertaken for OBR:

(a) service providers need to consult with customers and understand their priorities (desired outcomes), via qualitative and quantitative research, and use representative customer groups to test the results, credibility and interpretation of this empirical evidence

(b) outcomes need to be measurable and transparent (and relevant, meaningful, comparable, accurate and verifiable)

(c) service providers need to identify the cost implications of delivering different levels of service for each outcome in order to decide which level is economically efficient and affordable for customers.

DEWS (2013a) proposed to investigate the benefits of moving away from the emphasis on setting and approving plans towards business-based performance reporting (BBPR) for urban water service providers (WSPs) across Queensland. In BBPR, the business rates and reports its own performance against a number of key performance indicators (KPIs). In May 2014, the *Water Supply Services Legislation Amendment Act 2014* amended the *Water Supply (Safety and*

Reliability) Act 2008 to remove various management plan obligations and introduce annual reporting on key performance indicators by urban WSPs.

ESC (2012) also considers the performance measures need to identify baseline performance of businesses, provide incentives for improvement, inform customers about the level of service, provide information for developing regulatory standards and assessing compliance against those standards, and make comparisons between businesses.

Performance monitoring and reporting systems (including OBR and BBPR) are consistent with less intrusive, lighter-handed regulation. Under appropriate governance arrangements, they can provide more flexible, cost-effective, and timely incentive-based economic regulation. Their scope can be more readily aligned with the desired regulatory objectives.

Propose and respond

Under the propose-respond model, the regulated entity submits a proposal to the regulator for consideration. The regulator is unable to reject that position, or substitute its own proposal, if it could be demonstrated that the proposal fell within a reasonable range.

Variations include 'final offer arbitration', or 'pendulum' arbitration whereby the decision is made between bids made by the owner or the user, but no other.

This approach was used in the Queensland sugar industry to negotiate the division of proceeds between growers and millers from 1996 until 2004 but was replaced by a conventional dispute resolution procedure. Final offer arbitration was originally used to avoid ambit claims but was regarded as a 'confrontational' approach and resulted in win/lose scenarios (Hildebrand 2002).

A significant concern is that the regulator may not have sufficient information to determine a reasonable range unless it has had a prior regulatory role. Further, the reasonableness test could provide an incentive for regulated service providers to propose upper end estimates for all individual components leading to a systematic upwards bias in returns to regulated service providers.

The approach also provides little guidance to other stakeholders and thus does not promote regulatory certainty or consistency.

Negotiate-arbitrate

Negotiate-arbitrate processes are typically applied where there are only a limited number of customers or participants:

(a) The regulated access provider and access seeker are required to attempt to negotiate a commercial agreement.

(b) If commercial negotiations fail, the regulator is generally required to arbitrate.

The process may be complemented by guidance from the regulator on the boundaries for pricing outcomes, or advice on key matters such as efficient costs. A variation, constructive engagement, involves a formalised negotiation process which results in a plan being submitted by the negotiating parties to the regulator – as for UK airports (CAA 2005).

An advantage of the negotiate-arbitrate process is that it can reduce information requirements and therefore costs, as both parties have an incentive to avoid an extended costly arbitration.

The model was applied to GrainCorp's application to access Freight Australia's declared rail freight network in Victoria. The process was regarded as legalistic, protracted and costly (Fearon 2006).

Applicability to the urban water industry is likely to be limited as there are many customers with little to no bargaining power. Few if any larger customers have the financial capacity to engage in such formal regulatory processes (as distinct from commercial negotiations).

3.4 The appropriate form of regulation for SEQ retailers

3.4.1 Position paper

The objectives of the long-term regulatory framework required by Ministers, and principles, desired characteristics and criteria for selecting alternative forms of regulation have been identified above.

Stakeholder submissions

QUU (2013b) submitted that the regulatory framework should provide certainty in terms of under-recovery to allow businesses to make strategic long-term decisions without concerns that the regulatory framework may change. The framework should ensure that the cost burden of applying regulation is minimised.

QUU proposed that where the risk of misuse of market power is low, the oversight would be minimal. This is especially so where businesses are under-recovering in relation to a QCA-determined MAR.

QUU submitted that the strength of regulatory penalties and incentives is a factor in setting the level of oversight.

Unitywater (2013c) submitted that from 2015, the preferred form of regulation is light-handed price monitoring of water and sewerage supply services that excludes oversight of non-regulated services and miscellaneous fees and charges.

BCC (2013a) submitted that it welcomed a move to more light-handed regulation. The framework should consider the retailers' budget processes and requirements, and should provide long-term certainty and stability to the retailers while allowing them to respond to short-term pressures.

Gold Coast City Council (2013) submitted that, to promote efficiencies, the regulatory framework should be designed on a propose-respond model incorporating a consultative and transparent process.

Moreton Bay Regional Council (MBRC 2013) submitted that due to the costs of regulation of $1.8 million, there is a burden on customers not experienced by water consumers elsewhere in the State, and that regulatory compliance should be removed. Should this not be acceptable to the Government, compliance requirements should be drastically reduced to using information already available.

Logan City Council (2013a) submitted that it welcomed a move to light-handed regulation, from 1 July 2015, to reduce costs to the regulator, the business and customers.

Qldwater (2013) submitted that the key structural and capacity differences between stand-alone DRs and councils should be appropriately considered. Unitywater (2013c) and QUU (2013b) proposed that the DRs and councils should be treated on similar terms.

QCA analysis

Form of regulation

Some forms of regulation incorporate inherent limitations and are thus considered unsuitable for long term regulatory purposes:

(a) cost of service fails to provide incentives to reduce costs

(b) profit sharing is difficult to achieve and costly to administer

(c) propose and respond models tend to result in prices trending to the upper end of the range and thus are less likely to achieve efficient costs.

Some forms of regulation are considered to be inappropriate for SEQ:

(a) negotiate-arbitrate regulatory processes are more suited to negotiations between very large customers and service providers rather than the SEQ customer base

(b) yardstick regulation requires more close comparators (or years of consistent data if longitudinal analysis is to be undertaken) than available for SEQ

(c) pricing disclosure is unlikely to disclose information capable of being critically reviewed by the majority of urban customers.

Other forms of regulation address more of the key elements of the Ministers' Direction as outlined below – but not all of the requirements on its own.

Table 5 Ministers' Direction and forms of regulation

Requirement of Ministers' Direction	Most appropriate form of regulation
Protects the long-term interest of the users of SEQ water and sewerage services by ensuring the prices of these services reflect prudent and efficient costs having regard to service reliability, safety and security; and, incorporates service quality performance monitoring	Incentive regulation (incorporating cost of service review) and pricing principles
Ensures appropriate levels of customer engagement, co-ordination with other regulatory processes, promoting whole of sector solutions, and incorporates service quality performance monitoring (including specific information)	Performance monitoring (with scope expanded beyond output based reporting to ensure coverage of necessary processes and outcomes)
Assist customers' understanding of how the costs of water and sewerage services influence prices	Incentive regulation (incorporating cost of service review) and pricing principles
Incorporates aggregate annual revenue under/over-recoveries in relation to core water and sewerage services in a manner that balances the interests of retailers and their customers	Incentive regulation (incorporating cost of service review)
Is administratively cost-effective	Performance monitoring
Reflects the risk of misuse of market power and the different characteristics and size of the retailers	Incentive regulation for larger retailers and performance monitoring for the smaller retailers

Overall, incentive regulation (based on a cost of service review) accompanied by the application of the appropriate pricing principles and a comprehensive performance monitoring framework would most effectively address the requirements of the Ministers' Direction.

Such a comprehensive incentive-based form of regulation (often accompanied by determinations by an independent regulator) has been adopted in many jurisdictions because

of the significant potential of the water businesses to exert market power and absence of countervailing market power. It has also formed the core of the QCA's remits in the past (for GAWB, SunWater and Seqwater).

Such a comprehensive approach, however, comes at a cost. Significant time, effort and cost need to be dedicated to the annual detailed regulatory review of expenditures. Regulatory scrutiny also introduces the prospect of regulatory uncertainty and error.

When considered against the principles, desired characteristics and criteria identified above, the following emerges:

(a) Despite the significant market power of the retailers, QUU and Unitywater have under-recovered the (prudent and efficient) costs of operation identified by the QCA.

(b) The difference in estimates of prudent and efficient costs between the retailers and the QCA, based on available information, is only modest.

(c) The retailers have been pre-disposed to responding constructively to opportunities for improving decision-making processes and pursuing identifiable areas for cost efficiency.

Provided that appropriate initiatives can be developed to maintain performance and respond to other requirements of the Ministers' Direction, no further detailed reviews (incorporating cost of service reviews) may be necessary for the retailers – in contrast to the detailed annual cost of service based reviews previously undertaken.

Public reporting by the retailers and transparent review is considered a powerful means of ensuring continued performance improvement. Once such a review is completed, consistent with existing practices, retailers would face the prospect of adverse public comment.

It is recommended that annual monitoring and reporting be undertaken by the (independent) QCA of the retailers' performance based on a range of measures including prices, revenues, certain costs (including efficiency targets) and recommended procedures and policies (including strategic investment and customer engagement practices), and service quality standards.

This contrasts with the more detailed annual cost of service price monitoring reviews being undertaken which involve prudency and efficiency reviews of capex and opex.

Many jurisdictions where price or performance monitoring is applied incorporate the prospect of cost of service reviews to further promote performance improvement and to deter the exercise of market power.

That detailed reviews would serve as an appropriate response to provide the right incentives to constrain the monopoly activity exercising its market power was noted at the introduction of such powers in the QCA Act (*QCA Amendment Bill 2008 – Explanatory Notes*).

Relevant mechanisms could include:

(a) an automatic right of complaint to a regulator or request for review

(b) automatic right to implement price determination

(c) appropriate sanctions for breaches, including clawback provision for prior ‘gains’.

In almost all jurisdictions in Australia price determination is applied to significant urban water service providers. It is also recommended as an element of the recommended performance monitoring regime for the retailers. As recommended by the Commission of Audit (2013) a determination power is required to be incorporated in the QCA Act.

While the Queensland Government could pass legislation in the event of a breach under performance monitoring to provide the QCA with a price determination power this would not provide for timely reviews. The QCA recommends the QCA Act be amended to provide for a price determination power similar to that which applies in NSW under IPART. This is consistent with the recommendations of the Commission of Audit (2013) and as previously accepted by the Queensland Government (Queensland Treasury and Trade 2013). At the time of writing no amendments have been made to the QCA Act.

It is noted that in NSW and Victoria the independent economic regulator exercises the deterministic power.

Such intervention would only be justifiable where evidence emerges that a retailer may be exerting market power through, for example, excessive pricing (revenues), inefficient costs or reduced service standards.

A cost of service review is otherwise recommended to be scheduled when a retailer's Water Netserv Plan is updated, which, under legislation, is required at least every five years (see Chapter 6). This is in effect, a stocktake of the effectiveness of annual performance monitoring over the preceding period – the QCA would not proceed with the scheduled review if the changes to the Water Netserv Plan (endorsed by the Minister and councils) are not material and do not warrant a full cost of service review.

Other matters

In respect to stakeholder submissions, the QCA:

(a) agrees that regulatory certainty is an important objective and the commitment to a long-term annual performance monitoring framework is consistent with such a requirement. The recommended approach recognises the low risk of misuse of market power and the costs of more intensive regulation

(b) considers that public scrutiny combined with the prospect of a cost of service review and potentially price determination should provide sufficient incentive for compliance

(c) accepts that services with low market power (non-regulated) should be excluded from the review framework (except insofar as determination of cost allocation requires an understanding of their cost drivers)

(d) accepts that information requirements should draw upon existing budget processes and requirements (wherever possible). In the past the QCA was required to develop information requirements (in consultation with the retailers) at a time that a range of other planning information requirements were being developed. This review would co-ordinate these with those now in place

(e) considers the costs of regulatory review to be significantly below the benefits achieved to date. However, further refinements should further reduce costs

(f) considers the nature of the annual performance reporting framework is to be relevant to all retailers equally, irrespective of size. However, the transition paths may require differential costs to apply

(g) considers that innovation-attracting regulatory scrutiny is not a disadvantage as the community seeks an explanation for changes in prices (and costs), as noted in the Ministers' Direction.

3.4.2 Final report

Independent review of economic regulation in Victoria

In February 2014, the Victorian Government appointed Professor Graeme Samuel AC to independently review the economic regulation, governance and efficient operation of the Victorian water sector.

The preliminary advice of the Independent Reviewer (2014) was that the cost-based nature of the ESC's 'propose-respond' model has shortcomings, and that regulatory arrangements are not meeting an optimal level of efficiency.

Under the regulatory framework, the ESC authorises allowed prices or revenues according to their actual costs. The Reviewer considered that there is little incentive to reduce costs or to innovate, as the gains would be removed by the regulator while additional costs due to inefficiency would be covered by prices set by the regulator. Cost-based regulation, using building blocks methods, creates an incentive to 'distort up' reported costs – the information submitted to the regulator may be 'padded' to raise the regulated price. There is a specific incentive to increase capital expenditure rather than seek out operating solutions.

The Reviewer considered that Victoria's WIRO locks in procedures and principles that the ESC must adopt and restricts its flexibility to pursue alternatives to the building block approach. The economic regulation framework that has been in place is complex and burdensome.

The Reviewer recommended price-based regulation involving benchmarking of costs between water corporations and incentives to improve efficiency and share the benefits with customers.

In response, the ESC (2014a) submitted that it was interested in exploring a graded approach to pre-assessing business' pricing proposals against key criteria and modifying the regulatory assessment process accordingly. The ESC cited the QCA's proposed long term framework as outlined in the QCA (2014e) position paper as being similar to this approach.

The assessment of water businesses would consider price paths, service standards, long-term investment plans etc. Proposals that indicated a negative assessment against the criteria would undergo a more comprehensive review and pricing determination. ESC suggested this regulatory framework could progress under the existing ESC Act decision-making criteria allowing ESC to tailor its regulatory response to the circumstances of the regulated business (Gilbert and Tobin 2014).

The Victorian Government has yet to respond.

The issues raised by the Independent Reviewer of Victoria's regulatory framework are consistent with the known deficiencies of the propose-respond cost of service regulatory model.

Incentive regulation

The QCA (2014l) has released a research paper on incentive regulation, applicable to all sectors, for comment. The paper outlines the concept of incentive regulation and its economic foundations.

The paper suggests that potential improvements to existing regimes could arise from considering: the extent to which 'menu' regulation approaches might be applied; greater use of benchmarking to determine efficient costs; whether existing regimes favour capital or operating expenditure; and the feasibility of introducing efficiency carry-over mechanisms.

Annual performance monitoring (as recommended) includes many of these features, but does not incorporate 'menu' regulation so as to be more light-handed. Under menu regulation the regulator offers a regulated entity a range of profit sharing and other options designed to encourage the entity to reveal and benefit from potential efficiency gains. Under annual performance monitoring the extent of profit sharing to be pursued rests with the retailers.

Submissions

Relevant submissions and responses to the QCA's (2014e) regulatory framework position paper are summarised below.

Table 6 Summary of submissions and responses

Issue	*Comment*	*QCA response*
QCA to determine framework	QUU (2014a) suggested that the final recommendations for the regulatory framework 'reside in' a determination made by the QCA. QUU suggested the QCA release a guidance paper for the rules of the framework.	Under the Ministers' Direction, QCA is required to investigate and report on a long-term regulatory framework. The section 10(e) Direction does not enable the QCA to determine the framework. The QCA proposes to prepare a guidance paper based on the Minister's decision.
Recommended framework Draft recommendation 3.4: "In the long-term, the retailers be subject to a performance monitoring framework".	QUU (2014a) and LCC (2014) agreed that a performance monitoring framework apply but QUU considered that it needs to be clear, transparent and detailed.	Relevant guidelines are proposed after receipt of the Minister's decisions.
No regulation	Unitywater (2014a) submitted that Unitywater's customers effectively own Unitywater. Even if prices were monopolistic the ownership structure ensures that monopoly profits are redistributed back to customers. Further, this ownership structure places significant pressure on retailers to ensure costs are prudent and efficient with unjustified prices likely to be met by rate-payer discontent.	Redistribution of monopoly prices through lower than otherwise rates and subsidies cannot ensure that the excessive revenues are shared equitably. Such an approach can impose disproportionate costs on many user groups. Unjustified prices may result in rate-payer discontent. However, in order to know that prices are unjustified (or justifiable) some assessment of costs and revenues needs to be undertaken.
	Unitywater therefore submitted that the QCA should assess more regulatory options - from self-regulation through price monitoring to highly intrusive regulation, such as cost-of-service price setting regulation.	A full suite of identifiable regulatory options has been identified. A 'no-regulation' option is not consistent with the Direction. Self-regulation does not meet the requirement under the Direction for the framework to be operated by the QCA.
Application to LCC	LCC (2014) submitted that to reduce the regulatory burden the proposed regulatory framework not be applied to LCC. LCC questioned why additional regulation is required above that	The Ministers' Direction relates to SEQ retailers, including LCC. This is a matter for government.

Issue	*Comment*	*QCA response*
	applied to all other local government service providers.	
Independent review	QUU (2014a) and RCC (2014) proposed that an independent review process be introduced to the proposed framework to hold the QCA accountable for its decisions. RCC noted that appeal processes may be required where the QCA executes price deterministic powers.	The QCA is an independent economic regulator. The QCA's analysis is open to public scrutiny and submissions from stakeholders. Retailers can also direct any concerns to the relevant Ministers. The Minister makes the final decision wherever the QCA makes recommendations. In a deterministic framework, QCA's decisions would be subject to procedural review.
Periodic review of the framework	QUU (2014a) and QCOSS (2014) suggested that independent, periodic ex post reviews of the framework be undertaken to assess its effectiveness. QUU suggested that this review be undertaken every 4-5 years, and could be undertaken by the Office of Best Practice Regulation.	The recommended regulatory framework responds to the Ministers' Direction and is proposed to apply over the longer-term. The need for any subsequent review, and the manner in which it is implemented, is a matter for government.
Review when Netserv Plan updated	QUU (2014a) did not agree with the QCA's proposal that a cost of service review is initiated when an entity's Netserv Plan is materially changed, as there is no link between the Netserv Plan and whether a business is exercising monopoly power. QUU proposed that the intention to undertake a cost of service review as a consequence of updating the Netserv plan be removed.	The QCA has proposed that a cost of service review be scheduled at the time of the five-yearly review by a retailer of its Netserv Plan as it may incorporate significant changes which may be relevant to whether market power is being exercised. For example, costs may be forecast to fall while prices are maintained. It is not proposed to proceed to a cost of service review unless it is considered necessary at that time.
Overlap between regulatory regimes	QUU (2014a) and GCCC (2014a) were concerned about the potential for the DRs to face conflicting or inconsistent regulatory objectives arising from the Queensland Government's water policy more broadly. This includes in relation to infrastructure charging, the development of new water and sewerage service quality standards and a new water strategy for the State. LCC noted that performance information and data is already provided to other bodies and is readily available for use by the QCA.	Infrastructure charging, the setting of water and sewerage service quality standards and their interrelationship with the new water strategy, and the economic regulatory framework, is a matter for government. The QCA has consulted with relevant agencies in formulating the recommended regulatory framework. This is ongoing. The proposed regulatory regime draws as much as possible on information provided to other regulators. It only seeks to draw on additional information where necessary information is not available.

Issue	*Comment*	*QCA response*
Certain costs and efficiency targets "Annual monitoring and reporting be undertaken by the (independent) QCA of the entities' performance against a range of measures including prices, revenues, certain costs (including efficiency targets)".	QUU (2014a) sought clarification regarding of the use of the terms 'certain costs' and 'efficiency targets'.	Certain costs refer to cost items that may be relevant drivers of changes in prices which exceed CPI-X. The X factor is the efficiency gain considered achievable. The QCA has proposed an X factor of 0.25% (of total MAR).
Innovation "innovation attracting regulatory scrutiny is not a disadvantage as the community seeks an explanation for changes in prices (and costs".	QUU (2014a) sought clarification of the statement.	The QCA was responding to a concern in a submission that regulatory oversight might hold back innovation. Where a retailer proposes, for example, innovative charging arrangements, any regulatory scrutiny would seek to ensure that the proposal is understood by customers.
Prospect of detailed review Draft recommendation 3.5: "Performance monitoring be complemented by the prospect of detailed public review and the potential for price determination".	QCOSS (2014) supported the prospect of a cost of service/deterministic review as: the power balance between the customer and the water retailers is fundamentally different to other sectors, where there are well-informed and well-resourced customers.	Agreed.
	RCC (2014a) considered there may be better more viable options (than price determination).	The prospect of price determination is intended as a last resort to provide incentives to ensure compliance. Most other Australian regulators have deterministic powers. Deterministic price regulation was recommended by the Queensland Commission of Audit and accepted by the government.

Issue	*Comment*	*QCA response*
	QUU (2014a) submitted that the threshold at which QCA considered that an entity exercised monopoly power should be clarified. A clear process and rules for the cost of service review and the price determination process should be established.	It is not possible to identify all possible combinations of factors relevant to establishing that monopoly power is being exercised. Broad guidance has been provided in the section 3.5.2. Further, by not being prescriptive about thresholds should promote a broad culture of compliance. As also noted, other regulators applying light-handed price monitoring do not specify explicit triggers. The QCA would seek to provide guidance in response to specific concerns in a proposed guidance paper.
Amendments required to the QCA Act	LCC (2014) submitted that, should the QCA Act be amended to allow the potential for price determination by the QCA, consideration should also be given to any conflicts with the *Local Government Act 2009*. QUU acknowledged the need for amendments.	This is a matter for government. Any conflicts, though none are evident, are a matter for government to resolve. The issue of potential duplication in the legislation applying to local government retailers and the DRs is addressed in Section 6.2 below.

The QCA's recommendations are noted below.

Recommendation

3.4 Retailers be subject to an annual performance monitoring framework.

3.5 Annual performance monitoring be complemented by the prospect of a cost of service review and the potential for price determination by the QCA.

3.6 The QCA Act be amended for the purposes of the price determination referenced in 3.5 above.

3.5 Key elements of the long-term framework

The recommended long-term regulatory framework comprises annual performance monitoring, with a prospect of detailed price and cost review and potentially a price determination.

The Ministers' Direction requires that the QCA also:

(a) recommend the preferred length of the regulatory period (timing)

(b) recommend incentive mechanisms to support innovation and other efficiencies

(c) facilitate the retailers moving to more light-handed prices oversight over time (including how the regulatory framework would be implemented on an ongoing basis).

3.5.1 Timing issues

For the recommended long-term framework, timing issues include:

(a) the frequency of performance monitoring

(b) the timing of reviews

(c) the regulatory period applying to any price determination.

Position paper

(a) Frequency of performance monitoring

SEQ retailers set prices for services on a one-year budget cycle although their Water Netserv Plans will set out infrastructure plans for 20 years or more. Where light-handed price monitoring is in place such as in airports or ports in SA, price monitoring is annual and continues indefinitely.

With the move from detailed annual cost reviews and having regard to the pace of changes that have occurred institutionally and from a climate perspective, annual performance reviews would seem appropriate.

Annual reviews would provide timely information for customers and Government agencies to understand the basis for prices (which are annually set) and to respond to changing and emerging matters.

(b) Review timing

Since 1 July 2010, the QCA has reviewed revenues and costs during the regulatory period after retailers set prices - with the QCA reviewing the information available to retailers at the time of setting prices. The QCA assessment process was neither an ex ante (as for a typical price determination) nor an ex post assessment (as for a typical price monitoring report).

Stakeholder submissions

Unitywater (2013c) suggested long-term price monitoring using an ex post review of audited accounts to remove estimation error.

QUU (2013b) submitted that reviews are being undertaken at the same time the business must finalise end-of-financial-year statutory reporting requirements. The framework should consider conducting regulatory reviews either completely before or after the regulatory period. QUU noted that in other jurisdictions, regulatory reviews are completed prior to the commencement of the regulatory period.

QCA analysis

The Ministers' Direction requires the QCA to develop service quality performance reporting to inform customers about the comparative performance of the retailers.

Monitoring regimes for Australian airports, NSW water providers and Victoria water providers are all conducted on an ex post basis. *Ex post* monitoring of past performance provides:

(a) a focus on actual outcomes

(b) a basis to prioritise improvements for future planning.

The Ministers' Direction also requires the QCA to assist customer understanding of how costs of water and sewerage services influence prices identifying key drivers of existing retail price levels and annual price increases.

Ex ante assessment of costs would provide a basis for outlining the basis for future changes in prices for customers. *Ex ante* review of costs would also promote:

(a) greater certainty for retailers where cost increases are involved

(b) greater ability to avoid those costs deemed to be inefficient

(c) greater focus on factors controllable or predictable by the retailers rather than outcomes.

The QCA recommends *ex post* annual performance monitoring against pre-specified indicators to ensure a clear focus upon outcomes – revenue and prices against costs and service quality (to establish whether market power is being exercised). However, QCA would accept ex ante details from a retailer seeking certainty that the QCA would accept the deviation from CPI-X in a future period.

The SEQ retailers should submit their completed information templates for a financial year by 31 October following the financial year. This should provide sufficient time for all relevant information for the past year to be available. A QCA draft report would be completed by the end of January the following year, allowing time for retailers to respond to any recommendations prior to locking in pricing decisions for the following price period.

(c) Regulatory period

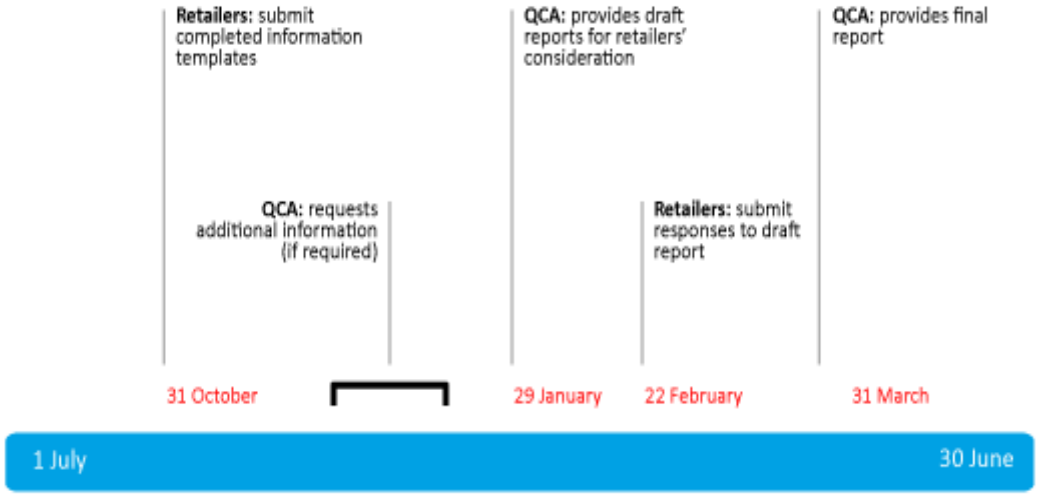
Under the Ministers' Direction the long-term framework would apply from 1 July 2015.

The QCA recommends that the performance reporting measures be put in place over 2014–15 and be available for review for 2014–15 from 31 October 2015. This would enable the QCA to compare the forecasts received for 2014–15 from the 2013-15 review, against outcomes for that year. This in turn would ensure a suitable reference for future efficient costs as a basis for future analysis.

Essentially, retailers would use the period from 1 July 2015 to prepare returns for 31 October 2015. The QCA would prepare a draft report for 29 January 2016 and a final report for 31 March 2016.

Timelines for annual performance monitoring are outlined in Figure 2.

Figure 2 Timelines associated with reporting



Cost of service reviews and price determinations

In the event that a cost of service review or price determination is required, the length of the regulatory period for which any performance targets or prices are to be applied would be an issue.

The QCA has in the past been directed to adopt: a five-year regulatory period for its oversight of GAWB (an initial review covered three years); a three-year regulatory period (with annual reporting) for 2010–13 price monitoring in SEQ; a two-year price monitoring review for SEQ for 2013–15; and annually for bulk water in SEQ.

Other jurisdictions

Regulators typically adopt a shorter initial regulatory review period and then gradually move to longer periods, adjusting these if required to take account of changing circumstances.

For example:

(a) IPART initially applied two-year regulatory periods for bulk/retail suppliers such as Hunter Water taking into account uncertainties about future demand on water supply systems, which could have implications for capital investment (IPART, 2003a).

(b) Under Government direction, ESCOSA (2013a) adopted a three-year initial regulatory period (2013-16), and the next regulatory period is to be four years.

(c) OTTER (2012) adopted an initial three-year regulatory period (2012–15), to be followed by a five-year regulatory period.

In some jurisdictions subsequent regulatory periods were shorter for a variety of reasons:

(a) IPART (2005a) for some entities subsequently adopted four-year periods (rather than five years) on the grounds that the regulated industry is undergoing change or facing uncertainty.

(b) IPART (2008) for some other entities considered that the shorter period was necessary to improve entities' information collection and recording systems, develop more comprehensive pricing proposals and undertake work to correct other shortcomings identified in the review.

(c) In the ACT, ICRC (2004) adopted a five-year review period and then subsequently used a shorter four-year price period (2004–08), due to uncertainties about water usage, drought impacts, concerns about long term capital projections, and potential commitments to a new major water source.

There is a broad range of factors that influence the decision as to the length of the regulatory period. Ofwat's (2010) analysis is summarised below.

Table 7 Long vs short regulatory periods

Benefits of a long regulatory period	*Benefits of a short regulatory period*
Investment Certainty - a longer-term review of capital expenditure reduces regulatory risk	**Flexibility** - Prices and price structures can adjust frequently to increase allocative efficiency.
Incentives - retailers can retain cost savings for a longer period and therefore have greater incentives for efficiency gains and innovation	**Revenue Adequacy** - frequent reviews reduce the risk that revenues and costs diverge over time due to unforeseen events
Innovation - retailers may be able to demonstrate benefits of innovation within one regulatory period	**Adaptability** - regulators may gradually increase rigour and information requirements to allow retailers to mature and adjust to the regulatory regime gradually
Price Certainty - greater price certainty may reduce the risks associated with complementary investment by customers	

Benefits of a long regulatory period	*Benefits of a short regulatory period*
Cost - less frequent reviews impose less administrative burden on retailers and regulators	

Source: Ofwat (2010)

Stakeholder submissions

Gold Coast City Council (2013) submitted that a forward-looking review period provides certainty to water retailers, and incentives for water authorities to achieve efficiency gains. Gold Coast City Council noted that the QCA should consider possible conflicts with the *Local Government Act 2009*, which limits councils to only adopt an annual budget.

QUU (2013b) noted that the previous annual reviews did not allow time to implement the findings of the review. These regular reviews also added to the costs of the business. Long-term reviews add extra risk, so an appropriate balance is sought.

Unitywater (2013c) proposed that the regulatory period should be either three or five years, nominated by the relevant water retailer.

QCA analysis

In general, regulators apply a five-year regulatory period unless:

(a) there are significant changes expected in the service provider's business activities

(b) the regulated retailers are new to regulation. In this case, an initial shorter regulatory period of say three years may be applied before transitioning to four or five years

(c) there are issues with the level and quality of information available from the regulated retailers, particularly in regard to long-term forecasts

(d) light-handed forms of regulation are employed that are less burdensome.

In the case of SEQ retailers, the previous price monitoring reviews are collectively of sufficient rigour to be classified as an initial review period (depending on the outcomes of the 2013–15 review particularly for the three councils). On this basis, in the event of a price determination by the QCA, it should apply for five years, unless specific circumstances justify otherwise (for example, information is limited to one year). The retailer would then return to annual performance monitoring provided the QCA's transition criteria are met (see below).

As a detailed review and price determination would require a greater level of information and analysis compared to performance monitoring, such a review would typically take up to 12 months. Any such review should be announced at the time of the Final Report in any year (that is 31 March). It is recommended that during the investigation, the retail and distribution component of prices be frozen (in real terms).

Final report

Submissions and responses to the QCA's (2014e) regulatory framework position paper are summarised below.

Table 8 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Timing of monitoring Draft recommendations: "3.7 Annual performance monitoring be undertaken on an ex post annual basis". 3.8 Entities submit their completed information returns for a financial year by 31 October following the financial year. The QCA's Final Report should be released by 31 March of the following year".	QUU (2014a) agreed that monitoring be ex post annual. However, it considered that greater detail was needed regarding the timing and processes of the cost of service and price determination reviews. QCA could finalise its annual performance monitoring before 31 March. QUU agreed that entity submissions be made by 30 October each year. QCOSS (2014) noted that it was not clear from the text if the draft reports which are intended to be provided to the retailers on 29 January 2016 would be made publically available and open to public consultation.	Where a cost of service review is conducted the QCA would establish timelines at the time of the review, reflecting the nature of the issues. As noted in the recommendation, the QCA proposes to release its final report by 31 March. Whether it can be released earlier depends on the nature of the issues identified. The QCA draft reports are intended to be made publically available for comment.
Regulatory review period Draft recommendation 3.11: "In the event of a regulatory price determination, a 5-year regulatory period apply unless circumstances justify a shorter period".	QUU (2014a) sought clarification as to what would justify a shorter (than 5 year) period for the regulatory price determination to apply.	A shorter than five year period may be justified for example if there was uncertainty about relevant factors such as future demand or long-term investments.
Prices frozen during cost of service review Draft recommendation 3.12: "During any detailed price investigation, the component of the price relating to retail and distribution services be frozen (in real terms)".	QUU (2014a) stated that it did not have an issue with the recommendation to freeze prices during an investigation but sought clarification on the timing and process of a detailed price investigation, and the measure of CPI to be applied. RCC (2014a) considered that a 12-month freeze of prices is heavy-handed and sought clarification on whether, while prices are frozen, the entity is returned to a 5-year review period thereafter.	A review could take 12 months (depending upon the key issues of concern). The CPI increase in prices is to be based on the RBA forecast. Once an efficient cost base is re-established through a cost of service review, the water retailer can return to annual performance monitoring.

QCA is not proposing any changes to its recommendations in the regulatory framework position paper.

Recommendations

3.7 Annual performance monitoring be undertaken on an ex post annual basis.

3.8 Retailers submit their completed information returns for a financial year by 31 October following the financial year.

3.9 Retailers make their first submissions by 31 October 2015.

3.10 The QCA prepare a draft report by 29 January and a final report by 31 March for the preceding financial year.

3.11 In the event of a regulatory price determination, a 5-year regulatory period apply unless circumstances justify a shorter period.

3.12 During any cost of service investigation, the component of the price relating to retail and distribution services be frozen (in real terms).

3.5.2 Binding rulings

Position paper

The Ministers' Direction also requires the QCA to assist the businesses to develop a strategic approach to long-term investment and ensure that whole-of-sector solutions, non-infrastructure solutions and efficient demand-side management initiatives are encouraged.

Large long-term investments and non-infrastructure initiatives present a risk for the retailers under an ex post performance monitoring regime as costs incurred by retailers may be later disallowed.

There is thus merit in an ex ante mechanism for reducing regulatory risk. This should take the form of a ruling which, unless there are significant deficiencies of fact later found to exist at the time of a submission, would be binding on any future regulatory reviews by the QCA.

Relevant details would be submitted to the QCA by 31 October each year.

Final report

Submissions

QUU (2014a) agreed with the recommendation for binding rulings and agreed to be bound by such a ruling. QUU considered that a request for a binding ruling should be able to be made at any time.

QUU also sought clarification on what QCA meant by the term 'initiatives' for the binding rulings.

QCA analysis

It is recognised that certainty may be required by a retailer at a time which does not coincide with the due date for submissions. The relevant draft recommendation has been edited to reflect this change.

The term 'initiative' refers to material changes in costs, or causes of changes in costs upon which a retailer requires the certainty associated with a binding ruling.

Recommendations

3.13 Where a SEQ water retailer seeks a binding ruling for particular initiatives in a future period, relevant details be submitted to the QCA at the retailer's discretion.

3.14 The QCA be bound by its ruling for the purpose of 3.13 provided that there are no significant deficiencies of fact later found to exist at the time of a submission.

3.6 Incentives

Incentives are a key feature of regulatory oversight and more so for performance monitoring. The avoidance of cost of service reviews itself is considered a key incentive for ensuring performance. Other mechanisms are also typically implemented for this purpose.

3.6.1 CPI-X

Position paper

Following an initial price review, where the cost base and pricing practices are set, most regulators estimate further potential productivity gains (identified by the X-factor) that should be achieved in total expenditure over the forthcoming regulatory period.

Other jurisdictions

The application of X-factors represents a generally accepted regulatory approach.

For example, IPART (2012a) identified annual catch-up efficiency gains for opex (up to 2% per year), to move Sydney Water to the efficiency frontier of a benchmark utility, and annual continuing efficiency gains for technical innovation (0.25% per year). IPART netted out planned gains already identified by Sydney Water, and adjusted for controllable costs, to give a net gain over the four-year period, accumulating to 1.8%.

ESCOSA (2013a) used the same approach for capex efficiencies, applying a continuing efficiency gain of 0.4% per year and a catch-up efficiency of 0.6% per year for uncontracted future capex.

Ofwat (2010) assumed a continuing efficiency improvement factor of 0.25% a year for both water and sewerage base operating expenditure. Ofwat also assumed continuing efficiency improvements for all companies of 0.4% a year for all capital expenditure incurred during 2010–-15 and 0.25% a year for the 2015–25 period. Ofwat took a more conservative view of the scope for continuing efficiency after 2015 to reflect the greater uncertainty in predicting costs and productivity further into the future.

QCA analysis

Determining the X-factor and the service quality performance targets requires a level of regulatory judgement – if too low, the service provider may not have much incentive to reduce costs, but if too high, service standards may be compromised in order for required cost savings to be met. For this reason monitoring of service quality is essential.

Generally this is achieved by reference to:

(a) benchmarking the business against comparators

(b) comparison to an engineering model of best practice for a service provider operating under the same operating environment conditions

(c) historical cost performance, historical rates of planned maintenance, and the potential for one-off impacts to affect opex

(d) efficiency targets established in other jurisdictions

(e) an analysis of total factor productivity.

The appropriate X factor/s would be reviewed in a separate report by 30 May 2014, in consultation with the retailers.

If achieved over a regulatory period there would not appear any evident reason to review a service provider's performance – subject to there being no major changes in the market for water services or technology.

Final report

Independent review of economic regulation in Victoria

The Independent Reviewer (2014) considered that effective price-based regulation sets a capped price path over the regulatory period with a downward adjustment based on arms' length measures of efficiency improvements, rather than information from the regulated business. The Reviewer noted that the recommended approach is commonly described as CPI-X, but chose not to use this terminology in its report.

ESC (2014b) submitted in response that the Reviewer's proposed model is untested and novel compared to frameworks established elsewhere. However, ESC (2014b) also submitted that its building block methodology has been affirmed by the Supreme Court of Victoria as a form of CPI-X or incentive-based regulation. It provides incentives by incorporating expected efficiency improvements into prices, setting relatively long pricing periods and minimising the ability of businesses to re-open previously approved prices.

Melbourne Water (2014) submitted that in a price-based regulatory framework there is still a role for a detailed understanding of costs to encourage efficient investment decisions and ensure a fair allocation of costs. This would assist in setting cost reflective prices – for example between bulk water and sewerage, setting fixed and variable charges and supporting any third party access proposals.

Final outcomes of the Victorian review are pending.

Submissions

QCOSS (2014) supported the QCA's recommendation of CPI-X regulation as it has a number of advantages over cost-based regulation which are not just related to the costs of regulation and resource intensiveness (but in this case also relate to monitoring service quality).

QUU (2014a) suggested in an ex post framework, 'future' prices' would not be monitored against CPI-X.

QCA analysis

The proposed reform of economic regulation in Victoria involves potentially adopting a framework similar to the QCA's recommended annual performance reporting.

QCA agrees with QCOSS's comment that CPI-X regulation has a number of advantages over cost-based regulation.

In response to QUU, it is noted that under the annual performance monitoring framework, QCA recommends that it monitor prices as set by the retailers for the preceding year (reviewed ex post).

Recommendation

3.15 Changes to prices, and MAR where relevant, be monitored against CPI-X.

3.7 CPI

The issues in applying CPI were addressed in the QCA's technical paper – SEQ Long-term framework – annual performance monitoring - implementation issues (technical paper) (QCA 2014f).

3.7.1 Technical paper

Australian regulators have consistently used CPI as an input cost index in regulatory decisions (ESC 2013b, ERA 2013a, ESCOSA 2013a, ICRC 2008, 2013 and IPART 2012a).

In SA, SA Water argued for increases in prices above CPI citing increases in input costs, but ESCOSA (2013a) rejected this approach on the basis that another cost index was unlikely to perfectly match SA Water's mix of inputs and would not drive efficiency gains.

The QCA has also used CPI for escalating some index prices and prices in general in other parts of the sector, electricity, rail and ports regulation.

It is noteworthy that CPI is readily available and widely understood. Moreover, it is sufficiently broad-based not to be affected by the actions of any regulated business. Industry-based cost estimates are more narrowly defined, and are therefore more volatile over the short term.

Which measure of CPI

As noted above, CPI is variously used to measure past changes in particular input costs, as a broad measure to forecast input costs and a means for escalating prices into the future – as well as for applying CPI-X.

The particular measure of CPI adopted needs to reflect the purpose for which it is intended to be applied.

Water retailers set prices either by reference to CPI or by reference to changes in their costs. Prices are set only one year in advance – in some instances water retailers maintain longer-term cost models for strategic and operational planning purposes.

Under the performance monitoring framework, the QCA has drawn on the arguments presented by Baumol and others cited above and proposed to assess water retailers' changes in prices against CPI (-X). This approach is considered to:

(a) provide suitable incentives for improved productivity as it reduces the possibility of gaming and, to avoid more detailed reviews, encourages water retailers to seek out potential efficiency gains (particularly when in conjunction with X)

(b) promote the financial sustainability of an entity to the extent that CPI reflects the general movement in input prices. The recommended performance monitoring framework incorporates various means for addressing any particular concerns should these arise; these include binding rulings and unders and overs accounts.

The forecast of CPI at the time prices are set for a forthcoming year seems most appropriate for such an approach, as prices should be forward-looking at the time they are set.

A question remains as to what is the best means for forecasting CPI at the time prices are set. The main options for doing so are:

(a) the rate observed for the past year (December to December is generally preferred by water retailers as March to March is not always available at the time prices are set)

(b) a long-term average of past rates

(c) a long-term benchmark [RBA] target for CPI

(d) a published [RBA] forecast for each year.

Other jurisdictions

In other jurisdictions price regulation is typically ex ante – prices are based on forecast costs and revenues over a regulatory period of up to five years. For this purpose, ESCOSA (2013a) used the previous year's observed CPI to set prices. IPART (2013a) used the mid-point of the RBA target range.

The AER (2012) used the RBA's short-term inflation forecast for the first two years and then the mid-point of the target inflation in the later years (2.5%).

In setting the 2014–15 retail electricity prices the QCA used a CPI consistent with the mid-range of the RBA forecast (QCA, 2014c). For irrigation pricing for SunWater and Seqwater, the QCA used specific forecasts for labour, materials and electricity costs, but applied the mid-point of the RBA target range for all other direct and non-direct costs (2.5%) (QCA 2012a, 2013a).

QCA analysis

Options (a) and (b) are essentially backward-looking and while in stable inflationary environments there may be no significant difference between these and other approaches, forward-looking approaches would be more relevant where inflationary expectations are changing – and would more likely protect water retailers' financial sustainability when prices are expected to rise.

The principal benefit of using a long-term benchmark forecast such as the RBA target (option (c)) is that it gives a stable, predictable and forward-looking CPI estimate (of 2.5%). It would thus provide certainty to water retailers and customers about the standard against which price rises are assessed over a long-term period.

However, the forecast for any particular year may diverge from the RBA target range, leading to accumulated under- or over-recovery.

The QCA preferred that water retailers' prices be compared to annual forecast CPI (the RBA forecast) at the time the pricing decisions are made (option (d)). The RBA forecasts are forward-looking and reflect authoritative market expectations. A forward-looking approach is also consistent with the methods used to establish WACC, for example, also based on a forward-looking risk-free rate and also reflects the approach used by the QCA for electricity price setting (QCA 2014k).

Forecasts are made available by the RBA quarterly, including in February each year.

Where for a particular period the RBA publishes only a range for the CPI forecast, the mid-point of the range should be adopted (in the absence of any particular reason to use either end of the range). For example, for 2014–15, the RBA, in its February Statement on Monetary Policy, forecast a range from 2.25% to 3.25%, giving a mid-point of 2.75% (RBA 2014).

As noted above, such an approach is consistent with the QCA's approach in other sectors.

3.7.2 Final report

Relevant submissions and QCA responses to the QCA's (2014f) technical paper are summarised below.

Table 9 Summary of submissions and responses

Issue	*Comment*	*QCA response*
CPI-X - general comments	QUU (2014b) suggested that when referring to the options for forecasting CPI, instead of using the word "actual", the QCA should use "existing" or "published". CRA (2014) and Unite Against Unitywater (2014) both considered that without QCA's independent confirmation of Queensland Government's determination of 2008 legacy regulatory asset value, adoption of the modified CPI indexation methodology would not achieve the stated overall regulatory objectives.	To remove any ambiguity, the QCA has replaced 'actual' with 'published'. A review of the initial asset base (established for the purposes of 2010-13 price monitoring) is explicitly prohibited under the Ministers' Direction.
Divergence of forecast and realised CPI QCA comment that: "where prices are reset annually, such as is the case for SEQ water retailers, the forecast for any particular year may diverge from the RBA target range, leading to accumulated under- or over-recovery."	QUU (2014b) noted that resetting prices annually is not related to the divergence from the target range. Rather, resetting prices annually reduces the risk of accumulated under- or over-recovery related to divergence from the RBA target range.	Accepted the phrase was used to establish a context. It is proposed to delete the introduction "where prices are set annually, such as is the case for SEQ water retailers".
CPI Draft recommendation: "CPI be based on the RBA forecast national CPI index (or the mid-point of the forecast range where a forecast is not available) applying at the time of SEQ retailers' pricing decisions."	QUU (2014b) accepted the recommendation.	Noted.
	RCC (2014b) accepted the use of a forward-looking CPI measure as issued by the RBA. RCC was concerned that any delay in the RBA's release of its February forecast would affect the timeliness of pricing decisions.	Should the relevant information not be available at the time pricing decisions are made then the preceding forecast would apply.
	QUU (2014b) understood that QCA would use the mid-point of the RBA's forecast range to assess retailers' prices, but that the mid-point of the RBA's target range would be used for forecasting the MAR. QUU supported using the recommended RBA forecast range for both purposes.	The QCA agrees that where a forecast CPI is used, the same basis should be adopted. QUU's suggestion is accepted to be applied from 1 July 2015 onwards.
	GCCC (2014b) submitted that it bases final price decisions on the March to March ABS CPI data released in mid-April each year. This aligns with contractual arrangements.	Under annual performance monitoring, GCCC may use historical CPI data to set prices. The QCA's recommendation is for monitoring purposes.

The QCA's recommendation remains unchanged.

Recommendation

3.16 CPI be based on the RBA forecast national CPI (or the mid-point of a forecast CPI range) applying at the time of SEQ retailers' pricing decisions.

3.8 X Factor

The range of approaches and methods for establishing an X factor were discussed in the QCA's (2014e) regulatory framework position paper. The derivation of an X-factor for SEQ retailers was provided in the technical paper (QCA 2014f).

3.8.1 Position and technical papers

The regulatory framework position paper (QCA 2014e) noted that X may be based on an appraisal of the entity's ability to achieve cost savings ('cost-linked') or may be 'unlinked' from firm specific costs and based on broader productivity assessments.

The cost-linked approach

The cost-linked approach is related to rate-of-return regulation in that the regulator determines building block costs for the regulated entity. However, in determining building block costs, the regulator assesses the scope for efficiency gains in the entity's operating and capital expenditure. This involves detailed analysis of costs to identify whether they are prudent and efficient, and conclusions may be supported through benchmarking or comparative analysis.

The 'unlinked' approach

The regulated firm's prices are allowed to grow by an index intended to reflect input price growth (CPI) and adjusted by an exogenous measure to provide a further incentive to improve productivity.

In a pure application neither the CPI nor the X-factor is linked to a firm's cost structure (that is, they are unlinked).

Two types of productivity measures are typically adopted:

(a) total factor productivity (TFP)

(b) partial performance indicators (PPI).

Total factor productivity

TFP measures changes in output that result from the efficiency with which inputs are used in production.

While an industry-specific TFP measure is typically adopted, a more sophisticated approach is to account for differences in TFP growth between the regulated industry and the broader economy and differences in input price growth between the regulated industry and the broader economy (QCA 2012d; Bernstein and Sappington 1999). Input prices of the typically more capital intensive regulated industry may grow at a different rate from input prices in the broader economy.

Partial performance indicators

Partial performance indicators (PPI) measure productivity by using benchmark measures of operating expenditure or unit-cost measures. Such measures are typically used where it is difficult to obtain robust and reliable estimates of TFP.

Other jurisdictions

Application of the cost-linked approach

The cost-linked approach to determining X is adopted by a number of regulators including, in Australia, the Australian Energy Regulator (AER 2010), the Independent Pricing and Regulatory Tribunal (IPART 2012), the Essential Services Commission (ESC 2013c), the Essential Services Commission of South Australia (ESCOSA 2013a) and the Economic Regulation Authority (ERA 2013a).

IPART, ESC, ESCOSA and ERA undertake efficiency assessments of the expenditure proposals of regulated service providers, usually using the advice of consultant engineers.

Application of the 'unlinked' approach

TFP

There have been a few academic and regulatory studies that have attempted to estimate the TFP of the Australian water industry.

The studies have sometimes employed data envelopment analysis (DEA, a non-parametric technique which constructs feasible input-output combinations based on sample business data) to estimate TFP and have tended to show declining productivity growth in the urban water sector, between the mid-1990s and the mid-2000s.

One study (Coelli and Walding 2006) recorded an average annual decline in TFP of 1% over this period while a second study (Byrnes et al 2010) recorded an average annual decline of as much as 10% (largely attributed to water conservation policies over the period studied). Only one study (Worthington, 2011) showed positive average annual growth in TFP (1%).

The ESC (2012b) also has published findings on productivity trends of the Victorian water industry over the period 2006 to 2010 finding an average annual decline in TFP of 0.5% for the businesses studied. The Commission's decomposition of TFP was based on a stochastic frontier model. The ESC also estimated TFP using the random effects model and index-based approach (using a Cobb-Douglas index specification). The average of the three models (stochastic frontier model, random effects model and index-based approach) was used to compare Victorian metropolitan and regional water retailers to interstate retailers.

These results have been influenced by the period chosen for analysis (typically a period of significant investment in supply augmentation) and the measurement of outputs and inputs. In general, the studies advanced three key reasons for the measured decline in productivity:

(a) the drought over this period and the corresponding decline in average water use

(b) recent investments in supply augmentation which have resulted in higher input costs

(c) increased regulatory compliance requirements.

PPI

In regulatory applications, PPI measures have typically been used to inform judgements about the scope for efficiency gains in the process of cost-linked reviews however they involve judgements based on benchmarking (see for example, the AER (2010), IPART (2012a), ESC (2013a), ESCOSA (2013a) and ERA (2009, 2013a)).

In an extensive review of the use of PPI in regulatory applications in the energy sector, the ACCC (2012c) found that PPI benchmarking methods appear to have been relied on when there are a small number of comparable regulated utilities.

PPI benchmarking methods appear to often be complemented with other methods. For example, the Ontario Energy Board in Canada and the Irish CER considered the results of both PPI and econometric benchmarking methods (ACCC 2012c).

QCA analysis

Cost-linked approach

The cost-linked approach has been criticised for its close resemblance to rate of return regulation in that the regulated firm has little incentive to reduce its costs once they have been approved by the regulator.

It can also be a time-consuming and costly exercise.

Unlinked approaches

The unlinked approach avoids the potentially time-consuming process of directly identifying cost savings.

TFP

The application of TFP requires significant robust information and is subject to significant difficulties such as potential errors following from errors in the assumptions underlying the estimation methodology and errors in the selection and measurement of inputs and outputs (Biggar 2005).

The empirical studies of TFP growth in the Australian water sector reinforce the impact, on estimates of productivity growth, of the choice of methodology, data and measurement approach. For example, because many of the studies occurred during a period of significant investment in supply augmentation, they show a decline in productivity over time.

PPI

While partial productivity measures offer a relatively simple approach for measuring productivity, they ignore the possibility for substitution between inputs and assume that there is a linear relationship between inputs and outputs. For example, if capital expenditure is substituted for operating expenditure, a unit cost measure of operating expenditure may indicate that there has been an increase in productivity (ACCC 2012c).

Proposed Approach

Reflecting concerns about the lack of incentive of cost linked estimates and the information problems (as well as costs and time) associated with establishing robust sophisticated methods for establishing 'unlinked' X, in practice, regulators often rely on historical information about the performance of regulated firms or of other firms in similar industries in setting an X factor (King, undated).

In effect this means reviewing previous cost-linked reviews of the regulated firms and related unlinked sources – noting also that the X-factor may depend on the form and effectiveness of prior regulation and whether the nature of ownership has changed (King, undated).

Consistent with the above, to set a value for X the QCA has reviewed:

(a) the historical performance of the water retailers

(b) the performance of like businesses in other jurisdictions

(c) the X-efficiency targets set by other regulators.

While the resultant estimates lack the desired rigour otherwise sought, other components of the proposed regulatory framework are available as safeguards where the nominated CPI-X potentially results in unanticipated untoward financial or service quality outcomes.

Past reviews of SEQ retailers

Operating expenditure efficiencies in SEQ for 2010–15

At the commencement of prices oversight and other complementary Queensland Government policy initiatives substantial savings in operating expenditure were identified. Initially an amount of $127 million in savings was achieved over 2010–13. This represented about 4% of total operating expenditure over that period.

The average efficiencies identified by the QCA as part of price monitoring alone in non-bulk operating expenditure of the Queensland water distribution-retail businesses over the period 2010–15 are summarised below.

Table 10 Identified operating expenditure efficiencies of SEQ water retailers

	2010-11	***2011-12***	***2012-13***	***2013-14****	***2014-15****	***Annual average***
QUU	-0.4%	1.4%	4.4%	2.3%	0.5%	2.0%
Unitywater	1.5%	-0.9%	4.8%	1.2%	1.7%	1.6%
Gold Coast Water				0.4%	1.1%	0.7%
Logan Water				1.6%	2.1%	1.8%
Redland Water				5.7%	6.6%	6.2%

*Sources: QCA (2011, 2012c, 2013b, 2014d, 2014e, 2014f, 2014g, 2014h). *Excludes relatively large savings in tax expenditure.*

While a wide range of estimates of savings have been identified by the QCA in past reviews, for most water retailers these ranged between 0.7% and 2% per annum although average efficiency gains of 6.2% per annum were identified for Redland Water for 2013–14 and 2014–15 (based on the retailers' forecasts at the time prices were set).

Capital expenditure efficiencies in SEQ for 2010–15

At the commencement of prices oversight and other complementary Queensland Government policy initiatives, substantial savings in capital expenditure were achieved. Initially an amount of $1.1 billion in savings was achieved over 2010–13, as identified and implemented by the retailers. This represented about 38% of total capital expenditure over that period.

In subsequent monitoring investigations, the QCA used a sample of capital expenditure items to review prudency and efficiency. Samples accounted for between 23.9% and 45.8% of total capital expenditure of Unitywater and QUU. However, capital expenditure was, in total, only 5.9% of the RAB of these retailers.

Given that the combined capital expenditure of QUU and Unitywater over 2010–15 makes up 5.9% of their combined RAB, the capital expenditure savings identified (6% of the capital expenditure reviewed) make up a relatively small percentage (0.4%) of the combined RAB of these retailers. If these savings are expressed in terms of MAR (through return on and of capital) this represents a reduction of approximately 0.04% in the MAR.

It should be noted that while savings in capital expenditure may appear insignificant when expressed in MAR terms, they may be significant when considered over the life of the relevant assets and in the context of the amount of the initial outlays.

X-factor in other jurisdictions

Operating expenditure efficiencies in other jurisdictions

The operating expenditures of various retail-distribution businesses in Australia have often been reviewed by expert consultants as part of the price determination or price monitoring processes of various regulators over the last decade. These reviews have identified efficiencies in operating expenditure of various water retail-distribution businesses as noted below.

Table 11 Identified operating expenditure efficiencies of selected water businesses across Australia

Service provider	*Period*	*Average annual efficiencies in operating expenditure*
City West Water	2009-18	1.1%
South East Water	2009-18	1.1%
Yarra Valley Water	2009-18	0.7%
State Water Corporation	2010-14	0.8%#
Sydney Water	2012-16	0.25% #
Sydney Catchment Authority	2012-16	0.3%
SA Water	2013-16	0.4%
Water Corporation (WA)	2005-16	2.0%##

Sources: IPART (2012), ESC (2009, 2013b), ESCOSA (2013a), ERA (2013). #Represents estimated achievable on-going efficiency gains. IPART also identified catch-up efficiency savings of 0.6% rising to 1.2% per annum (for State Water) and 1.5% rising to 2% (for Sydney Water Corporation). ##Applied to 'business as usual' operating expenditure.

Operating expenditure targets in other jurisdictions

In other jurisdictions, continuing efficiency improvements have ranged from 0.25% per annum to 2.2% per annum. The ESC (2013a) imposes a 1% (real) per year annual efficiency target in baseline operating costs (business as usual costs) for metropolitan Melbourne water retailers and Melbourne Water (based on analysis by the Victorian Competition and Efficiency Commission (VCEC 2008)). This applies to controllable costs, excluding bulk water charges and compliance costs such as license fees and environmental charges and one-off costs such as drought management.

In NSW, IPART (2010, 2012a) identified catch-up efficiencies (gains in operational efficiency to move to the level of a top performing frontier company) and continuing efficiency (increased productivity derived from process innovation and technology or a shifting of the frontier). IPART (2010, 2012a) applied catch-up efficiencies of 0.6% rising to 1.2% (real) per year for State Water Corporation and 1.5% rising to 2% per year for Sydney Water Corporation (that is, operating expenditure efficiencies to bring these service providers to the benchmark efficiency frontier). Ongoing efficiency gain targets were 0.8% and 0.25% per year respectively.

For the Sydney Catchment Authority (SCA), a bulk water provider, efficiency gain targets were only 0.3% of core operating cost per year (IPART 2012a). This target was estimated by Halcrow and took into account identified efficiency savings from various projects, offset by increases in

expected customer service costs. It is notable that this (relatively low) efficiency target followed a period of significant cuts in FTEs by the SCA – from 289 FTEs (in 2007–08) to 246 (in 2010–11).

Capital expenditure efficiencies in other jurisdictions

Other regulators in Australia, including the ESC (2013a), IPART (2012a), ESCOSA (2013a) and ERA (2013a) typically assess capital expenditures using cost-linked methods with the aid of a consultant. Typically, the capital expenditure program is broken down into components including growth related expenditure and expenditure related to regulatory compliance. The expenditure is then analysed using a range of tools including trend analysis.

Examples of efficiency savings identified by regulators in other jurisdictions include:

(a) Victoria, where the ESC found average savings, across the metropolitan Melbourne businesses, of 3% for the 2013–18 pricing determination.

(b) NSW, where IPART found average savings of 15.6% in Sydney Water's capital expenditure program, for the 2012–16 pricing determination, reflecting IPART's view on the scope for efficiency improvements and the desirability of re-phasing some parts of the program.

(c) South Australia, where ESCOSA set a capital expenditure benchmark for SA Water that was 14.4% lower than proposed by SA Water for the 2013–16 pricing determination primarily as a result of re-phasing the capital expenditure program.

However, these regulators have not set specific savings targets in terms of a total MAR equivalent.

An X-factor for SEQ retailers

Proposed efficiencies in operating expenditure

The evidence from the QCA's reviews of the water retailers indicates that efficiency gains in operating expenditure (excluding tax) for most retailers averaged between 0.7% and 2% per annum, with some variation from year to year.

The implications of the experience in other jurisdictions are difficult to assess as the water utilities in other States differ in various ways to the SEQ water retailers. SA Water, the Water Corporation of WA and the Victorian regional water authorities are vertically integrated bulk/retail businesses. Melbourne Water provides treated water and wastewater services and bulk transport services. Sydney Catchment Authority is a bulk business that does not provide treated water services while the NSW State Water Corporation provides regional bulk/retail services. Sydney Water and the Victorian metropolitan authorities are most comparable to the SEQ retailers.

Overall, the identified operating cost efficiency savings ranged from 0.25% (Sydney Water, which is mainly a retailer) to 2% (Water Corporation of WA). For the service providers that focus on retail services, the efficiency savings ranged from 0.25% (Sydney Water) to 1.1% (South East Water and City West Water in Victoria).

Other regulators have typically used the estimated efficiency gains as targets, for example, IPART applied a 0.3% target to SCA based on its cost-linked analysis. In Victoria, however, the ESC applies a broad 1% target to all regional and metropolitan water authorities.

On the basis of the three assessment criteria, therefore:

(a) historic SEQ performance suggests a range of 0.7% to 2%

(b) opex efficiency gains in like businesses in other jurisdictions range from 0.25% to 1.1%

(c) regulators' efficiency targets range from 0.3% to 2%.

This leaves a wide potential range for setting operating X efficiency. However, based on QCA's past experience, operating cost efficiency gains could be expected to be in the 0.7% to 2% range for the SEQ water retailers. It is reasonable to expect that the scope for efficiency gains would become less as businesses mature, and an X at the lower end of the range would be reasonable, while also remaining within the ranges and targets identified in other jurisdictions.

There is essentially no clear pattern based on the available information as to whether different estimates of X should be applied to any particular SEQ water retailer (estimates for Redland are still under review) nor for any group of retailers.

Proposed efficiencies in capital expenditure

The evidence from the QCA's reviews of water retailers together with the experience in other jurisdictions shows that, given the variable and lumpy nature of capital expenditure, it is much more difficult to forecast benchmark capital expenditure over time and therefore the potential efficiency gains.

The QCA's experience with prudency and efficiency reviews shows that, while they result in meaningful savings in actual capital outlays, the impact on the MAR (in the absence of any recent significant augmentations relative to the asset base) and therefore prices, have more recently been quite small. Based on the historical savings identified in capital expenditure in the QCA's previous reviews, a target saving of up to 0.04% in MAR equivalent would seem appropriate.

X-factor

Efficiency gains of 0.7 to 2% per annum in operating expenditure (excluding Redland Water) (MAR equivalent) translate into a decrease in total costs (or MAR) of between 0.2% and 0.6% per annum for distribution and retail services (excluding Redland Water), as shown below.

Table 12 Operating efficiencies of SEQ water retailers - MAR equivalent

	2010-11	***2011-12***	***2012-13***	***2013-14****	***2014-15****	***Annual average***
QUU	-0.1%	0.4%	1.3%	0.6%	0.6%	0.6%
Unitywater	0.6%	-0.3%	1.4%	0.3%	0.5%	0.5%
Gold Coast Water				0.1%	0.3%	0.2%
Logan Water				0.4%	0.5%	0.5%
Redland Water				1.8%	2.0%	1.9%

*Sources: QCA (2011, 2012c, 2013b, 2014d, 2014e, 2014f, 2014g, 2014h). *Excludes relatively large savings in tax expenditure.*

The QCA recommends an X-factor near the low end of this range (0.2%) be adopted noting that further operating efficiency gains would become more difficult to achieve as fewer opportunities for savings become available.

Taking account also of the capex efficiency target of 0.04%, the QCA considers a reasonable overall X-factor of 0.25% per year should be applied to the MAR. This X-factor would apply in monitoring from 1 July 2015 onwards.

3.8.2 Final report

Relevant submissions and responses to the QCA's analysis of X-factors are summarised below.

Table 13 Summary of submissions and responses

Issue	*Comment*	*QCA response*
The X-Factor Draft recommendation: "An X factor of 0.25% be applied annually (to the MAR for distribution retail services) for the 5 SEQ water retailers."	QUU (2014a) had no concern with the X factor recommended. Traditionally, X factors in Australia have been used in price deterministic regimes rather than for establishing a threshold to trigger a request for further information and explanation from DRs. This distinction should be noted.	The X factor is an estimate of efficiency gains considered achievable. It is not a trigger - that is, failure to achieve the target does not necessarily trigger a cost of service review.
	QUU (2014a) noted that minor breaches of such a strict price constraint would not provide any meaningful indication that a DR is exercising market power.	Retailers are not constrained to limit their price increases to CPI-X. Increases that exceed CPI may be justifiable.
	RCC (2014a) submitted that QCA had not taken into account the small size of its water business when setting X. Seeking more efficiencies is more challenging for a business that reaps no benefits from economies of scale. RCC considered it unlikely that there are further operational efficiencies that can be identified amounting to 0.25%.	The X factor was established taking account of the efficiency objectives applied in other jurisdictions and the gains identified in price monitoring investigations of SEQ retailers since 2010-11. Economies of size were therefore taken into account.
X-factor during transition	QUU (2014a) sought clarification as to whether the reference to the X-factor was to smoothing or for a CPI-X regime.	The reference relates to CPI-X.
X-Factor	RCC (2014b) commented that the QCA has not taken economies of scale into account in determining the X factor. The QCA approach is one size fits all.	The QCA has not observed any discernible pattern in efficiency savings that could be related to scale economies relevant to establishing the X factor.
	RCC considered that the X factor proposed by IPART for opex efficiencies for Sydney Water (2%) would not be achievable by smaller council owned retailers.	The recommended X factor (0.25%) is considered achievable for SEQ retailers, being in effect lower than that applied to Sydney Water.
	RCC queried whether the X factor would be set by 2014 or 2015.	The recommended X factor (0.25%) is to apply from 1 July 2015.

The QCA proposes no change to its draft recommendation.

Recommendation

3.17 An X-factor of 0.25% be applied annually (to prices, and the MAR where relevant).

3.8.3 Reviewing and resetting the X-factor

Position and technical papers

The QCA's (2014e) regulatory framework position paper noted that, where retailers demonstrate that price increases are in line with CPI-X but costs increased by less than CPI-X due to efficiency initiatives, these gains may be retained by the retailers for up to three years before being passed through to customers.

Whether or not retailers are able to outperform the CPI-X target through efficiency initiatives would depend on the level at which X is set.

Given its importance, the QCA should review the X-factor in five years, or earlier, should evidence emerge that the X-factor is inappropriate.

Final report

QUU (2014a) agreed that the X-factor be reviewed [periodically]. However, this should be part of a holistic review of the long term regulatory framework to assess its effectiveness.

The recommended framework responds to the Ministers' Direction. Whether there should be future reviews of the effectiveness of the framework is a matter for the government. The QCA's recommendation remains unchanged.

Recommendation

3.18 The QCA review the X-factor in five years or earlier if it is considered a more appropriate estimate should be applied.

3.9 Form of risk management

3.9.1 Position paper

Risk is the prospect of variation between expected and actual outcomes. Management or mitigation of individual risks would impose different costs on different parties and attitudes to risk are likely influenced by the ability of parties to manage the risk (QCA 2012d). Allocation of risk to parties best able to manage it provides incentive for improved performance (Ofwat 2010) and should increase economic efficiency (Jin 2009).

There are two mechanisms to control such risks – revenue and price caps. Both provide an entity with an incentive to minimise costs, as once the cap is set as under either, retailers can secure the benefits of efficiency gains until the end of regulatory period or longer.

The Ministers' Direction also specifically requires the QCA to consider the treatment of aggregate annual revenue under- or over-recoveries in relation to core water and sewerage services as part of the permanent price monitoring framework. Such a mechanism can be used to minimise revenue risks for retailers.

Revenue caps

Under a revenue cap, the regulated entity is guaranteed the opportunity to earn a set level of revenue, and is protected from demand volatility (QCA 2013d).

As revenue is fixed, where the revenue cap covers a number of products or services, an entity can increase profits by increasing the prices of relatively high-cost, price-insensitive services while reducing the prices of relatively low-cost price-sensitive services (AER 2012).

Volume risk is passed to the customer through changes in prices.

If demand is higher than expected and there is no excess capacity, the extra revenues required to fund any supply augmentation may not be available until the next price review (unless arrangements are in place for cost pass-through or review triggers).

Over the short term, a revenue cap can promote demand side management projects that reduce demand (Crew and Kleindorfer 1995) but generally if building blocks are used there is a general incentive to increase the volume of sales to increase the size of network on which a return can be achieved (AER 2012).

Less information is required than for price caps as the regulator only requires information on the total revenue for the regulatory period.

To avoid the prospect of cross-subsidies the revenue cap is often accompanied by pricing principles that proscribe inappropriate price structures.

There are a number of issues associated with revenue caps in that they may:

(a) increase the volatility of prices to customers to an unacceptable level. This volatility may in turn discourage investment by customers

(b) reduce the transparency of the regulated price by creating a gap between the published price and the out-turn regulated price.

A fixed-revenue cap is usually set at the commencement of the regulatory period and not varied. Under a variable-revenue cap, revenues are linked to a particular variable or group of variables, such as demand or performance measures. In this instance, if demand changes the amount of revenue can be adjusted.

Average revenue caps may be used to set maximum per unit revenues, and where set separately for different products and services, are similar to price caps in regard to risk management.

Price caps

Price caps control the prices charged by the service provider, rather than revenue. There is no effective limit on revenue within the regulatory period.

Under a standard price cap the service provider has an incentive to reduce costs, improve productivity, and increase sales, at least until prices are reset in the future. Accordingly they have a disincentive to undertake demand management that restricts output.

Where there are different costs for different services an individual price cap can be set for each service or consumer type (and thus prevents cross-subsidisation across different consumer classes).

There are a number of issues associated with price cap regimes:

(a) the regulated entity has little flexibility to adjust prices once set within the regulatory period unless accompanied by within-period adjustment mechanisms such as review triggers

(b) a price cap requires a significant amount of information for the setting of the price control, including for example, demand forecasts and demand elasticity and can evolve into cumbersome fact finding and consultative procedures similar to those found for cost of service regulation (Gomez-Ibanez 2003).

Fixed price caps are set for the regulatory period, usually subject to either the CPI or CPI-X.

An important aspect of ideal price cap regulation is that these factors are set with reference to exogenous benchmarks and not entity-specific values that are vulnerable to manipulation by the regulated entity (Beesley and Littlechild 1989; Laffont and Tirole 1994).

A weighted average price cap limits annual price increases on the basis of a basket of specified services. Often the weights would be fixed with reference to the base year in which the control is set. Under such an arrangement, a business has an ability to rebalance prices during the regulatory period. Complexities arise in determining the basket of services, the weighting system and how and when changes are made.

Under a weighted average price cap, an entity has an incentive to reduce the price for those services where sales are highly sensitive to price and the incentive to increase the price for services which are price insensitive (AER 2012). Such potential cross-subsidies may not be inconsistent with economic efficiency (see QCA 2013d).

A particular difficulty with a weighted average price cap is that the specification of weights requires a greater level of information than a simple price cap.

Hybrid approaches

Hybrid approaches combine price and revenue caps. These include different forms of regulation for different customer categories, different services or different parts of charges.

For example, a revenue cap may apply to the fixed cost component and a price cap may apply to the variable cost component of the total revenue requirement.

Other jurisdictions

In this respect, a price cap form of regulation applies in most other jurisdictions. For example, ICRC for ACTEW Corporation changed from a revenue cap to a price cap approach on the basis of concerns with the revenue cap about the potential for year-to-year price fluctuations, lack of certainty for customers and the resource intensive nature of annual price resets (ICRC 2013).

ESC (2013a) approved a 'hybrid' form of price control to apply to City West Water, Western Water and Melbourne Water. This involves a price cap applying to the initial year of the regulatory period with the businesses having the ability to propose a tariff basket to apply at the time of the annual price review. ESC considered that this approach provides a balance between the need for revenue certainty and customers' need for price stability.

However for Yarra Valley Water, the ESC (2013a) approved a revenue cap to apply for the duration of the regulatory period. ESC considered that this approach addresses difficulties experienced with revenue variability and limitations associated with demand forecasting.

QCA analysis

Control mechanisms

In reviewing SunWater's irrigation schemes, the QCA (2012b) noted that it is the allocation of risks and the nature of regulatory arrangements that are important rather than the form of price control.

The preferred form of risk management, tariff structure and the discount rate need to be consistent to ensure risks are appropriately allocated and managed, and parties appropriately compensated. The nature of the appropriate tariff structure and discount rate are addressed in subsequent chapters.

The nature of the relevant risks, their appropriate allocation and the recommended means of addressing that risk appears in Table 14 below.

Table 14 Summary of risk and recommended allocation and mechanism

Risk	*Nature of the risk*	*Allocation of risk*	*Recommendation*
Short-Term Volume Risk	Risk of fluctuating customer demand and supply due rainfall or demand.	Retailers can only partially manage these risks. As customers are the beneficiaries of service provision, those risks not able to be managed by the retailers should be allocated to customers.	Either revenue cap (with growth factor) or price cap with triggers (cost of service review or binding ruling) for material changes in the volumetric and fixed would achieve allocative efficiency and revenue adequacy respectively. A fixed revenue cap could involve an unacceptable number of price resets.
Long-Term Volume Risk (Planning and Infrastructure)	Risk of matching asset capacity to future demand.	Ministers' Direction requires customers to bear cost of past assets. Cost-reflective tariffs (with long run marginal cost in the volumetric component) can provide appropriate signals for future demand. Retailers responsible for cost effective responses.	Either revenue or price cap would address this requirement. The appropriate infrastructure response and necessary revenue base for prices be established through the initial review. For subsequent periods where there are significant variations in costs, cost of service reviews or binding rulings may be necessary. Either price or revenue cap could be adopted.
Market Cost Risks	Changing input costs	Retailers should bear the risk of controllable costs. Customers should bear the risk of uncontrollable costs	Breaches of CPI-X and/or service quality performance targets likely to trigger cost review. Uncontrollable costs such as those resulting from Government legislation should be passed through.
Bulk Water Cost Risk	A substantial and specific form of input cost risk relating to the cost paid by retailers for bulk water (set by	Customers bear this risk (uncontrollable cost to the retailer).	Cost pass-through.

Risk	*Nature of the risk*	*Allocation of risk*	*Recommendation*
	Queensland Government)		

Essentially, a revenue cap would result in considerable potential price volatility (unless accompanied by price bands) while a price cap would result in more stable prices and could incorporate an acceptable price band or defined triggers for changes under more extreme circumstances.

Any changes to future prices above CPI-X would be a significant factor in deciding whether to trigger a cost of service review (except insofar as they incorporate an underspend from a previous period or for which the reasons could be substantiated by the QCA).

The bulk water price is determined by the State Government, without any control by the retailers. As noted in the 2013–15 review, bulk water costs typically make up over 50% of the retailers' operating expenditure (QUU 2013a; Unitywater 2013b).

Brisbane City Council (2013a) noted that one of the major costs for water retailers is the cost of bulk water – the investigation needs to consider the ability of retailers to absorb these increases.

This cost and corresponding risk of cost increase should be allocated to customers through an automatic pass-through mechanism included on customers' bills.

Other proposed cost pass-throughs, for example associated with regulatory compliance costs for new regulations or increases in Government charges, should be clearly detailed in information submissions. Revenues are also subject to demand variations and growth over time.

3.9.2 Final report

Submissions

QUU (2014a) submitted that it did not understand the purpose of the discussion on revenue and price caps.

QUU noted that QCA stated that breaches of CPI-X are likely to trigger a cost of service review. QUU was under the impression that if increases in price or MAR breached CPI-X, retailers would need to justify the breaches through the provision of further information. QUU noted that as the wording stands a breach would automatically trigger a cost of service review.

QCA analysis

The QCA reviewed revenue and price caps and considers that a better way forward which is more consistent with light-handed regulation is to review changes in costs against (initially) CPI-X and then against the reasons why costs have changed further. A factor in this analysis is the ability of the parties to carry the relevant risks; therefore, a breach does not constitute an automatic review trigger.

3.10 Unders and overs mechanisms

3.10.1 General issues

Position paper

Key issues

An unders and overs mechanism can complement incentive-based regulation to manage any shortfalls or surpluses in an entity's revenue over a given period. An interest rate (risk-free rate or the weighted average cost of capital) is usually applied to the unders and overs account to address any timing issues.

An unders and overs mechanism gives a level of financial security to the business by ensuring that revenues do not depart substantially from costs over time where revenues and costs vary due to uncontrollable factors. Such a mechanism minimises price shocks to customers through price adjustments and provides greater revenue certainty over a longer period for service providers.

The appropriateness of the whether unders and overs should be permitted in particular circumstances is typically determined by the ability of the respective parties (retailers or their customers) to manage (control) the risks, and the implications of the allocation when assessed against the relevant regulatory objectives – in this case economic efficiency, revenue adequacy and public interest considerations (particularly those relating to customers). Further, any unders or overs need to be efficient.

Where actual revenues fall short of those implied by the prices based on previously deemed prudent and efficient costs, a decision is typically required as to whether an adjustment is required, and if so, whether an immediate adjustment is made (referred to as P_0 adjustment), or whether a smoothed (glide-path) approach should be adopted.

Relevant considerations are:

(a) the magnitude of the difference between efficient and actual prices

(b) reasons for revenues being below efficient costs

(c) the feasibility and time required for efficient costs to be achieved

(d) the impact on consumers.

Other jurisdictions

For 2012–13, Unitywater and QUU put forward prices that, based on their demand projections, under-recovered the MAR set by the QCA for the year. In aggregate terms for both water and wastewater services, QUU's revenues are around 90% of MAR.

Most jurisdictions do not allow unders and overs accounts for their water sector. For example:

(a) ERA (2013a) determined that it would not make adjustments for under- and over-recovery of revenue in the subsequent regulatory period. The intent was to encourage service providers to develop demand forecasts as accurately as possible.

(b) For Sydney Catchment Authority, IPART (2012b) minimised the need for unders and overs by linking volumetric and fixed charges to costs, and applying a separate volumetric charge for when the desalination plant is operating.

(c) ICRC (2013) proposed not to adopt an unders and overs approach, but instead to adjust prices biennially within the six-year regulatory period, to take account of deviations between actual and forecast revenues.

ESCOSA (2013a), however, allowed SA Water an adjustment mechanism of 30% of the difference between actual revenue and forecast revenue to be adjusted in the subsequent regulatory period. This adjustment is subject to a 1% materiality threshold. The method of adjustment would be determined at the time of the next determination.

Stakeholder submissions

In an initial submission, QUU (2013b) stated that mechanisms to deal with any under- or over-recoveries should ensure that the regulated entity recovers revenues over the long term while being mindful of equity concerns for customers.

Unitywater (2013b) suggested guidance is required on formalised eligibility and business rules regarding the carrying forward of MAR under- or over-recoveries.

QCA analysis

An unders and overs account with frequent (annual) adjustments may have the advantage of ensuring that revenues do not depart substantially from costs.

The problem with the unders and overs approach is that it can reduce incentives for efficiency. The mechanism transfers risks to the consumers.

Under a performance monitoring approach in which the objective is to prevent the exercise of market power in a light-handed manner, the QCA remains of the view that past under-recovery may be the result of a legitimate exercise of a retailer's discretion to forego these revenues and accept a lower rate of return.

Where under-recovery occurs in the future and it is not the result of an express decision to accept lower than prudent and efficient costs, it would seem that prior under-recoveries could be offset against future over-recovery. It is therefore proposed that under-recoveries incurred in 2013–14 and 2014–15 as part of a price path can be carried forward and capitalised in the MAR. For previous years, under-recovery may only be recognised where it relates to flood impacts (QCA 2014a).

However, where an initial over-recovery occurs, it should be returned to customers having regard to the related costs and circumstances.

Final report

Relevant submissions and responses to the QCA's (2014e) regulatory framework position paper are summarised below.

Table 15 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Unders and overs - general	QUU (2014a) sought clarification as to whether under-recoveries incurred in 2013-14 and 2014-15 would only be permitted to be capitalised if they were associated with a price path.	It is recommended that eligible under-recovery from a past period can be recovered on a NPV-neutral basis over a period of up to 10 years from 1 July 2015. The relevant deduction could be made annually without a comprehensive price path being established.
Monitoring of prices	QUU (2014b) agreed that prices be monitored annually ex post, but suggested that price changes should be based on weighted average prices.	The QCA recommends that changes in prices be monitored against CPI-X in the first instance. Any breaches would require QCA to consider revenue (that is, weighted average prices).
Pass-throughs Draft recommendation 3.18: "Differences due to the following will be accepted as pass-throughs: (a) uncontrollable costs (such as those following on from Government legislation and bulk water charges or where there are market-driven changes in WACC) (b) where they represent the difference between actual and efficient costs from a previous period (over or under recovery from and including 2013-14) or (c) where they have been substantiated by an entity prior to the reporting period."	QUU (2014a) suggested that the QCA specify what changes in government policies are uncontrollable events for the DRs. QCOSS sought details of the circumstances in which changes could be passed through. QUU considered that under/over recoveries since 2013-14 should be based on revenue differences, not the difference between actual costs and efficient costs. QUU queried how growth in volumes sold would be incorporated into the assessment. QUU also suggested that the recommendation 3.18(c) be reworded as - where they have been substantiated by an entity prior to the reporting period through a binding ruling.	It is not possible to predict which changes in government policy or cost would qualify. Generally those that qualify are those which impose costs in a manner which is not avoidable by the retailer. It is proposed (for clarity) to redraft the recommendation (a) (and delete (b)) to read: 'Differences (arising from 3.19) be accepted as pass-throughs where they are efficient and uncontrollable or where they have been substantiated by a retailer prior to the reporting period'.

Recommendations

3.19 Where prices exceed CPI-X, retailers be required to justify the differences.

3.20 Differences (arising from 3.19) be accepted as pass-throughs where they are efficient and uncontrollable or where they have been substantiated by a retailer prior to the reporting period.

3.21 Any changes in prices above CPI-X be a significant factor in deciding whether to trigger a cost of service review (except insofar as they incorporate 3.20).

3.10.2 Unders and overs mechanisms – application to SEQ retailers

Technical paper

The QCA's (2014f) regulatory framework implementation technical paper provided analysis of the application of unders and overs mechanisms to SEQ retailers.

Past under- or over-recovery

QCA's price monitoring of the SEQ water retailers for 2013–15 (for example, QCA 2014b, 2014c, 2014h, 2014i, 2014j) found that in most cases, the retailers are under-recovering relative to efficient costs. This is due in part to legacy pricing policies.

The regulatory framework position paper (QCA 2014e) recommended that under-recoveries incurred in 2013–14 and 2014–15 as part of a price path can [that is, are eligible to] be carried forward into the maximum allowable revenue (MAR) from 1 July 2015. Where a water retailer is considered to have over-recovered revenue during the 2013–15 period, the over-recovery must be passed back through future price adjustments.

For previous years (before 2013–14), under-recovery may only be recognised where it relates to flood impacts. QCA's view in the position paper is that under-recovery prior to 1 July 2013 was the result of a legitimate exercise of the retailers' discretion to forgo these revenues and accept a lower rate of return.

To assist retailers, the QCA proposes to estimate the amount of under-recovery that is eligible to be accommodated in pricing decisions in future years (for its final report).

The QCA recommends that the appropriate mechanism to address unders and overs is to smooth out the impact on prices, with prior under-recoveries to be recouped on an NPV-neutral basis for a period of up to 10 years (to provide sufficient opportunity to moderate price increases given the increases in bulk water charges). Where a retailer has not fully regained its 2013–15 under-recovery at the end of the ten-year period an application would need to be made to the QCA to allow this under-recovery to be carried forward to later years.

Final report

Relevant submissions and responses to the QCA's (2014f) technical paper are summarised below and in the following recommendation.

Table 16 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Past under-recovery - general comments Draft recommendation: "Eligible under-recovery from a	QUU (2014b) submitted that the QCA implies that a price path needs to have been in place for a past under-recovery to be carried forward. QUU would like the	As noted above, under-recovery from past years does not require that the under-recovery be incurred as part of a price path.

Issue	*Comment*	*QCA response*
past period be recovered on a NPV-neutral basis over a period of up to 10 years from 1 July 2015."	reference to price path removed. From QUU's perspective, an internal price path reflective of recovery of the DR's MAR should be sufficient for the QCA.	
Draft recommendation: "Where an entity has not fully regained its 2013-15 under-recovery at the end of the ten-year period an application would need to be made to QCA to allow this under-recovery to be carried forward to later years."	QUU (2014b) queried what the QCA means by "eligible" under-recoveries.	As noted in the position paper, the difference between revenues collected and prudent and efficient costs for the period 2013-14 and 2014-15 are eligible for recovery through future prices. To be passed through the costs need to be efficient and uncontrollable.
	QUU submitted that it is not clear whether the QCA intends to calculate the under- (or over-) recovery with regard to the QCA's Reference MAR or the actual MAR. QUU suggested that the calculation of the under- (or over-) recovery should be based on the difference between actual revenue and the actual MAR calculated from audited information for the year.	The QCA would monitor performance against the Reference MAR. Where an application is made to carry forward under-recovery the actual prudent and efficient MAR is relevant. Retailers would need to submit details of actuals should the QCA request such information.
Past under-recovery QCA comment: "QCA's view is that under-recovery prior to 1 July 2013 was the result of a legitimate exercise of the retailers' discretion to forgo these revenues and accept a lower rate of return."	QUU and Unitywater (2014b) submitted that the QCA does not mention the *Fairer Water Prices for SEQ Amendment Act 2011* that was enacted to cap DRs' price increases at CPI for 2011-12 and 2012-13. The QCA's statement assumes all DRs in the SEQ region decided to forego revenues. As QUU understands, both Unitywater and QUU set prices below the CPI price cap for 2012-13, and therefore did not recover the full amount of revenue that they could have under the price cap. Unitywater submitted that DRs should be able to carry forward these under-recoveries from 2011-12 and 2012-13.	Under-recovery arising from prices capped by legislation is not considered eligible for future recovery, as this would detract from the government's policy intention of the cap. Any decision by the retailers to set prices below the cap was at the discretion of the retailer.
Past under-recovery - mechanism	QUU submitted that the QCA has not provided a clear and detailed mechanism for addressing unders and overs for future pricing purposes. An example of what this mechanism looks like and how it would work, under the different levels (1, 2, 3 and 4) would be a worthwhile addition to the technical paper.	The QCA proposes to work with retailers to provide further guidance subsequent to the final report.

Issue	*Comment*	*QCA response*
Past under-recovery Draft recommendation 3.3: "Where a water retailer is considered to have over-recovered revenue during the 2013-15 period, the over-recovery must be passed back through future price adjustments."	QUU suggested that there should be a time frame over which DRs should 'hand back' over-recoveries through future price adjustments. QUU suggested a time period of five years.	The QCA recommends that over-recovery be 'handed back' to customers within 3 years of it being incurred to provide symmetry to the retention of out-performance gains.

The QCA recommendations are summarised below. As noted above eligible under-recovery includes:

(a) the difference between revenues collected and prudent and efficient costs for the period 2013-14 and 2014-15

(b) under-recovery resulting from changes in uncontrollable costs.

Recommendations

3.22 Eligible under-recovery from a past period be recovered on a NPV-neutral basis over a period of up to 10 years from 1 July 2015.

3.23 Where a retailer has not fully regained its 2013-15 under-recovery at the end of the ten-year period an application should be made to the QCA to allow this under-recovery to be carried forward to later years.

3.24 Where a water retailer is considered to have over-recovered revenue during the 2013-15 period the over-recovery must be passed back through future price adjustments and within three years.

3.10.3 Under and overs mechanisms - revenue risks

Technical paper

In other jurisdictions where a deterministic regulatory framework is applied for water utilities' unders and overs mechanisms are often, but not in all cases, used to manage variances between actual and forecast revenues.

Other jurisdictions

In the 2012 Determination for Sydney Water, IPART (2012a) adopted a mechanism to address the risk to an agency of variations between forecast and actual consumption. IPART implemented the option of making price adjustments in the subsequent determination for all variations unrecovered or not passed-through where the variation was outside a deadband of +/- 10 per cent.

The ICRC (2008) set prices based on a five-year forecast. If water usage (and therefore revenue) is significantly different from forecast water usage in the first 2.5 years of the period, usage would be re-forecast for the remainder of the period and prices adjusted. In addition, where the volumetric revenue shortfalls/over-recoveries are outside a 3% dead-band range, they would be recovered/repaid in the subsequent regulatory period. The ICRC noted that this approach provided ACTEW with relatively greater certainty and less exposure to demand risk, while providing customers with as much certainty as possible regarding prices.

ERA (2009) in setting the tariffs of the Water Corporation, Aqwest and Busselton Water, advised that the Western Australian State Government is provided with annual updates on capital expenditure in the preceding year and forecasts of capital and operating expenditure for the coming 10 years. Any under- or over-recovery of past expenditure due to short term supply variations is accounted for by making adjustments to future prices. ERA contended that this approach removes demand risk from the utilities and places the risk associated with incorrect demand forecasts with the customers. It allows any under- or over-recovery of past expenditure to be accounted for in the following year.

ESC (2013a) does not provide for within- period unders and overs for revenue risks. Once prices are set, they are not normally adjusted during the regulatory period to reflect differences between actual and forecast costs, or divergences between actual and forecast demand levels. The ESC considers that this approach provides businesses with an incentive to manage their costs efficiently during the regulatory period (typically five years). However, ESC does allow for end-of-period cost pass-throughs.

QCA analysis

Under the recommended annual performance monitoring framework, retailers set prices annually to meet their required revenue, taking account of forecast demand and costs, and report annually on their performance for the previous year.

Primarily, the risks associated with revenue risks relate to unpredictable or unexpected changes over the regulatory period in the level of demand for water and sewerage services.

The retailers cannot control customer demand particularly for a wide range of services in particular and different localities. However, retailers can control the structure of tariffs that reflect fixed and variable costs. Nevertheless, revenues may vary from forecast where there are complex inclining block tariffs or other forms of differentiated tariffs in place, and demand changes as a result of specific local factors.

Under the recommended annual performance monitoring framework, water retailers may choose to raise revenue shortfalls arising from demand variations from customers in later years. Where this results in prices that exceed CPI-X, they would need to provide additional information in annual returns.

Final report

Relevant submissions and responses to the QCA's (2014f) technical paper are summarised below.

Table 17 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Revenue risks Draft recommendations: "3.4 Under-recovery resulting from unexpected changes in demand be recovered on a NPV-neutral basis over a period of up to 10 years from 1 July 2015. "3.5 Under-recovered uncontrollable costs be recovered on a NPV-neutral	QUU submitted that unders and overs mechanisms are used in other jurisdictions to manage the difference between actual revenue and forecast maximum allowable revenue. While this may not be an issue where the DR is pricing to recover the full costs of service provision, there is a difference when a business is in [a continuous] under-recovery position. QUU suggested	The unders and overs mechanisms would operate into the future to enable under-recoveries to be recouped on an NPV neutral basis at a later date. Accumulated years of under-recovery can be carried forward for this purpose.

Issue	*Comment*	*QCA response*
basis over a period of up to 10 years from 1 July 2015."	that this by clarified.	
	QUU agreed with the concept that under-recoveries should be recovered by DRs over a maximum of 10 years from the time they are incurred. QUU was unclear however whether under-recoveries are to be recovered over a 10-year period from the time that they are incurred post 1 July 2015, or that any and all under-recoveries are to be recovered by 10 years from 1 July 2015 (i.e. 2024).	It is proposed to delete the reference to 'from 1 July 2015".
	QUU suggested that the QCA explicitly outline how it would address any over or under-recovery related to capital contributions (either using a revenue or asset offset approach), as these could have an impact on the calculation of the RAB and the subsequent derivation of MAR.	Over- or under-recovery arising from capital revenues should be addressed on a case-by-case basis to ensure that no double-counting occurs. The QCA recommended the asset offset approach in its previous monitoring investigations. Further comment on capital revenues is provided in Chapter 4.
	QUU agreed that government policy can be a potential risk for QUU, in terms of costs. QUU submitted that Government policy can also impact on revenues. For example, Government policy changes with regard to infrastructure charges can have a large impact on QUU's revenues, as well as its costs. This, in turn, has implications for QUU's retail prices because there is a direct linkage between infrastructure charges and retail prices, which are both used by QUU to recover its costs.	QUU's comment is acknowledged. Efficient and uncontrollable costs arising from government decisions can be passed through. Where government policy has an impact on revenues, these should be taken into account. Changes to infrastructure charging rules are relevant. The QCA notes that the new infrastructure charging framework (DSDIP 2014) has retained maximum charges. Councils would also have access to State funding through a co-investment program where 'fair value' charges are adopted. Fair value charges are 10-15% below the maximum charges.
Outperformance The regulatory framework position paper (QCA 2014a) noted that, where entities demonstrate that price increases are in line with CPI-X but costs increased by less than CPI-X due to efficiency initiatives, these gains may be retained by the entities for up to three years before being passed to customers.	QUU suggested that this recommendation should be removed as QUU considered the efficiency incentive to be another form of a review trigger.	There is no suggestion that this provision is to be used to trigger a review. The provision is intended to provide incentives to undertake efficiency initiatives.

The QCA's recommendation is revised as below. Eligible under-recovery in this case refers to revenue shortfalls arising from unexpected changes in demand.

Recommendation

3.25 Eligible under recovery resulting from unexpected changes in demand be recovered on a NPV-neutral basis over a period of up to 10 years from the time they are incurred.

3.10.4 Unders and overs mechanisms - cost risks

Technical paper

Cost risks occur when actual expenses change compared to forecast expenses. These can relate to unexpected changes in market conditions for inputs (including those related to the maintenance and renewal of infrastructure) or as a result of regulatory imposts (such as changes in legislation, taxation and technical or economic regulation) or one-off natural disasters (such as the 2011 floods). Increases in costs after prices are set can result in under-recovery.

When a monopoly service provider is confronted by unforeseen and unexpected changes in costs, the issue arises as to whether these should be passed on to customers or borne by the service provider. In general, this is determined by:

(a) whether the change in costs could have been anticipated and thus managed or avoided by the service provider

(b) whether the effect of the change in costs on either the service provider or the user is material.

The regulatory framework position paper (QCA 2014e) stated that uncontrollable costs such as bulk water charges and changes to Government legislation would be accepted as pass-throughs.

It can be difficult to establish the source of changes in costs and whether these are controllable or not. They can arise as a result of market conditions, for example, increases in chemicals costs, or may be the result of poor management practices that allow costs to increase beyond efficient levels. Furthermore, a reduction in costs may be the result of a decrease in service rather than an increase in efficiency.

In regulatory practice, various mechanisms may be used including:

(a) end-of-period adjustments. Cost increases outside of the service providers' control are accumulated and passed through in the next regulatory period

(b) review triggers. Unexpected substantial changes above a materiality threshold may re-open a regulatory investigation

(c) cost pass-throughs. Such mechanisms allow for automatic adjustment of prices for the impact of uncontrollable exogenous cost impacts when they occur.

The basic motivation for cost pass-throughs is to help insulate the firm’s cash flows from external shocks, as regulated firms should not bear risks that they cannot manage or control.

Other Jurisdictions

ESC (2013a) allowed cost pass-through for desalination water order and security costs for Melbourne Water and the metropolitan retailers. Similarly, IPART (2012a) allowed a cost pass-

through mechanism for desalination costs charged to Sydney Water, including shut-down charges. The mechanism allowed for adjusted charges to be made to customers.

The National Electricity Rules (NER 2014) requires the Australian Energy Market Commission (AEMC) to consider pass through applications from distribution network service providers. Cost pass-throughs may be for increases or decreases in costs.

The NER contains extensive guidance on what events are positive or negative change events, the process and information requirements for providers to apply for pass-through, and the factors the AER must take into account when making a determination.

In electricity pricing, QCA (2014k) allowed pass-through for differences in network charges, in the event that the charges billed to retailers (usually the AER-approved charges) differ from those used to set notified prices, and differences in small-scale renewable energy scheme (SRES) costs, where the amounts included in the determination are found to be materially understated or overstated as a result of differences between the non-binding and binding small-scale technology percentages (STPs).

The QCA considered that limiting the use of the pass-through mechanism to these two situations strikes a reasonable balance between concerns about the potential for regulatory gaming and the expectation that retailers should have the opportunity to recover the efficient incremental costs of certain exogenous events.

In the SunWater review, QCA (2012b) proposed end-of-period adjustments, price review triggers or cost pass-through mechanisms be used to manage risks due to market conditions for inputs or regulatory imposts. Regulatory imposts should be passed through immediately. However, QCA considered that electricity cost increases not be an immediate pass-through as this could remove incentives to manage electricity costs efficiently.

QCA (2012b) recommended that if SunWater were to sustain material costs above or below forecast costs, the QCA would consider an application for adjustment by SunWater or other stakeholder. The QCA's decision would depend on consideration of the following criteria:

(a) whether the impact of the change in costs on SunWater or the customer is material

(b) whether the change in costs could have been anticipated, and thus managed or avoided by SunWater

(c) the extent to which allowing the recovery of unanticipated costs would reduce incentives to pursue efficiencies.

QCA analysis

The key issue is whether such adjustments result in price increases that exceed CPI-X, and whether these can be justified as legitimate uncontrollable risks or whether they result from poor management.

Cost pass-through arrangements can have unintended and undesirable impacts on incentives. For example, if the regulatory regime permits one category of costs to be automatically passed through, there may be a bias towards that expenditure at the expense of a more efficient substitute. In general, the pass-through process should allow only the efficient component of changes in costs to be passed through – that is, the component of cost that could not be managed or avoided by the service provider.

In previous reviews, QCA has indicated that immediate cost pass-through (both positive and negative) would be considered for changes in:

(a) taxation

(b) regulatory compliance requirements

(c) law or pursuant to law

(d) government policy, provided it was a major change.

In addition to these costs, bulk water costs, which make up over 50% of the retailers' operating costs for water should also be accepted as a cost pass-through. Market-driven changes in the WACC (for example, significant changes in the risk-free rate or debt margins) are unavoidable and may result in price increases exceeding CPI-X.

In other jurisdictions, and in electricity pricing by the QCA, cost pass-throughs are allowed for certain limited identified circumstances. The QCA recommended that they be limited to the circumstances listed above.

As the retailers set prices annually, and these are locked in, cost pass-throughs would not be reflected in prices within the pricing period. Rather, they would be accounted on an NPV neutral basis for a period of up to 10 years. Where the cost impact is substantial, a longer period of up to 10 years may be suitable to ensure price increases are appropriately smoothed. Review trigger arrangements are built into the annual performance monitoring framework.

Where a retailer has breached CPI-X to recover unforeseen and unexpected changes in costs, it would be required to provide detailed information to QCA regarding these over-recoveries and potential cost pass-throughs (in terms of the MAR).

Final report

Submissions

GCCC (2014b) submitted that operating costs are largely uncontrollable - apart from labour, most costs are determined by an open tendering process influenced by market forces outside of GCCC's control.

QCA analysis

It is accepted that many costs are outside of GCCC's control. Uncontrollable cost increases above CPI-X should be passed through in the MAR. There is no change to the draft recommendation for this purpose.

Recommendation

3.26 Under-recovery of efficient and uncontrollable costs be recovered on a NPV-neutral basis over a period of up to 10 years from the time they are incurred.

3.10.5 Unders and overs mechanisms - outperformance

Technical paper

A key feature of incentive regulation involves offering the regulated organisation an incentive to out-perform the X factor, as doing so would enable it to increase profitability. However, the incentive to out-perform is likely to be undermined if the organisation believes its out-performance would be immediately returned to customers.

The regulatory framework position paper (QCA 2014e) stated that where retailers demonstrate that price increases are in line with CPI-X but costs increased by less than CPI-X due to efficiency

initiatives, these gains may be retained by the retailers for up to three years before being passed through to customers. The retention of such gains would not be truncated in the event of a triggered or scheduled cost of service review.

QCA analysis

The regulatory framework position paper (QCA 2014e) recommended that the benefit of outperformance be retained by the retailers for three years before prices need be adjusted to pass the benefit through to customers. This benefit is a permanent saving to the retailer over the three-year period through the higher rate of return achieved. However, after three years, the benefit should be returned to customers either through a one-off price adjustment, or by a series of suitable price adjustments through time.

Water retailers that are complying with the CPI-X framework, and therefore not providing annual cost information, may lack an incentive to reveal to QCA undetected over-recoveries or outperformance. Furthermore, without adequate cost information, QCA would have a limited ability to detect these over-recoveries or outperformance.

QCA considers that this is a manageable risk to the extent that it is able to track these forms of over-recovery through the use of publicly available information regarding operating costs, net profit, dividend payments, debt repayments, etc., or from other information sources such as through customer engagement, to establish whether undetected over-recovery is occurring. Reasonable expectations of a material undetected over-recovery can be expected to result in a request for detailed information or a subsequent full cost of service review.

Final report

QUU (2014b) suggested that this recommendation should be removed as QUU considered the efficiency incentive to be another form of a review trigger.

There is no suggestion that this provision is to be used to trigger a review. The provision is intended to provide incentives to undertake efficiency initiatives. There is no change to the recommendation.

Recommendation

3.27 The benefits of outperformance, adequately documented by retailers and approved by the QCA, be retained by retailers for a period of three years, and then returned to customers.

3.11 Triggers for cost of service reviews

3.11.1 Position paper

Under the annual performance monitoring framework, the issue is whether triggers for a cost of service review should be explicitly defined, with pre-defined thresholds or whether triggers should be implicit (less defined), leaving flexibility for the regulator to decide on whether a cost of service review should be commenced.

Other jurisdictions

The nature of the regulatory intervention and whether the threshold is explicitly defined or implicit in other jurisdictions where light-handed price monitoring is practised are summarised below.

Table 18 Nature of regulatory intervention and threshold

Industry	*Nature of intervention*	*Explicit thresholds*
International Airports - New Zealand	The Minister for Commerce can direct a pricing review by the NZCC.	None
International Airports - Australia	Returns in excess of reasonable expectations could make an airport subject to price review by the ACCC.	None
Stevedoring – Australia	Nil	Not applicable.
Ports – South Australia	ESCOSA can require justification for price increases.	Annual price increases greater than CPI
Port of Melbourne Corporation	The relevant Minister may initiate price review based on petitioning from customers or advice from ESC.	None
Water - Minor and Intermediate retailers in South Australia	ESCOSA can set prices for a retailer if it considers this approach is justified. The Treasurer can direct ESCOSA to adopt a less light-handed approach.	None

Source: ESC (2011a, 2013a, 2013b), ESCOSA (2012a, 2012b, 2013a, 2013b), ACCC (2012b, 2013), PC (2011b), NZCC (2010, 2013)

As shown above, there are typically no pre-defined performance thresholds.

QCA analysis

The implicit trigger may have lower administrative costs and provide greater flexibility. Explicit triggers have the benefit of regulatory certainty and transparency (Table 19 refers).

Table 19 Explicit triggers

Benefits of an explicit trigger	*Benefits of an implicit trigger*
Transparency – retailers and customers can be actively engaged in setting expected performance standards.	**Flexibility** – implicit triggers are more able to respond to changing community expectations of performance.
Regulatory certainty – removal of a subjective assessment increases certainty. Retailers will know in advance whether their performance is satisfactory.	**Holistic** – implicit triggers are more able to consider trade-offs between price and quality. Retailers have incentives to manage all aspects of their business.
	Cost – the initial setting of expected performance standards is likely to be an information intensive exercise that may approximate a full price determination. An implicit trigger would avoid this cost.
	Comparability – implicit triggers may enable regulators to compare entity performance against its peers or history. Such benchmarking or longitudinal comparison may be more appropriate than thresholds.
	Customer focus – implicit triggers may assist retailers to maintain focus on serving customers rather than becoming focussed on regulators.

On balance, an implicit trigger allowing the regulator to exercise judgement is superior. However, while the QCA proposes not to define the thresholds which would trigger a cost of service review and price determination, it has defined the measures which must be reported annually. These measures would be the inputs into the QCA's decision on whether to initiate a cost of service review and price determination and therefore provide some certainty to retailers.

Before triggering a cost of service review, retailers would have the opportunity to provide additional information relevant to the issue in question, through a request for further information. The intent is to avoid, if possible, the costs and complexity of a cost of service review.

Where breaches relate to customer engagement, investment strategy, or pricing principles, and prices and costs are otherwise within CPI-X, the QCA should publicly report its concerns.

The QCA would assess any potential trigger event taking into account past performance, the potential costs of a cost of service review as compared to the benefits (that is the materiality of the breaches), and any other mitigating circumstances.

Trigger scenarios

Indicative scenarios are shown in Table 20 below, for the key performance monitoring indicators. Performance in customer engagement, long-term strategic investment planning practices and application of pricing principles may also influence a decision to trigger a review.

Table 20 Review trigger scenarios

Scenario	*Changes in prices/ revenues*	*Changes in costs (Maximum allowable revenue)*	*Changes in service standards*	*Response*
1	In line with CPI-X	In line with CPI-X	No significant change	No cost of service review required
2	In line with CPI-X	Materially above CPI-X	Significant deterioration	Cost of service review possible
3	In line with CPI-X	In line with CPI-X	Significant deterioration	Cost of service review possible
4	Materially above CPI-X	In line with CPI-X	No significant change	Price determination possible
5	Materially above CPI-X	Materially above CPI-X	No significant change	Cost of service review probable
6	Materially above CPI-X	In line with CPI-X	Significant deterioration	Cost of service review probable
7	Materially above CPI-X	Materially above CPI-X	Significant deterioration	Cost of service review highly likely

Where service quality changes occur, breaches of standards set by technical regulators (for example for drinking water quality standards) would be referred also to the relevant regulator.

Where service quality standards are significantly higher than the minimum set by a regulator or changed, evidence that the difference is supported by customers would be required when considering whether to trigger a more complete review.

3.11.2 Final report

Relevant submissions and responses to the QCA's regulatory framework position paper are summarised below.

Table 21 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Implicit triggers and scenarios Draft recommendations: "3.20 The QCA trigger a full cost of service review in accordance with the scenarios defined in Table 20. 3.21 The QCA publicly report any concerns with an entity's customer engagement policies or procedures, investment strategy, or pricing principles as well as any intention to trigger a price review."	While QUU (2014a) accepted that implicit triggers are needed to some extent to provide regulatory discretion, it considered that retailers need to understand how this discretion would be applied. QUU suggested that a consideration of the costs and benefits of undertaking a cost of service review for the specific breach be incorporated in these criteria.	The QCA accepts that in any trigger event, it should assess the potential costs of any cost of service review as compared to the benefits. It is proposed to amend the relevant recommendation to reflect this intent.
	QUU considered that the scenarios for trigger events appeared definitive. QUU recommended that the scenarios outlined be used to provide guidance to the QCA.	The scenarios are intended to provide guidance and are not intended to be definitive - there is scope for QCA to consider the circumstances in each case, including the costs and benefits of any review.
	QUU sought more transparency about the triggers to provide regulatory certainty and to ensure they did not impede retailers' future investment decisions. QUU also noted that QCA may trigger a review even if CPI-X is not breached, where there are major changes in the market or technology.	It is not possible or desirable to define thresholds - as the same principle applies. That is, the QCA seeks to promote a culture that focuses on the long-term interests of users and investment in affordable services, rather than compliance with pre-determined triggers.

Issue	*Comment*	*QCA response*
	GCCC (2014a) also sought more guidance as the absence of trigger thresholds would create regulatory uncertainty. The guidance paper should include but not be limited to: (a) formalised rules applicable to the framework, comprehensive list of information requirements including template requirements to ensure adequate regulatory recordkeeping is maintained (b) definitions for the proposed service standards (c) a proposed appeal mechanism to complement the potential for price determination (d) QCA's expectations re the application of pricing principles (e) an illustration of how the proposed efficiency mechanism is to work.	The QCA does recommend that a broad guidance paper be prepared once the Ministers' decision is received: (a) however, as there are different approaches to financial recording and reporting between retailers, it is not proposed to prepare detailed information templates (b) service indicator definitions are equivalent to those of the DEWS and NPR indicators (c) if price determination is accepted, a procedural review process would be available as would recourse to the Minister (d) relevant details are presented in a subsequent chapter (e) it is recommended that retailers should undertake to pass on cost savings after a three-year period.
	GCCC considered the proposed framework broadens the scope of regulation by introducing additional parameters to the review of costs.	The additional elements are explicitly required under the Ministers' Direction.
	QCOSS (2014) stated that it was not clear why scenario 4 triggered a possible price determination while scenarios 5, 6 and 7 trigger probable or highly likely cost of service reviews (Table 20).	Under scenario 4, price increases are greater than increases in costs while service standards are maintained. A cost of service review is not the issue rather appropriate prices are required. In the remaining scenarios cost increases are significant or service standards deteriorate and a detailed cost of service review would be relevant.
	LCC (2014) submitted that it did not believe that the provisions relating to triggering a review should apply to it as a local government water service provider.	LCC is explicitly required to be included in the proposed framework under the Ministers' Direction.
Service Standards Trigger	QUU (2014a) sought clarification as to which service standards QCA was referring to in Table 20. QUU also sought clarification regarding the implication that where service quality standards were significantly higher than the minimum standard, a cost of service review could be triggered.	Service standards and quality are detailed in Chapter 7. Where service standards or service quality is higher than the minimum, and not supported by customer engagement, a cost of service review may be justifiable to ensure that costs are consistent with the service quality provided.

Issue	*Comment*	*QCA response*
	QUU stated that this raised the broader issue of how service quality indicators can be a trigger event given the uncertainty around definitions and how the [then] 39 indicators would be combined into a meaningful index. QUU sought clarification on how QCA would determine a 'significant deterioration' in service standards across the proposed 39 indicators.	A systematic decline in service quality while costs and prices increase materially can be expected to trigger a review. Where some indicators reveal a decline in service quality while costs remain constant or increase materially, a review can be expected. The QCA recommends using a combination of comparative analysis and scoring techniques with comparisons made against other SEQ retailers, other jurisdictions and over time. Retailers would be consulted as these are developed.
	QUU suggested that changes in service standards should not be separately identified, but rather should be considered more generally along with other factors such as customer engagement.	Service quality is a key output and one which requires monitoring as CPI-X is applied. It is accepted that customer engagement and investment strategies are key supporting processes.
	QUU considered that any attempt to measure service standards over time needs to outline how to account for force majeure and act of God events.	Such uncontrollable events would be taken into account in monitoring changes in service quality.
Financeability indicator	QUU considered that a specific test of the financeability be incorporated into the decision as to whether a cost of service review should be triggered.	DEWS has proposed to monitor financeability ratios, including operating ratio, capital replenishment ratio and debt to revenue ratio. These would be taken into account by the QCA if considered necessary.
Public reporting Draft recommendation 3.21: "The QCA publicly report any concerns with an entity's customer engagement policies or procedures, investment strategy, or pricing principles as well as any intention to trigger a price review."	QUU sought clarification on whether the public report mentioned in the recommendation is part of the QCA's annual performance monitoring report to be released on 30 March.	It is.
	QCOSS (2014) considered that it would be helpful if concerns with an entity's customer engagement policies or procedures, investment strategy and pricing principles were reported publicly regardless if prices and costs are within the CPI-X and regardless of changes in service standards.	This is intended. Amend the relevant recommendation to read: "In its public annual report, the QCA identify any concerns with a retailer's customer engagement policies or procedures, investment strategy, or pricing principles as well as any intention to initiate a cost of service review".
	QCOSS noted that where the QCA has concerns, a more active form of 'publicly reporting' is warranted, including that the Chair of the QCA write to the retailers' shareholding councils with a copy to the relevant Minister documenting the concerns.	Under the QCA Act, the QCA's reports under the monopoly pricing provisions are made available to the relevant Minister, government agency or other person carrying on the monopoly business activity and made available to the public. Media releases and fact sheets accompany the release of the QCA's reports.

The QCA recommends that it should be able to initiate a cost of service review where there is sufficient evidence of a potential exercise of market power which cannot be justified by the retailer. This may be achieved by a standing referral, such as that provided by the Ministers that enables the QCA to undertake a within-period review of SunWater to address material unforeseen cost changes.

In response to stakeholder comments, the draft recommendation 3.20 (now 3.28) has been edited to clarify that QCA would assess the potential costs of a full cost of service review as compared to the benefits where it seeks to initiate a cost of service review.

Draft recommendation 3.21 (now 3.29) is also amended as noted above.

Recommendations

3.28 The QCA initiates a cost of service review where it considers there is sufficient evidence of a potential exercise of market power and where the potential benefits of doing so exceed the expected costs.

3.29 In its public annual report, the QCA report on and identify any concerns with a retailer's customer engagement policies or procedures, investment strategy, or pricing principles as well as any intention to initiate a cost-of-service review.

3.12 Transition to long-term framework

3.12.1 Position paper

To address the requirements of the Ministers' Direction, for the long term, the QCA recommends a performance monitoring framework which 'tracks' retailers' performance against:

(a) CPI-X and certain financial information

(b) pricing principles

(c) desired customer engagement practices

(d) service quality standards (including performance targets).

Having regard to the differences between the past and recommended regulatory frameworks consideration is required of whether there is a need to transition retailers to the recommended framework.

Stakeholder submissions

Unitywater (2013c) proposed that the price monitoring framework should create incentives for water retailers to transition to light-handed price monitoring or even have it removed altogether where the retailer has demonstrated it is worthy of this reward. The QCA should establish criteria for such an objective.

QUU (2013b) noted that the existing price monitoring framework was developed with a view to transitioning to a deterministic regulation at the end of the three-year period.

QUU considered that the process of moving to a more light-handed approach over time should happen through a focus on processes rather than outputs, with regulatory 'hurdles' put in place to transition to a focus on reasonableness rather than prudency and efficiency.

Brisbane City Council (2013a) submitted there should be clear and timely provisions for transitioning from the existing regulatory framework to any new approach.

QCA analysis

The initial focus on inputs has reflected the Government's concerns about the nature and size of the retailers' capital and operating programs and what this implies about likely future pricing outcomes.

The focus on inputs is also pertinent, given water and wastewater-specific legislative obligations imposed on the retailers are a key driver of the size of their capex and opex programs.

The limitations of the QCA's earlier reviews and requirements of the Ministers' Direction have been noted above.

In considering a move from regulatory price setting to a price monitoring regime (where some form of prices oversight is considered necessary), the PC (2011a) has concluded that a staged approach should be adopted.

The PC also recommended that guidance be provided as a prerequisite to utilities on items such as pricing principles, service obligations, transparent processes and procedures for supply augmentation and the setting of prices, the nature and funding of Community Service Obligations, annual performance reporting requirements, provision for independent reviews, and sanctions for poor performance.

ESC (2011c) in assessing the pricing proposals of Victorian water businesses to apply from 1 July 2013, considered transitional arrangements when transferring from one form of price control to another, with particular regard to impacts on disadvantaged customers and how the change affects price stability.

Criteria

The criteria for an immediate move to long-term performance monitoring were considered to include:

(a) absence of public interest or equity issues that may warrant regulatory review

(b) regulated services are clearly defined and separated from non-regulated services. The QCA would need to be confident that cost-shifting has not occurred.

(c) evidence that market power is not being exercised - that is, the opening cost base is efficient and further cost increases comply with the CPI-X mechanism (with above referenced qualifications) and service quality is in line with expectations

(d) absence of imminent material changes in circumstances or major infrastructure costs

(e) demonstrated capacity to provide the required information accurately and on time, based on prior regulatory processes.

Each retailer should meet each of these criteria before a transition to the annual performance monitoring framework can occur. Performance in terms of customer engagement, strategic planning for long-term investment, service quality and pricing principles would also be relevant.

The QCA used the information available to it after the 2013-15 price monitoring investigation to inform its assessment, and reported on each retailer by 30 May 2014.

Where a cost of service review has been triggered for a retailer, the same criteria would apply for that retailer to return to annual performance monitoring.

Opening cost base

Where regulated prices are being set for the first time, or where significant changes in price/revenues are required, a regulator generally seeks to estimate a base revenue

requirement. A move to annual performance monitoring requires assurance that the starting point is appropriate.

As noted above, for Unitywater and QUU the level of expenditure deemed prudent and efficient for the purpose of the 2013-15 review could be accepted as the cost base for the longer term, as:

(a) The difference between the retailers and QCA's estimates of total prudent and efficient costs was about 1.5% in 2012-13.

(b) Capital expenditure proposals will have been reviewed four times (by two different independent groups of consultants) and the sample size has totalled in excess of 30% (typically accepted as an appropriate sample size) of the new capital expenditure base since 2010. Further, the RAB prior to that date is required to be accepted.

(c) Non-bulk operating expenditure has been reviewed four times (by two different independent groups of consultants). While concerns existed with expenditure proposals and some aspects of the scope of the review, the application of a 2% efficiency gain per annum was considered valid for 2010-13.

For Logan and Gold Coast City Councils the 2013-15 review may provide sufficient information for this purpose.

Where the above criteria are not met, the existing arrangements should continue until outstanding elements are addressed to ensure an initial efficient cost base is in place. This would include implementation by retailers of improvements to various pricing and other practices to precede the implementation of a long-term performance framework. The exact nature of the scope and timing of the reviews for any retailer is dependent upon the outcomes of the 2013-15 review.

Should a retailer be considered not ready for immediate transition, the QCA recommended a further detailed review - for a one-year period (2015-16).

3.12.2 Final report

Relevant submissions and responses to the QCA's (2014e) regulatory framework position paper are summarised below.

Table 22 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Transition to long-term framework	QUU (2014a) sought clarification as to whether a reference to the term 'regulatory review' in Section 3.5.3 is a reference to a cost of service review or a price determination.	In this instance the term regulatory review refers to a cost of service review.
	QUU sought further information on how the opening cost base would be determined.	It is proposed to adopt the closing MAR for 2013-15 as finalised to address outstanding concerns after the 2013-15 final report was issued. The relevant recommendation has been edited as follows: "The QCA use the outcomes of the 2013-15 investigation to inform how retailers transition to the long term framework". For clarity, the closing adjustment to the Reference MAR is not based on actual costs.

Issue	*Comment*	*QCA response*
Price shocks	QCOSS (2014) stated that it was not clear how the proposed framework would address the issue of price shocks for customers.	Retailers may seek a binding ruling or apply an unders or overs mechanism. Any substantial price shocks may also trigger a review if such a response is considered appropriate when viewed against its cost and price implications.

Recommendations

3.30 The QCA use the outcomes of the 2013-15 investigation to inform whether retailers transition to the annual performance monitoring framework.

3.31 The criteria for an immediate move to annual performance monitoring be:

- **(a) absence of public interest or equity issues that may warrant regulatory review**
- **(b) that regulated services are clearly defined and separated from non-regulated services**
- **(c) evidence that market power is not being exercised**
- **(d) absence of imminent material changes in circumstances or major infrastructure costs**
- **(e) demonstrated capacity to provide information accurately and on time.**

3.32 Performance in customer engagement, strategic planning for long-term investment, service quality and pricing principles also be taken into account in assessing whether retailers should proceed to annual performance monitoring.

3.13 Costs and benefits of regulation

Under the Ministers' Direction, the QCA is to ensure the costs of implementing the regulatory regime do not exceed the benefits.

While there are net benefits from the relatively heavy-handed approach, an incentive-driven framework should deliver further benefits at lower regulatory cost.

3.13.1 Past price monitoring

The QCA has previously reported its view that the transparency and review provided by past price monitoring contributed to an environment for reducing the costs of service delivery and constrained the retailers from exercising their market power (QCA 2014a, 2013a).

Some of the most important benefits could not be readily quantified. For example:

(a) the prospect of transparent and independent review and public reporting provided incentives for improved service delivery by retailers. Similarly, improvements to policies and procedures following a review can have pervasive benefits to a retailer's prudency and efficiency. All of which benefit customers, as noted by QUU 2014(a)

(b) in 2010-15, the QCA was able to reassure customers that, despite increases in their bills, there was no evidence of monopoly power being exerted by their retailers (notwithstanding the caveats applied to Redland Water in 2013-15)

(c) the independence of the QCA review and its findings provided information to customers about the drivers of changes in bills and thereby facilitated customer engagement.

In price monitoring investigations over 2010-15 quantifiable benefits included those from the QCA's review of capital and operating costs. By identifying costs that are not prudent and efficient, the QCA reduced the under-recovery amounts that can be carried forward and recovered in future prices, with consequent future benefits in lower consumer prices. Over 2010-15, the QCA identified $211.85 million of cost savings for the SEQ retailers under review: $77.51 million for 2010-13 (2013a) and $134.34 million for 2013-15 (2014a). Details are provided below.

Table 23 Summary of QCA estimated savings ($m)

Retailer	*2010-11*	*2011-12*	*2012-13*	*2013-14*	*2014-15*
Unitywater	27.41	-12.50	6.40	19.30	42.60
QUU	9.11	-4.17	13.99	15.24	27.30
Allconnex	34.91	2.36			
Logan				10.10	13.10
Redland				3.30	7.20
Gold Coast				6.10	11.10
Total	**71.43**	**-14.31**	**20.39**	**47.44**	**86.90**

Sources: QCA 2010a, 2011, 2012a, 2013a, 2014a.

The QCA's costs (passed on to retailers) were $8.5 million for 2010-15 ($5.1 million for 2010-13 and $3.4 million for 2013-15). This includes internal QCA costs and the costs of independent expert advice on costs, policies and procedures. The costs for 2013-15 reflected a review of two years of costs, and about $0.9 million for developing the long-term framework. If the framework costs are excluded, the total QCA costs were $7.6 million over the five years. Over this period there were 13 retailer reviews - so that the average QCA costs were $585,000 per annum per retailer for each review.

The QCA requested advice from retailers on their internal regulatory compliance costs under the existing price monitoring framework.

The retailers provided information that indicated their combined compliance cost was $3.2 million for the 2013-15 review. This included the ongoing costs of the regulatory cycle - collating and providing information, staffing and consultancies. In the case of some retailers, the submitted amounts were lower bound estimates that did not include cost allocations from other services within the organisation. The submitted costs averaged to $640,000 per retailer for each review. Applied to 13 retailer reviews, the total cost incurred by retailers over 2010-15 is estimated at $8.3 million.

A proportion of these costs for some retailers may have been necessary anyway for the efficient management of their businesses (e.g. management information systems, customer engagement costs, etc).

Over the 5-year period, the total costs of regulation to the sector (QCA's and retailers' costs) are estimated to have been around $15.9 million ($7.6 million for QCA and $8.3 million for the retailers).

The identifiable estimated benefits of regulation ($211.85 million, as noted above) therefore significantly exceed the costs over the 5-year period.

Small retailers

For the 2013-15 period, there were five water retailers reviewed - two of which (Logan and Redland City Councils) were much smaller than the remaining retailers, together accounting for only about 13% of the total MAR for SEQ retailers.

For the two small retailers the QCA (2014a) identified a total net reduction in MAR over 2013-15 of $12.7 million.

The submitted regulatory costs for the two small retailers averaged $240,000 per retailer.

3.13.2 Other jurisdictions

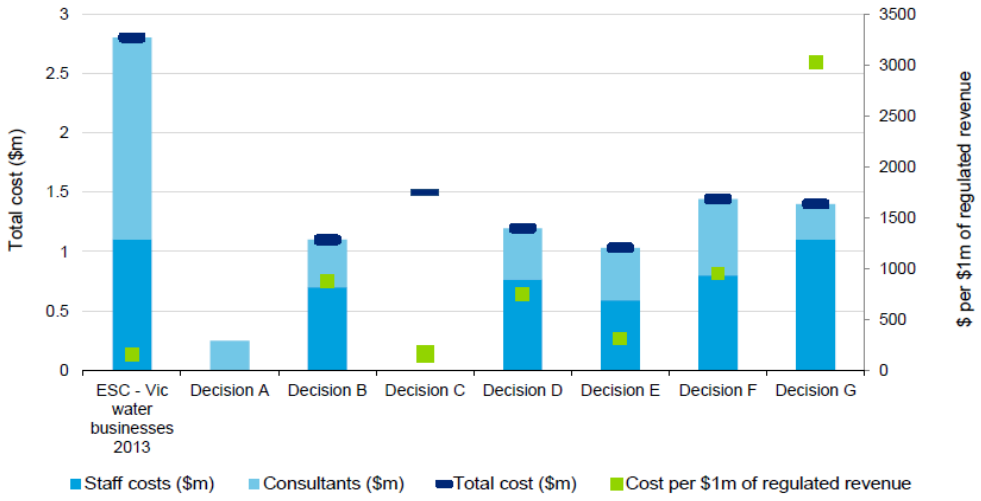
Independent review of economic regulation in Victoria

The costs of regulation were not a key driver for the Independent Reviewer's recommendation to move from a cost-based regulatory framework to a price-based approach.

The ESC commissioned Deloitte (2014) to compare the costs of water sector regulation across jurisdictions. While the ESC was the highest cost regulator at $2.8 million per review (regulator's staff and consultancy costs), when normalised by regulated revenue, the ESC was the lowest cost regulator, at $110 per $1 million of regulated revenue (see figure below).

This reflected the ESC's 19 water businesses with $18 billion of regulated revenue. Deloitte noted that this normalised cost was below that of the QCA's 2012-13 review (of two SEQ retailers). The nature of the QCA's past reviews has been such that the regulatory costs did not vary according to regulated revenue.

Figure 3 Economic regulators' costs of price reviews



Source: Deloitte (2014)

Frontier report for the Water Services Association of Australia

In its report on the economic regulation of urban water across all jurisdictions, Frontier Economics (2014) outlined the benefits of independent regulation as follows:

(a) a major driver of improved productivity and service standards for water business (citing the NWC (2011))

(b) lower prices for customers than otherwise, while service quality has not deteriorated or (slightly) improved

(c) support for businesses' efforts to invest and operate efficiently, relative to a counterfactual of government regulation. Regulators' approved capital expenditure is at or below the level proposed by businesses.

The costs of regulation (regulatory fees and compliance costs) cited by Frontier ranged from $0.8 million per entity (including regulatory levies) to $1-2 million per pricing review for a major urban water utility subject to five yearly price reviews (plus $0.65 million in annual regulatory levies). These utilities noted respectively that:

> *[in respect of $0.8m including regulatory levies] ... we do not think the current level is an undue burden, though a more light-handed regulatory framework should reduce some of the costs at the time of price reviews.*
>
> *[in respect of $1-2m plus $0.65m in regulatory levies] ... the cost was about 1% of revenue which is relatively immaterial compared to the benefits that customers receive – these include that, as a consequence of the transparent process undertaken, the pricing outcome is fair and under investment in essential infrastructure is less likely...*

Frontier also cited Deloitte (2014) on the costs of regulation, noting that the report found that costs of price reviews vary across the regulators.

Overall, Frontier considered that economic regulation is necessary and has led to significant benefits (compared to governments setting prices). To maximise net benefits, Frontier outlined a range of high-level principles that should be taken into account: clarity of objectives, efficiency, consistency, accountability, transparency, flexibility, independence, capability and coherence.

3.13.3 Final report

Submissions

Relevant submissions and responses to the QCA's (2014e) regulatory framework position paper are summarised below.

Table 24 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Costs and benefits of the framework	QUU (2014a) recognised that the move towards a more light handed approach should potentially reduce the regulatory costs on retailers. However, QUU considered the QCA has not demonstrated how it would ensure that the costs of ongoing operation of the framework will not exceed the benefits of the proposed framework. GCCC (2014a) noted that QCA has only included its internal costs and should include retailers' compliance costs in the cost benefit analysis (and any additional costs imposed on retailers as a consequence of QCA recommendations). GCCC suggested most retailers would need to submit information to level 3 (that is cost components that comprise MAR). Council proposed the cost benefit review consider the total	The benefits of annual performance monitoring should be greater than the past cost of service reviews, due to its better incentive properties (such as benefit sharing) and greater focus on pricing and service quality (which should result in more appropriate resource and investment decision-making). The QCA's costs are likely to be significantly reduced and the proposed framework would often draw on readily available information. At the time of the position paper the QCA had received few estimates of the costs of regulation from retailers. Those now available have been reflected in the final report. As the nature of a specific cost review may vary it is not possible to estimate total costs for each level. However, the minimum cost estimates have been provided and the greatest cost cannot be expected to exceed that for past cost of service reviews. Many past issues have now been resolved and the recommended framework draws heavily on

Issue	*Comment*	*QCA response*
	regulatory costs for levels 1 to 5.	available information sources.
Self-regulation	Unitywater (2014a) was concerned that the annual process proposed by the QCA and periodic major reviews would, on average, have similar or higher costs to the current annual price reviews. That is, average costs of perhaps $5M per annum or greater, for all retailers. The starting point for a cost/benefit analysis of regulatory options should be a self-regulation approach.	The proposed annual performance monitoring framework would result in lower costs per customer than has previously applied. Self-regulation is not considered consistent with the Ministers' Direction.
Savings	Unitywater (2014a) submitted that its Corporate Strategic Plan aims to reduce the total cost to serve customers. Savings are not attributable to the presence of economic regulation but are directly attributable to the entity's ownership structure and the pressure being applied by customers to pricing. In addition, were the identified savings made, the benefits would not necessarily be reflected in lower prices but would be expected to flow to the owners given that most retailers were assessed as forecasting revenue below the maximum allowable revenue (MAR).	Price monitoring is part of an overall policy framework which has provided cost savings and improvements across the water sector. The recommended framework provides a means for ensuring transparency of retailers' performance through public reporting and analysis. Administrative redistribution of monopoly prices through lower than otherwise rates and subsidies cannot ensure that the excessive revenues are shared in a manner which promotes efficient use of resources or equity. Such an approach can impose disproportionate costs on many user groups, even if overall revenues are below costs.
Fees for cost of service review	QUU (2014a) sought further information on the fees for a cost of service review - would an entity be charged individually and would this be set in advance of the review.	Each retailer would be charged individually and this would be set in advance of the review (as is the practice).
Reducing the cost of regulation	RCC (2014) submitted that the costs and benefits of implementing a framework of this nature would be most effective if implemented on a state-wide basis.	There is some scope for the costs of regulation per retailer to be reduced if applied to other retailers in Queensland, but this depends on the regulatory framework applied. The Ministers' Direction only applies to SEQ retailers. Whether to apply the recommended framework more widely is a matter for government.
Costs of regulation for smaller retailers	Qldwater (2014) submitted that the analysis of the QCA's costs in administering the regulatory regime (direct QCA charging and internal costs) for the smaller councils is deficient. Qldwater noted that for RCC, the regulatory costs are in the order of 2% of total opex. Similarly, LCC submitted that its customers are paying significantly more per customer.	The costs of regulation of smaller SEQ retailers by the QCA are not lower as they involve the provision and analysis of similar (considered minimum) information. The QCA must apply charges which reflect costs. The recommended framework would reduce the total cost of regulation and the cost per customer.

Issue	*Comment*	*QCA response*
	LCC (2014) stated that while it supported light-handed economic regulation it believes that this would place another bureaucratic regulatory burden on local government water service providers.	LCC is explicitly required to be incorporated in the proposed regime under the Ministers' Direction. Much of the information that the recommended framework draws upon should be readily available.
	LCC (2014) stated that information is already provided to other bodies, such as performance indicators, and can be used by QCA without a need for the distributor retailers to incur additional costs for producing new indicators.	The proposed regulatory regime draws as much as possible on the information provided to other regulators and only seeks to draw on additional information relevant to the Ministers' Direction which is not available.

Benefits and costs of annual performance monitoring

In developing annual performance monitoring, the QCA has taken into account the benefits and costs (efficiency) of the proposed framework, as briefly summarised below.

Benefits

Annual performance monitoring should provide further benefits to those achieved by past cost of service reviews due to its incentive properties (such as increased transparency and benefit sharing) and additional focus on pricing principles and service quality. Additional benefits should also flow from improved customer engagement, increased innovation and improved information systems.

Rather than cost savings being driven by prudency and efficiency reviews, the broader focus should improve incentives for efficient investment and business decision-making.

QCA costs

The QCA's costs (and consequently the regulatory fees recovered from retailers) have the potential to be much lower under annual performance monitoring. This derives from the gradation of reviews and the high-level threshold tests based on readily available information.

Where no additional information is required, for example if prices do not increase by more than CPI-X, costs would be significantly lower than those applied to date for a cost of service review. The QCA has estimated the minimum annual cost to be incurred by the QCA and charged to the retailer at $100,000 per retailer per year. Additional costs may be incurred where a request for further information notice is issued and the QCA is required to undertake further analysis. For example, where additional information is required to allow the QCA to conduct a greater depth of analysis and update its modelling (e.g. levels 3 and 4 information requirements), regulatory fees could increase by up to $50,000 per retailer.

A cost of service review could range from $250,000 to $500,000 per retailer, depending on the nature and scope of the issues to be investigated. Any ensuing price determination would not be expected to cost more than $50,000 to $100,000.

It is expected that the QCA's costs would reduce over time as retailers become more familiar with the framework and their pricing and investment decisions take the incentives into account. That is, the first year of review may involve higher costs than later years.

In total, QCA's costs could range from $0.5 million to $0.75 million per year for annual performance monitoring of all five retailers. Should a cost of service review be required for all retailers, the cost would be $1.25 to $2.5 million, depending on the nature of the investigation.

The QCA's costs, based on past experience do not vary significantly between entities as the QCA applies the same methodology for review irrespective of the nature of the entity. Similar principles would need to be validated for retailers under annual performance monitoring.

Retailer compliance costs

The QCA requested anticipated cost estimates under annual performance monitoring from all five retailers. Of the four that provided responses: three estimated their compliance costs would approximately halve to achieve the minimum (level 1 and 2) requirements of annual performance monitoring; the other estimated compliance costs would be the same as for previous price monitoring. The range of internal costs estimated by retailers for annual performance monitoring is large and ranges from $32,000 to $600,000 (plus undefined overheads), and averages to be $335,000 per retailer per review. Applied across all five retailers, the total cost is estimated at $1.7 million per year.

While retailers' costs may be higher in the initial year to establish information systems, and provide initial information, these should decline in later years.

For the two small retailers, Logan and Redland City Councils, the submitted average internal cost for annual performance monitoring was $118,000 per retailer per year.

Conclusion

Overall, the broader incentive-based annual performance monitoring framework should deliver greater benefit in terms of monopoly prices oversight and lower customer prices, as well as other benefits of transparency, at a lower cost over time.

For the 2010-15 period, the total regulatory cost was estimated at about $1.2 million per retailer for each review.

Under annual performance monitoring, the total regulatory costs should be less than $500,000 per retailer for information submissions at level 1 or 2. This compares very favourably to the average regulatory costs identified by Deloitte (2014) noted above.

Because the QCA's cost is the same regardless of the size of the retailer a similar charge would apply to each retailer for a similar level of assessment.

Retailers' compliance costs are expected to decline over time, as they become more familiar with the process.

4 REGULATORY PARAMETERS

4.1 Ministers' Direction

The Ministers' Direction requires the QCA to recommend treatment of the following regulatory parameters:

(a) the roll-forward of the regulatory asset base (RAB) within and across regulatory periods. A revaluation of the initial RAB (established for the purpose of the 2010-13 price monitoring period) is not to be considered

(b) the weighted average cost of capital (WACC)

(c) calculating the return of capital

(d) assessing efficient prudent and efficient operating and capital costs, including the process the QCA will apply in assessing prudency and efficiency

(e) principles to guide the treatment of capital revenues, including gifted assets and infrastructure charges.

Incentive mechanisms were addressed in the previous chapter.

The following details are relevant to both the establishment of the initial asset base and potentially for any variation to the CPI-X price cap.

To identify instances of potential monopoly pricing, annual financial information is required for performance monitoring. The relevant information requirements follow from a consideration of market power and the treatment of the above regulatory parameters.

4.2 Maximum allowable revenue

Generally-accepted regulatory practice in the Australian water sector is to use the 'building blocks' approach to calculate the revenue needed to cover a service provider's costs.

The maximum allowable revenue (MAR), establishes the total amount of revenue that an efficiently operated service provider would need to remain commercially viable, but not enjoy monopoly profits. It is generally expressed on an annual basis (the MAR).

The MAR for a particular regulatory period normally comprises the following ‘building blocks’:

(a) a return on capital based on a WACC applied to a depreciated RAB, updated to reflect any additional capital expenditure (net of asset disposals, customer and government contributions)

(b) a return of capital based on a suitable depreciation method, or calculated as a renewals annuity

(c) operating, maintenance, and administrative costs based on efficient costs relative to the appropriate scale of operation, including tax equivalents and any provision for externalities

(d) an allowance for working capital (if applicable).

The water sector is characterised by wide variations in climatic conditions which will affect demand, operating expenditures and returns to the service provider.

4.3 Regulatory asset base

The RAB consists of those assets necessary for the provision of the regulated (usually monopoly) services. These are usually non-current assets, but can include net current assets (working capital) depending on whether the service provider suffers an economic cost arising from the timing difference between accounts receivable and accounts payable.

The main regulatory issues relate to the valuation of non-current RAB assets (including network assets and land), and the treatment of new capital expenditure and the method of roll forward of asset value.

In the SEQ urban water sector, the initial RAB is set by the Government and under the Ministers' Direction; a revaluation of the existing RAB is not to be considered.

4.3.1 Asset valuation

Position paper

National commitments and positions

The relevant NWI principles are in summary:

(a) valuation of new assets - new and replacement assets should be initially valued at efficient cost

(b) valuation of legacy assets - legacy assets that are to be retained should be valued at Depreciated Replacement Cost (DRC), Depreciated Optimised Replacement Cost (DORC), Optimised Replacement Cost (ORC), indexed actual cost, Optimised Deprival Value (ODV) or using another recognised valuation method.

The legacy date equates to the date where a 'line in the sand' has been drawn. Where jurisdictions have not drawn a line in the sand, the legacy date will be no later than 1 January 2007 and may be in accordance with earlier dates as determined by governments or economic regulators.

Other jurisdictions

In NSW (IPART 2012a), the ACT (ICRC 2006), Victoria (ESC 2011a), and Tasmania (OTTER 2012) the initial RAB was an economic value (EV), based on drawing a line in the sand, to estimate a present value of existing and anticipated revenue. This provided an initial financial value of the assets. Prudent and efficient new capex was rolled in each year.

QCA analysis

For SEQ, the Government has drawn a line in the sand on the RAB for SEQ water retailers and adopted an economic value based on 2007 revenues. The RAB for the combined bulk and retail sectors was defined on the basis of the present value of net revenues across the water sector, and the bulk/retail split was apportioned using then available council written down values of the assets. The basis for this approach was that the assets are 'sunk' assets with no value in an alternative use (KPMG 2007).

Consistent with the Ministers' Direction, the QCA will accept the RAB established in the 2013-15 price monitoring review carried forward to 1 July 2015.

Final report

Relevant submissions and the QCA's responses are noted below.

Table 25 Summary of submissions and responses

Issue	*Comment*	*QCA response*
RAB value - initial value	R J Koerner (2014) and Coolum Residents Association (CRA 2014) submitted that the QCA has continued to accept a flawed RAB valuation by KPMG. CRA and Unite against Unitywater (2014) submitted that the asset valuations should be reviewed.	The Ministers' Direction explicitly prohibits a revaluation of the RAB established for the purpose of the 2010-13 price monitoring investigation.
RAB value at 1 July 2015 Draft recommendation 4.1**:** "The QCA accept the QCA forecast RAB at 1 July 2015 as established in the 2013-15 price monitoring review."	QUU (2014a) and GCCC (2014a) suggested that QCA accept the RAB from 1 July 2015 where actual information from 2013-15 is used to roll forward the RAB.	Since, the QCA has resolved a number of outstanding data issues. The forecast RAB would be used as the basis for the Reference MAR. The QCA recommends that draft recommendation (4.1) be amended (as detailed below).
	GCCC suggested that the actuals submitted each October should be used to recalibrate the RAB rather than rely on forecast data.	Under the framework, actual RAB data is only required where prices exceed CPI-X. In a cost of service review, the prudency and efficiency of actual capital expenditure is also reviewed.
	QUU also suggested that the recommendation be made clearer in that if a cost of service review is triggered, the prudency and efficiency review of capex is to be limited to the six large projects.	In Chapter 6, the QCA recommends that "retailers submit details of project evaluation, including options analysis and risk analysis, for up to the 6 largest capex items, where required as part of a request for further information."

As noted above, draft recommendation 4.1 has been amended to take into account the adjustments made to the final assessments of the retailers' suitability for transition.

Recommendation

4.1 The QCA adopt the QCA forecast RAB at 1 July 2015 as established in the 2013-15 price monitoring review (reflecting adjustments to the final assessments of retailers' suitability for transition), for annual performance monitoring.

4.3.2 Prudent and efficient capital expenditure

Position paper

Under the Ministers' Direction, the QCA is to recommend the efficient and prudent capital costs, including the process that will apply in assessing prudency and efficiency. The process is described below, in answer to the Direction. However, under the annual performance monitoring framework, the QCA would only apply the prudency and efficiency review process in the event of a cost of service review being triggered, or where required as part of a binding ruling.

National commitments and positions

The NWI stated that new and replacement assets should be initially valued at efficient cost. Valuations should not be based on the net present value of cash flows.

Other jurisdictions

Most regulators subject new capex to review of prudency and efficiency. For example, ESC (2011a) adopted a four-step test:

Step 1: project is justified either to meet broadly defined government objectives or benefits demonstrably outweigh the costs, or were supported by customers that were informed of the costs

Step 2: demonstrated prudency where a project justified at Step 1 meets objectives at lowest efficient cost, taking account of whether a range of reasonable options was considered and lowest NPV option selected

Step 3: assessment of the business' delivery mechanism for effective risk management, appropriate staging, contracting and project management

Step 4: assessment of cost estimation methodology.

QCA analysis

In recent reviews of SEQ bulk water providers and retailers, the QCA applied a prudency and efficiency test to new capital expenditure (including replacement).

The general criteria applied by the QCA in such tests are that:

(a) capital expenditure is prudent if it is required in response to key drivers: as a result of a legal obligation (compliance), growth in demand (growth), renewal of existing infrastructure that is used and useful (renewal), or it achieves an increase in the reliability or the quality of supply that is explicitly endorsed or desired by the government or by customers (service). Capital expenditure may also be driven by efficiency gains in operations, to achieve lower operating costs (efficiency).

(b) capital expenditure is efficient if:

  (i) the scope of the works (which reflects the general characteristics of the capital item) is the best means of achieving the desired outcomes after having regard to the options available, including the substitution possibilities between capex and opex and non-network alternatives such as demand management

  (ii) the standard of the works conforms with technical, design and construction requirements in legislation, industry and other standards, codes and manuals. Compatibility with existing and adjacent infrastructure is relevant, as is consideration of modern engineering equivalents and technologies

  (iii) the cost of the defined scope and standard of works is consistent with conditions prevailing in the markets for engineering, equipment supply and construction.

The assessment of prudency takes account of potential:

(a) bypass options – such options are limited in distribution/retail services. Large customers may find it economic to bypass services in some circumstances

(b) non-network options – such options, if not already exploited, could defer the timing of capital expenditure, for example through demand management, sponsoring new low-use technologies, supply restrictions or system leakage reduction

(c) excess capacity - for most water utilities there are considerable benefits in terms of minimising total costs from installing assets to meet not only existing demand, but also to allow for a reasonable (expected) level of growth in demand. Generally, planned excess capacity, where it is considered necessary to produce the lowest long-run total cost, on a present value basis, should be retained in the optimised asset base

(d) redundant or stranded assets – assets that are no longer used or are superseded. Assets would not be considered to be stranded if they must continue to be maintained due to supplier of last resort requirements or to address a relevant risk

(e) over-investment or gold-plating – the level of investment exceeds that necessary to provide the service at least cost.

In reviewing proposed new capital expenditure, the QCA in some cases found that an alternative configuration using different combinations of assets may be more prudent and efficient. For such cases, the QCA adopted the prudent and efficient configuration.

In the event that a cost of service review is triggered, the QCA proposes to adopt the same methods for assessing prudency and efficiency of sampled capex.

For annual performance reporting purposes, the QCA would not undertake prudency and efficiency reviews. Retailers would be responsible for ensuring that their investment decisions meet the prudency and efficiency criteria. Where prices or revenues diverge from CPI-X due to capex related issues, and the QCA seeks to investigate these specific issues, retailers would be required to demonstrate that alternative investment options (including replacement or upgrades of existing infrastructure rather than new investment) have been appropriately assessed. This is discussed in Chapter 6.

Final report

Submissions

QUU (2014a) agreed with the recommendation for prudency to be assessed against the key drivers, but suggested that prudency would only be assessed in the event that a cost of service review is triggered.

QUU agreed that retailers should ensure investments are consistent with QCA's prudency and efficiency tests.

QCA analysis

QCA notes that the regulatory framework position paper analysis explicitly noted that for annual performance reporting purposes, the QCA would not undertake prudency and efficiency reviews. Such a review would only be undertaken as part of a cost of service review.

QCA has not made any changes to the recommendations from the position paper.

Recommendations

4.2 Prudency be assessed against key drivers: compliance, growth, renewals, service and business efficiency. Efficiency be assessed against the scope and standard of works.

4.3 Water retailers ensure investments are consistent with prudency and efficiency tests.

4.3.3 Asset roll-forward

Position paper

Asset roll-forward refers to the method for carrying forward the RAB over successive regulatory periods. The annual roll-forward should be undertaken using a method of return of capital that fully recovers the initial cost of an asset over its economic life and a rate of escalation consistent with maintaining the real value of the initial investment over time. Ultimately, the NPV of capital charges applied over the life of the asset should equal the initial cost, or purchase price, of an asset.

National commitments and positions

The NWI principle for asset roll-forward is that the RAB comprising prudent new investments and legacy investments should be rolled forward each year in accordance with the following formula, which can be expressed in nominal or real terms:

$$RAB_t = \left(RAB_{t-1} + Prudent\ \&\ Efficient\ Capital\ Expenditure_t - Depreciation_t - Disposal_t\ (discarded\ assets)\right)$$

(Where t = the year under consideration).

Where assets are optimised, they should not be subject to further optimisation unless there are relevant changes in market circumstances.

Other Jurisdictions

In urban water decisions, Australian regulators have adopted the roll-forward approach proposed in the NWI pricing principles (ERA 2013a; IPART 2008, 2013a; ICRC 2006; OTTER 2012; ESC 2011a; ESCOSA 2013a).

Nominal rates are typically rolled forward using inflation (IPART 2008, OTTER 2012). However:

(a) ICRC (2006) used a capital escalation factor based on industry forecasts (by BIS Shrapnel) of engineering and construction cost increases in the water and sewerage sector

(b) Ofwat (2010) also used a roll-forward of Regulatory Capital Value for UK water businesses. Ofwat includes a capital maintenance charge to maintain serviceability.

Stakeholder submissions

In an initial submission, Unitywater (2013c) sought guidance on RAB roll-forward and MAR construction.

QCA analysis

While asset roll-forward is straightforward within a regulatory period, issues arise when contemplating roll-forward over successive regulatory periods. Most Australian regulators support the principle of roll-forward (rather than full asset revaluations) on the grounds that:

(a) it is simpler and less costly

(b) ongoing revaluations may affect the future incentive of regulated retailers to invest.

Capital expenditure which was originally considered prudent and efficient by the regulator may later become redundant or sub-optimal due to changes in demand or technology. Any subsequent adjustments in successive regulatory reviews may, therefore, result in losses and reduce the incentive to efficiently invest in infrastructure.

Once reviewed for prudency and efficiency, assets would be subject to no further optimisation, unless, in some rare circumstances:

(a) the regulator had previously been misled in some way

(b) there are actual bypass options

(c) there are issues in relation to customers' capacity to pay (although this is difficult to assess, the QCA would refer to any customer engagement processes undertaken by the retailer) or

(d) there is a need to promote outcomes in downstream or upstream markets that are consistent with those of properly functioning competitive markets.

Where retailers overspend on capital relative to prior projections, consideration needs to be given to whether such over-expenditures are efficient and whether it should be included in the RAB in subsequent periods.

Where actual capital expenditure is less than forecast, retailers are typically allowed to earn a return on the forecast amount, provided service quality does not deteriorate. However, the RAB at the start of the next regulatory period would only reflect actual expenditure. New assets would enter the RAB at commissioning date.

The QCA recommended that nominal values be adopted in the roll-forward valuation, and that base values be escalated using an appropriate factor to maintain values in real terms. The relevant index is CPI (or other indicator such as the mid-point of the RBA's inflation target band). There is a case to apply industry-specific input indexes where these are available, stable and reliable. Industry-specific indexes have the advantage of maintaining the value of the asset in equivalent terms, but may be volatile and less predictable for setting prices over a regulatory period.

Final report

Submissions

QUU (2014a) agreed with the proposed approach to roll-forward the RAB.

In relation to draft recommendation 4.5 QUU suggested that RAB should be rolled forward using CPI or other indicator such as the RBA forecast. LCC (2014) stated that the actual CPI measure be used to roll-forward the RAB.

QCA analysis

The QCA has since finalised its position on CPI and proposed that the RBA forecast CPI as the time of pricing decisions be adopted (see chapter 8).

QCA has not made any changes to the recommendations from the regulatory framework position paper.

Recommendations

4.4 For setting prices, retailers roll forward the RAB taking account of prudent and efficient capital expenditure, depreciation and asset disposals.

4.5 For rolling-forward the RAB CPI be adopted.

4.3.4 Contributed assets and capital subsidies

Position paper

Contributed assets are those assets that are funded or provided by water users, or funded or provided by others on their behalf. Assets may have been contributed in the past through transfer of ownership of a facility, direct payment for the facility involved, a capital contribution or capital revenue towards an expansion of existing facilities or through payments for developed land (developer charges).

National commitments and positions

The NWI proposes that new contributed assets (i.e. grants/gifts from governments and contributions from customers (e.g. developer charges)) should be excluded or deducted from the RAB or offset using other mechanisms so that a return on and of the contributed capital is not recovered from customers. If a renewals annuity is used, it should include provision for replacement of contributed assets.

For contributed assets other than developer charges, funding should be recognised as an asset contribution only where there is clear contractual or policy evidence that this funding was meant to be used to lower long-term prices.

Other jurisdictions

ERA (2013a) excluded developer contributions from the asset base. ESCOSA (2013a) likewise excluded customer contributions and gifted assets from new capital expenditure.

Stakeholder submissions

In an initial submission, Unitywater (2013c) suggested guidance is required on the treatment of developer contributions. The Queensland Department of Local Government, Community Recovery and Resilience (2013) indicated an interest in the treatment of capital revenues, gifted assets and developer charges.

QCA analysis

Capital contributions

Recognition that capital contributions for setting prices depends on the particular circumstances surrounding the capital contribution, particularly the intention and expectations of the parties at the time the capital contributions were made. In SEQ, revenues from infrastructure charges are likely to be the main source of external capital contributions.

Where it is proposed to recognise capital contributions, different approaches have been adopted. In general these involve either:

(a) including the contributed assets in the regulatory asset base, but employing some form of offsetting mechanism to account for the contribution or

(b) excluding contributed assets from the regulatory asset base for pricing purposes.

These approaches can be applied to previous or future capital contributions. In general, option (b) is simpler, but may not be practical where the capital contribution relates only to a subset of

the customer base. In these cases, if it is administratively not overly complex, it is recommended to recognise any specific arrangements between identifiable contributors and the water business by adjusting prices for those specific users in accordance with the terms of the arrangement.

Any price offsets or adjustments should reflect the capital-related costs, namely return on capital and depreciation, unless otherwise specified.

Capital subsidies

Capital subsidies or grants form a specific sub-group of contributed assets, and generally refer to subsidies provided by the State or Commonwealth Government to various water businesses. Local government water services businesses, for instance, have acquired significant assets that have been funded, in full or in part, through grants from other levels of the government.

Options for dealing with capital subsidies include:

(a) treating the subsidy as an equity injection, with no consequent changes to pricing

(b) recognising the subsidy as revenue in the period in which it is received, and including in the retailer's asset base any assets funded by the subsidy

(c) amortising the value of the subsidy over the remaining life of the relevant assets and including this as revenue to offset the amount required of other revenue sources.

The appropriate approach to regulatory recognition of capital subsidies depends, largely, on the purpose of the grant. The purpose may be to reduce the service costs to a particular consumer or group of consumers. In the absence of any specific agreement or agreed purpose, or evidence to suggest that a particular outcome was intended, the treatment of past and future grants should be at the asset owner's discretion.

Final report

QUU (2014a) agreed with the treatment of capital contributions.

The QCA has not made any changes to the recommendation from the regulatory framework position paper.

Recommendation

4.6 Capital revenues (from capital contributions including infrastructure charges) and capital subsidies (where verifiable) be taken into account in determining the revenue requirement.

4.3.5 Valuation of land and easements

Position paper

The SEQ retailers hold, or may invest in, land and easements for buildings, pipelines or other facilities.

QCA analysis

The QCA considers that land should be valued for regulatory purposes at a value consistent with its next best use – the opportunity cost to the asset owner, or the value which would be faced by a new entrant to the market.

New easements are best valued at market value where this is available, or historic cost indexed forward by CPI (in the absence of an observed market value).

Final report

QUU (2014a) agreed with the treatment of the valuation of easements.

The QCA has not made any changes to the recommendation from the regulatory framework position paper.

Recommendation

4.7 Easements be valued at market value where this is available, or historic cost indexed forward by CPI (in the absence of an observed market value).

4.3.6 Work in progress

Position paper

Water infrastructure can take a long time to build and provide services – financing and holding costs can be incurred where asset construction spans more than one year.

QCA analysis

The QCA's preferred approach is for work in progress that spans more than one year to be capitalised until completion/commissioning at the appropriate WACC. The capital expenditure should only be included in the asset base when it is able to provide services.

Final report

QUU (2014a) agreed with the treatment of work in progress.

The QCA has not made any changes to the recommendation from the regulatory framework position paper.

Recommendation

4.8 Work in progress spanning more than a year be capitalised until commissioning at the appropriate WACC.

4.3.7 Working capital

Position paper

Working capital is generally defined as the difference between a service provider's current assets and current liabilities, and is a measure of operating liquidity.

Despite this general definition, the components of current assets and current liabilities included in the actual calculation of working capital can vary. However, it is common practice to include the trade component of accounts receivable (trade debtors), the trade component of accounts payable (trade creditors), and inventories if these are material.

Whether or not working capital is required would depend mainly on the timing difference between the cash received from customers on account (accounts receivable, or trade debtors) and the cash paid to suppliers on account (accounts payable, or trade creditors), plus the need to finance inventories.

The timing difference creates a financial liability when the average collection days for accounts receivable are greater than the average payment days for accounts payable (that is, on average it takes longer to receive cash than to pay it, resulting in a shortfall). Conversely, when the

average payment days for accounts payable are greater than the average collection days for accounts receivables, there is a surplus of cash on average.

To cover the economic cost of any working capital required to supply regulated services, a return on working capital should be included in the maximum allowable revenue.

Other jurisdictions

In 2000 the Victorian economic regulator rejected Victorian electricity distributors' proposals for working capital allowances on the basis that, given the assumption regarding return on capital implicit in the building block formula that payments are received at year end, while in practice, utilities receive payments from customers throughout the year, there is already an excess net present value revenue for the return on assets component that would more than compensate for this purpose (Deloitte 2011).

Since this 2000 decision, ESC has not provided an allowance for working capital in its pricing decisions for regulated service providers.

In its final report on the Bulk Water Charges for the State Water Corporation (State Water) 2010-14, IPART (2010) included an allowance for working capital in the return on capital to recover the costs of managing revenue volatility risk caused by variability in the availability of water (for example, the borrowing costs associated with providing services in years when extractions (and therefore revenue) is below forecast).

ESCOSA (2005) considered the need for separate working capital allowances for capital related costs and operating related costs. ESCOSA found that, although there was no basis for providing a working capital allowance for the capital cost component, a working capital allowance on the operating expenditure was appropriate.

ICRC (2008) explicitly did not include working capital as an allowance as it was already provided in ACTEW's regulatory model. Since 2002, the Australian Economic Regulator (AER) has consistently held that, under a building block framework, regulatory allowances for working capital funding are unnecessary.

QCA analysis

In its previous water decisions the QCA has generally assessed the need for a working capital allowance based on the difference in value between a service provider's current assets and current liabilities multiplied by the applicable WACC (QCA 2010b, 2012a, 2012b, 2013c).

However, the particular categories of current assets and liabilities included in the calculation have varied depending on the actual business circumstances of service providers.

If justified, an allowance for working capital should be included in the MAR to recover any economic cost arising from the timing difference between receivables and payables, plus the cost of maintaining relevant material inventory if this has not already been included in the RAB. The onus of proof as to whether it is justified lies with the retailer.

The calculation of the allowance, if any, should reflect not only the particular trading circumstances of the service provider, but also should take into account other relevant current assets and liabilities if these have a material effect on cash flow patterns (for example, prepayments, accrued revenues, other creditors and accruals, and wages and salaries payable).

Final report

QUU (2014a) agreed with the treatment of in progress and working capital.

The QCA has not made any changes to the recommendation from the regulatory framework position paper.

Recommendation

4.9 A working capital allowance account for the timing difference between receivables and payables, plus inventory costs where it can be justified.

4.4 Return on capital

The Ministers' Direction requires the QCA to recommend an appropriate treatment for determining the WACC for the SEQ water retailers to apply from 1 July 2015.

The following provides a brief outline of the QCA's recommendations, with Appendix B providing further detail including relevant references to the detailed analysis of issues and findings of the QCA's cost of capital review which has been carried out in parallel with this investigation.

Appendix B also includes details of WACC in other jurisdictions and summaries of stakeholder submissions.

4.4.1 General approach

The QCA proposes to continue to use a nominal post-tax 'vanilla' form of the WACC (Officer's WACC3) for benchmarking purposes.

Single or multiple discount rates

The QCA applied the same benchmark WACC across all SEQ water retailers for the 2013-15 price monitoring investigation, and recommends continuing this practice for the long-term regulatory framework from 1 July 2015.

Split cost of capital

The QCA does not propose to use a split cost of capital because further evidence is needed to support application of the approach. Should further research suggest that it is desirable and feasible to use a split cost of capital to further inform the determination of the discount rate, QCA may re-examine this issue at a later date.

Progressive updates of benchmark WACC

The light-handed nature of the proposed annual performance monitoring framework allows for annual price adjustments by water retailers. This implies that estimates of the benchmark cost of debt (and therefore the WACC) would need to be updated annually.

Recommendations

4.10 The form of the benchmark discount rate for the long-term regulatory framework for SEQ water retailers from 1 July 2015 be a single nominal post-tax 'vanilla' WACC (Officer WACC3).

4.11 The same benchmark WACC apply across all SEQ water retailers.

4.12 The benchmark WACC be updated annually to align with the recommendations made for estimating the cost of debt.

4.4.2 Risk free rate

The QCA's position is to maintain its approach for estimating the risk-free rate using Commonwealth Government bond nominal yields as the proxy for the risk-free rate, applying an 'on-the-day' rate estimated as the average yield over a period of 20 business days, and matching the term to maturity of the risk-free proxy to the regulatory period.

Previous price monitoring reviews for SEQ water retailers used the term of the review as the regulatory period, and set the term to maturity of the risk-free proxy equal to this period.

The QCA now proposes to use an annual term for the risk-free rate for both the cost of equity and the cost of debt to align with the revised nature of economic regulation – in particular, annual performance monitoring and price resets.

Recommendation

4.13 The risk-free rate be estimated annually from 1 July 2015 using:

(a) Commonwealth Government bond nominal yields as the proxy for the risk-free rate

(b) an averaging period of 20 business days just prior to the annual update

(c) a term to maturity of one year.

4.4.3 Market risk premium

The QCA has reassessed its traditional estimation methods for the market risk premium (MRP) after considering new evidence, market conditions, and material submitted by stakeholders (including SEQ water retailers).

The QCA's view is that expanding the range of information to include market conditions supports an increase in the MRP to 6.5% per annum.

Recommendation

4.14 A market risk premium of 6.5% per annum apply from 1 July 2015.

4.4.4 Capital structure

As no material changes are expected in the general operational and regulatory circumstances for SEQ water retailers from 1 July 2015, QCA proposes no change to the benchmark capital structure (60% leverage) and credit rating (BBB).

Recommendation

4.15 A benchmark capital structure of 60% debt and credit rating of BBB, apply to all SEQ water retailers from 1 July 2015.

4.4.5 Asset and equity betas

The QCA's position is to apply the same asset and equity betas across all SEQ water retailers. QCA proposes that the appropriate benchmark asset beta to apply from 1 July 2015 for all SEQ water retailers is 0.35.

Using the Conine relationship, this corresponds to a levered equity beta of 0.65 at leverage of 60%, debt beta of 0.11, gamma of 0.47, and corporate tax rate of 30%.

Recommendation

4.16 A benchmark asset beta of 0.35 apply to all SEQ water retailers from 1 July 2015. This corresponds to a levered equity beta of 0.65 at leverage of 60%.

4.4.6 Cost of debt

A major concern of some stakeholders (as noted in submissions detailed in Appendix B) is that the regulatory cost of debt allowance should match the cost of debt incurred by a benchmark firm that adopts an efficient debt policy. Retailers also considered that the regulatory framework should contain mechanisms to smooth short-term changes in the WACC to reflect the long-term nature of water and sewerage infrastructure, and to provide greater price certainty to customers. The retailers proposed that the trailing average applied to the total cost of debt is the most suitable method to address these issues.

The QCA's draft position is that the regulatory cost of debt for SEQ water retailers should be estimated using the established 'on-the-day' approach. The established 'on-the-day' approach, which includes adequate allowances for managing interest-rate and refinancing risks, provides the appropriate regulatory cost of debt allowance for SEQ water retailers consistent with the efficient benchmark cost of debt, while satisfying economic efficiency criteria.

The QCA is yet to reach a final position on the appropriate approach for setting the benchmark cost of debt.

Recommendation

4.17 Subject to a final QCA position, from 1 July 2015, the benchmark cost of debt for SEQ water retailers be estimated annually using the 'on-the-day' approach comprising:

- **(a) a risk-free component of the cost of debt estimated using the prevailing one-year risk-free rate**
- **(b) a debt risk premium component of the cost of debt using the prevailing 10-year benchmark (BBB) bond rate**
- **(c) an interest rate swap allowance to convert the term of the risk-free rate from 10 years to one year**
- **(d) an allowance for debt raising costs of 10.8 basis points per annum.**

4.4.7 Debt beta

The QCA proposes to continue to apply a debt beta of 0.11 in its calculation of levered equity beta for all SEQ water retailers using the Conine relationship.

Recommendation

4.18 A debt beta of 0.11 apply to all SEQ water retailers from 1 July 2015.

4.4.8 Value of imputation credits (Gamma)

The QCA has re-examined its estimates of the distribution and utilisation rates as part of its review of the cost of capital. QCA proposes to apply a gamma value of 0.47 (based on a distribution rate of 0.84 and a utilisation rate of 0.56) from 1 July 2015.

Recommendation

4.19 A gamma of 0.47 (based on a distribution rate of 0.84 and a utilisation rate of 0.56) apply from 1 July 2015.

4.5 Return of capital

4.5.1 Position paper

To ensure appropriate investment incentives, investors need both an adequate return on capital plus a return of capital over the economic life of the asst. Return of capital, or depreciation, represents the repayment of capital to an investor. This is different from an accounting or physical definition of depreciation.

There is considerable scope to choose different methods of depreciation but it is critical to ensure that the present value of capital charges (return on capital and return of capital) over the life of the asset equals the initial cost of an asset. This includes the application of an annuity (QCA 2014d).

The return on capital and the return of capital can be calculated and shown separately or combined in the form of an annuity charge.

Key issues are the alternative methods of calculation and the parameters used in applying each of the methods.

National commitments and positions

The NWI pricing principles state that charges will be set to achieve full cost recovery of capital expenditures (net of transparent deductions/offsets for contributed assets and developer charges) through either:

(a) a return of capital (depreciation of the RAB) and return on capital (generally calculated as rate of return on the depreciated RAB) or

(b) a renewals annuity and a return on capital (calculated as a rate of return on an undepreciated asset base).

Other jurisdictions

Straight-line depreciation has been adopted as a measure of asset consumption in most recent regulatory decisions applied using assessed asset lives for asset categories (ERA 2013a; IPART 2008, 2013; ICRC 2012; OTTER 2012; ESC 2013a; ESCOSA 2013a).

OTTER (2012) applied an asset renewal annuity (ARA) in addition to depreciation. The ARA was an attempt to smooth capital expenditures over the 3-year regulatory period.

Ofwat (2009a) applied a depreciation charge to above-ground assets such as treatment works. For underground assets, pipes for water and sewerage, it applied an infrastructure renewals charge, based on a 15-year average (2005-20) of renewals expenditure.

QCA analysis

Depreciation

Cost-based depreciation charges allocate the original cost of an asset over its estimated (remaining) useful economic life. The asset base is then 'depreciated' or 'written-down' in each period to return the initial capital to the business.

Central issues are the assessment of the useful life of the asset (the time over which the asset depreciation occurs), the pattern or profile of depreciation, and the estimate of the salvage or residual value that may be realised at the end of an asset's useful life.

The useful life of the asset is best determined by reference to asset management plans. The depreciation profile may be:

(a) straight-line – an equal annual amount of reduction in service potential

(b) constant efficiency – reduction in service potential occurring mostly towards the end of the asset life or

(c) accelerated depreciation or diminishing value method – reduction in service potential is by a constant percentage each year, producing more rapid depreciation in the early years of the asset life.

Water storage and distribution system assets exhibit different physical depreciation profiles. Dams have long lives requiring minor maintenance to maintain service potential, while pipelines may lose service potential more evenly. Assets such as pumps and motors may exhibit linear consumption patterns. However, as noted the key economic issue is to ensure the recovery of capital over the life of the asset.

Straight-line depreciation is usually adopted as a default position because it is simple, transparent and typically the standard approach in business. This approach has been adopted in the QCA's urban water regulatory reviews and is applied almost universally in other jurisdictions.

The application of straight-line depreciation means that capital charges are larger in absolute terms in the beginning of the asset life relative to those in later years. This can mean material changes in the level of prices between regulatory periods. This difference may be exacerbated over time where long-lived assets include a significant amount of excess capacity which is taken up with rising demand over the asset life (QCA 2014d).

If an asset is underutilised but demand is expected to grow and asset stranding risk is low, it will be economically efficient and likely to be perceived as equitable for capital charges to increase in real terms over time (by adopting a back-end loaded depreciation). This back-ended approach effectively carries the value of excess capacity forward for future users to pay (QCA 2014d).

While the straight-line depreciation approach is adopted as the default option, retailers may consider alternative depreciation profiles that take account of excess capacity and demand growth implications. For some assets, an approach that allocates a loading on future users may be considered appropriate (QCA 2014d). Retailers should advise of any such variations from straight-line depreciation.

Renewals annuity

Rather than set an asset depreciation charge, a renewals annuity reflects the costs of necessary refurbishment or rehabilitation of individual parts of the network over a relatively long period of time. The infrastructure asset network is considered an integrated, renewable system to be maintained in perpetuity, rather than a collection of individual assets each with its own asset life and maintenance requirements. There is no direct reference to the (historic actual) cost of the assets in question, only replacement or refurbishment costs.

The essential input to a renewals annuity approach is the asset management plan. Taking account of the age, condition and service capacity of the system, a total maintenance plan is developed which identifies the most effective operating lives and times for replacement of all assets which, together, comprise the system or network. An expenditure program, in some cases as long as 35 years, is then developed to both replace component parts of the system when required and to carry out all other operations and maintenance. These expenditure projects are converted to an annuity and an asset renewal reserve (ARR) is established to carry the accumulated balance (whether unspent or overspent) of this annuity charge.

The main application of renewals annuities has been in irrigation pricing. The rationale for adopting such an approach is that it is considered to provide a lower cost for asset replacement for long life assets such as dams and channels, as compared to a full asset consumption charge. The renewals annuity enables sustainable funding and operation of a scheme consistent with lower bound pricing.

A renewals annuity should be structured to allow for periodic asset maintenance, asset refurbishment and replacement of all assets in the system. If a planning period less than the economic life of the asset is adopted, the annuity charge would be underestimated (QCA 2014d). Over time, the renewals annuity may increase upwards as replacement of long-lived high-cost assets enter the planning period.

Where the system has initial excess capacity, pricing based on smoothing over the life of the longest life asset in the system can avoid the front loading of prices.

The QCA recommended the continuation of renewals annuities in its reviews of SunWater (QCA 2012b) and Seqwater (QCA 2013c) irrigation operations. In these reviews, the QCA adopted a 20-year time horizon (2012-36 for SunWater and 2013-36 for Seqwater).

In recent years there has been a move away from renewals annuities in some businesses (e.g. Goulburn-Murray Water 2006). The reasons relate to issues in the greater provision of urban services (where depreciation is typically applied), management of the ARR, the risk of price spikes as the planning horizon is moved forward, and the risk that funds would be set aside for assets that may not be replaced.

In the light of these experiences, the renewals annuity approach should not be adopted for urban water pricing. A depreciation measure provides more stable asset consumption costs over time, is simpler and more transparent, and avoids the additional management of an ARR.

4.5.2 Final report

QUU (2014a) recommended that the recommendations for straight-line depreciation and adoption of alternative depreciation profiles be merged as one recommendation.

It is noted that greater clarity is achieved by the presentation.

QCA has not made any changes to the recommendations from the regulatory framework position paper.

Recommendations

4.20 Return of capital be based on straight-line depreciation.

4.21 Details of alternative depreciation profiles for long-life assets be justified to the QCA.

4.6 Operating costs

4.6.1 Position paper

Operating costs of water services typically include labour and contractors, repairs and maintenance (routine and non-routine), materials, and administration. A competitive and efficient market would ensure that, in general, operating costs are minimised.

National commitments and positions

The NWI (COAG 2004) indicates that full cost recovery includes efficient operational maintenance and administration costs.

QCA analysis

Prudent and efficient costs

The most common means of estimating efficient costs is to benchmark the performance of a particular utility against other relevant businesses. Another approach is internal benchmarking over time which allows a firm to establish its own relevant performance indicators. Under these approaches, efficiency levels for inputs, unit costs and quality of service are set on the basis of lowest-cost, highest-service standards (van den Berg 1997).

Key difficulties include the lack of an appropriate set of businesses against which valid operational conclusions can be drawn. It may also be difficult to determine the optimal balance of operating, maintenance and administration costs and capital expenditure over time.

In some cases, the regulator may have no option but to accept operating cost projections by the regulated organisation so long as sufficient supporting evidence, for example, independent cost reviews, is provided. This may be necessary until sufficient time has elapsed to enable a time series of comparative data to be collected.

An alternative approach that has been adopted by the QCA is to undertake a bottom-up expert analysis of the efficiency of a sample of operating cost items and extrapolate where possible.

Operating expenditure is prudent if the expenditure:

(a) is necessary to operate the water services in review

(b) is required to meet growth in demand for services or

(c) results from a legal or compliance obligation.

For expenditure to be efficient, it must represent the least-cost means of providing the requisite level of service within the relevant regulatory framework. Operating expenditure is efficient if it is undertaken in a least-cost manner over the life of the relevant assets and is consistent with relevant benchmarks. In assessing efficiency, it is necessary to have regard to the conditions prevailing in relevant markets, historical trends in operating expenditure and the potential for efficiency gains or economies of scale.

In general, the QCA considers that operating costs should reflect efficient service delivery given the scale and nature of the business activity.

Under the annual performance monitoring framework, prudent and efficient base-year operating costs may be used as a reference point to assess forecast costs.

4.6.2 Final report

Relevant submissions and the QCA's responses are noted below.

Table 26 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Operating costs	QUU sought clarification regarding what is meant by assessing forecast costs. QUU noted it would not be providing forecast costs (under the framework).	Base year operating costs may be used as a reference point to assess costs forecast at the time prices were set.
Prudent and efficient operating costs Draft recommendations: "4.12 Operating costs are prudent if justified in terms of service, growth or compliance drivers. 4.13 Operating costs are efficient where they represent the least cost over the life of the assets."	QUU suggested re-wording these recommendations to clarify that prudency and efficiency reviews are undertaken only during a cost of service review.	The definitions are proposed to be maintained as they are relevant to retailers irrespective of when they are applied by the QCA. It is however accepted that the QCA would only be reviewing forecast operating costs for a cost of service review.
	Should the QCA consider it necessary to assess prudent and efficient operating costs, RCC sought clarification on how the QCA would undertake a bottom-up expert analysis of the efficiency of a sample of operating cost items and extrapolate where possible.	The approach would be similar to that applied in the 2013-15 price monitoring review. Expert advice would be sought to assess prudency and efficiency of operating costs and whether savings could be extrapolated on a case-by-case basis.
	LCC considered that when undertaking benchmarking of operating costs, the very high cost of bulk water compared to other retailers other than SEQ retailers must be taken into account when carrying out comparisons.	Benchmarking at the retailer level is only applied for broad comparisons. In such comparisons, the effect of different bulk water service provision is taken into account.

The QCA has not made any changes to the recommendations from the regulatory framework position paper.

Recommendations

4.22 Operating costs are prudent if justified in terms of service, growth or compliance drivers.

4.23 Operating costs are efficient where they represent the least cost over the life of the assets.

4.7 Tax equivalents

4.7.1 Position paper

A government business may benefit from tax exemptions or concessions that are not available to private sector competitors.

Therefore, in order to satisfy competitive neutrality obligations, certain government business undertakings in Queensland are required to include a tax allowance in their cost bases, and therefore prices, in order to maintain tax neutrality between the government businesses and their private competitors, or potential competitors.

These tax allowances are called tax equivalents.

National commitments and positions

The National Competition Policy (NCP) agreements (COAG 2007) and the associated NWI agenda (COAG 2004) provide the framework for nationwide competition policy reform in the water sector.

A specific policy element of NCP reforms is competitive neutrality, the purpose of which is to remove benefits which accrue to government business activities as a result of their public ownership, such as the exemption from taxation.

As a signatory to NCP agreements, the Queensland Government is committed to achieving consistency, as far as practicable, with the direction and spirit of the national water reform agenda under the NWI, including competitive neutrality reform. This is reflected in its general policy objectives for the structural and regulatory reforms of urban water supply arrangements in south east Queensland.

Other jurisdictions

IPART uses a post-tax WACC, and therefore includes tax liabilities as a separate cost building block (IPART 2012a, 2012b, 2013a). The tax liability is calculated as the tax that would be payable by a comparable privately owned business.

ESC (2011a) and ACCC (2011b) use a post-tax building block model and therefore include a taxation forecast in the total revenue requirement. However, these regulators calculate the taxation with reference to the forecast taxation to be incurred by the entity over the regulatory period, rather than benchmarking against a comparable private firm.

ESCOSA (2013a) uses a post-tax WACC, and explicitly includes an estimate of tax expense in the cash flows using entity-specific revenues and costs, but benchmark interest expenses.

OTTER (2012) and ERA (2013a) uses a pre-tax WACC which implicitly embeds 'benchmark' tax effects in the cost of capital, thus precluding the need for a separate tax allowance in the total revenue requirement.

ICRC (2013) has concluded that competitive neutrality concerns are not relevant in the market for water and sewerage services in the ACT, and therefore does not allow for tax equivalents in ACTEW's cash flows.

SEQ approach

In order to meet their tax neutrality obligations, the councils are required to include tax equivalents in their costs in accordance with the Local Government Tax Equivalents Regime (LGTER) administered by the Office of State Revenue (Queensland Treasury and Trade 2010).

The LGTER determines the amounts of income tax and State tax equivalents to be paid by the retailers because they are not liable to pay Commonwealth income tax, or State duty, payroll and land taxes. Both income tax and State tax equivalents are paid to the relevant local authority.

QCA analysis

A tax equivalents allowance may be based on either actual cash flows for the business, or based on the benchmarked parameters for capital structure, cost of debt etc (as used by IPART). Generally, where a benchmarked WACC is used, a benchmarked tax equivalents estimate would be more consistent.

The QCA employs the Officer WACC3 or 'vanilla' form of the discount rate, which defines corresponding cash flows in nominal, post-tax terms.

Therefore, when calculating the maximum allowable revenue requirement, it is necessary to include an amount to compensate the retailers for tax equivalents.

4.7.2 Final report

QUU (2014b) agreed with the treatment of tax equivalents.

QCA has not made any changes to the recommendation from the regulatory framework position paper.

Recommendation

4.24 The MAR includes an allowance for tax equivalents based on a benchmark private sector entity.

4.8 Cost allocation

4.8.1 Position paper

Indirect costs are the cost of facilities used jointly or in common by several or all services, or customer groups.

The appropriate allocation of costs may be an issue in determining cost reflective pricing signals for the different services provided by the SEQ retailers.

Cost allocation may be a problem where there are joint or common costs that need to be allocated:

(a) between services, for example, between water and sewerage

(b) between customer types, for example, between residential and non-residential customers

(c) where there are prices differentiated by cost causation , eg location, service quality standard, peak periods etc.

A cost allocation problem arises where there is no economically feasible way to trace the costs directly to that service, customer, or customer group in a clear cost-causative way.

Under such circumstances there is usually no one 'best' way to allocate these costs, and judgment based on knowledge and experience is needed. As there is a degree of arbitrariness or subjectivity in whatever method is chosen, the aim is to use a method which results in a 'fair and reasonable' allocation which is acceptable to stakeholders.

This is an important issue in the setting of cost-reflective prices for water services because the system cost of water services infrastructure is often characterised by a large proportion of common or joint costs.

Cost allocation in principle

General economic guidance on what is 'fair and reasonable' cost allocation is usually provided by two commonly-accepted principles: the stand-alone cost test; and the incremental cost test. These are also called the 'subsidy-free' tests (Faulhaber 1975).

The stand-alone cost test comprises two elements:

(a) each user's (service or customer) share of the cost must not be greater than the user's stand-alone cost. That is, no user can do better on its own than under the proposed cost allocation

(b) the cost share for any group of users must not be greater than their combined costs. That is, no group of users can do better on its own than under the proposed cost allocation.

The incremental cost test is satisfied if the cost allocated to any user group is at least as much as the incremental costs of including that group on the system. If this condition is satisfied, no single group would be subsidising another.

As shown by Brown and Sibley (1986), these two principles of cost allocation are equivalent whenever common or joint costs are fully allocated to users. If costs are fully allocated and the stand-alone test is not met, then cross-subsidies must exist as the contribution of at least one group to total costs is less than its incremental costs.

If a cost allocation approach passes both stand-alone and incremental cost tests, it would provide incentives for all interested parties to cooperate, rather than by-pass the system and supply themselves by alternative means. Also it will not give rise to cross-subsidies and it would allocate all costs among users.

Cost allocation in practice

The stand-alone and incremental cost tests are often impractical to apply because of the difficulty of obtaining reliable, transparent, or cost-effective measures of stand-alone (and therefore incremental) costs. The band between incremental and stand-alone cost is usually wide, and a range of cost allocation solutions may satisfy the cross-subsidy test. Stand-alone cost at the individual and combinatorial levels is also difficult to estimate.

Another difficulty is that it may not be possible to calculate cost allocations that meet the tests. Alternatively, even if the tests are satisfied, a unique allocation of costs normally cannot be determined, and judgment in making a final choice would still be required.

These difficulties give rise to the use of alternative, simpler approaches in practice. These methods commonly distribute indirect costs to users in proportion to some allocator (or cost allocation base) perceived as 'reasonable', such as output or usage quantities, revenues, or costs directly attributed.

However, although these allocation methods may appear reasonable and plausible proxies for the incurrence of indirect costs, the costs allocated are arbitrary in the theoretical sense that there are no clear arguments, based on economically meaningful criteria, for preferring one allocator over another (Kahn 1971).

Notwithstanding this theoretical objection, attempting to trace causal responsibility for some of the common costs can reduce the risk that the final allocations would breach the cost tests. For example, the costs of a local storage reservoir to accommodate daily fluctuations in demand might be allocated to customer classes according to the extent to which each is causally responsible for the daily peak.

Moreover, despite the lack of a clear economic rationale for using cost allocation bases (CABs), Brown and Sibley (1986) showed that, for the types of cost functions used in most applied economics work, the use of direct (attributable) costs as the CAB does have a strong axiomatic foundation and is therefore not strictly arbitrary. In this sense at least, the use of direct costs as the allocator, where applicable, may have claims to being a superior approach for the assignment of indirect costs.

National commitments and positions

NWI principles (COAG 2004) explicitly refer to cost allocation in the following contexts:

(a) For urban water supply, unattributable joint costs should be allocated such that total charges to a customer must not exceed stand-alone cost or be less than avoidable cost where it is practicable to do so.

(b) The costs of water planning and management activities are to be allocated between water users and governments using an impactor pays approach, where an impactor is any individual, group of individuals or organisation whose activities generate costs, or a justifiable need to incur costs. The impactor pays approach seeks to allocate costs to different individuals, groups of individuals or organisations in proportion to the contribution that each individual, group of individuals or organisation makes to creating the costs, or the need for the costs to be incurred.

    Water planning and management costs are to be identified and differentiated by catchment or valley or region and by water source where practicable.

(c) The common costs of recycled water and stormwater schemes should be allocated using a beneficiary pays approach, with specific cost share across beneficiaries based on the scheme's drivers (and other characteristics of the recycled water or stormwater reuse scheme).

QCA analysis

For practical reasons, allocation of indirect costs to water services, customers or customer groups should be carried out using a suitable cost allocation base.

In the SEQ price monitoring investigations, the QCA considered that where a causal relationship could not be established, amounts may be allocated on a non-causal basis provided that there is likely to be a strong positive correlation between the non-causal basis and the actual cause of resource or service consumption.

In previous water decisions the QCA has used a variety of cost allocation bases to allocate indirect costs depending on the perceived reasonableness of the allocator to proxy for a causal link between the costs incurred and the service provided. For example:

(a) For GAWB (QCA 2010b), indirect costs were allocated to network segments on the basis of the segments' shares of total direct costs, and thence to users according to their share of throughput.

(b) For SunWater (QCA 2012b) and Seqwater (QCA 2013c), indirect costs were assigned to irrigation schemes on the basis of the schemes share of direct labour costs and total direct costs, respectively, and thence to customer groups within the schemes using measures of water reliability, water allocations, or water use depending on the nature of the customer group and costs, and whether costs were fixed or variable.

Each significant common cost pool should be allocated to services and customers on the basis of a reasonable attempt to proxy the causal relationship between the costs incurred and the water or wastewater service performed. Cost allocators also need to be assessed for their ease and cost of use.

The more costs are related to the provision of services, the greater is the cost reflectivity of pricing structures, and the more effective are pricing signals.

4.8.2 Final report

Submissions

QUU (2014a) suggested that the wording in relation to cost allocation contained in the pricing principles position paper should be reflected in the QCA recommendation.

QCA analysis

The discussion of cost allocation has been consolidated in this report.

In the pricing principles position paper, the QCA noted that the use of direct costs as the allocator, where applicable, may be a superior approach for the assignment of indirect costs to user groups. For example, the proportion of direct costs may be a useful indicator for allocating costs between water and sewerage activities.

The use of such fully distributed cost allocation methods relies on sometimes arbitrary judgements about the appropriate allocator variable but may nonetheless be the only feasible options available (QCA 2013d). As a general principle, the allocator should exhibit a strong positive correlation with the changes in costs.

Accordingly, the QCA agrees with QUU's comments and it is proposed to add a recommendation (4.26) to state: "If a causal relationship cannot be established between costs incurred and the relevant service, a cost allocator be adopted which reflects a strong positive correlation with changes in costs".

Recommendation

4.25 Each significant common cost pool be allocated to services and customers on the basis of a causal relationship between the costs incurred and the water or wastewater service performed.

4.26 If a causal relationship cannot be established between costs incurred and the relevant service, a cost allocator be adopted which reflects a strong positive correlation with changes in costs.

4.9 Information Requirements for monitoring prices and costs

4.9.1 Position paper

Discerning market power

The explanatory notes relating to the objective of price monitoring under Part 3 of the QCA Act indicate that the QCA is required to constrain the monopoly activity from exercising its market power.

The QCA (2009) has published criteria for the identification of government monopoly business activities, for the purpose of declaring them for regulatory oversight. One of the QCA's recommended criteria is whether:

> *there is evidence that the government business activity is exercising substantial market power which may include that it is earning an excessive return, or would be earning an excessive return were it not operating inefficiently or is cross subsidising.*

Consistent with the QCA Act explanatory notes and the criteria for identification of government monopoly business activities, the SEQ Interim Price Monitoring Framework required the QCA to report any instance where revenues significantly exceeded (or fell below), or were considered likely to significantly exceed (or fall below), the MAR for a sustained period.

This is consistent with economic literature which focuses largely on the outcomes of an exercise of market power (Joskow & Kahn 2001) which while noting that the outcomes of an exercise of market power are varied, monopolies exercise their market power, in particular, to achieve excessive profits (Tirole 1988).

Other outcomes of an exercise of market power have been noted above and include: using too many inputs, such as paying staff excessive wages, or over-investing in infrastructure (productive efficiency); providing a lower quality of service (allocative efficiency); and resisting responding to new demand, new low-cost technologies or managerial processes (dynamic).

Other considerations in forming an opinion about whether market power is being exercised include whether:

(a) the conduct was materially facilitated by the entity's substantial degree of power in the market

(b) the entity engaged in the conduct in reliance on its substantial degree of power in the market

(c) it is likely that the entity would have engaged in the conduct if it did not have a substantial degree of power in the market

(d) the conduct is otherwise related to the corporation's substantial degree of power in the market

(e) it is using the power for an illegal purpose (ACCC 2012b).

The misuse (intent and legality) of market power are legal considerations, and not the focus of the QCA's investigation – it being to identify any excessive profits or costs achieved as an outcome of an exercise of market power.

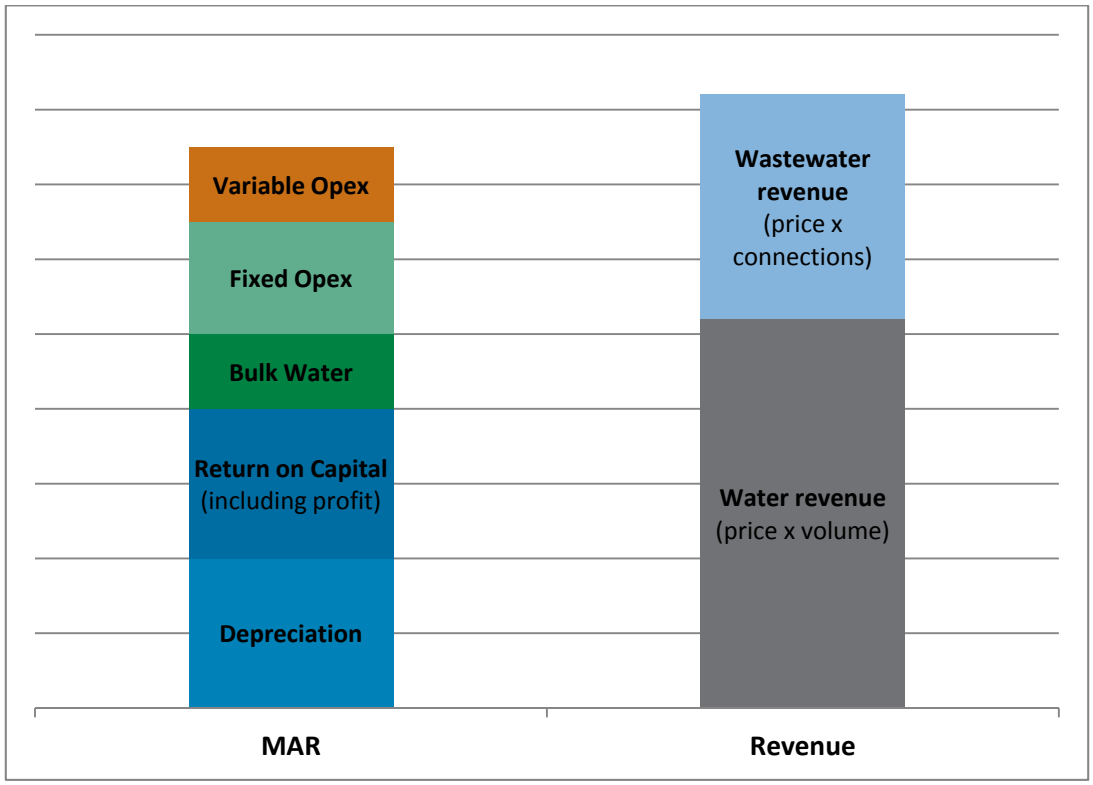
Measuring market power

A stylised comparison of MAR and revenue is shown in Figure 4. The MAR represents the total prudent and efficient costs of providing water and wastewater services, including an allowance for return on capital.

It is important to note that return on capital includes a component related to return on equity, or profit. This allowance for profit included in the MAR is considered to be a fair or appropriate level of profit to be earned by the retailer. Profit earned above this level is considered to be excessive.

The stylised example shown in Figure 4 presents a situation where revenue (the right hand bar) is greater than costs (the left hand bar). In this case, the retailer is exercising market power to earn excessive profits.

Figure 4 MAR vs. revenue



Explicit intent

The most evident exercise of market power would occur where prices were set by retailers to explicitly result in forecast revenues in excess of MAR over a sustained period. This represents the classical case of monopoly pricing which is profit maximising for an unfettered, unregulated monopoly (Pindyck and Rubinfeld 2008).

For annual performance monitoring and any cost of service review, the QCA would compare a retailer's forecast revenues and MAR to establish whether there is any explicit intention to exceed MAR.

Potential over-recovery

Potential forecast error can occur in many ways – for example, costs could be overestimated or demand underestimated (resulting in higher prices than required to meet MAR, as forecast costs are divided by forecast quantity to determine prices).

The QCA acknowledges that a finding of inefficient expenditure or under-forecast demand does not necessarily equate to an intention to exercise market power.

Indeed, revisions made by the QCA are generally considered to be a difference of opinion regarding the most appropriate forecast, rather than evidence of an intention to over-recover. However, the QCA does not consider it is necessary to show that a retailer intended to make excessive profits, only whether it is likely to.

Other jurisdictions

In other jurisdictions where financial performance is monitored, the regulated service providers are typically required to report on income or profits, revenues, expenditure, financial position, cash flows, and asset values. In many cases, costs and asset values must be attributed between different services and locations. A summary of information collected is provided in Table 27.

Table 27 Financial Performance monitoring in other jurisdictions

Industry	***Reporting requirements***	
International Airports – New Zealand	Return on investment Regulatory tax allowance RAB roll forward Related party transactions	Actual to forecast expenditure Segmented information Consolidation statement Asset & Cost allocations
International Airports – Australia	Income Statement Balance Sheet Cash Flow Statement	Operational Statistics Cost Allocations
Stevedoring – Australia	Revenue/costs per 20-foot equivalent unit (or container) Revenue/costs per 40-foot equivalent unit Number of container lifts	
Ports – South Australia	Profit and Loss Account Revenues and costs by service and location	Statement of Financial Position Accounting Principles and Policies
Ports – Victoria (Melbourne)	Profit and loss statement Statement of financial position Capital expenditure and asset disposals	Asset revaluations Related services and related party transactions Cost allocation
Water - Minor and Intermediate retailers in South Australia	Income Expenses Profit	Asset Values Capital Expenditure

Source: ESC (2011a, 2013a, 2013b), ESCOSA (2012a, 2012b, 2013a, 2013b), ACCC (2012a, 2013), PC (2011b), NZCC (2010, 2013)

QCA analysis

Price information requirements

For the purpose of measuring whether there was any exercise of market power, the QCA would need to assess the annual change in each retail distribution price. For this purpose, the QCA would require an assessment of prices against CPI-X. Retailers would be required to submit an annual information return identifying increases in prices (as well as changes in other non-financial measures).

If prices (or the components of prices) exceed CPI-X, further information would be required depending on the reason for the difference.

For example, if the increase was due to a tariff restructure, the QCA would require the nature of the impact on total revenues, and may also require information (such as the nature of risks and costs) underpinning the reason for the change in the tariff structure. If not available in the initial submission, the QCA would require further information from the retailer. In this instance the following information would seem relevant:

(a) revenues for water and sewerage activities

(b) sales volumes and number of connections for water and sewerage services

(c) details of tariffs and tariff structures

(d) average prices for water and sewerage

(e) average bills for residential users of water and sewerage on 200kL per household per year.

Where prices or revenues have increased by more than CPI-X and cannot be justified on the basis of cost pass-throughs (see above), the QCA would require retailers to provide broad data to estimate the MAR such as:

(a) RAB roll-forward summary including:

  (i) opening RAB

  (ii) total commissioned capex,

  (iii) depreciation

  (iv) disposals

  (v) closing RAB

(b) return on capital (WACC). Retailers would develop their own WACC based on the methodology outlined in a separate position paper dealing with WACC

(c) total operating costs for water and sewerage:

  (i) operating costs by type; for example, employee costs, contractors, sub-contractors, electricity, chemicals, sludge handling, other materials and services, and other costs

  (ii) operating costs by activity: for example, planned maintenance, unplanned maintenance, operations, executive, finance and legal, HR and marketing, communications, IT and other

(d) tax equivalents

(e) total MAR based on the above.

The QCA proposed to work with retailers to prepare a more detailed information requirement.

Requests for further information

Where a retailer's price exceed CPI-X (or breaches other non-financial criteria) it should submit the relevant supporting information justifying the departure to the QCA in its initial submission. Where this is insufficient or absent, the QCA would seek further information and indicate on its public website that it is doing so.

Binding rulings

At the time of the review of past performance *(ex post*), the benchmark for effective future performance (*ex ante*) continues to be CPI-X (with appropriate adjustments), unless the retailers seek a binding ruling or can justify expected variations.

Retailers may seek a binding ruling when they anticipate that CPI - X would be exceeded.

Relevant information could then include:

(a) forecast bills for customer categories (residential and non-residential)

(b) forecast total demand (volumes of water and wastewater)

(c) forecast total MAR

(d) forecast total revenue

(e) expected material capital expenditure items

(f) expected material changes in operating costs, including any specific items.

Outperformance

Where retailers demonstrate that price increases are in line with CPI-X but costs increased by less than CPI-X due to efficiency initiatives, these gains may be retained by the retailers for up to three years before being passed through to customers. The retention of such gains would not be truncated in the event of a triggered or scheduled cost of service review. Relevant information should be submitted to the QCA.

4.9.2 Final report

Relevant stakeholder comments and the QCA responses are summarised below.

Table 28 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Information Requirements	QUU (2014a) suggested that Figure 4 be adjusted to reflect revenue received for fixed water charges and variable sewerage charges.	Figure 4 is intended as an illustration of the broader relationship between MAR and revenue.
Forecast Revenues	QUU suggested that QCA should not attempt to assess an 'intent' to exercise market power, but should focus on actual outcomes compared to thresholds.	The QCA does not seek to assess intent. The analysis is to focus on the outcomes.

Issue	*Comment*	*QCA response*
Retailers to submit prices Draft recommendation: "4.16 Each year, entities submit to the QCA details of prices (and components of prices) and changes from the preceding year. 4.17 If changes in prices (or the components of prices) exceed CPI-X, further supporting information including the reason for the difference be submitted in the entities' initial submission."	QUU agreed with the recommendation that retailers submit details of prices but that tariff structures should not be considered. QUU considered that weighted average prices should be compared to CPI-X.	Where prices do not increase by more than CPI-X and tariff structures do not change only prices would be reviewed. Whenever tariff structures change there is a possibility that actual revenue changes in a way that exceeds total efficient costs. The change in revenue implied is effectively the weighted average of prices. The QCA needs to review the tariff structure and the reasons for the change to establish that the change is consistent with the recommended pricing principles.
CPI-X as a target	QUU sought clarification that CPI-X is an information threshold and not a target.	CPI-X is not a target - it is a threshold beyond which further information is required to assess whether there has been an exercise of market power. It does have some incentive properties in that it encourages retailers to keep prices below CPI-X to avoid more costly reviews.
Initial submission	QUU requested that QCA define what is meant by the 'initial submission' in Section 4.8 of the position paper.	The initial submission is the annual performance monitoring report from the retailers, due 31 October each year.
Growth factor	QUU sought clarification as to how QCA would be assessing the CPI-X threshold and how growth is factored into the assessment.	In annual performance monitoring, the QCA's proposed first step is to assess changes in prices for water and sewerage against CPI-X. Should CPI-X be exceeded, and a change in demand (growth) is a relevant factor it would be taken into account.
QCA may seek additional information Draft recommendation: "4.18 The QCA should seek additional information on any matter that it considers is necessary to assess whether the change in prices can be justified. 4.19 The QCA should indicate on its public website that it is seeking further information if the initial submission is deficient."	QUU suggested that the draft recommendation implies the QCA can seek information on any change in prices, not just those where prices exceed CPI-X.	If CPI-X is not breached but service quality deteriorates or pricing principles are such as to be of concern, the QCA may also seek such details even if CPI-X is not breached.
	QUU further sought clarification on what type of additional information may be required.	The information should reflect the nature of the issue to hand. Retailers are to self-assess to determine the relevant information that should be provided. The QCA may seek clarification or additional information on relevant matters.
	QUU agreed that QCA should indicate on its website the request for additional information.	Noted.

Issue	*Comment*	*QCA response*
Binding rulings Draft recommendation 4.20: "Where entities anticipate that CPI - X will be exceeded in a future period, entities may request a binding ruling from the QCA."	QUU sought clarification regarding what binding rulings would apply to, what information should be provided and what are the timeframes for seeking a binding ruling.	Binding rulings could apply to any change in controllable costs by the retailer, or changes to tariff structures, and potentially require assessment of prudency and efficiency.
Outperformance Draft recommendation 4.21: "Efficiency gains may be retained by entities for up to three years."	QUU and GCCC (2014a) sought clarification regarding how the outperformance issue would work in practice. GCCC submitted that it appears to reflect an efficiency carry over mechanism.	It is correct that the efficiency gains are a form of carry-over mechanism. Retailers should be able to account for it if a question arises over a breach of CPI-X.
	GCCC suggested the use of 'competition by comparison' instead of the efficiency carryover mechanism. 'Competition by comparison' eliminates the need for complicated carry over mechanisms.	As noted by GCCC, the QCA may compare the retailers to identify where cost savings (or cost increases) are occurring. However, such comparisons are also difficult to make given many other changing circumstances.
	QUU considered the efficiency incentive to be another form of a review trigger and suggested it be removed.	The QCA does not intend to use this arrangement as a review trigger.
Information requirements by local government	LCC (2014) submitted that it did not consider it appropriate for a local government provider to submit to the QCA details of prices and changes from the preceding year. LCC also did not consider that QCA's recommendation that if changes in prices exceed CPI-X, further supporting information be submitted, was appropriate for a local government water service provider.	Prices and changes in prices are a key indicator of whether a retailer is exercising their market power. The information is readily available and its provision should not be onerous. Further information may be necessary to assess whether there is a justification to exceed CPI-X. Under the Ministers' Direction, the framework is explicitly required to apply to the LCC.

The QCA can discern four information levels depending upon performance against CPI-X. Those related to prices and revenues are outlined below - additional requirements relate to pricing principles, customer engagement strategies and service quality are detailed in a subsequent chapter.

Level 1 - Price information requirements

Retailers would be required to submit an annual information return identifying increases in prices and components of prices (as well as changes in other non-financial measures).

Level 2 - Revenue information requirements

If price rises (or the components of prices) exceed CPI-X, further information would be required to enable the QCA to derive average prices for services. This includes revenues for water and sewerage activities, residential and non-residential.

If the increase was due to a tariff restructure, the QCA would require the nature of the impact on total revenues, and may also require information (such as the nature of risks and costs) underpinning the reason for the change in the tariff structure.

Level 3 - Cost information requirements

Retailers' circumstances may mean that average price increases exceeding CPI-X can be explained by pass-through of a limited number of costs, for example, increases in electricity costs, compliance costs or the like.

At level 3, retailers are required to submit details of such costs, in addition to levels 1 and 2 data.

Level 4 - Cost information requirements

Where prices or revenues have increased by more than CPI-X and cannot be justified on the basis of cost pass-throughs, the QCA would require retailers to provide broad data to estimate the MAR such as:

(a) RAB roll-forward summary including total commissioned capex, depreciation and disposals

(b) return on capital (WACC)

(c) total operating costs for water and sewerage, by type and by activity

(d) tax equivalents.

The QCA would compare the submitted MARs for water and sewerage to Reference MARs carried forward from the 2013-15 price monitoring investigation.

Recommendations

4.27 Retailers self-assess the level of information to be submitted to the QCA.

4.28 The QCA seek additional information on any matter that it considers necessary to assess whether the change in prices can be justified.

4.29 The QCA indicate on its public website that it is seeking further information if the initial submission is deficient.

5 CUSTOMER ENGAGEMENT

5.1 Introduction

Ministers' Direction

Under the Ministers' Direction, the QCA is required to consider the appropriate levels of stakeholder and customer engagement for the long-term regulatory framework.

In particular, the QCA is directed to:

(a) assist with transition toward best-practice stakeholder engagement

(b) develop service quality performance reporting to inform customers about the comparative performance of SEQ retailers

(c) ensure the regulatory framework assists customers understand how the costs of water and sewerage services influence prices.

Retailers have a wide range of stakeholders. These include government agencies, technical regulators, peak body groups and customers. To a large extent the relationship with these stakeholders would be determined by issues relevant to those stakeholders.

A primary focus of submissions and the QCA's analysis has been on the appropriate nature and levels of customer engagement which is a key driver of the effectiveness of annual performance monitoring.

5.2 Position paper

In a competitive market, customers have the ability to choose services from a service provider based on their preferred bundle of attributes including price and service standard.

The willingness-to-pay revealed by customers for their choices provides service providers with valuable information about worthwhile investments and levels of service. Competition provides the basis for ensuring service levels are provided at least cost.

Such choices are not typically available in a monopoly market. Moreover, economic regulation is usually needed to ensure that the price of those services is not excessive. Such regulation usually involves setting or monitoring prices and service levels.

Customer engagement is important in competitive markets to define customer expectations which firms can seek to address. Customer engagement is even more important in monopoly markets because, in the absence of alternative service providers, it provides an opportunity for customers to reveal their preferred combinations of service quality and price.

Structured and purposeful customer engagement can also help regulators test the proposals put forward by regulated retailers by:

(a) verifying the appropriateness of proposed customer service standards

(b) identifying the most cost-effective response to meeting a particular service standard

(c) identifying opportunities for customers to pay for different levels of supply reliability

(d) monitoring the performance of regulated service providers

(e) explaining the reasons for changes in costs and prices

(f) improving frameworks for protecting customers against hardship, and abuses of monopoly power.

Customer engagement also provides reassurance to other stakeholders, including government and the broader community, that the services provided reflect customer preferences and not just the interests of the service provider.

Customer involvement is thus generally seen as an important mechanism for providing appropriate checks and balances on the activities of regulated service providers.

To meet these objectives it is essential that customers are meaningfully engaged in decision-making on an ongoing basis.

5.2.1 National commitments and positions

The National Water Commission (NWC) has recommended that governments, regulators and service providers should ensure that the urban water sector gives a greater voice to customers by exploring opportunities for customer choice in pricing and service delivery, improved engagement in objective setting and the determination of trade-offs (between levels of service and other outcomes and costs), improved customer protection frameworks, and competition (NWC 2011).

The NWC's supporting recommendations were that:

(a) customers should be better informed and further engaged in planning and policy processes, and the public should be better informed about trade-offs between levels of service and other outcomes and the costs they entail

(b) effective and transparent customer protection frameworks should be established in all jurisdictions

(c) jurisdictions should fund urban water customer and community advisory bodies to enable increased customer engagement in policy, regulation and service delivery.

The NWC sees these recommendations as helping the water sector make the most of existing opportunities to better meet customer needs and provide value-for-money services.

COAG has established a consistent set of generic consumer laws, the Australian Consumer Law (ACL), jointly administered by the ACCC and State agencies which commenced from January 2011 (COAG 2013).

5.2.2 Forms of customer engagement

There are several different forms of customer engagement used in regulatory decision-making. These approaches include consult and respond, consumer panels, customer surveys and willingness-to-pay (WTP) studies and constructive engagement (CEPA 2011, Decker 2013).

Consult and respond

Consult and respond (or public consultation) provides an opportunity for customers or their representatives to respond to major regulatory proposals, with the regulator making the final decision.

The approach can take different forms, including: public hearings and workshops; opportunities to respond to regulators' issues and position papers; research reports and draft decisions; through generally accessible media such as websites; and private meetings with representative customer bodies. Targeted consultation may be one-off and focused on target audiences through workshops or seminars (Owen 2013).

Advantages of the consult and respond approach include (CEPA 2011, Ofwat 2011):

(a) Wide discretion is usually given to customers about how to interact and respond.

(b) There are no restrictions usually on the submission of expert reports and opinions.

(c) It is relatively inexpensive compared with other forms of customer engagement.

(d) A broad range of customers can be reached by through a range of media (including the regulator's website).

(e) It provides a useful source of information flow between the regulator, regulated retailers, and customers, including information on how prices reflect costs.

(f) It can mitigate potential misalignment between customers and customer representatives.

On the other hand, limitations include:

(a) The technical nature of many issues makes it difficult for residential and small business customers to respond effectively, and only large well resourced customers, or their representative organisations, tend to become involved.

(b) Although small customers may be represented by large or intermediate-sized users, this would depend on the issue.

(c) Specific interest groups may seek to capture the process.

(d) It is not always clear to customers how the regulator or the service provider takes submissions into account. This can lead to low participation.

(e) The approach is increasingly seen as necessary, but not sufficient, and needs to be supplemented with other forms of customer involvement.

Customer panels

Specialist customer panels or advisory committees provide the customer view to either the service provider or the regulator, depending on the purpose of the panel. These vary considerably in their design, size, composition, functions, funding and status. Two common forms are customer consultative groups (or committees) and customer challenge panels.

Customer consultative committees are designed to engage with retailers on the development of their strategies and water plans. Customer challenge panels are designed to engage with the service provider or regulator about certain aspects of regulatory decision-making.

Advantages of the customer committee approach include that it:

(a) is relatively inexpensive

(b) can address the representation gap by allowing the views of small customers to be heard

(c) allows for the regulator to hear a diversity of views on relevant issues

(d) can build understanding on relevant issues

(e) can promote the development of expertise leading to more informed engagement

(f) can provide a source of information flow between the regulator, regulated retailers, and customers.

However, there are also some limitations:

(a) People with the potential to make a valuable contribution may not be included, or the views of longstanding members become less representative (IPART 2012c).

(b) Issues championed by the panel may not be representative of all customer interests. For example, the views of large industrial users may predominate.

(c) The approach may lead to disappointment and disengagement by panel members if they perceive their input is not sufficiently valued by regulatory decision makers.

Customer challenge panels typically bring together a group of consumer advocacy experts who can challenge a retailer's customer engagement framework, or can be used to advise a regulator directly on the effectiveness of the entity's customer engagement (AER 2013b, Owen 2013). Challenge panels may provide a quicker source of advice on complex consumer issues and can be used to achieve a better balance between consumer and provider in regulatory processes.

Customer surveys

In customer surveys, a representative random sample of participants is requested to answer a standardised set of questions on a clearly defined issue.

Customer surveys take various forms, such as questionnaires, telephone or face-to-face surveys, online surveys, or customer complaint databases. Surveys often include questions on customer attitudes and priorities on such matters as service levels and standards, service delivery strategies and price structures. Responses are generally qualitative or attitudinal (IPART 2012c).

Advantages of customer surveys are that they are generally well understood, can be undertaken for a variety of issues, and are relatively easy to construct and undertake (CEPA 2011, IPART 2012c). They can be undertaken for specific categories of expenditure (CEPA 2011) and can be used to gain feedback from large and diverse groups of customers.

Disadvantages include obtaining a representative sample of all customers, and making objective assessments of customer views (for example, on trade-offs between prices and service standards). Biases can result due to the type of survey. For example, on-line surveys exclude some customers due to timing, language barriers and survey fatigue.

Willingness-to-pay (WTP) studies

In WTP studies, customers are directly asked about the value they place on different service levels or service options where price is unable to be revealed because of the lack of a market.

Stated preference techniques, which are similar to market research interviews, are often used to establish the collective WTP for particular alternatives. These WTP measures are based on values determined by observing customers' responses to questions about a range of hypothetical choices.

WTP analyses are often used where, in the absence of market data, it is necessary to impute values using the stated preferences of customers.

Advantages of WTP include that it enables researchers to add quantitative data to a cost-benefit analysis, and make comparisons among alternative choices, where otherwise only qualitative judgements would be available.

Disadvantages are that WTP studies can be time-consuming and expensive to construct and carry out.

In addition, methodological issues about clarity of choice options, possible bias in questions included, and interpretation of data can produce results that are problematic.

Other limitations of both simple surveys and WTP studies include that the evidence obtained may not be sufficiently differentiated or representative of customers' views, and the views of future customers would normally not be recognised.

Constructive engagement

Under this approach, regulated retailers consult directly with customers about their activities, business and investment plans, and services. The regulator remains the determinative body.

For constructive engagement to work successfully both parties need to be committed to the process; be well informed; and, have sufficient expertise and resources to engage effectively. For these reasons, the approach is more relevant to larger customers, and customer representative bodies, compared to small businesses or households.

Advantages of the constructive engagement approach include that it:

(a) encourages regulated retailers to develop constructive relationships with customers

(b) can make customers better informed about the activities of the entity, drivers of price changes, and constraints on decision-making

(c) allows customers and retailers to focus on the issues that they think are important

(d) can be combined with traditional regulation to allow customers to influence discretionary expenditure while ensuring that mandatory requirements are met.

Limitations include:

(a) Structuring and managing the process, together with associated information needs and disclosures, can increase the burdens and costs for all parties.

(b) The interests of future customers need to be an explicit focus of any constructive engagement process.

(c) The regulatory framework and the role of the regulator need to be clear before any constructive engagement takes place.

(d) Information asymmetry between parties, and absence of suitable dispute resolution processes, have raised concerns.

Constructive engagement can be developed to the point that regulated companies and customers are able to negotiate settlements or agreements between themselves, with the regulator only involved in the event of arbitration.

Negotiated settlements allow for new initiatives to be introduced, and for parties to agree on trade-offs across price control issues particularly on matters that may not have been addressed through the standard regulatory process.

Issues can arise if some interests are not adequately represented in negotiations. For example, an agreement between a service provider and large users can result in decisions being made which disadvantage smaller and future customers.

5.2.3 Other jurisdictions

Approaches adopted by regulators in the various water jurisdictions throughout Australia and overseas range from general guidance to more prescriptive requirements for customer engagement.

Principles

Ofwat (2011) has proposed that customer engagement should be guided by the following principles:

(a) Engagement should promote understanding of customers' needs and responding effectively in plans and ongoing delivery.

(b) It is the companies' responsibility to engage customers and to demonstrate that this is being carried out effectively.

(c) Engagement is not a 'one-size-fits-all' process, but should reflect the particular characteristics and circumstances of each company, and its various customers.

(d) Customers and their representatives, should be able to challenge the companies throughout the process. If this is not done effectively, the regulator must be able to challenge the companies on behalf of customers.

A number of regulators (Ofgem (2010), Ofwat (2011), and IPART (2012)) have also suggested that good customer engagement should include the following characteristics:

(a) The process should be continuous, rather than periodic around price reviews.

(b) Customer types should be segmented (including future customers), so that service providers understand and engage customers' particular needs and concerns.

(c) Customer engagement needs to be evidence based, with information collected through market research, focus groups, customer surveys and willingness-to-pay studies.

(d) Stakeholders need to be willing and able to engage with one another. For this purpose:

  (i) Customer representative bodies need to fully understand the needs of member customers in order to adequately represent their views.

  (ii) Customers, and their representatives, need to understand the regulatory framework in order to engage effectively.

  (iii) Parties need to invest time and effort to be effective in the regulatory process. Therefore, it is important that customers, or their representatives, have access to the necessary information and resources.

  (iv) Parties should feel that they can influence decisions. Service providers and the regulator should work with customers not only in planning and conducting the engagement process, but also in interpreting responses and demonstrating that different views have been taken into account.

(e) The process needs to be transparent and objective. It should be an impartial and open process and should not mislead, or lead in predetermined directions.

(f) The process should enable the timely exchange of information between service providers, customers and the regulator.

(g) A range of options should be explored. These should not be limited to traditional approaches (for example, cost versus quality or reliability of service; demand management versus capital investment; alternative sources of water supply).

(h) The activities should be fit for purpose, and costs should be commensurate with perceived benefits.

General guidance

The general framework proposed by IPART (2012c) sets out the following expectations of regulated water businesses in relation to customer engagement for price reviews. They should:

(a) provide evidence of the customer engagement they have undertaken in relation to their proposed discretionary expenditure

(b) provide evidence of the customer engagement they have undertaken on proposed changes to price structure

(c) undertake customer engagement in accordance with generally accepted principles of good industry practice

(d) engage with their customers for price reviews early (that is, prior to submitting a pricing proposal)

(e) provide, along with their price proposal, a separate, short, plain English summary of their proposal that contains a clear statement of its customer impacts.

In determining its approach, IPART engaged Cambridge Economic Policy Associates (CEPA 2011) to review how other regulators and regulated businesses approach customer engagement in Australian and international jurisdictions.

Based on the evidence from its case studies and analysis, CEPA observed:

(a) Consumer groups and customer representative bodies can play a key role in several of the forms of customer engagement, provided they are adequately resourced.

(b) Regulators and regulated service providers, need to ensure that customer friendly consultations take place. This may be facilitated through either structured consultation with some key stakeholders as to how public consultation could be improved.

(c) Constructive engagement can play an important role, especially for discretionary expenditure, when strong consumer groups or well informed and resourced customers exist (so a mix of a consumer panel with constructive engagement might be a good combination in this case).

(d) Customer engagement is a responsibility for both regulators and regulated retailers and so ensuring that the right mix of engagement is occurring by the right parties at the right time is important.

(e) Increased use of formal justification for expenditure based on cost-benefit analysis, supported by well designed surveys, could be appropriate, although this is likely to be expensive

(f) Effective customer engagement needs to be well managed and requires commitment of resources and time.

(g) To encourage customer involvement in the process, it may be necessary to provide a right of third party appeal to demonstrate significant commitment.

CEPA also observed situations where combinations of approaches may work well. For example:

(a) Customer consultative committees and constructive engagement should combine well because a strong customer group can play an important role in engaging and negotiating with the service provider (the State Water approach in NSW is an example).

(b) Synergies should exist between customer challenge panels and effective public consultation as the challenge panel is able to take the role of an informed and well-resourced respondent (the AER's Consumer Challenge Panel (CCP) is an example).

The ESC encourages service providers to explore other ways to engage customers, including targeted fact sheets, newsletter inserts in bills, or electronic media (ESC 2011b).

Prescriptive requirements

Some other regulators rely on more prescriptive customer engagement requirements.

For example, the ESC (2011b) requires that:

(a) service providers undertake in-depth customer consultation on the content and presentation of their draft Water Plans, which set out plans and outcomes for the next regulatory period and provide information to ESC about services, expenditure, revenue and tariffs (as does ESCOSA (2012d))

(b) key service and price information be accessible to customers during all phases of the development of the Water Plan and submission process

(c) draft Water Plans enable readers to easily understand the prices and tariff structures proposed, summarise proposed major projects and service outputs and the rationale for them, and include information so that customers can easily understand service and price trade-offs (as does Ofwat 2011).

Ofwat (2012) also requires its water companies to set up an independent customer challenge group that reports back to Ofwat on the effectiveness of customer engagement in developing companies' plans.

Both ESC and Ofwat may reject elements of a service provider's pricing proposal if they consider that customer consultation was ineffective or inadequate (ESC 2011b; Ofwat 2011).

Customer engagement practices

Water businesses use various media to provide information to customers and provide avenues for customers to provide feedback back to the retailers. This is done through media releases, newsletters and websites.

Customer surveys are used by some retailers. For example, North East Water (Victoria) (2013) and Busselton Water in WA (2012) undertake a customer survey each year to determine customer satisfaction levels, on measures of water quality, pressure, supply reliability, and contact service.

Customer advisory committees are commonly used by water businesses. For example:

(a) Yarra Valley Water (2012) gains customer insights from a combination of market research, key stakeholder briefings and ongoing review and input from its Customer Advisory Committee. It has established an on-line two-way portal for customers to ask questions and provide feedback.

(b) Western Water (2013) maintains a Customer Advisory Group that provides a direct link between the Board of Western Water, customers and advocacy groups on matters that affect customer service. In addition, annual customer surveys are undertaken to gauge customer satisfaction with services provided with the results of the customer surveys being made available on Western Water's website.

(c) State Water (the rural bulk water provider in NSW) maintains a Customer Service Charter that outlines scheme specific services standards that have been agreed through input from Customer Service Committees (CSCs). State Water convenes CSCs quarterly for consultation regarding pricing and water delivery strategies and to discuss asset management priorities.

(d) Hunter Water's Operating Licence sets out consultation obligations in detail, including regularly conducting customer consultative forums. Hunter Water has a Customer Panel, established in 2009, which focuses primarily on customer service related issues and environmental management.

(e) In accordance with the provisions of the *Sydney Water Act 1994*, Sydney Water (2011) is required to establish a Corporate Customer Council with membership representing a wide variety of stakeholders reflecting a broad range of customers. Sydney Water also convenes regularly a Commercial and Industrial Customer Forum which includes representatives from peak organisations in the manufacturing, food and industrial sectors.

(f) The Water Corporation of Western Australia (Water Corporation 2012) - the principal provider of water and wastewater services throughout the state - convenes a Customer Advisory Council which provides advice regarding issues affecting customers such as strategic initiatives, operations and service levels. The Customer Advisory Council comprises 11 representatives from metropolitan and country regions.

SunWater (as major supplier in Queensland of water for irrigation) regularly convenes Irrigator Advisory Committees for the purpose of:

(a) facilitating advice from irrigators regarding scheme specific operational issues

(b) discussing matters in relation to customer relationships and managing the physical aspects of the scheme.

SunWater is also responsible for compiling, and publishing on its website (for customer consideration) network service plans that outline operating and renewals (that is, capital) expenditure associated with a particular scheme.

There are fewer examples of CCPs. The Economic Regulation Authority of Western Australia (ERA 2013b) has established a consumer consultative committee to advise on its oversight of regulated activities.

The Australian Energy Regulator (AER 2013b) has established a 13-member CCP as part of its Better Regulation reform program to represent the interests and expertise of customers. The members of the panel have local and international expertise in economic regulation, energy networks and consumer representation. They are appointed for a three-year term and a number of the members of the panel are called upon to provide advice on a particular determination.

Ofwat (2013b) has a Customer Advisory Panel to inform or challenge Ofwat on key sector-wide assumptions that would impact on companies' business plans being developed as part of the 2014 price review. The panel comprises experts appointed on an individual capacity but who also serve in various consumer organisations and small business peak bodies. The panel has convened a number of meetings during the investigation period and its work comes to a close once Ofwat has finalised its methodology (Ofwat 2013c).

The most notable example of constructive engagement/negotiation processes is the Civil Aviation Authority's (CAA) regulation of the UK airports. Under this process, the regulated

retailers (airports) and customers (airlines) negotiated outcomes for capacity requirements, service quality, efficient capital expenditure, and revenues from non-regulated charge, leaving the regulator a role in assessing operating expenditure efficiencies, cost of capital, RAB roll-forward and the revenue requirement (Littlechild 2010).

In NSW, State Water negotiated with its nine Hunter Valley based customer service committees on discretionary service levels (Frontier Economics 2013).

SEQ retailers' customer engagement

In SEQ, the Water and Sewerage Services Code for Small Customers in south east Queensland (DEWS 2013c) (the SEQ Customer Code) made under the DR Act, provides for standards and conditions of service that must be provided to small customers, namely all residential customers and non-residential customers using less than 100 kL per year.

It is intended to provide a balance between the interests of small customers and service providers. It acknowledges the need for adequate protection of small customers' interests. Customers can provide feedback on the Charter to their respective retailer.

The SEQ Customer Code sets out service standards, complaint resolution procedures, billing arrangements, leakage policy, and arrangements for the payment and collection of accounts. The SEQ Customer Code requires that each retailer publish a customer service charter on its website and make this available to any customer upon request.

In December 2013, DEWS initiated an extensive review for the purpose of providing service providers and their customers the opportunity to contribute to improving the effectiveness of the SEQ Customer Code. Submissions to the review were due by 7 March 2014. Consultation on any potential changes to the SEQ Customer Code was scheduled to conclude by July 2014.

Customer service standards are reviewed in further detail in a subsequent chapter.

SEQ retailers use a range of customer engagement methods to gain an understanding of their customers' needs. These include conducting surveys and holding quarterly customer discussions on issues such as service standards, water leakages, tariff structures and fluoride levels (see Table 29).

Table 29 Summary of approaches to customer engagement used by SEQ retailers

Retailer	*Customer engagement approach*
Unitywater	Unitywater has a Customer Advisory Group that meets on a quarterly basis. The Group includes representatives from the community and business sectors and provides feedback on issues impacting community and business customers. Unitywater has a Customer Charter which sets out customer service commitments, including water pressure, system loss management, water quality, and connection times. Unitywater conducts 3-monthly rolling surveys of its customers to gauge their feedback on a range of issues related to water use. Unitywater noted that its customer satisfaction ratings have been improving consistently over time. Unitywater undertook community consultation in developing its Water Netserv Plan.
QUU	QUU's Customer and Community Reference Group has eleven members representing community sectors, local government and major industries. Formed in late 2010, the Group meets quarterly and is consulted on water and sewerage pricing and related topics such as hardship and concealed leaks. QUU tracks customer satisfaction through annual focus groups and monthly customer surveys. Through this research QUU has identified four key drivers of customer satisfaction and their corresponding weightings: value 39%, transparency 11%, customer focus 29%, and reliability 21%. QUU calculates a monthly measure of its brand health. QUU has a Customer Service Standards document which sets out its target levels for various indicators including water quality, water pressure, customer complaint response, unplanned interruptions and response to incidents. A Customer Charter summarises customers' rights and responsibilities.
Logan City Council	No customer engagement framework specifically for water. LCC may discuss water issues as part of its general customer engagement if needed. LCC has a customer charter and standards of service, with the latter defining targets for compliance, unplanned interruptions, customer complaints, and response times.
Redland City Council	Redland Water (RW) includes material (such as flyers) with Redland City Council's (RCC) quarterly rates and charges bills. RCC also has a print and radio media presence in the council area where water issues are discussed. Particular issues of interest to customers are identified through complaints and a call centre (RW has a separate call centre from RCC). Through these processes, RW implements a 'personalised' approach to customer engagement; for example, RW officers regularly visit customers to talk about specific issues such as concealed leaks, water charges and so on. RW has customer charter and service standards documents. The service standards define targets for water quality, supply continuity, connection times, and wastewater blockages and overflows.
Gold Coast City Council	GCCC is establishing a framework for customer engagement. It recently conducted the first residential customer survey of its customers which will set the baseline for customer behaviour. It intends to develop time series data that can be used to assess community views on water use, fluoride in the water, water leakage and tariff structure. GCCC is reviewing the 1000+ responses from the general community and will share its findings with the QCA shortly. GCCC has published Customer Service Charter and Standards. This detailed document sets out its target levels for various indicators including water quality, water pressure, odour complaints, customer complaint response, unplanned interruptions and response time for repairs.

5.2.4 Stakeholder submissions

Gold Coast City Council (2013) submitted that it has instigated a range of engagements to understand customer needs. The council recently undertook a customer survey on attitudes to water use and water efficiency, fluoridation and water and sewerage tariff structures.

QUU (2013) submitted that it will consult with customers (through QCOSS and its own Customer and Community Reference Group), to ensure that its positions are submitted with the support of stakeholders.

5.2.5 QCA analysis

Where competition is absent, such as in the SEQ urban water sector, there is typically limited opportunity for customers to reveal information about their preferences and WTP for different trade-offs in the provision of water and sewerage services. Such trade-offs can relate to: cost versus quality; demand management versus capital investment in additional capacity; and alternative sources of water supply.

Similarly, service providers have limited information about how to deliver the best value-for-money services to their customers.

Customer engagement is a two-way process which involves not only providing information to customers (about prices, services and costs), but also receiving information from customers (about WTP, attitudes, options and priorities).

Good customer engagement would influence retailers' water plans in a positive way by: taking customers' priorities into account in service and expenditure plans; motivating retailers to demonstrate that customers are receiving value for money; and fostering cost effective solutions over time.

The details of customer engagement are unlikely to be the same across all retailers, or during different price reviews, as the issues would vary between retailers and customers, and over time. Therefore, to engage customers effectively, flexibility is required.

Effective customer engagement should lead to more relevant, cost-effective service provision, improved performance by the retailers and greater understanding of regulatory issues and processes. Service providers should better understand their customers' concerns and preferences, and customers should develop a better understanding of why and how they are charged for essential water and sewerage services.

Relative roles of QCA and SEQ retailers

Traditionally, the QCA has sought to comprehensively engage stakeholders in a transparent manner when conducting water price investigations or price monitoring reviews. Opportunities for stakeholder involvement are provided through many avenues. These include: workshops; direct consultation; and opportunities to make submissions on retailers' water plans, research reports, on assessments prepared by specialised consultants employed by the QCA, and the QCA's position papers and draft reports.

Under annual performance monitoring, the QCA would collate and analyse the retailers' information returns and provide a draft report for consultation with stakeholders. However, the draft report would be less detailed than the equivalent in a more determinative process. Therefore, the retailers themselves would need to demonstrate that they have undertaken relevant customer engagement activities to take various interests into account.

Mandated compliance standards

Many of the service standards governing the delivery of water and sewerage services are set by technical regulators or government agencies external to the water service provider and the QCA.

Some of these standards, such as environmental standards and security of supply criteria, are likely to be major drivers of cost and of the overall level of service provided to customers (Frontier Economics 2013).

This highlights the need to clearly define responsibility and accountability for determining, and consulting on, different aspects of the services provided to customers.

Although the QCA expects retailers to comply with their legal and regulatory obligations, it would not expect the retailers to engage with customers on mandatory compliance issues. However, retailers may choose to inform customers how these standards are met and the costs involved in complying with them.

Customer differences

Customers usually hold diverse views. For example, a large industrial customer may have different priorities from the majority of households or small businesses. In addition, households and business customers are not uniform groups.

The SEQ retailers should therefore identify whether views collected during customer engagement represent a wide group of customers or a particular group of customers.

As a general position, retailers' plans should reflect the priorities of the majority of its customers and wider stakeholders. However, in specific cases retailers may have the ability to segment levels of service and therefore reflect the views of particular customer groups. For example, large industrial users may put a higher value on security of supply than households.

Depending on the characteristics of the physical infrastructure, and subject to the requirements of mandated standards, these differences could be reflected in varying levels of service.

Ensuring engagement outcomes

While engaging with customers to establish desired water service goals is important, what matters more is that agreed outcomes are delivered in practice.

In the absence of market incentives, one means of encouraging regulated service providers to meet their service obligations is to include a mechanism within the regulatory framework that monitors service providers' performance and rewards success, or penalises failure, to achieve the specified standards. An example of such a mechanism is Ofwat's Service Incentive Mechanism (SIM) (Ofwat 2010).

The SIM measures service providers' performance against two consumer experience measures: a quantitative measure aimed at capturing instances where an entity fails to meet consumers' expectations based on the number of complaints and unwanted contacts received; and a qualitative measure derived from a consumer experience survey.

Reputational incentives are generated by publishing comparative assessments of the service providers' performance against the two consumer experience measures.

Financial incentives are produced by making positive or negative adjustments to each entity's price limit based on their performance against the consumer experience measures.

The QCA recommends (in a subsequent chapter) that service quality measures and aggregate performance indexes be developed by the retailers following a process of customer engagement. These can be expected to provide a basis for public transparency of a retailer's performance against desired customer standards. Non-compliance is to be addressed through public reporting of performance and potentially the prospect of a cost of service review.

The Energy and Water Ombudsman of Queensland (EWOQ) also has a role in ensuring that water utilities in SEQ are accountable for their customer service through its complaints and dispute resolution functions.

Recommended approach

Based on the best practice principles and guidance provided by other regulators, SEQ retailers' customer engagement should:

(a) promote understanding of customers' needs and for this purpose be:

  (i) representative - ensuring broad representation of customer views. Nevertheless, it is acknowledged that the retailers have statutory responsibility for the ultimate management of their businesses

  (ii) responsive - provide for different price/service quality trade-offs for different customers

(b) be the responsibility of the SEQ retailers who should be able to demonstrate that this is being carried out effectively and for this purpose be:

  (i) relevant - different forms of engagement may be employed for different purposes and evolve in a manner consistent with the move to a light-handed regulatory framework over time

  (ii) evidence based - information should be collected through market research, focus groups, customer surveys and WTP studies (where cost effective)

  (iii) open and transparent - the process should provide relevant information (including identifying customer priorities, price/service quality options and associated costs (and their drivers) to customers. The process should be objective and open to challenge

  (iv) timely - the process needs to be continuous, and occur within timeframes necessary to assist decision-making

  (v) collaborative - enabling customers to define their expectations on service quality and price to the retailer, and allows retailers to provide relevant information to customers

  (vi) cost-effective - the costs of engagement mechanisms and programs should be considered against their perceived benefits.

Application of these principles can be expected to result in different approaches between the retailers according to their different characteristics, their customers and circumstances which change over time.

As a minimum, the QCA would expect that a customer engagement strategy would incorporate:

(a) transparent and timely provision of information to customers through relevant media - newsletters, websites and local press releases. This is a low cost and effective option - simple actions such as making websites more intuitively accessible can substantially improve customer engagement

(b) a customer consultation committee to develop, implement and oversee the strategy. Attesting to their contribution, such committees have been widely adopted including in SEQ by QUU and Unitywater. The council retailers may source relevant customer feedback from elected representatives or through wider council consultations

(c) regular updates of Customer Charter and Customer Service Standards. These should be made available on-line and customers should be invited to provide feedback.

The QCA expects these points would be addressed in each retailer's customer engagement strategy. The QCA proposes to assess these strategies against best practice principles; where appropriate, the QCA would advise retailers of potential improvements.

In general, the constructive engagement approach leading to negotiated settlements is not suited to SEQ distribution-retail as the customer base is too numerous and diverse. However, this does not preclude its application to particular circumstances (for example, for large customers).

The retailers have started to undertake engagement activities which are consistent with some of the elements of this approach. Any decisions made by the retailers in response to customer engagement are their responsibility.

5.3 Final report

Stakeholder comments on customer engagement and the QCA's responses are summarised below.

Table 30 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Customer engagement	QUU (2014a) agreed with the minimum customer engagement elements to be incorporated into an entity's engagement strategy.	Noted.
Customer engagement strategy Draft recommendation 5.1: "Each SEQ entity, in consultation with its customers, develop a strategy for customer engagement based on best practice principles."	QUU questioned that if it was able to demonstrate that it was already engaging customers in a manner that is consistent with best practice principles, why it would need to develop this strategy document as a requirement under the long term framework.	Good practice customer engagement includes developing a strategy. Customers and QCA should be able to access and view the strategy. As noted by QCOSS (2014) customers should be involved in developing retailers' policies.
Customer engagement Draft recommendation 5.2: " Customer engagement should: (a) promote understanding of customer's needs and be representative and responsive of customer views (b) be relevant, evidence based, open and transparent, timely, collaborative, and cost-effective."	QUU agreed with the QCA's principles for effective customer engagement.	Noted.
Customer engagement requirements Draft recommendation 5.1 and 5.2 (See above).	QCOSS (2014) recommended that the QCA clarify the level of consumer engagement it is expecting and what factors it would use to assess the retailers' engagement.	The QCA intends to assess the level of customer engagement against the principles in the recommendations (5.2 and 5.3). Where there are significant changes that impact customer service or bills,

Issue	*Comment*	*QCA response*
	QCOSS noted that there is a wide spectrum of consumer engagement and that the different retailers are likely to sit at different points along this spectrum. Consequently it may be difficult for the QCA to assess the different strategies and come to an overall position on the extent to which consumer engagement is effective. QCOSS recommended that the QCA provided further guidelines on best practice consumer engagement to clarify the basis for assessing retailers' performance.	the onus is on the water retailer to provide sufficient evidence that it has engaged with and responded to customers. Where changes in tariff structure and service quality are proposed the retailer would need to demonstrate that these changes have been communicated and received support of customers (or if not why an alternative position should be adopted to that proposed by customers). QCA does not consider it necessary to be too prescriptive. The recommended principles and strategies should provide sufficient guidance.
	QCOSS provided examples of different levels of customer engagement and recommended that the QCA take these into account when making its assessment on consumer engagement activities. These were: (a) customer service offering - information on prices, policies and procedures (b) prices and bills - factsheets and bill analysis (c) market information - customer surveys and focus groups (d) consumer representative and advocacy groups.	QCA would expect that a customer engagement strategy would incorporate: (a) information provision through media, websites, press releases (b) clearly outlined and accessible fact sheets and bill analysis (c) results of customer surveys (d) customer consultation committees.
Customer consultation committee Draft recommendation 5.3: "The customer engagement strategy should include a customer consultation committee."	QCOSS supported the establishment of consumer consultation committees for all five retailers. QCOSS noted that this may be problematic for the smaller retailers in Redland and Logan, however, even smaller retailers should make efforts to build local networks to formally engage with their consumers and representative groups.	Agreed.
	QUU (2014a) agreed that there should be a customer consultation committee but noted it can take a number of different forms, with the primary objective being to gain feedback from a range of customers.	Agreed. It is noted that QUU and Unitywater already have such committees.

Issue	*Comment*	*QCA response*
	GCCC (2014a) submitted that a customer consultation committee should only be mandated when other proposals are not put forward. Council has an existing forum it proposes to use called Gold Coast Engage (GCE). If an additional customer consultation committee was required it may be considered to be an unnecessary cost burden.	The QCA (which is yet to assess council's customer engagement processes) notes that GCCC incorporates many of the desired attributes of effective customer engagement. GCE may be an appropriate body for customer consultation. If so, the QCA would not expect an additional customer consultation committee to be convened.
	RCC (2014a) considers the cost of a customer consultation committee could be significant. In a local council, customers are represented by their elected representative, thereby eliminating the need for a committee and the associated costs.	A customer consultation committee can provide a cost-effective means for addressing many of the elements of engagement considered necessary. Elected representatives are not typically in a position to be able to provide the level of detail and extent of interface to effectively outline the various pricing and service quality options and their associated costs to water retailers' customers. A customer committee would be particularly relevant where there are changes proposed that have an effect on customers and their bills.
	LCC (2014) considered that through many existing customer engagement forums, as well as the fact that 12 elected community members serve as community advocates, it provides effective customer engagement without the need for a customer consultation committee.	Electoral pressure would be a factor in ensuring appropriate services are provided at lower cost. However, water issues and pricing are often very technical and customers are not knowledgeable or resourced to acquire the necessary knowledge to hold water businesses to account (QCOSS 2014). Prices oversight (particularly when accompanied by effective customer engagement) can provide a longer- term and more transparent and informative environment with a continuous focus on performance.

Recommendations

5.1 Each retailer, in consultation with its customers, develop a strategy for customer engagement based on best practice principles.

5.2 Customer engagement:

(a) promote understanding of customers' needs and be representative and responsive of customer views

(b) be relevant, evidence based, open and transparent, timely, collaborative, and cost-effective.

5.3 The customer engagement strategy include a customer consultation committee.

6 STRATEGIC APPROACH TO LONG-TERM INVESTMENT

6.1 Background

Ministers' Direction

As part of the overarching objective of the regulatory framework, the QCA is to ensure the prices of services reflect prudent and efficient costs, while promoting efficient investment in and use of these services.

To this end, the Ministers' Direction requires that the regulatory framework should:

(a) ensure there is sufficient co-ordination with other regulatory and regulatory review processes, taking into consideration things such as Water Netserv plans, Total Water Cycle Management (TWCM) plans, environmental regulation and land use planning

(b) ensure that opportunities for a whole-of-sector approach to solutions for the industry are encouraged (including non-infrastructure and efficient demand side management initiatives)

(c) assist the retailers develop a strategic approach to long-term investment in the water sector.

The framework is also to take into account the different characteristics of the SEQ retailers (in particular their size), and minimise the administrative burden placed upon them.

Light-handed regulatory framework

The recommended regulatory framework outlined in preceding chapters seeks to achieve a light-handed form of regulation which provides incentives to retailers to make prudent and efficient long-term investment decisions.

Under such a proposal, unless a cost of service review is required, there is no regulatory oversight of the prudency and efficiency of particular capital expenditure proposals. Rather, it is recommended that the retailers, instead, demonstrate compliance with relevant legislative requirements, policies, principles and procedures.

6.2 Legislative framework

In May 2014, the *Water Supply Services Legislation Amendment Act 2014* was passed by the Queensland Parliament. The Amendment Act changed some of the SEQ water retailers' obligations in respect of their approach to long-term investment.

6.2.1 Position paper

The key legislation and aspects of it that are relevant to all SEQ service providers includes:

(a) the *Sustainable Planning Act 2009* (SPA) - instruments include the SEQ Regional Plan, State Planning Policy 4/10 for Healthy Waters (management of stormwater and wastewater)

(b) the *Water Act 2000* (Water Act) - regulation of water supply, including water resource plans, Water Security Program for SEQ, and the SEQ Bulk Water Supply Code

(c) *Water Supply (Safety and Reliability) Act 2008* (Water Supply Act), which sets out requirements Drinking Water Quality Management Plans (DWQMPs), Customer Service

Standards (CSS), Recycled Water Management Plans (RWMPs) and performance reporting

(d) the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009* (DR Act) includes provisions for the SEQ retailers to prepare the SEQ design and construction code, Water Netserv Plans, customer service standards and a customer charter

(e) the *South-East Queensland Water (Distribution and Retail Restructuring) and other Legislation Amendment Act 2012* (DR Amendment Act) extended the same requirements to the council water businesses. The councils also have various planning related regulatory obligations under the *Local Government Act 2009* (LGA)

(f) the *Environmental Protection Act 1994* and the Environmental Protection Regulation 2008 set licence conditions for water and sewage treatment plants. The Environmental Protection (Water) Policy 2009 (EPP Water) previously required local governments in SEQ to prepare TWCM Plans.

Stakeholder submissions

In an initial submission, Logan City Council (2013a) submitted that the council water business is subject to requirements of the DR Act as well as the regulatory requirements of the LGA, creating unnecessary regulatory complexity. Logan City Council seeks a regulatory environment that distinguishes the difference between a local government water business and a separate DR.

QCA analysis

The DR Act and the DR Amendment Act provide a framework for application of the same planning requirements for the DRs and the councils. However, there are regulatory obligations under the LGA which apply only to the commercial business units (CBUs) of the local governments that duplicate the requirements of the DR Act - for example, Annual Performance Plans (APP) duplicate some of the content of Water Netserv plans and asset management plans duplicate some requirements of the Water Supply Act (details below).

The corporate governance frameworks and reporting requirements of QUU and Unitywater differ markedly from the CBUs. However, there is no evident reason for there to be differences in the regulatory obligations the retailers must meet as SEQ service providers under the DR Act. Gold Coast Water and Logan Water have already mapped the duplication between the requirements of the DR Act and the LGA (including the Local Government Regulation 2012 (LGR)).

It is appropriate that council water businesses be covered only by the requirements placed on the DRs. This would reduce duplication and the complexity of the regulatory environment, thereby reducing the administrative burden on the councils. This could be achieved by providing an exemption to those requirements under the LGA that go beyond the requirement of the impositions placed on DRs.

6.2.2 Final report

Submissions

With respect to draft recommendation 6.1:

(a) To QUU (2014a) it was unclear on which legislation was expected to be consistent between DRs and council retailers. Logan City Council considered that there are significant differences in the requirements for the DRs and the council businesses. Logan

City Council sees no basis for the QCA's recommendation 'that council water businesses be subject to the same legislative and regulatory planning requirements as the DRs'.

(b) Qldwater (2014) submitted that the QCA should have analysed the option for removal of regulatory burden imposed by the DR Act and deferment to the LGA for the council water businesses. The concerns raised by the councils impacted had been inadequately addressed.

Further, Gold Coast City Council (2014a) suggested QCA consider entering into a Memorandum of Understanding (MOU) with other regulatory authorities such as DEWS, DEHP, and DSDIP. Gold Coast City Council continued to seek assurance that QCA is interacting with other regulators to ensure streamlining and alignment of regulatory requirements and objectives.

QCA analysis

In response to comments received on recommendation 6.1:

(a) There is duplication relating to various planning requirements between the DR Act and the LGA. However, the DR Act also incorporates core planning responsibilities to enable the operation of the SEQ water grid. A review of the requirements of the LGA that go beyond the requirements of the DR Act may find means to reduce the burden of compliance on councils.

(b) Deferment to the LGA would remove necessary references to the requirements related to the management of the SEQ water grid.

In response to Gold Coast City Council, the QCA has and would continue to liaise with relevant regulatory agencies but has not found that formalisation of the interaction is required for the purpose of establishing (and overseeing) the economic regulatory framework. Streamlining of the regulatory framework is being undertaken by DEWS.

Recommendation

6.1 The legislative and regulatory planning requirements for council water businesses be reviewed with a view to reducing any duplication of the requirements applied to the DRs.

6.3 Strategic planning

6.3.1 Position paper

National commitments and positions

The COAG National Urban Water Planning Principles were agreed in 2009. Key principles are:

(a) delivering urban water supplies in accordance with agreed levels of service

(b) basing urban water planning on the best information available at the time and investing in information on an ongoing basis to improve the knowledge base

(c) adopting a partnership approach so that stakeholders are able to contribute to urban water planning, including consideration of the appropriate supply/demand balance

(d) managing water in an urban context on a whole-of-water-cycle basis

(e) considering the full portfolio of water supply and demand options

(f) developing and managing urban water supplies within sustainable limits

(g) using pricing and markets where efficient and feasible to help achieve planned urban water supply/demand balance

(h) periodically reviewing urban water plans.

Water Netserv Plans

Under the DR Act, all five SEQ service providers must adopt a Water Netserv Plan by 1 October 2014. The plans are to be reviewed at least every five years (from 1 October 2014), with connection areas being reviewed annually. Water Netserv Plans require endorsement by the Planning Minister for consistency with the SEQ Regional Plan (discussed below), and by participating councils to ensure consistency with local government planning assumptions.

Water Netserv Plans provide for strategic planning for the operation of the SEQ service providers' businesses and for planning the delivery of water and sewerage infrastructure for at least 20 years. They are therefore the instrument by which the SEQ service providers define a strategic approach to long-term investment.

In terms of a strategic approach to long-term investment, Part A of a retailer's Water Netserv Plan must include (i) relevant planning assumptions, (ii) details of infrastructure networks for water and sewerage services, (iii) details of any proposed increases in the capacity of infrastructure networks, (iv) the desired standard of service for infrastructure, (v) the water demand management strategy, and (vi) a charges schedule. Part A must also indicate how the retailer proposes to achieve effective outcomes for the provision of water and sewerage services in the SEQ region.

Part B of a Water Netserv Plan must include information on the retailer's existing and proposed infrastructure for providing its services, indicating how the retailer proposes:

(a) to meet performance targets and service standards for assets relating to the operation, maintenance and replacement of existing infrastructure

(b) to provide new infrastructure to meet expected future development and growth in its relevant area, considering demand for the services based on low, medium and high population growth scenarios.

Part B plans must also indicate the measures to minimise water losses and sewerage overflows, protect public health through drinking water quality management measures, provide for TWCM for water and sewerage, indicate how the retailer seeks to achieve ecological sustainability, and inform about the management of trade waste and recycled water where relevant.

Further, the Water Netserv Plans must take account of:

(a) documents that are relevant to the retailers' water and sewerage service delivery and its plan; for example the SEQ Regional Plan and SEQ Water Supply Strategy under the regional plan

(b) the most efficient cost asset cycle planning for the business

(c) the relevant local government TWCM plan(s) (Although the EPP Water no longer requires TWCM plans, the DR Act still refers to them in the matters SEQ service providers must take account of when preparing Water Netserv Plans)

(d) any guidelines relevant to the making of the plan and prepared by the chief executive under section 100C of the DR Act

(e) the customer water and wastewater code.

QUU, Unitywater, Gold Coast City Council and Logan City Council have had their Water Netserv Plans endorsed by the Planning Minister and relevant local governments. Redland City Council's Water Netserv Plan Part A and Part B documents were updated in June 2013. The council also referred Part A to the Queensland water supply regulator for comment as part of its consultation process. The council has not yet endorsed its plan, nor submitted it to the Planning Minister, pending advice from DEWS that legislative amendments to the requirements for inclusion in Water Netserv Plans may be made.

State and regional planning instruments

Table 31 identifies the State and regional strategic planning instruments relevant to the SEQ retailers' distribution and retail activities.

Table 31 High-level planning instruments

Plan/instrument	*Objectives and actions*	*Relevance to SEQ retailers' investment decisions*
WaterQ: a 30-year strategy for Queensland's water sector	The strategy sets out the long-term vision for Queensland's water sector	Strategies and actions for: increased customer empowerment and community education; equitable and affordable water; efficient and productive water use; responsible and productive water management across Queensland; a skilled and sustainable water sector; smart regulation that encourages private sector investment; and innovative technology and infrastructure.
SEQ Regional Plan 2009-2031 (under Sustainable Planning Act 2009)	Framework for sustainable growth to 2031. Objective is for water in SEQ to be managed on a sustainable and total water cycle basis to provide sufficient quantity and quality of water for human uses and to protect ecosystem health.	Pre-eminent plan for SEQ and takes precedence over all other planning instruments. Establishes principles for regional infrastructure planning, total water cycle management, efficient water use, water supply planning and catchment management. Requires incorporation of TWCM and water sensitive urban design (WSUD) principles in land use and infrastructure planning.
SEQ Water Strategy	Blueprint for maintaining SEQ water supply security. Ensure that water in SEQ is managed on a sustainable and integrated basis to provide secure and reliable supplies of acceptable quality for all uses for the long term.	Focus is on water supply security, including demand management options. Outlines the framework for TWCM planning in SEQ, including regional TWCM, sub-regional TWCM (catchment scale) plans, council TWCM plans and development scale plans (WSUD focus). Sub-regional TWCM plans have been completed for Ripley Valley (February 2012), Caloundra South and Palmview (February 2012), and Caboolture West (April 2012) (QWC 2012).
State Planning Policy 4/10 for Healthy Waters (under Sustainable Planning Act 2009)	Planning to ensure that stormwater and wastewater is managed consistent with environmental values.	Relevant for stormwater and wastewater management - input to TWCM plans.
Statement of Obligations for the Queensland Bulk Water Supply Authority (Seqwater) 2013	Investment and operating decisions are to be made considering the whole of SEQ system least cost, subject to appropriate arrangements between Seqwater and its customers (cl 3.3.1). Seqwater is to plan and manage water in a total water cycle framework including its water supply catchments (cl 4.2.2).	Consideration of whole of sector solutions and TWCM principles in Seqwater's investment decisions.

The Government in December 2013 finalised for public release a single State Planning Policy (SPP). The SPP is a broad statutory planning instrument that has ascendancy over other planning instruments such as regional plans (including the SEQ Regional Plan). The SPP describes state interests in planning and development and outlines how these are to be dealt with in planning and council development assessment processes. As an example, the SPP recognises the importance of land use planning in ensuring the integrity of critical water infrastructure.

Other jurisdictions

Most other jurisdictions adopt planning approaches wherein high level strategic plans guide long term water sector investments.

For example, the Victorian Government has the Living Melbourne, Living Victoria Roadmap (DSE 2011). The Roadmap defines a vision for providing secure and resilient water supplies, protecting the environmental health of urban waterways, protecting public health and delivering affordable water supplies. In June 2014, the Victorian Government introduced the Water Bill 2014 (Vic) to enable key elements of the roadmap.

ESC (2011a) requires that proposed capital expenditure in businesses' Water Plans which are submitted to the ESC as part of five-yearly regulatory reviews, reflect obligations imposed by government, including technical regulators. ESC noted that businesses should demonstrate that capital expenditure is efficient on a whole-of-sector basis.

The NSW Metropolitan Water Plan 2010 (NSW Office of Water 2010) sets out how the government will meet the medium-term needs of growing metropolitan areas, while protecting river health, ensuring water supplies are adequate during drought and minimising costs to the community. The plan focuses on dams, recycling, desalination (including operating rules) and water efficiency. The plan is reviewed every four years and progress is reported and reviewed by an independent panel each year. The plan is a key input to IPART's regulatory decisions and water businesses must demonstrate compliance.

Stakeholder submissions

In an initial submission, the Gold Coast City Council (2013) submitted that the QCA should consider government policies such as the 30-year Water Strategy and the review of infrastructure charges.

QCA analysis

A strategic approach to long-term investment in the water sector requires that the retailers comply with relevant legislation and strategic planning instruments as noted above.

The high-level strategic planning instruments provide guidance on issues relevant to the SEQ retailers including investments in demand management options as an alternative to infrastructure, water sensitive urban design and (WSUD) principles and TWCM.

Planning instruments at the entity (or shareholding council) level are also required to reflect these strategic principles. To minimise the administrative burden on the retailers, evidence of approval by boards (for QUU and Unitywater), and endorsement by the Planning Minister and relevant local governments, of Water Netserv Plans would demonstrate to the QCA that a strategic approach to long-term investment has been undertaken.

As noted in Chapter 4 (Section 4.9), the QCA may request retailers provide more information on capital expenditures where CPI-X is exceeded after allowing for relevant adjustments. This could require up to 6 of the largest capex items to be detailed.

For these projects, retailers are required to detail how these investment decisions are consistent with the objectives of legislation and other high level strategic requirements. This includes the 30-year strategy (where relevant) and the SPP. They should also be reflected in annual capital works plans.

Should compliance not be demonstrated, the QCA may consider this to be a contributory factor for instigating more detailed prudency and efficiency reviews.

6.3.2 Final report

Submissions

Logan City Council (2014) submitted that Part A is to be endorsed by board/council and submitted for Ministerial endorsement. Part B is an internal planning document. Logan City Council added that the position paper relies on the statutory process of preparing Netserv Plans to ensure sufficient regional coordination of retailers. The open interpretation of Part B requirements will result in a varied level of plan content and development between the SEQ retailers.

QUU (2014a) agreed that water retailers should provide evidence of endorsed Netserv Plans.

QCA analysis

Logan City Council's comment is noted. The QCA is not proposing to review Part B Netserv Plans. In the event a cost of service review is triggered this may serve as a reference document.

QCA has not made any changes to the recommendations from the regulatory framework position paper.

Recommendation

6.2 Retailers provide evidence of board/council approval and Ministerial endorsement of their relevant Water Netserv Plans to the QCA.

6.4 Co-ordination with other planning requirements

6.4.1 Position paper

Total Water Cycle Management Plans and Guidelines

The EPP Water previously required Unitywater's and QUU's participating local governments, and local governments with a population of at least 25,000 (including Gold Coast, Logan and Redland City Councils), to prepare TWCM plans by 1 July 2015. Plans were to include provisions about the collection, treatment and recycling of waste water, stormwater, ground water and other water sources and the integration of water use in its area.

Although the requirement has been removed from the EPP Water, many councils have already completed their plans. Table 32 summarises the status of TWCM plans for SEQ's local governments.

Table 32 Status of TWCM plans for SEQ councils

SEQ service provider	*Local Government*	*Status of TWCM plan*
Queensland Urban Utilities	Brisbane City Council	*Brisbane's Total Water Cycle Management Plan* published June 2013.
	Ipswich City Council	Development of TWCM strategy included in *Corporate Plan 2012-17*.
	Lockyer Valley Regional Council	*Lockyer Valley Planning Scheme (Strategic Framework)* states that a TWCM plan will be prepared.
	Scenic Rim Regional Council	Unknown
	Somerset Regional Council	Unknown
Unitywater	Moreton Bay Regional Council	*Total Water Cycle Management Plan* published October 2012.
	Sunshine Coast Regional Council	*Sunshine Coast Waterways and Coastal Management Strategy* proposed the development of a TWCM plan.
Gold Coast Water	Gold Coast City Council	*Total Water Cycle Management Fact Sheet*
Logan Water	Logan City Council	Developing council's TWCM plan included in the *Logan Rivers and Wetlands Recovery Program*.
Redland Water	Redland City Council	*Total Water Cycle Management Plan for Redland City Council Final Report* published February 2013.

WaterQ (DEWS 2014a) states that, in the next five years, the Queensland Government will review the regulatory framework to support total water cycle solutions and streamline reporting and administration for service providers.

For the SEQ retailers, Part B of Water Netserv Plans must include information about how the plan provides for total water cycle management for water and sewerage.

Drinking Water Quality Management Plans

Under the Water Supply Act, each drinking water service provider must prepare a DWQMP for the provider's drinking water service. The plan must include details of the operational and verification monitoring programs under the plan, including the parameters to be used for indicating compliance with the plan and the water quality criteria for drinking water.

In SEQ, multiple water service providers are involved in the supply of drinking water to consumers. Therefore individual plans should consider, where relevant: existing agreements and arrangements between providers for the supply of water, emergency response plans, reporting, water quality monitoring programs and other related matters (DEWS 2010a).

DWQMPs also include Risk Management Improvement Programs which demonstrate (to the regulator) how the water service provider will address risks to drinking water quality and outline the interim, short- and long-term management measures and actions and implementation timeframes (DEWS 2010a).

Priority Infrastructure Plans (PIPs)

Under the SPA, councils are to prepare PIPs - an infrastructure planning instrument for water supply networks, sewerage networks, and stormwater drainage networks (as well as roads and

public parks). PIPs will identify required network upgrades to meet demand growth as part of strategic overall planning. PIPs provide a key input to Water Netserv Plans.

The Department of State Development, Infrastructure and Planning (DSDIP) has reviewed the infrastructure planning and charging framework (DSDIP 2014). This could have implications for the retailers and may need to be taken into account in planning procedures and the timing and funding of infrastructure. For example, the new infrastructure charging framework (DSDIP 2014) has retained maximum charges. Councils would also have access to State funding through a co-investment program where 'fair value' charges are adopted. Fair value charges are 10-15% below the maximum charges.

SEQ Bulk Water Supply Code

The SEQ Bulk Water Supply Code (DEWS 2012), issued under the Water Act, includes provisions for co-ordinated water system planning between the bulk and distribution sectors in SEQ (including water quality improvements).

The code requires Seqwater and the SEQ retailers to form a Joint Working Group (JWG). The JWG requires members to disclose their capital expenditure and infrastructure plans to each other and to identify the opportunities to co-ordinate infrastructure, operations and optimisation of assets across the SEQ network. The JWG is also required to decide the Key Possible Projects (KPPs) which should be the subject of an annual JWG report to the Minister.

Planning Guidelines for Water Supply and Sewerage

The Planning Guidelines for Water Supply and Sewerage (WSR Guidelines) (DEWS 2013d) assist retailers in the planning phase and to promote consideration of a wide range of infrastructure, source substitution and non-asset solutions to meet community needs. It has an emphasis on integrated system planning incorporating water, sewerage and stormwater, with guidelines for delivering the optimal strategy at lowest financial, social and environmental cost.

SEQ Water and Sewerage Planning Guidelines

Developed by SEQ service providers, the SEQ Water and Sewerage Planning Guidelines (SEQ planning guidelines) provide a framework for water services planning consistent across the region to accommodate future demands. The SEQ planning guidelines complement the WSR planning guidelines.

Annual capital works plans

In addition to the infrastructure planning requirements of Water Netserv Plans, the DR Act requires QUU and Unitywater to develop an annual capital works program for constructing or acquiring plant and equipment, and adding to or replacing its existing plant and equipment. For the councils, the LGR requires APPs for CBUs to state (among other things, detailed below) "the unit's proposed major investments" for the financial year.

Local Government Regulation - CBUs

The LGR requires CBUs to conduct business in accordance with the key principles of commercialisation: (i) clarity of objectives, (ii) management autonomy and authority, (iii) accountability for performance, and (iv) competitive neutrality.

The LGR also imposes specific financial planning and accountability obligations on local governments, of which some are relevant to SEQ's council water businesses. These include:

(a) financial statement forecasts for the budget year and the next two financial years, including the estimated costs of the activities of the council's CBUs

(b) an annual operational plan (AOP) for each financial year, including an APP for each CBU of the local government. In terms of long-term investment, APPs state the CBU's (i) notional capital structure, and treatment of surpluses, (ii) proposed major investments and borrowings and (iii) policy on the level and quality of service consumers can expect

(c) a council's annual report for a financial year must contain an annual operations report (AOR) for each CBU.

Table 33 summarises the key planning instruments relevant to SEQ and the relevant legislation. A co-ordinated approach to these various plans is necessary to ensure consistent, whole-of-sector, least-cost outcomes.

Table 33 Legislation and planning instruments - relevant to SEQ retailers

Category	*Water service providers*			*Environmental protection*	*Land use planning*	*Water resources and supply*
Legislation	Water Supply (S&R) Act 2008 Public Health Regulation 2005	SEQ Water (Distribution and Retail Restructuring) Act 2009 (DR Act)	Local Government Act 2009 Local Government Regulation 2012	Environmental Protection Act 1994 Environmental Protection Regulation 2008	Sustainable Planning Act 2009 DR Act ch 4C	Water Act 2000
Policy					State Planning Policy - 4/10 Healthy Waters	
Regional Plans					SEQ Regional Plan 2009-31 SEQ Water Strategy 2010	Water Resource Plans Resource Operations Plans Water Security Program for SEQ SEQ Bulk Water Supply Code
LG/entity plans	DWQMPs RWMPs Performance reports	Water Netserv Plans Customer Service Charter (under SEQ Customer Code) Customer Service Standards (under SEQ Customer Code)	Council-wide long term asset management plans Budgeted statement of income and expenditure, for the budget year and the two following years. Annual performance plans for CBUs. Annual operations report for CBUs.		Priority Infrastructure Plans (LGs) Infrastructure Charges Schedules (LGs) Sub-regional TWCM Plans	Joint Working Group - Key Possible Projects

Stakeholder submissions

QUU (2013) suggested that a whole-of-sector approach with increased co-ordination could lead to lower long-term capital investment for the industry.

Gold Coast City Council (2013) submitted that to promote co-ordination with other regulatory planning processes, the QCA should consider entering a Memorandum of Understanding with other regulators. This should provide a holistic understanding of regulatory obligations.

Unitywater (2013) called for closer co-operation between government agencies, economic and environmental regulators and the Energy and Water Ombudsman of Queensland (EWOQ) to promote least-cost solutions. Unitywater cited an example as being environmental licence conditions which can lead to expensive solutions for sewage collection, transport and discharge.

QCA analysis

Co-ordination of planning regulatory instruments

The Water Netserv Plan draws together the outputs of a range of plans, and an effective and approved Water Netserv Plan demonstrates that the SEQ water retailers have already adopted a strategic approach to planning. For example, a Water Netserv Plan is typically based on:

(a) the requirements of the high-level strategic plans of the government, such as the SEQ Regional Plan and the SEQ Water Strategy

(b) strategic planning within each retailer's service area - for example to identify optimal system configuration to meet growth needs and infrastructure/non-infrastructure solutions, and take account of total water cycle management principles

(c) local government PIPs which assist with system network planning for new developments

(d) pre-feasibility and detailed feasibility planning, a more refined assessment of the range of options to address needs

(e) achieving service delivery outcomes for the SEQ region.

In response to stakeholder comments, closer co-operation between government agencies, economic and environmental regulators and the EWOQ is generally supported, although EWOQ's role is limited to dispute resolution and not policy-making.

A Memorandum of Understanding (MOU) between the QCA and other regulators such as DEWS is not considered necessary as compliance with the requirements of Water Netserv Plans would effectively ensure such co-ordination and a whole of sector approach. Seqwater's obligations to make investment and operating decisions considering the whole of SEQ system least cost, and the Bulk Water Supply Code's requirement for co-ordinated water system planning between the bulk and distribution sectors in SEQ, provide further mechanisms to achieve the objectives of the Ministers' Direction as they relate to long-term investment. This in turn should lead to more efficient cross-sector capital investments and lower administration costs.

Annual performance monitoring

For the purposes of annual performance monitoring, the annual capital works plan (or annual performance plan) developed by each retailer would serve as the initial reference for annual monitoring of capital investments as, once approved by the board/council, they represent a culmination of a co-ordinated approach to planning.

The QCA did not propose to further monitor co-ordination with other planning instruments (other than the Water Netserv Plan) unless prices and/or costs are considered to have exceeded CPI-X after allowing for relevant adjustments.

In such circumstances, retailers may be required to submit information to Level 4, and identify the largest water, sewerage and recycled water projects commissioned in the preceding year.

For the six largest items, any variations occurring for the relevant year (2014-15 for the first return) from those indicated in annual capital works plans, or any projects not previously identified, should be supported with relevant details, including cost drivers, consistency with higher level planning and reasons for any variations. Updates to Water Netserv Plans should also be submitted.

Should compliance and co-ordination not be demonstrated, the QCA may consider this to be a contributory factor for instigating more detailed prudency and efficiency reviews.

6.4.2 Final report

Relevant submissions and responses to the QCA's regulatory framework position paper are summarised below.

Table 34 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Annual capital works plans and annual performance plans Draft recommendation 6.3: "Entities annually report to QCA on their annual capital works plans or annual performance plans."	LCC (2014) agreed that retailers should report to QCA on annual capital works plans or performance plans. QUU (2014a) submitted that it can provide its annual capital works plan in annual submissions. The QCA needs to state which year it is requiring. It should also be noted that these plans would be based on 'as incurred' expenditure rather than 'as commissioned' which is what is included for the roll-forward of the RAB. The detail contained within these annual capital works plans are at a high level and only projects that exceed $15 million, or are of interest to the Board, are separately identified.	Noted. The year of the capital works plan required by the QCA would be the year subject to performance monitoring. Consistent with price monitoring requirements to date, the QCA would require capex on an "as commissioned' basis. Further, in the event of a cost of service review, more detailed information may be required.
Co-ordination of planning Draft recommendation 6.4: "Annual updates to Water Netserv Plans also be submitted".	LCC noted that legislation does not require annual updates of Netserv Plans (only a 5-year review is required). QUU noted that its updated Netserv Plan will be on QUU's website. QUU considered it unnecessary to inform the QCA of all updates to the Netserv Plan. QUU suggested that the only changes within the updates that	It is intended that updates of Netserv Plans for minor and major amendments (as defined by the DR Act, s 99BRAA) be submitted. The recommendation has been clarified to this effect. It is noted that the retailers are required to keep Part A of Water Netserv Plans on their website. Accepted.

Issue	*Comment*	*QCA response*
	the QCA needs to be made aware of are minor and major amendments (as defined by the DR Act, s 99BRAA).	
Information requirements Documents relating to strategic approach to long term planning	GCCC supported annual information returns, provided the QCA clearly articulates the intended use of the various planning documents. Council questions the resources available within the QCA to review these technical documents.	The QCA requires the various planning documents to ensure retailers have followed appropriate procedures and have received appropriate approval from relevant agencies and regulators. The QCA would only need to seek technical advice if there is a concern that planning practices could result in investments that are not prudent and efficient.

The QCA's recommendation is revised as indicated below.

Recommendations

6.3 Retailers annually report to the QCA on their annual capital works plans or annual performance plans.

6.4 Part A Water Netserv Plans and any updates for minor and major amendments be submitted.

6.5 Asset management

6.5.1 Position paper

Asset management frameworks provide the information base for the retailer to better manage its assets, to identify drivers for capital investments, and to provide input to Water Netserv Plans.

In terms of the council water businesses, the LGA requires a local government's financial management system to include a long-term asset management plan. The period stated in the plan must be 10 years or more. These plans must:

(a) provide for strategies to ensure the sustainable management of the assets mentioned in the council's asset register and the council's infrastructure

(b) state the estimated capital expenditure for renewing upgrading and extending the assets for the period covered by the plan

(c) be part of, and consistent with, the long-term financial forecast.

National commitments and positions

The Local Government and Planning Ministers' Council (LGPMC) (2009) set out guiding principles for a national asset management framework for local governments, based on seven elements:

(a) development of an asset management policy - establishing objectives and requiring adoption of an asset management plan informed by community consultation and financial reporting

(b) governance and management arrangements - assigning roles and responsibilities, and maintaining accountability

(c) defining levels of service - including establishing quality and cost standards, and reviewing standards in consultation with community

(d) data and systems - to enable performance measurement over time, identify funding gaps and enable benchmarking

(e) skills and processes - including setting targets for improvement, training and providing guidelines

(f) evaluation - mechanisms for evaluating effectiveness and compliance.

The LGPMC framework is not limiting on state jurisdictions - the nationally consistent approach is to sit within the context of each state's legislative framework. Individual states can pursue additional elements in their asset management frameworks.

Other jurisdictions

Australia

Most state governments provide guidelines and principles to assist local governments with asset management planning in all activities including water and sewerage. For example:

(a) In WA, the Department of Local Government and Communities (2011) provides guidelines for Asset Management Plans. These set out the required inputs (e.g. asset data, demand forecasts, renewals priorities, asset lives, new asset priorities) and outputs (plans for each asset class, expenditure projections, financial and funding information)

(b) In Victoria, the Department for Victorian Communities (2004) set out guidelines for developing an asset management policy, strategy and plans. Plans should define service levels, planning horizon, risk management strategies, changes in asset service potential, and be linked to other council strategic plans

(c) In NSW, IPART (2012d) recommended Hunter Water Corporation be required to develop and implement an asset management system consistent with PAS-55 or a system based on the Water Services Association of Australia's (WSAA) Aquamark asset benchmarking tool (discussed below), or other appropriate standard as agreed by IPART

(d) In South Australia (2013), the Department of Planning, Transport and Infrastructure (2013) provides a Strategic Asset Management Information System (or SAMIS) to assist in the management of assets through establishing an asset register and planner that creates preventative maintenance schedules

(e) In Tasmania, the State Government (2009) provided a framework consistent with the LGPMC guidelines.

Other approaches

PAS-55

The British Standards Institution's (2008) Publicly Available Specification 55 – Asset Management (PAS-55) outlines the planning and implementation elements of an organisation's asset management system.

Ofwat considers PAS-55 to be a governance framework which demonstrates that the company is self-aware of its capability and is developing improvement plans.

PAS-55 identifies a checklist to deliver an entity-specific approach to asset management. This checklist includes:

(a) general requirements

(b) asset management policy

(c) asset management strategy, objectives and plans, and contingency planning

(d) asset management enablers and controls, including structure, authority and responsibilities; outsourcing, training, consultation and communication, documentation, information management, risk management and legal and other requirements

(e) implementation of asset management plan(s)

(f) performance assessment and improvement, including condition monitoring, investigation of asset-related failures, evaluation of compliance, audit, and improvement actions

(g) management review.

A similar draft ISO standard is being developed, Draft International Standard ISO/DIS 55001 Asset management - Management systems - Requirements (ISO 55001).

Ofwat

In its 2009 review of water and sewerage charges for water and sewerage companies in England and Wales for the period 2010-15, Ofwat (2009b) conducted an asset management assessment (AMA) of each company's final business plan to assess the technical and managerial processes applied in developing capital maintenance business plan submissions.

The AMA scoring criteria includes nine high-level areas (containing 28 sub-components). The high-level areas are:

(a) stakeholder engagement

(b) leadership, policy and strategy

(c) management

(d) processes

(e) systems

(f) data - testing for reliability of data

(g) analysis - includes verification, sensitivity and validation checks

(h) reporting

(i) balance - a balanced view of risks across the whole plan.

Ofwat scores, by sub-service, each of the above components from 0 (lowest) to 5 (highest) against an 'aspirational statement' which defines "the upper limit of expectations for a frontier company in the 2009 price review". A score of 4 out of 5 represents a fully justified plan. Sub-service areas are water infrastructure, water non-infrastructure, sewerage infrastructure, and sewerage non-infrastructure.

2013-15 Price monitoring investigation

The Ministers' Direction for the 2013-15 price monitoring investigation required the QCA to review the robustness of the retailers' capital policies and procedures relating to planning and

delivery, having regard to 'good industry practice' using a sample of six capital expenditure projects.

For the investigation, the QCA's consultant (SKM) assessed each retailer's asset management system against the PAS-55 standard, as representing good industry practice. Unitywater indicated its asset management system will meet the PAS-55 framework and QUU advised it intends to meet the ISO standard.

Gold Coast, Logan and Redland City Councils use the International Infrastructure Management Manual (IIMM), published by the Institute of Public Works Engineering Australia (IPWEA) for their asset management plans. This methodology was endorsed for Queensland local governments in the Asset Management Advancement Program 2011-12 Guideline (DLGP 2011). Gold Coast City Council indicated that, through the implementation of continuous improvement activities over the next few iterations of its asset management plans (updated annually), it will strive to achieve alignment with the ISO 55000 asset management standards (GCCC 2013b).

SKM found that each of the retailers had deficiencies in their asset management systems compared to good industry practice. The retailers also identified a number of projects or initiatives that were underway and/or planned to address the known shortcomings in their asset management systems.

As in earlier price monitoring investigations, QUU and Unitywater also noted their participation in the IWA/WSAA 2012 Asset Management Performance Improvement Project (WSAA asset management project). The WSAA asset management project benchmarked the retailers' asset management practices against other participating water authorities. In its review, SKM noted that this benchmarking program uses self-assessment, with subsequent review and validation by external consultants. The results are compared against those of other participating water authorities, not against a published standard of requirements for good industry practice. The relative results would therefore vary dependent on the other authorities participating (SKM 2013).

Stakeholder submissions

For the 2013-15 price monitoring review, QUU indicated that the ISO 55000 series of standards is an aspirational goal. Compliance with this standard does not necessarily represent good industry practice, as the ISO 55000 series has not been published by the ISO organisation and is not widely used by the water industry in Australia.

QUU is of the view that:

(a) good industry practice in Australia is best represented by WSAA's Aquamark framework

(b) a non-compliance result in assessment against the (unpublished) ISO 55000 business system does not mean that QUU's system is not robust. The purpose of a business management system is to identify and manage non-conformance to improve the overall system. As such QUU believes that its systems are robust and in line with good industry practice.

QCA analysis

For SEQ retailers, asset management plans should be developed for relevant asset classes, for example, sewerage treatment plants, pipelines, reservoirs etc. Retailers should maintain an asset register with details of asset type, location, acquisition date, value, and condition monitoring updates. Plans should provide information on levels of service required of assets, risk management, financial information including capex projections and drivers, whole of life

costings (including operating costs) and schedules for performance review, maintenance and asset improvements.

The plans should identify the key drivers, and necessary information, for example:

(a) for demand growth: relevant demand analysis and forecasts

(b) for compliance: details of the relevant regulatory requirement or Government directive

(c) for renewal or replacement: assessment of risks and criticality of the investment and the optimal approach to maintenance and replacement as supported by relevant data

(d) for service quality enhancement: analysis of customer preferences and requirements, or details of Government policy direction

For the annual performance reporting, it is recommended that the SEQ retailers provide details of their compliance with the asset management standard they have implemented, and report on progress in addressing areas of improvement to achieve good industry practice (QCA 2014a).

For example, in capital planning and asset management, SKM found (in the 2013-15 price monitoring review):

(a) QUU needs to develop its benefits realisation and improve consistency with asset management standards. QUU has plans in place to do so.

(b) Unitywater's asset management system was not yet consistent with good industry practice. SKM noted that Unitywater has not yet fully implemented its Consolidated Asset Management System (CAMS) which will improve asset management.

(c) Gold Coast Water's asset management system was not robust but SKM noted Gold Coast Water is developing a compliance program.

(d) Logan Water's asset management system was not robust but SKM noted Logan Water has identified a number of tasks to improve asset management in the business.

(e) Redland Water's documentation and compliance requirements were not addressed adequately but SKM noted Redland Water is developing a comprehensive program of planned improvements (QCA 2014c).

If a review is triggered, and the QCA undertakes a cost of service review, the QCA review of retailers' asset management standards would be based on a sample of the key elements of good asset management, drawing on PAS-55 (ISO 55000) and the objective asset management standards in place.

The QCA also supports the retailers' participation in the WSAA asset management benchmarking project where it is cost-effective to do so.

6.5.2 Final report

Relevant stakeholder comments and the QCA responses are summarised below.

Table 35 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Asset management Draft recommendation 6.5: "SEQ entities provide to the QCA annually, details of their	QUU (2014a) agreed with the concept of retailers detailing their compliance with the asset management standard they have adopted.	Noted.

Issue	*Comment*	*QCA response*
compliance with the asset management standard they have implemented and report on progress in addressing areas of improvement to achieve good industry practice."	QUU submitted that QCA should recognise that these are not formalised standards, rather they are the asset management standards adopted by the individual businesses.	Noted.
	GCCC (2014a) sought the QCA's guidance in regards to assessment of compliance with asset management standards. For example, would internal executive signoff suffice or does QCA expect third party accreditation from an external auditor? Should this be the case the council would like QCA to acknowledge the additional costs this would impose on water retailers.	The QCA would review the retailers' statement of practices and evidence of compliance. External third party accreditation or sign-off is not required but would support any contentions in this regard. Whether additional costs are incurred is at the retailers' discretion.
Compliance with PAS 55 Draft recommendation 6.6: "Should a cost of service review be triggered, the QCA assess entities asset management practices against PAS-55."	QUU (2014a) disagreed that, should a cost of service review be triggered, the QCA assess retailers' asset management practices against PAS-55.	In the 2013-15 price monitoring review, PAS-55 was chosen as the asset management standard representing good industry practice.
	QUU submitted that the regulator should not be prescribing its preferred asset management system, but rather the businesses need to ensure their asset management standards are consistent with a standard asset management system.	Nomination of PAS-55 does not mean that is has to be applied but rather that adopted practices would be reviewed against it and any differences explained.

QCA has not made any changes to the recommendations from the position paper.

Recommendations

6.5 Retailers annually report to the QCA, details of their compliance with the asset management standard they have implemented and progress in addressing areas of improvement to achieve good industry practice.

6.6 Should a cost of service review be triggered, the QCA assess retailers' asset management practices against PAS-55.

6.6 Evaluating efficiency of long-term investment alternatives

6.6.1 Position paper

Background

Once the basis (prudency) for capital expenditure is defined, relevant options and their relative benefits and costs need to be considered. This is particularly the case with water and sewerage sector investments which involve capital-intensive long-life assets (pipelines, pump stations, reservoirs, sewage treatment plants, etc.). Investment evaluation processes should consider:

(a) customer demand and needs, including the level of service required. It is common practice when evaluating investment alternatives to allow for reasonable expected additional capacity to meet not only existing demand, but also long-term growth in demand, compliance or service quality expectations

(b) various risks related to long-term investment. These include construction, planning, environmental (e.g. climatic uncertainty), financial, technological, and demand risks, as well as regulatory and government policy risk. The appropriate allocation of risks among customers, service providers, and Government can help minimise costs. Scenario analysis is a useful tool in assessing risks and the costs of managing them.

(c) financial viability and sustainability of the water business. Large investments in additional capacity imply that full cost recovery will occur over the long-term. Therefore, an important consideration is how these costs should be shared among present and future users of the infrastructure.

The conventional approach to assessing long-term investments is to use cost-benefit analysis to evaluate and rank the net present value (NPV) of alternatives. This approach has the advantage of being relatively simple, but may be difficult to apply where there are a number of non-infrastructure solutions such as demand management, with different timings and risks. Scenario analysis, as a complementary tool, can help assess risks and establish contingency allowances for the various alternatives being evaluated.

Cost effectiveness analysis may be applied where the level of benefit is the same across all options. The analysis focuses on the lowest cost option to achieve the specified outcome.

Multi-criteria analysis applies weightings to a range of pre-determined (often qualitative) criteria or objectives relevant to the investment options, for example, equity impacts, effects on the environment, etc. In doing so, it can incorporate more information and be more flexible, but the weightings may be difficult and subjective to derive.

Another approach is real options analysis, which enables comparisons of combinations of a potentially large number of options, involving different timings, costs and risks, with continual re-evaluation over time.

Options analysis can generate a sequence of whole-of-sector responses, including partial investments (e.g. in land) to keep open the range of options for future growth. It may be appropriate where the benefits of a project remain uncertain, and it is known that information will improve to enable better decisions in the future. For example, demand management options may not deliver significant water savings but could defer major investment decisions until information improves.

National commitments and positions

The NWI (2004) required that proposals for investment in new or refurbished water infrastructure continue to be assessed to be economically viable and ecologically sustainable prior to the investment occurring.

Other jurisdictions

In most jurisdictions, project evaluation guidelines are available to assist service providers to evaluate alternative investments. For example, NSW Treasury has Guidelines for Economic Appraisal (2007) which can be applied by public agencies for investments exceeding $1 million. In Victoria, projects exceeding $5 million must be subject to the Treasury's Investment

Evaluation Policy and Guidelines (1996). In addition to financial cost-benefit analysis, the Guidelines call for analysis of non-quantifiable socio-economic impacts.

The ESC (2011c) considers a range of factors in assessing water service providers' capital expenditure, including obligations imposed by technical regulators, variations from historical trends, consistency with best-practice asset management, proposed timeframes and risk-sharing. Business' Water Plans must include:

(a) 10-year capital expenditure forecasts, distinguishing between business-as-usual and new expenditure

(b) drivers of expenditure, for example, to meet existing levels of service, to meet higher targets imposed by Government, to meet higher customer expectations, to address changes in demand or to reduce operating costs. Businesses should demonstrate that best-practice risk-based asset management practices have been used, and a range of options has been considered in making expenditure decisions. Real options analysis may be used

(c) demonstrated capacity to meet timing of projects. ESC noted a previous tendency for timing to be optimistic. Incentives and risk-sharing structures with contractors should be symmetric

(d) details of the 10 largest projects, their drivers, outcomes, delivery dates and annual costs. Water Plans should demonstrate evidence of options and risk analyses, including cost-benefit analyses and risk mitigation plans

(e) forecast capital expenditure based on P50 cost assumptions (50% probability the cost will not be exceeded). Plans should also show P5 and P95 costs.

In 2008, the ERA considered proposals for the application of real options modelling by the Water Corporation of WA to analyse alternative supply and demand options. ERA also proposed that this analysis be performed by an Independent Procurement Entity (IPE). Options modelling was considered an appropriate approach given the large number of supply and demand management options available, varying risks and costs and changing circumstances over time. However, the approach was not adopted.

In response to QCA recommendations, SunWater has implemented a process for evaluating asset renewals and replacement options for material projects. SunWater identifies options including a 'do-nothing' option if appropriate, and uses cost benefit analysis or cost effectiveness analysis to identify a preferred option. A risk analysis assigns a level of risk according to categories - WH&S, environment, operations, customer and financial. The analysis is used to develop a business case for the preferred option.

QCA analysis

Within the overall strategic and entity-level planning framework, to support the asset management procedures and as an input to Water Netserv Plans, the range of investment options (including non-infrastructure options) should be evaluated to identify the preferred option using where appropriate:

(a) cost-benefit analysis or cost-effectiveness analysis of various alternatives, including non-infrastructure alternatives and reviewing non-quantifiable costs and benefits

(b) real options analysis, where there is a large number of significant options with different scales, timing and risk profiles, and which may require a sequenced or staged acquisition of assets

(c) risk assessments including costs of risk mitigation measures.

Under the price monitoring regulatory framework, the QCA assessed the prudency and efficiency of capital expenditure, using the criteria noted in Chapter 4.

Queensland Government agencies are already required to comply with Project Evaluation Guidelines issued by the Queensland Treasury (1997).

Under annual performance monitoring, the QCA would not undertake prudency and efficiency reviews, unless specifically requested to do so by the retailers or as part of a subsequent review (unless a cost of service review is required). The retailers would be required to report on the project evaluation methods applied for significant capex.

For the six identified material capital expenditure projects, if and where there are significant variations in capital costs from those indicated in the annual capital works plan, or where the project was not identified in the annual capital works plan, retailers should provide to the QCA evidence of that an appropriate approach to project evaluation, including options and risk analyses has been applied.

Variations are generally considered to be material where they differ from those proposed by between five and 10% (AASB 1031). For the purpose of the annual performance monitoring framework a threshold of 10% is considered to be material.

6.6.2 Final report

Submissions

QUU (2014a) submitted that the statement "Queensland Government agencies are already required to comply with the Project Evaluation Guidelines issued by Queensland Treasury" incorrectly implies that this applies to distributor-retailers.

QUU agreed that retailers provide details of major project evaluations, but required clarification on when such information would be provided.

QCA analysis

In response to QUU:

(a) The QCA did not explicitly state or intend it to be implied that retailers should adopt the guidelines. Such guidelines provide general guidance. The QCA notes however that the referenced guidelines were replaced by cost-benefit guidelines in 2008.

(b) The QCA would require a statement of the processes applied for project evaluation and options analysis for Level 1 (baseline) information requirements.

QCA has not made any changes to the recommendations from the regulatory framework position paper.

Recommendations

6.7 Retailers annually report to the QCA details of the project evaluation practices used for significant capex projects.

6.8 Retailers submit details of project evaluation, including options analysis and risk analysis, for up to the 6 largest capex items, where required as part of a request for further information.

7 SERVICE QUALITY PERFORMANCE REPORTING

7.1 Background

Under the Ministers' Direction, the QCA must:

(a) develop service quality performance reporting (SQPR), in consultation with the retailers and other stakeholders, based on service quality indicators of relevance to residential and non-residential customers to inform these customers about the comparative performance of the retailers

(b) ensure that SQPR is not excessively onerous or costly to implement by focusing on a reasonable range of meaningful indicators in the following areas: baseline (contextual) information; water and sewerage reliability and service (including water) quality; water consumption, recycling and reuse; customer responsiveness and service.

Terminology

'Service quality' refers to the attributes of a water or sewerage service that relate to utility, health, safety and reliability. Examples include water quality and reliability (frequency, timing and duration of interruptions to water services, and overflows of wastewater).

A 'service standard' refers to an obligation relating to a service quality attribute. An obligation can be specified in law, accepted as a de facto industry standard, or adopted by retailers in consultation with customers.

A 'performance indicator' is the basis on which the service standard will be measured.

A 'target' refers to the desired performance level.

'Performance' refers to the outcomes achieved by a service provider in relation to the defined targets.

Price monitoring 2010-15

In its SEQ Interim Price Monitoring Framework Report (2010), the QCA recommended that retailers' standards of service, as approved by other agencies, be adopted for the purposes of interim price monitoring.

During price monitoring over 2010-15, the QCA was not required to monitor retailers' performance against standards of service. However, it noted that customer service standards specified by the retailers under the *Water Supply (Safety and Reliability) Act 2008* (Water Supply Act) varied considerably across the state and across SEQ retailers (QCA 2011). In subsequent reports, the QCA (2012a) supported the development of specific and measurable service standards as a first step in the development of a more integrated performance monitoring framework for retailers (QCA 2013a).

7.2 Objectives and criteria

7.2.1 Position paper

Key issues

The Ministers' Direction's stated objective for establishing SQPR is to inform residential and non-residential customers on the comparative performance of SEQ retailers.

National commitments

Section 75 (*Benchmarking Efficient Performance*) of the National Water Initiative (COAG 2004) requires States and Territories to report independently, publicly and on an annual basis, the benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery agencies. Reporting is to be made on the basis of a nationally consistent framework.

This requirement has been met through the annual National Performance Reports (NPR) published by the National Water Commission (NWC 2013).

The NWC notes that the benefits of the NPR include public accountability to the community, governments and regulators, prioritisation of works programs, and comparability of performance of similar-sized retailers. A requirement of the NPR framework is that a comprehensive audit of the data collected under the NPR is undertaken at a minimum of three-yearly intervals.

It remains unclear whether responsibility for the NPR framework, and its publication, will be transferred to another agency following the closure of the NWC from 31 December 2014.

Other jurisdictions

ESC's performance reporting framework is designed to inform customers about the level of service, identify baseline performance of individual businesses, provide data for developing regulatory standards and allow comparisons between businesses.

ESC's (2012) criteria require indicators to be: relevant and meaningful; collected on a consistent basis across businesses to assess variances and aid performance comparisons; reliable and verifiable in terms of accuracy; and consistent with national reporting. ESC suggested the framework should focus on a reasonable number of meaningful indicators to ensure the costs of collecting, reporting, and analysing information and data do not exceed the expected benefits.

ESC introduced the indicator set in 2004 and reviewed it in 2009 and 2012. ESC intends to again review the indicator set in 2014-15.

IPART (2013b) reports annually on the performance of metropolitan retail and bulk water utilities to inform stakeholders and to strengthen utilities' accountability and incentives to maintain and improve performance over time.

ERA (WA) (2014) reports on the performance of water, wastewater and irrigation schemes licensed by the ERA, to highlight comparative performance and examine service performance over time.

OTTER's (2013) performance reporting framework is designed to provide information for the Regulators' State of the Industry Report and to assist with comparative analysis.

QCA analysis

The following criteria were identified as being relevant to selecting appropriate service quality performance measures.

Relevance

Indicators should be relevant to the nature of the services provided by each retailer; and to the key issues of concern to retailers, their customers, and other interested parties (Kaufman and Lowry 1999; QCOSS 2012).

Service quality indicators that are material and linked to controllable cost drivers would be of particular interest to customers (and the economic regulator seeking evidence of an exercise of market power).

Stakeholders, as well as government and the retailer, need to be informed about (controllable) variances over time between a retailer's planned and actual performance against agreed service standards, and the reasons for these variances.

The customer engagement and consultation strategies discussed in Chapter 5 may be used to determine customer preferences for water and sewerage service indicators.

Comparability

The performance indicators should also enable useful comparisons across service providers, and over time, where appropriate. There are obvious advantages in using the indicators (and accompanying metrics) developed as part of NPR process, or those in use in other jurisdictions, to maximise the scope for performance comparisons with a range of water utilities.

However, it would expected that specific performance indicators would also need to be developed to meet the particular requirements of SEQ water retailers and their customers.

Cost effectiveness

The performance reporting framework should be cost-effective in application, and balance costs of collection, recording and analysis against perceived benefits. To ensure that SQPR is cost-effective:

(a) the costs of collecting, reporting and analysing data and information should be justifiable in terms of the expected benefits

(b) the number of indicators used should be reasonable and reflect as far as possible existing service standards

(c) the set of indicators chosen should take into account the size and characteristics of the retailers.

A general indication of cost effectiveness is implied where the indicators, and the relevant metrics, are widely adopted by other jurisdictions.

Measurability

Indicators should be defined and collected on a consistent basis (ESC 2004), controllable by the entity, verifiable, quantifiable and timely (DEWS 2013c). Meyrick/Pacific Economics (2003) also emphasised the need for independent external scrutiny of the distributor's measurement and reporting systems. The ability to verify or audit the indicators would provide greater credibility to the reporting framework and support consumer confidence.

7.2.2 Final Report

No submissions were received in regard to the principles for setting service quality indicators.

The QCA recommends no change to the regulatory framework position paper recommendation.

Recommendation

7.1 The service quality performance reporting framework incorporate indicators that are:

- **(a) relevant and meaningful to stakeholders**
- **(b) linked to controllable costs**
- **(c) suitable for relative performance assessment within, and across, retailers over time**
- **(d) cost effective - the costs of collecting and reporting indicators should be justifiable relative to benefits**
- **(e) measurable - clearly defined, quantifiable, reliable, and verifiable.**

7.3 Choice of indicators for SQPR

7.3.1 Position paper

Background

The Ministers' Direction requires the following general categories of performance indicators to be incorporated in SQPR:

(a) baseline indicators - contextual data that defines the business, such as number of customers, length of pipelines, number of infrastructure assets

(b) water and sewerage network reliability and service quality (including water quality) indicators - for example, number and frequency of leakages and interruptions

(c) water consumption, recycling and reuse indicators - for example, trends in water consumption and uptake of recycled water options

(d) customer responsiveness and service indicators - for example, customer complaints and response times.

Available and known indicators are:

(a) NPR indicators

(b) additional indicators used by other jurisdictions

(c) indicators identified by DEWS

(d) other indicators that may be suggested by the retailers.

A further issue is how the indicator is measured (metrics). For example, the number of unplanned interruptions to water supply may be expressed as a total, or as a number per 1000 properties, or per 100 properties, or a number per 100 km.

National commitments and positions

For the NPR, 180 indicators, with standardised definitions, have been jointly developed by WSAA, the NWC and the parties to the NWI, being the Commonwealth and State Governments and the Bureau of Meteorology (NWC 2013).

The NPR indicator categories include baseline data for water resources, water and sewerage assets, recycled water and stormwater; and performance data for system operations, water losses, customer service (including complaints) and unplanned interruptions, environmental

performance, public health (including water quality), system costs, financial measures and pricing. The NPR indicators are listed in Appendix C.

Other jurisdictions

In other jurisdictions where annual service quality performance reporting is in place, regulators have adopted a subset of the NPR indicators and added other indicators specifically targeted to the objectives of the respective reporting frameworks, including licence conditions.

The categories of indicators used in the main jurisdictions are listed in Table 36.

Table 36 Performance indicator categories in other jurisdictions

Regulator	*Indicator categories*	*Comment*
ESC	72 performance indicators including usage, price trends and payment management, customer responsiveness and service, network reliability, water quality, conservation and the environment and historical performance, drainage and waterways services.	Non-NPR indicators include bill payments and hardship arrangements, water supply interruptions, responses to sewerage system blockages, and trade waste volumes. ESC (2012) also used survey techniques to assess customer service quality - deriving a greeting quality index, agent manner ratings, and enquiry handling skills. ESC's annual reporting also includes updates on major infrastructure projects.
IPART	Drinking water quality, water and sewerage reliability and continuity, environmental impact (which includes water use and recycled water), customer service complaints, and expenditure and sales for retail retailers.	IPART is developing a standardised set of hardship indicators for concessional plans, hardship applications and flow rate restrictions for non-payment.
ERA (WA)	Categories of sources of water, uses of water, asset data, and customer service which constitute a subset of NPR indicators.	A number of additional indicators set out in licence conditions.
ICRC	A subset of NPR indicators, some with different metrics.	26 non-NPR indicators that relate to various types of complaints and responses to complaints, and duration and frequency of planned interruptions.
OTTER	Categories of water and sewerage supply reliability (including planned and unplanned interruptions), customer responses and payment plans, affordability and hardship information and measures.	Water retailers are required to report on all NPR indicators as well as a comprehensive list of additional indicators.
Ofwat (UK)	4 high-level areas customer experience, reliability and availability, environmental impact and financial.	Noted

ESC (2012), IPART (2013b), ERA (2013c), ICRC (2012), OTTER (2013) and Ofwat (2012)

The ESC undertakes regulatory audits to ensure the integrity of reported data, and also periodically reviews the framework to identify new indicators, remove indicators that are no longer useful, and modify indicators to make them more relevant (ESC 2012). For example, the ESC in 2012 removed 11 indicators, modified 8, clarified 16 and added 5. Some indicators were flagged for further review (mainly productivity based indicators).

In 2012 IPART collected information on 82 additional indicators (to the NWI) from Sydney Water. Following review this was reduced to 40 to remove obsolete indicators and

duplications, reduce the burden of regulation and ensure the remaining indicators are more diagnostic to support decision making (IPART 2012a).

Appendix C provides a list of the NPR indicators, identifying most of those used by other regulators. Appendix D provides a list of additional non-NPR indicators used by other regulators. Most of the other regulators have supplemented the NPR in the area of customer service, suggesting that the NPR is considered deficient in this area. Some regulators, such as OTTER and ESC, have a series of indicators relating to customer payment activities, hardship arrangements, concession holders and status of customer debt. Many of these indicators relate to licence conditions.

Queensland

DEWS (2014b) is implementing state-wide reforms to replace various water supply planning processes with an annual performance reporting framework. The framework requires mandatory reporting, including annual reporting on targets set in customer service standards. (The SEQ retailers are not required to prepare and publish the customer service standard required by s 115 of the Water Supply Act. The retailers have separate obligations under the DR Act and the SEQ Customer Code). Annual comparative reports, based on a set of key performance indicators (KPI), will compare the performance of like service providers.

Specific KPIs have been established to promote regulatory reduction and to vary according to the size of the service provider and the type of service provided.

In developing the framework, a Business Advisory Group was established to:

(a) provide advice and feedback to DEWS on proposed KPIs and their application to the different sizes of service providers

(b) provide advice to DEWS on practical industry issues associated with the implementation of performance reporting on the selected KPIs

(c) develop practical solutions for industry issues relating to the reporting of KPIs.

Membership of the Business Advisory Group comprised service providers and their representatives, including Logan City Council and the Queensland Water Directorate (qldwater).

DEWS requires that the SEQ retailers and other water providers with more than 10,000 connections complete the NPR indicator set, as well as a number of additional indicators.

QCOSS (2012), in a comparative survey of customer service standards, identified the priority standards as:

(a) frequency and duration of planned and unplanned interruptions

(b) response time to incidents

(c) water quality

(d) lost or unaccounted for water

(e) infrastructure failures, such as breaks, chokes and sewerage overflows

(f) water pressure or flow rates

(g) customer service, standards around complaints and call response times.

QCOSS concluded that a common set of standards should apply for SEQ.

Qldwater

Qldwater is an industry association representing water service providers. In partnership with the LGAQ and State Government agencies, qldwater developed the SWIM system to make it easier for water service providers to supply data requested by State and Commonwealth Governments, including for the NPR framework.

SWIM is a data submission portal that is designed to cater for any temporal and spatial frequency of data reporting required (from daily to annual, for water schemes to whole jurisdictions). SWIM collects data on 256 performance indicators (2009-10) for a range of purposes, including NPR and strategic asset management plan (SAMP) reporting. (The requirement for water service providers to prepare SAMPs was removed from the *Water Supply Act* in May 2014: *Water Supply Services Legislation Amendment Act 2014*, s 56). Many of the NPR indicators relate to bulk activities and are not relevant to the SEQ retailers.

The Energy and Water Ombudsman Queensland

The Energy and Water Ombudsman (EWOQ) provides a free and independent dispute resolution service for residential and small business customers in SEQ. Disputes may relate to billing, credit, customer service, land, provision (connections) and supply (planned or unplanned interruptions). EWOQ cannot assist complaints relating to prices or policy related matters.

QCOSS (2012) stated that it is not sufficient to rely on customer complaints to EWOQ as an enforcement mechanism for customer service standards as its primary focus is as a dispute resolution body. EWOQ is not resourced or empowered to sanction retailers' performance or to undertake relevant audits. In addition, the public reporting that they undertake is limited and would not provide sufficient disaggregation of data to allow any weaknesses to be identified.

SEQ

There are a number of regulatory instruments relevant to service quality standards for SEQ retailers:

(a) Drinking Water Quality Management Plans (DWQMP) - the DWQMP specifies the parameters to be used for indicating compliance with the water quality criteria for drinking water. Mandatory parameters to be measured and reported under the Public Health Regulation 2005 include e.coli and fluoride (where added). Additional water quality requirements set by DEWS (2010b) in the Water Quality and Reporting Guideline for a Drinking Water Service are based on the health guideline values of the Australian Drinking Water Guidelines (ADWG)

(b) Water Netserv Plans - Water Netserv plans must state the desired standard of service for infrastructure used to provide services (in Part A), how the entity will meet these standards (in Part B), and measures proposed to minimise water losses caused by leakage from infrastructure and sewerage overflows (in Part B)

(c) Water and Sewerage Services Code for Small Customers in South East Queensland (the SEQ Customer Code) - Part B sets out customer service standards that need to be set by each retailer, such as unplanned interruptions, response times and flow rate. The retailers must publish and maintain service standards targets on their websites.

The DR Act lists examples of the desired standard of service as standards about water supply pressure and volume for particular areas; and rates of removal of sewage for particular areas. However, these are not framed as obligations – there are no mandatory service standards or performance indicators specified for inclusion in a Water Netserv Plan.

The SEQ Customer Code has requirements relating to the reliability of services which relate to the timeliness of appointments, supply restrictions, that service be restored after unplanned interruptions in accordance with an appropriate priority level, and at least 48 hours notice be given of planned interruptions. The retailers are accorded considerable flexibility in applying the obligations to their own circumstances.

The indicators, and targets, set out in each of the retailers' Customer Service Standards under the SEQ Customer Code are listed in Table 37 below.

Table 37 Retailers' customer service standards - indicators and targets

Indicator/Target	*Redland City Council*	*Logan City Council*	*Gold Coast City Council*	*Unitywater*	*QUU*
Water and sewerage reliability and service					
Average frequency of unplanned interruptions – water	≤ 2 (per 1,000 connections per annum)	< 150 (per 1,000 connections per annum)	< 100 (per 1,000 connections per annum)	< 10 (per 100kms per annum)	≤ 100 (per 1,000 connections per annum)
Average duration of unplanned interruptions – water (min)	restore 97% of interruptions within 5 hours	restore 95% of interruptions within 5 hours	restore 80% of interruptions within 5 hours	restore 90% of interruptions within 5 hours	restore 90% of interruptions within 5 hours
Response to urgent incidents	Respond to loss of water supply within 1 hour on mainland	no reference	no reference	< 1 hour in 90% of time	< 1 hour in urban areas/< 2 hours in rural areas
Response to non-urgent incidents	no reference	no reference	no reference	no reference	< 24 hours in urban areas/< 72 hours in rural areas
Break per 100 km of main - water	≤ 8 breaks per 100km of maim per annum	< 20 breaks per 100km of maim per annum	no reference	no reference	no reference
Infrastructure leakage index (water losses)	no reference	< 95 litres/connection/day	no reference	no reference	no reference
Notice of planned works involving interruption	at least 48 hours	no reference	at least 48 hours	at least 48 hours	at least 48 hours
Average duration of planned interruptions – water	no reference	5 hours	no reference	no reference	no reference
Average sewerage interruption	restore services within 5 hours	no reference	no reference	no reference	no reference
Sewerage main breaks and chokes	no reference	< 50 (per 1,000 km of mains)	no reference	no reference	no reference
Sewage overflows to customer property	≤ 2 overflow events for every 1000 properties per annum	< 5 overflow events for every 1000 properties per annum	< 5 overflow events for every 1000 properties per annum	no reference	no reference
Overflow events for each 100km of sewer and rising main	≤ 8	< 20	no reference	no reference	no reference
Sewage odour complaints (per 1000	≤ 0.85 complaints for every	< 3 complaints for every	< 3 complaints for every	no reference	no reference

Indicator/Target	*Redland City Council*	*Logan City Council*	*Gold Coast City Council*	*Unitywater*	*QUU*
customers)	1000 properties	1000 properties	1000 properties		
Minimum pressure	At least 98% of properties (when tested due to complaint) have pressure of ≥ 22 metres of static head	Pressure to be ≥ 22 metres of static head at the hydrant	Pressure to be ≥ 22 metres of static head immediately upstream of the water meter	Pressure to be between 210kPa (or 21 metres of static head) and 800kPa (or 80 metres of static head) at the boundary	Pressure to be ≥ 210kPa (or 21 metres of static head) at connection to property
Minimum flow rate	At least 98% of properties (when tested due to complaint) have flow rate of ≥ 30 litres a minute at the meter	no reference	no reference	Flow rate to be ≥ 23 litres a minute to meet household needs	Flow rate to be ≥ 25 litres a minute in urban areas
(1) Water Quality					
Water quality guidelines	no reference	> 98% of samples pass E.coli test Compliance with chemical standards at all zones	> 98% of samples pass E.coli test Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health and Medical Research Council's Australian Drinking Water Guidelines
Number of zones where microbiological compliance was achieved (e.g. 23/24)	no reference	> 98% of samples pass E.coli test Compliance with chemical standards at all zones within Logan City Council	> 98% of samples pass E.coli test Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health and Medical Research Council's Australian Drinking Water Guidelines
Number of zones where chemical compliance was achieved (e.g. 23/24)	no reference	> 98% of samples pass E.coli test Compliance with chemical standards at all zones	> 98% of samples pass E.coli test Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health and Medical Research Council's Australian Drinking Water Guidelines
Water quality complaints	≤ 4 complaints for every 1000 properties	< 5 complaints for every 1000 connections per annum	< 5 complaints for every 1000 connections per annum	no reference	≤ 8 complaints for every 1000 properties

Indicator/Target	*Redland City Council*	*Logan City Council*	*Gold Coast City Council*	*Unitywater*	*QUU*
(2) Customer Responsiveness and Service					
Percentage of calls answered by an operator	no reference	no reference	no reference	≥ 80% of calls answered within 30 seconds	≥ 80% of calls answered within 30 seconds
Complaints acknowledged within 10 days (water and sewerage)	no reference	no reference	100% of written enquires acknowledged within 10 business days	100% of written enquires acknowledged within 10 days	no reference
Installation of new service connection	within 15 days of receiving request	no reference	no reference	within 15 days of receiving application and payment	within 15 days of receiving application and payment, 95% of the time

Source: GCCC (2012), LCC (2012), RCC (2012), QUU (2012a) and Unitywater (2013)

Stakeholder submissions

Logan City Council (2013a) submitted that water businesses prepare performance reports to the NWC that are subject to quality auditing processes. This should be used as a base rather than using a different set of indices. Gold Coast City Council (2013) also submitted that use of the NPR framework should be considered to reduce the administrative and reporting burden.

Gold Coast City Council further submitted that a service quality performance framework should consider business characteristics including age and type of assets, geography and customer types.

QCA analysis

Within the categories stipulated in the Ministers' Direction, the QCA identified a range of indicators considered to meet the criteria of relevance, comparability, cost effectiveness and measurability.

In assessing the customer value criterion, QCOSS's commentary on the preferred service indicators and the indicators used in retailers' customer service standards were also taken into account. For comparability, QCA reviewed service quality indicators in the NPR and those adopted by other regulators and other agencies. The QCA also reviewed those indicators being proposed by DEWS (2014b). Cost effectiveness and measurability were considered indirectly through the choice of metrics and consistency with indicators used elsewhere.

Baseline (contextual) indicators

These indicators relate to contextual data such as the nature and numbers of customers, distribution and retail services provided, characteristics of water and sewerage infrastructure facilities (e.g. pipeline sizes and lengths, reservoirs, sewage treatment plants, etc.), and other relevant business characteristics.

Baseline indicators provide a basis for comparison between retailers, by identifying similarities and differences in their physical and operational characteristics. These comparisons should help establish the drivers of material differences in costs across SEQ that are not comparable, or controllable, by the retailers.

The NPR uses a number of baseline indicators, while the SQPR frameworks of ERA and ICRC also use some of these indicators.

In the regulatory framework position paper, the QCA selected eight baseline indicators relating to number of customers and types of assets that define the cost drivers and facilitate benchmarking comparisons. Seven of the indicators were sourced from the NPR (NWC 2013). An additional indicator to measure the number of properties served per wastewater treatment plant was recommended as this is an area of potential interest in terms of future cost savings.

In response to Gold Coast City Council's initial submission concerning business characteristics, the QCA considered that indicators for age and type of assets are difficult to specify. No other jurisdictions have used such baseline indicators. Geographic and customer type differences are reflected to some extent in the selected baseline indicators.

Performance indicators

Performance indicators were considered in terms of the criteria, the indicators used in other jurisdictions, indicators already specified in customer service standards (CSS) of the five retailers, QCOSS proposals and submissions.

Based on these submissions, the QCA compiled a list of potential indicators that met the objectives and criteria and can be used as a basis for initial service quality reporting.

The QCA's draft list of indicators, and justification, is detailed in Table 38 in the categories of:

(a) water and sewerage supply system reliability - 13 indicators were recommended, which represent activities within the control of the retailers, and reflect the effectiveness of their asset management strategies. It is noted that -

  (i) five indicators were from NPR and are widely used by other regulators

  (ii) a non-NPR indicator for pressure and flow rate was considered of value to customers and was suggested by QCOSS (2012). All the SEQ retailers include an indicator for pressure/flow rate in their CSS. An appropriate metric is required for flow-rate, and the ESC approach of flow-rate complaints per 100 customers would be relatively low-cost to collect and would be of value to customers. The proportion not meeting standards upon testing is an alternative metric

  (iii) response to urgent incidents was of value to customers and is used in the customer service standards of three of the retailers

  (iv) sewage outflows to a customer's property is another non-NPR indicator considered to be of interest to customers and required under SAMPs. It is a GSL indicator in Victorian retailers and Hunter Water

  (v) an indicator of odour complaints was also considered relevant and of value to customers. While not an NPR indicator, odour complaints have been adopted by IPART, ESC and ICRC. The three SEQ councils have used this indicator in their CSS

  (vi) frequency and duration of planned water interruptions was considered indicative of the retailer's management of the system. It is noted however, that customers may have a greater degree of tolerance for these compared to unplanned interruptions. The NPR does not include planned interruptions, although ESC, ICRC and OTTER incorporate such indicators, and similar indicators are required in SAMPs, expressed as a ratio to unplanned interruptions. QCOSS also supported indicators of planned interruptions

(b) water quality/public health - four indicators were sourced from the NPR framework. These are controllable by the retailers. Water quality was noted by QCOSS as being important. An indicator of water quality complaints is used by nearly all regulators, while ERA and IPART use some of the public health indicators

(c) water consumption and recycling activities - these were summarised in five indicators, sourced from NPR. These provide further contextual information - while the recycling water measures may be of limited interest to customers, they facilitate comparability and are required by the Ministers' Direction. Most of the selected indicators are used also by other regulators

(d) customer service and responsiveness - there were three specific indicators which are expected to be of interest to customers and measure the effectiveness of the retailer's customer interface and its response. The NPR indicators C13 and C14 are reported also by ESC, IPART and ERA. An additional non-NPR indicator to measure response to complaints aligns with indicators used by IPART, OTTER and ICRC

(e) environmental - four indicators were recommended, all from NPR. These are descriptive indicators, and define the potential environmental impact of the retailer. Indicators E1 to

E4 are reported by IPART, ESC and ERA, are a form of baseline indicator and therefore assist in comparability and benchmarking.

In total, there were 38 recommended service quality indicators, comprising 29 sourced from NPR and 9 additional indicators. For the most part, they reflected either the key cost drivers or the system reliability and customer service performance of the retailer (Table 38).

This was considered to be a reasonable number of indicators and was fewer than those used by other regulators. This was intended to ensure that the collection and reporting process was not onerous for the retailers, and that the benefit of reporting indicators justified the costs.

Of the nine non-NPR indicators, eight are already identified by some or all of the retailers in their CSS or were based on data collected for SAMPs. The additional indicator, properties served per wastewater treatment plant, is a baseline indicator readily derived from existing information.

There were no indicators in the set that are not used already either in the NPR, SAMPs, the retailers' SEQ Customer Code-driven CSS, or in at least one other jurisdiction. Retailers should therefore be familiar with the recommended indicators. The selected indicators were considered to be measurable and auditable, being broadly in line with NPR and those used by IPART and ESC which both audit their indicator sets.

The array of indicators was considered a starting point - following customer consultations, retailers may identify additional indicators, which may be added, or metrics modified. The metrics and definitions were proposed to align with NPR where relevant, and otherwise were to be clarified in conjunction with DEWS and the retailers prior to implementation. As in other jurisdictions, the selection of indicators and their definitions/metrics was considered an iterative process.

The proposed indicator set did not include any indicators for performance in managing hardship, pending DEWS' review of such indicators.

Table 38: Draft indicators of service quality performance reporting framework

Recommended indicator	*NPR Ref*	*Comment relating to criteria*
Baseline (Contextual information)		
Connected residential properties – water supply (000s)	C2	Connections drive costs, facilitates comparability. Reported by ERA and ICRC.
Connected non-residential properties – water supply (000s)	C3	Connections drive costs, facilitates comparability. Reported by ICRC.
Connected residential properties – sewerage (000s)	C6	Connections drive costs, facilitates comparability.
Connected non-residential properties – sewerage (000s)	C7	Connections drive costs, facilitates comparability.
Length of mains (km)	A2	Cost driver, facilitates comparability. Reported by ERA and ICRC.
Properties serviced per km of water main (no/km)	A3	Density explains differences in costs between rural and urban supply, facilitates comparability. Reported by ERA.

Recommended indicator	*NPR*	*Comment relating to criteria*
Properties served per km of sewer main (no/km)	A6	Density – explains differences in costs between rural and urban supply, facilitates comparability. Reported by ERA.
Properties served per wastewater treatment plant (no/plant)	-	This is not a NPR indicator but is another measure of density to complement the above related to sewer mains. It can be easily derived from existing information.
Water and sewerage reliability and service		
Average frequency of unplanned interruptions – water (no per 1000 properties or per 100 km of mains)	C17	Customers value uninterrupted supply. Already in CSS for all 5 retailers as constitutes a minimum condition of the SEQ Customer Code. This indicator applied where assets are owned and maintained by the water retailer.
Average duration of unplanned interruptions – water (min)	C15	Customers value uninterrupted supply. Already in CSS for all 5 retailers as constitutes a minimum condition of the SEQ Customer Code. This indicator applied where assets are owned and maintained by the water retailer.
Breaks per 100km of main - water	A8	Indicator of asset performance, of value to customers, facilitates comparability. Already in Redland and Logan City Council CSS. It is accepted that this indicator may catch breaks not caused by the actions of the retailer.
Response to urgent incidents (% within 1 hour)		Provides an indicator of asset management performance, of value to customers. A CSS of Redland City Council, QUU and Unitywater. A minimum condition of the SEQ Customer Code.
Infrastructure leakage index (water losses)	A9	Indicator of asset performance, facilitates comparability. Already a Logan City Council CSS. A standard approach to measuring leakage is required to facilitate comparison.
Average frequency of planned interruptions – water (no per 1000 properties)	-	Provides an indicator of a controllable variable, reflects reliability of infrastructure, and is of interest to customers. Related data collected for SAMPs.
Average duration of planned interruptions – water (min)	-	Provides an indicator of a controllable variable, reflects reliability of infrastructure, and is of interest to customers. Already a Logan City Council CSS.
Average notice of planned interruption (hours)	-	Provides an indicator of a controllable variable, reflects reliability of infrastructure, and is of interest to customers. Already a CSS for 4 SEQ retailers.
Pressure/Flow rate complaints (number per 1000 properties	-	Not a NPR indicator. Customers value minimum pressure and flow rate levels. ESC has adopted this indicator, and all 5 retailers include it in their CSS as constitutes a minimum condition of the SEQ Customer Code.
Average sewerage interruption (minutes)	C16	Customers value uninterrupted supply. Redland City Council CSS.
Sewerage main breaks and chokes (per 100km)	A14	Indicator of asset performance; facilitates comparability. Already a Logan City Council CSS.
Sewage overflows to customer property	-	This is not a national indicator but was required under SAMPs. It is considered of value to customers and is a cost driver. A GSL indicator in Victoria. A CSS of the 3 councils.
Sewerage odour complaints (per 1000 customers)	C11	NPR indicator refers to sewerage service complaints including odour complaints. Indicator is widely adopted by other jurisdictions, relevant for comparability. A CSS of the 3 councils.

Recommended indicator	*NPR*	*Comment relating to criteria*
Water Quality		
Water quality guidelines - Number of zones where compliance with ADWG was achieved, Text description	H1	Customers value technical water quality. A CSS of 4 SEQ retailers.
Number of zones where microbiological compliance was achieved	H2	Customers value technical water quality. A CSS of 4 SEQ retailers.
Number of zones where chemical compliance was achieved	H4	Customers value technical water quality. A CSS of 4 SEQ retailers.
Water quality complaints (no per 1000 properties)	C9	Customer complaints provides a useful check on technical compliance scores. A CSS of 4 SEQ retailers.
Water consumption, recycling and reuse		
Total water supplied (ML)	W11	Cost driver
Average annual residential water supplied (kl/property)	W12	Cost driver and allows for the calculation of an average bill.
Total sewage collected (ML)	W18	Cost driver
Total recycled water supplied (ML)	W26	Covers any use. Based on 'recycling' in Ministers' Direction – may be of interest of certain customers and drive certain costs for particular customers.
Recycled water (percent of effluent recycled)	W27	Covers any use. Based on 'recycling and reuse' in Direction – may be of interest of certain customers and drive certain costs for particular customers.
Customer responsiveness and service		
Total water and sewerage complaints (includes water quality, water service and sewerage service) (no per 1000 properties)	C13	Customer complaints provides an inverse indicator of customer satisfaction.
Percentage of calls answered by an operator within 30 seconds (%)	C14	Commonly adopted indicator for customer service, enables comparability. A CSS of QUU and Unitywater.
Complaints responded to within 10 days (% of C13) water and sewerage	-	An indication of effectiveness in addressing customer concerns. Of value to customers. Similar indicators adopted by ICRC, IPART and OTTER. A CSS of QUU, GCCC and Unitywater.
Installation of new service connection (days)	-	An indication of effectiveness in addressing customer concerns. Of value to customers. A CSS of QUU, Unitywater and Redland CC.
Environment		
Per cent of sewage treated to primary level	E1	Indicators of value to customers, and useful for comparison purposes. Indicators adopted by IPART, ERA and ESC, and is relevant cost driver.
Per cent of sewage treated to secondary level	E2	Indicators of value to customers, and useful for comparison purposes. Indicators adopted by IPART, ERA and ESC and is relevant cost driver.
Per cent of sewage treated	E3	Indicators of value to customers, and useful for comparison purposes.

Recommended indicator	*NPR*	*Comment relating to criteria*
to tertiary level		Indicators adopted by IPART, ERA and ESC and are relevant cost driver.
Per cent of sewage volume treated that was compliant	E4	Indicators of value to customers, and useful for comparison purposes. Indicators adopted by IPART, ERA and ESC.

Source: QCA 2013. NWC 2012.

7.3.2 Final report

DEWS KPIs

After the QCA's position paper was published, DEWS (2014b) advised that it had finalised its key performance indicators for Queensland urban water service providers.

DEWS (2014b) KPIs and definitions are set out in six series:

(a) general descriptive indicators (e.g. number of length of water and sewerage mains, maximum daily demand, volume of water sourced (in aggregate and from various sources) and connection numbers)

(b) water security (e.g. demand forecast for the next reporting year and over five years, capacity to meet demand and available contingency supplies)

(c) finance (e.g. operating and capital costs, revenues, asset replacement and depreciation)

(d) customer (e.g. water and sewerage charges, main breaks, incident response times and complaints)

(e) environment (e.g. nutrient/sediment load reduction activities in source and receiving waterway(s))

(f) other (e.g. financial ratios).

DEWS' indicators were developed as part of an annual reporting process to replace various plans, including SAMPs, system leakage management plans and drought management plans. The KPIs are designed to monitor and benchmark performance on common industry metrics including water security, capacity to ensure supply continuity, affordability, financial sustainability, industry and workforce capability and service quality to customers.

DEWS requires all service providers to begin collecting performance data against the KPIs from 1 July 2014, and to report on 2014-15 performance by 1 October 2015. Service providers can submit data using a DEWS template, or by using the Statewide Water Information Management (SWIM) data base (see below).

DEWS also requires that water service providers develop new customer service standards by 31 December 2014. However, this does not apply to the SEQ retailers, which have specific obligations within the SEQ Customer Code under the DR Act (being subject to review).

Submissions

Logan City Council (2014) and QUU (2014a) considered that the suite of performance indicators should largely be provided from the National Performance Reporting indicators. QUU does not agree to the use of non-NPR indicators. Logan City Council noted that additional indictors would result in additional costs incurred by the retailers in producing this information.

Qldwater (2014) noted that since work commenced on the position paper, SAMPs have been abolished and the NWC will no longer be administering the NPR. Qldwater was concerned that

the additional indicators being proposed were inappropriate or difficult to interpret while others are already reported in CSS, and that the QCA should not replicate an existing process.

QCOSS (2014) submitted that it was concerned that there are no indicators relating to the performance of the retailers with respect to their service offering for managing customers in financial difficulties.

QCOSS accepted that it may be problematic to come up with a service standard which captures the performance of a retailer around the provision of hardship policies given that there are many external variables which impact the incidence of financial hardship.

QCA analysis

The regulatory framework position paper identified a suite of indicators established to meet the requirements of the Ministers' Direction - that is, to develop a service quality performance reporting framework that is relevant and meaningful to customers, to inform them of the comparative performance of the retailers.

With the completion of DEWS KPIs (of which there are 65 including bulk supply and financial indicators) prepared in conjunction with stakeholders, the QCA recommends that only those KPIs relevant to the ascertaining whether market power is being exercised be assessed by the QCA.

In deriving its final set of indicators, the QCA also takes into account the key categories identified in the Ministers' Direction and the requirement that the framework should not be excessively onerous or costly to implement.

Response to submissions

In response to the finalisation of DEWS indicators and having regard to submissions from Logan City Council and QUU, the QCA has reduced the number of indicators against which service quality would be assessed. The recommended indicators are discussed in more detail below.

The removal of SAMPs from the Water Supply Act is also acknowledged. Equally, the removal of SAMPs is not, of itself, an argument that indicators reported through SAMPs are no longer relevant. The *Water Supply Services Legislation Amendment Bill 2014 Explanatory Notes* expand on this argument. The Notes state that the new performance reporting framework does not preclude providers from undertaking their own management planning and performance monitoring can be used to effectively focus planning and improvements. Further, that certain indicators were required for SAMPs means that retailers should have the ability to collect and report on these indicators.

In response to qldwater, the QCA was required by Direction to develop service quality performance reporting. And as noted in Chapter 3, service quality is a relevant input to the trigger for a cost of service review. The definitions and metrics associated with the recommended indicators are those adopted by the NPR, DEWS or the SEQ Customer Code.

Recommended indicators

For the final report, the QCA focused on DEWS KPIs, NPR indicators and performance indicators noted in the SEQ Customer Code. While the NWC will cease to operate on 31 December 2014, a decision about whether the NPR activities will be transferred to another agency remains outstanding.

Baseline indicators

For the QCA's purposes, baseline indicators are characteristics of an entity which drive fixed and variable costs, and are also relevant in any comparative analysis of performance between different sized retailers.

Those considered necessary relate to the number of residential and non-residential water and sewerage connections, length of water and sewerage mains, and number of treatment plants (Table 39).

Compared to the draft baseline indicators, the changes are:

(a) inclusion of an indicator for length of sewerage mains (km). This is a key indicator of service costs

(b) inclusion of an indicator for the number of sewage treatment plants. This can be used to facilitate comparisons between retailers

(c) deletion of indicators for properties served per km of water main; properties served per km of sewerage main; and properties served per wastewater treatment plant. These can all be derived from other baseline data.

For the final report, the QCA therefore recommends seven baseline indicators (compared to eight previously) all of which are also reported in DEWS KPIs and in the SWIM database.

The definitions of the chosen baseline indicators are as proposed by DEWS (2014b).

Water and sewerage network reliability and service (including water) quality

The water and sewerage reliability indicators are essential to provide an indication of the retailer's operational performance in providing continuous water supply and sewerage services to customers. Deteriorating performance in these indicators may suggest an exercise of market power. For example, a slow response to outages may be due to cost-cutting that is not reflected in prices or in customer preferences.

For the final report, the QCA recommends seven key indicators which provide a measure of the diligence and effectiveness of the retailer's asset management performance:

(a) incidence of unplanned water interruptions

(b) duration of unplanned water interruptions

(c) total water main breaks

(d) response time to water main breaks

(e) sewerage main breaks and chokes

(f) response time to sewerage incidents

(g) water quality complaints.

Compared to the draft list of reliability indicators in the position paper the following indicators are removed:

(a) incidence, duration and notice of planned interruptions. These were not NPR indicators and have also not been proposed as DEWS KPIs. There is a concern that such KPIs may provide a perverse incentive to defer necessary planned interruptions in the short term leading to increased unplanned interruptions in the long term

(b) sewage overflows to customer property. Service quality in sewerage services is considered adequately covered through recording sewage breaks and complaints

(c) response to urgent incidents. This indicator should be appropriately measured by duration of unplanned interruptions

(d) number of zones where water quality guidelines are met, microbiological compliance was achieved, and zones where chemical compliance was achieved. Performance in water quality is adequately covered through the customer-driven complaints indicator. DEWS also relies on the complaints indicator.

Other changes are:

(a) removal of separate indicators for water pressure/flow rate complaints and sewerage odour complaints. Instead, the QCA recommends a combined water and sewerage complaints indicator, as proposed by DEWS, and consistent with NPR. The broader indicator provides sufficient information for QCA's purposes. This indicator is listed under the customer service category

(b) an alternative measure for the leakage index. The leakage index has been problematic in practice. Instead, the QCA proposes to adopt the DEWS KPI indicator for volume of non-revenue water, simply measured as the difference between volume of potable water delivered to each retailer less volumes delivered to their customers. This new indicator is noted below in the category relating to water consumption

(c) inclusion of a new indicator for response to unplanned sewerage breaks in minutes taken to commence repair. This is a DEWS KPI.

As a result of these changes, the number of indicators in the category relating to network reliability and service is reduced from 17 to seven (Table 39). Only one of the indicators (average duration of unplanned interruptions) is not included in DEWS KPIs, but is required by the NPR and is listed in the SEQ Customer Code.

Water consumption, recycling and reuse

Water consumption related indicators are necessary to provide additional data on water service delivery. These indicators provide measures of key variable cost drivers, are indicative of demand changes and may be used to estimate total revenues and average bills. They also facilitate comparisons of performance between retailers and over time. The recommended indicators are:

(a) volume of residential water supplied

(b) volume of non-residential water supplied

(c) volume of non-revenue water (an indicator of unaccounted for water). As noted above, this indicator replaces the infrastructure leakage index recommended in the position paper, being more easily and reliably measured. It is also an indicator of asset management performance - any deterioration in unaccounted for volumes may indicate poor performance

(d) volume of recycled water. This is required under the Direction.

Compared to the QCA's regulatory framework position paper, the changes are:

(a) removal of indicator for total water supplied. Instead, volumes are separated between residential and non-residential. The total can be derived by combining these totals

(b) removal of indicators for total sewage collected and percentage recycled. An indicator is included for volumes recycled as in the DEWS KPIs.

With these changes, the number of indicators reduces from five in the regulatory framework position paper to four, all of which are also DEWS KPIs.

Customer responsiveness and service

These indicators are required to provide an indication of the effectiveness of the retailer's responses to customers and complement network reliability and service indicators: and are:

(a) total water and sewerage complaints

(b) percentage of calls answered within 30 seconds. Although this is not a DEWS KPI, it remains an NPR indicator and is reported by many of the retailers.

Compared to the regulatory framework position paper, the changes are:

(a) removal of the indicator for time taken to install new connections. This was considered of interest to a limited number of customers only. At QCA workshops, participants commented this indicator was also difficult to define and record

(b) deletion of the indicator for percentage of complaints responded to within 10 days, as performance was considered adequately covered in the above network reliability indicators.

While this leaves only two indicators for customer responsiveness and service, it is noted that network reliability indicators are also relevant to customer service generally.

Environmental indicators

It is also proposed to remove the four NPR environmental indicators, which relate to different levels of sewage treatment. Preceding indicators provide sufficient information on the management of sewerage services and the level of recycling relevant to monitoring under the Ministers' Direction. Monitoring performance in these areas is the responsibility of technical regulators.

Hardship indicators

The NPR includes indicators for the number of customers to which restrictions applied for non-payment of a bill (indicator C18) and an indicator for number of customers to which legal action applied for non-payment of a bill (indicator C19). In other jurisdictions, indicators used include number of customers on hardship grants, number of customers on flexible payment plans, or debt levels of amounts owing.

DEWS (2014b) has not included any indicators for hardship arrangements in its KPIs.

In general, indicators of hardship are likely to be a function of external factors, such as socio-economic conditions, rather than reflective of market power being exercised by the retailer. In addition, the various ways of measuring hardship management depends on the varying hardship policies of the retailers. Therefore, no hardship indicators are included.

Conclusions

The QCA has reduced the number of indicators from 38 to 20. The indicators are focused on providing the necessary detail to determine whether a retailer is exercising market power to cut costs by reducing network reliability, customer responsiveness and service. Changes in the indicators provide a means for validating many of the changes in costs and prices over time.

Combinations of the baseline indicators and other submitted information would also provide guidance on performance, for example, average bills, average revenues, volumes of demand per customer.

All nominated indicators are already required to be reported by the retailers under other obligations (NPR or DEWS (Table 39)). This ensures that the collection and reporting process is not onerous for the retailers, and that the costs of the process are minimised.

The definitions of indicators are also in common with other reporting, as follows:

(a) for the 18 DEWS indicators, the definitions and metrics are as per the DEWS KPIs (DEWS 2014b)

(b) for the additional NPR indicators which are not in the DEWS KPIs (C14, C15), the definitions and metrics are as per the NPR definitions (NWC 2013).

Broad definitions are provided in Table 39, and will be reproduced in detail in the QCA's proposed guidance paper.

Table 39 Indicators of service quality performance reporting framework

Recommended indicator	*DEWS KPI*	*NPR Ref*	*Comment relating to criteria*
Baseline (Contextual information) (7 indicators)			
Connected residential properties – water supply (000s)	QG1.13	C2	Connections drive fixed costs. The indicator also facilitates comparisons between retailers and over time. Reported by ERA and ICRC.
Connected non-residential properties – water supply (000s)	QG1.14	C3	Connections drive fixed costs. The indicator also facilitates comparisons between retailers and over time. Reported by ICRC.
Connected residential properties – sewerage (000s)	QG1.15	C6	Connections drive fixed costs. The indicator also facilitates comparisons between retailers and over time.
Connected non-residential properties – sewerage (000s)	QG1.16	C7	Connections drive fixed costs. The indicator also facilitates comparisons between retailers and over time.
Length of water mains (km)	QG1.1	A2	A driver of fixed and variable costs. Indicator also facilitates comparisons between retailers and over time. Reported by ERA and ICRC.
Length of sewerage mains (km)	QG1.2	A5	A driver of fixed and variable costs. Indicator also facilitates comparisons between retailers and over time.
Number of wastewater treatment plants	QG1.3	A4	A cost driver indicator to complement the above related to sewer mains.
Water and sewerage reliability and service (6 indicators)			
Incidence of unplanned interruptions – water (no per 1000 properties)	QG4.7	C17	Customers value uninterrupted supply. An indicator of the effectiveness of asset management practices. Already in CSS for all 5 retailers as constitutes a minimum condition of the SEQ Customer Code. This indicator applied where assets are owned and maintained by the water retailer. Applies where 24 hours notice is not received.
Average duration of unplanned interruptions – water (min)		C15	Customers value uninterrupted supply. An indicator of the effectiveness of asset management practices. Already in CSS for all 5 retailers as constitutes a minimum condition of the SEQ Customer Code. This indicator applied where assets are owned and maintained by the water retailer.
Total water main breaks Breaks per 100km of main -	QG4.5	A8	Indicator of asset performance, of value to customers, facilitates comparability. An indicator of the effectiveness of asset management practices. Already in Redland and Logan City Council

Recommended indicator	*DEWS*	*NPR*	*Comment relating to criteria*
water			CSS. It is accepted that this indicator may catch breaks caused by the actions of third parties.
Average response time to water service bursts and leaks (Minutes to commence repair on site)	QG4.8		Provides an indicator of asset management performance, service continuity and customer service. A similar indicator is a CSS of Redland City Council, QUU and Unitywater. A minimum condition of the SEQ Customer Code.
Sewerage main breaks and chokes (per 100km of main)	QG4.6	A14	Indicator of asset performance and facilitates comparability. Already a Logan City Council CSS.
Average response time to sewerage incidents (Minutes to commence repair)	QG4.9		Provides an indicator of asset management performance, service continuity and customer service.
Water quality (1 indicator)			
Water quality complaints (no per 1000 properties) (discolouration, odour, taste, illness, cloudy water)	QG4.10	C9	Customer complaints provides a useful check on technical compliance scores - a CSS of four SEQ retailers. It excludes complaints relating to interruptions, restrictions, billing and water pressure.
Water consumption, recycling and reuse (4 indicators)			
Volume of water supplied, residential (ML)	QG1.17	W8	Cost driver and baseline indicator. This indicator provides relevant data for assessing customer demand, changes in demand over time, average bill analysis.
Volume of water supplied, non-residential (commercial, municipal and industrial) (ML)	QG1.18	W9	Cost driver and baseline indicator. This indicator provides relevant data for assessing customer demand, changes in demand over time, average bill analysis.
Volume of non-revenue water (ML)	QG1.19	W10	Indicator of asset performance. Facilitates comparability between retailers and over time. A measure of unaccounted for water including leakages. Comparisons should take account of asset differences between retailers (age, type of assets etc).
Volume of water sourced from recycling (ML)	QG1.11	W4	Volume of recycled water, where it replaces potable use, excludes stormwater reuse. Covers any use. Based on 'recycling' in Ministers' Direction – may be of interest of certain customers and drive certain costs for particular customers. It can also be of relevance to environmental performance.
Customer responsiveness and service (2 indicators)			
Total water and sewerage complaints (includes water quality, water service and sewerage service) (no per 1000 properties)	QG4.11	C13	Customer complaints provides an inverse indicator of customer satisfaction. This includes complaints relating to bursts, leaks, service interruptions, water pressure, water quality, sewerage service, sewage odours, billing, and staff behaviour. It excludes government policy or tariff structure complaints.
Percentage of calls answered by an operator within 30 seconds (%)		C14	Commonly adopted indicator for the effectiveness and promptness of customer service, enables comparability. A CSS of QUU and Unitywater.

Source: QCA 2014. DEWS 2014b, NWC 2013.

Recommendation

7.2 Twenty service quality indicators identified in Table 39 be monitored annually.

7.3.3 Composite indicators

The array of separate indicators provides transparency and enables stakeholders to assess whether the retailer has exceeded or fallen short of the benchmark for each indicator. However, it is often difficult to establish the appropriateness of trade-offs in changes (particularly between service quality and costs).

A weighting of the indicators to give sub-indices or a single service quality performance index has the advantage of simpler presentation and high-level analysis of quality and cost. Over time this would provide a picture of changes in service quality and cost (price). Retailers could report, for example, a single score for customer service and a single score for system reliability.

Issues, however, arise in developing the weights, compiling the data where different metrics apply and providing an interpretation for customers. Unless there is a benchmark target level understood by customers, indexes may have limited practicality.

Other jurisdictions

ESC (2012) proposed survey-based customer scores to measure customer loyalty (the net promoter score or NPS) and customer effort to initiate and resolve a service request (customer effort score or CES). However, these have not yet been applied.

Ofwat (2012) uses serviceability indicators which are derived based on a composite of customer service, public health, environment and asset performance. Each company makes a judgement and assesses its status as either improving, stable, marginal or deteriorating.

Ofwat (2012) also has a service incentive mechanism (SIM) based on two customer experience measures - a quantitative measure based on number of complaints, abandoned calls and unwanted phone contacts; and a qualitative component based on a survey of 200 customers each year. This gives a score out of 100, taken over a three-year period. The score is used to determine price limits in the following year, with a range of +0.5% to -1.0%.

QCA analysis

For the SEQ retailers, sub-indices for key areas of service quality could be developed, to progress towards, for example, composite indexes for assessing comparative performance, particularly over time, for network reliability and customer service.

The weights used in forming the indexes should reflect relative customer valuation of the various attributes. Weights could be proposed by retailers as part of customer engagement and this work progressed prior to implementation of the monitoring regime. It is possible these weights would vary across SEQ retailers.

The QCA does not propose to develop such composite indicators at this stage. The retailers may consider such indicators on an individual basis.

7.4 Reporting procedures

7.4.1 Reporting and auditing

Position paper

National commitments and positions

National performance reporting (NPR) is not mandatory for all water service providers. The NWC expected water utilities with more than 10,000 connected properties to participate.

The National Performance Framework 2011-12 Auditing Requirements and Audit Report Template set out the requirements which a water utility had to meet in order to report its results in the National Performance Report (NWC 2011).

In particular, parties are required to undertake a comprehensive audit of the data collected by each urban water utility at a minimum of three yearly intervals.

Other jurisdictions

In other jurisdictions – NSW, Victoria, WA, Tasmania – the economic regulator collates and audits information returns and prepares annual water industry performance reports. In NSW, the Office of Water also publishes annual performance monitoring and benchmarking reports for non-metropolitan water and sewerage service providers that are not subject to review or oversight by IPART.

Existing arrangements in SEQ

Only QUU and Unitywater reported as part of the NPR in 2010-11 and 2011-12. DEWS, in, progressing state-wide reforms to replace various planning processes with annual performance reporting, propose that retailers with more than 10,000 connections will be required to report annually on NPR and additional KPIs. For smaller providers, DEWS has proposed a subset of indicators drawn from the NPR as well as additional indicators.

The SEQ Customer Code requires retailers to publish and maintain CSS on their website. There is no requirement for retailers to report performance against their service standards. The SEQ Customer Code is subject to review by DEWS.

Qldwater co-ordinates the SWIM program to facilitate the reporting of about 200 water and sewerage services indicators which are passed to Commonwealth and State agencies. NPR reporting entities are to submit their data to SWIM by 30 September each year.

QCA analysis

The Ministers' Direction requires a SQPR framework designed to inform customers. The recommended indicators were targeted for this purpose, and in concert with performance monitoring reporting, provide scope to analyse costs, prices and service levels which are considered interdependent. Cost related indicators are covered in Chapter 4.

It is noted that the retailers are to be required to report on service quality to various agencies, including DEWS. Any requirement for a further report to QCA would add to administration costs and the level of red tape. It was therefore proposed that DEWS, through SWIM, act as the collection agency and that the indicators, reported annually, be provided to the QCA through these agencies. The exact process for this would be determined in the implementation phase.

Although the indicators are auditable, the QCA did not propose a scheduled auditing process. In a light-handed framework, complex auditing would add to administration costs and the benefits

may not justify such costs. It was expected that DEWS may perform such a role as technical regulator.

However, the QCA may request explanatory information regarding selected performance indicators relevant to the exercise of monopoly power, and may request additional information from retailers where parameters are linked to cost drivers. These include baseline indicators, water and sewerage reliability and service, and water quality indicators.

The QCA recommended that the SEQ retailers place their service quality performance reports on their respective websites to allow comparison with target performance levels.

The QCA recommended that the retailers' performance against the service quality indicators be subject to comparative analysis over time and reported annually to the Minister for Energy and Water Supply. Data envelopment analysis (DEA) or other forms of efficiency frontier assessment may be used to assist.

Final report

Qldwater considered it inappropriate that a separate reporting process is established for these indicators. DEWS has a mandatory reporting process.

The QCA proposes to obtain the service quality indicators from the retailers' websites. The Water Supply Act requires service providers to complete reporting of their performance against the KPIs on or before 1 October each year and publish their performance against the KPIs as soon as practical thereafter. If not published in time, the QCA would request this information from the retailers.

Submissions and responses to the QCA's regulatory framework position paper are summarised below.

Table 40 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Reporting Draft recommendation 7.3: "Retailers be required to publish annually on their websites their performance against the identified 38 service quality indicators".	GCCC (2014a) supported the use of the SWIM data repository for both DEWS and QCA indicators as consolidation of reporting requirements (i.e. both QCA and DEWS indicators submitted via SWIM database) would reduce administrative and reporting burden on retailers.	The QCA proposes to obtain the relevant data from DEWS submitted via SWIM, if available.
Additional information Draft recommendation 7.4: "The QCA request additional information for service quality indicators where necessary to identify whether there is an exercise of market power."	QUU (2014a) agreed that QCA should request further information if necessary. However, QCA should be cognisant of the intent of light handed framework, which is to minimise the regulatory burden and cost.	QCA would take account of the administration costs when considering such issues.
Comparative analysis Draft recommendation 7.5: "The entities' performance against the service quality indicators be subject to comparative analysis by the	QUU sought clarity as to how the information on service standard performance would be used. QUU suggested QCA should track retailers' performance over time rather than compare between the retailers.	The QCA's proposed approach would track performance over time and compare performance to customer service targets where appropriate. It would also incorporate comparisons between retailers, recognising that customers may make such

Issue	*Comment*	*QCA response*
QCA."		comparisons. The QCA would take account of differences in circumstances.

As also noted above, the QCA does not propose a scheduled auditing process. In a light-handed framework, complex auditing would add to administration costs and the benefits may not justify such costs. Instead, the QCA would rely on DEWS processes which would cover most relevant indicators. DEWS requires service providers to periodically engage a third party to audit the accuracy of data provided and submit this to the Queensland Water Supply Regulator.

Recommendations

7.3 The QCA obtain the service quality indicators from retailers' websites. If not available by the due date for submissions, the QCA obtain the information directly from the retailers.

7.4.2 Timing

Position paper

Performance indicators provide only a historical view of how a water service provider has performed. By using only performance monitoring, the first sign of any issues is likely to be when the standard deteriorates or there is a failure to meet target levels. There are few lead KPIs that can be used to forecast future performance or that can be used to gain an insight into how a water service provider is being run and its technical capability to continue to provide its services into the future.

The information from SWIM is entered into the SWIM database in early September, reviewed by DEWS and typically finalised by end October. This is consistent with the QCA's recommended reporting date of 31 October and would allow the QCA to complete its analysis and reporting by 31 March the following year in order for retailers to address any implications for their costs for the forthcoming year.

NPR information is not available till March-April the year following the reporting year (for example, March 2013 for the 2011-12 reporting year). This is too late for it to be useful for retailers to analyse and incorporate in budget processes for the next financial year. Any differences in performance reporting could be addressed in conjunction with the retailers as required. Although it may be possible to also incorporate any responses, that should be at the retailers' discretion.

Final report

QUU (2014a) agreed above that QCA publish indicators annually.

7.5 Performance assessment and enforcement

Public disclosure and transparency may be insufficient to modify unacceptable behaviour. More rigorous sanctions depend on the overall legislative and regulatory framework and could include sanctions, fines, and requirements to address failures.

7.5.1 Position paper

Other jurisdictions

IPART (2013b) employs a water licence compliance policy to enforce licence conditions including service quality standards. IPART may respond to contraventions by requiring more frequent compliance reports and audits, an undertaking from the operator or development and implementation of a remediation plan. A fine may apply where a licensee has knowingly contravened conditions.

In Victoria, many of the service quality indicators (e.g. connections, system reliability, service quality, billing), are identified in the Customer Service Code for Urban Water Businesses (ESC 2013c). The ESC monitors and audits reports and can enforce compliance with the code.

ERA (2014) informs the Minister on any non-compliance, with breaches classed as minor, moderate and major.

In Tasmania, OTTER (2014) publishes an annual State of the Industry Report, which includes pricing and financial indicators, and identifies priorities for improving performance. Public reporting is used as an incentive for the industry to maintain and improve performance.

GSL schemes

Guaranteed Service Level (GSL) schemes are in place in some jurisdictions, including for Hunter Water (planned and unplanned water interruptions, water quality and pressure incidents, and wastewater overflow) and the Victorian metropolitan retailers (unplanned and planned water and sewerage interruptions and sewerage spills on property).

ESC (2011c) noted that the cost of implementing a GSL scheme is small relative to other service improvement projects. In Victoria, a typical rebate for unplanned interruptions not restored within five hours is $50, and a rebate for a sewage spill to property is $1000.

Ofwat (2012) uses a combined indicator to penalise providers by adjusting their price limits in ensuing years (as noted above in reference to 'composite indicators').

QCA analysis

Public reporting by an independent economic regulator, in concert with price, revenue and cost monitoring, provides a level of transparency about performance that can provide a basis for stakeholders to exert pressure for change where this is warranted.

Reporting could be complemented by media releases from the regulator in regard to identified compliance failures.

Publication of comparative service quality performance indicators helps address information asymmetry by making consumers more aware of how other distributors are performing relative to their own. This can place pressure on the local provider to improve its performance.

Other complementary mechanisms for compliance and enforcement of service standards could include QCA media releases, advising Ministers of material breaches, payment of fines for breaching regulatory obligations (ESCOSA 2013c).

Overall performance monitoring and the constituent SQPR must be complemented by the prospect of detailed cost of service review, and a focus on other inputs and processes as outlined in Chapter 4.

Depending upon the nature of the reports, a cost of service review could be triggered where material failures or differences between changes in cost, price and/or service standards

occurred, where materiality reflects a variation of 10% or more from that forecast or budgeted. Moreover, the QCA proposes 'watch' and 'all clear' ratings where the differences or changes were deemed concerning (but not material), not concerning or free of any concerns.

Before triggering a cost of service review, retailers would have the opportunity to provide more information to explain a service quality deterioration. For example, the lower standards may be temporary due to climatic impacts or unforeseen one-off system failures. QCA would consult with the retailers in regard to such circumstances.

Further, the QCA would liaise with DEWS, as the technical regulator, in regard to service quality changes.

GSL Schemes

GSL schemes that are in place in some NSW, Victorian and Tasmanian water retailers are established voluntarily by the relevant retailers. They apply typically to a small number of high value indicators of importance to customers: for example duration of unplanned water supply interruptions and sewage overflows to property.

QCOSS (2012) commented that a GSL scheme should be applied in Queensland. Such schemes involve additional costs in terms of administration which need to be taken into account, but the benefits in terms of incentives for efficiencies should offset these costs.

SEQ retailers may consider implementing GSL schemes from 2015. Retailers should consult with customers to identify the indicators that are easily definable and reliable. Rebates should be a meaningful amount to provide an incentive to improve services.

7.5.2 Final report

Relevant submissions in response to the regulatory framework position paper and QCA's responses are detailed below.

Table 41 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Performance assessment Draft recommendation 7.7: "Service quality performance: (a) be addressed in public annual performance reports by the QCA (including attendant media statements) (b) be subject to specific advices by the QCA to the Minister (c) material deterioration in performance trigger a full cost of service review."	QUU (2014a) agreed with the QCA's approach for assessing service quality. However, it requested further consultation on the proposed content of QCA's annual performance reports.	The QCA proposes to develop a draft report format in consultation with retailers prior to the release of its first annual performance monitoring report.
	QUU sought clarification as to the definition of material deterioration in service standard performance, and whether QCA would establish a downward trend.	A material deterioration occurs when there is systemic reduction in performance over time in measures of service quality, or where service quality changes are not commensurate with changes in costs.
	QUU considered that a significant decline in service standards should not automatically lead to a cost of service review. QUU submitted that it should trigger a request for further information to explain why performance has declined, and what actions the retailers have undertaken to address these issues.	Before triggering a cost of service review, QCA would seek advice from the retailer on any explanations for declines in service quality to determine whether the changes are one-off events or indicative of wider systematic issues. Retailers may also have sought customer support for changes in service quality. The QCA would also consider the

Issue	*Comment*	*QCA response*
		compare the materiality of changes in service quality against the cost of a review.
Guaranteed Service Level (GSL) Draft recommendation 7.8: "Entities should consult with customers to determine scope for a Guaranteed Service Level (GSL) scheme for high value indicators."	QUU stated that until a common regulatory environment across Queensland can be achieved, GSLs should not be considered. Further, QUU considered that a cost benefit analysis of implementing such a scheme would need to be undertaken.	The QCA recommends the use of GSL schemes on a voluntary basis. This is the case in other jurisdictions. Retailers should consult with customers before implementing any GSL scheme.

The QCA's final recommendations are provided below.

Recommendations

7.4 Service quality performance trigger a cost of service review where there is a material deterioration in performance or where service quality changes are not commensurate with changes in costs.

7.5 Retailers consult with customers before implementation of a guaranteed service level (GSL) scheme for high value indicators.

8 INFORMATION REQUIREMENTS

8.1 Introduction

The QCA's information requirements for all elements of the framework were discussed in the QCA's technical paper – SEQ Long-term framework – annual performance monitoring - implementation issues (technical paper) (QCA 2014f).

Under the Ministers' Direction, a primary focus of the long-term framework should be on assisting customer understanding of how the costs of water and sewerage services influence prices by identifying the key drivers of existing retail price levels and annual price increases, particularly where prices increase by more than the rate of inflation.

8.1.1 Technical paper

To implement the QCA's recommended regulatory framework it was proposed that the level of information provided by retailers would increase according to whether prices exceed CPI-X (chapter 4).

This approach is designed to minimise the cost of regulation. Essentially, it was recommended that the information sought and provided to the QCA reflects that necessary to ascertain whether market power is being exercised.

The drivers of existing retail price levels have been the subject of preceding price monitoring. However, where price increases exceed CPI-X increased information requirements and reporting of that cost data (together with effective customer engagement) should assist customers understand the key drivers of annual price increases. In the recommended annual performance monitoring framework, four information levels are discernible.

Information templates

In our regulatory framework position paper the QCA (2014e) indicated that we would work with the water retailers to prepare a more detailed information template by 31 May 2014. Such templates were previously requested by the water retailers and developed for price monitoring from 2010-15.

However, recent experience and discussions with water retailers indicated that detailed templates are now not of assistance, as retailers are pursuing different approaches for financial reporting information. Requiring a particular format to be applied uniformly by all water retailers specifically for regulatory purposes alone would impose unnecessary costs particularly when, after four previous reviews, water retailers are familiar with the nature and detail of information required for regulatory purposes.

Instead outlined below are indicative lists of the nature of the information required to be submitted.

8.1.2 Final report

QUU (2014b) suggested the QCA develop recommendations arising from the information requirements in the technical paper. QUU reiterated the need for a guidance paper that outlines the rules of the framework.

The QCA proposes to prepare a guidance paper should the Minister accept the recommendations.

8.2 Overview of information requirements

8.2.1 Technical paper

Four scenarios requiring increasing levels of information for the purposes of price monitoring from retailers are identifiable. These are as outlined below. A final scenario occurs where a cost review including prudency and efficiency of proposed expenditure is considered necessary.

Water retailers must therefore self-assess that the appropriate level of information is submitted in support of their pricing decisions. Should the appropriate level of information not be provided by the due date for submissions, QCA would issue a public request for further information.

Table 42 Information requirements and assessment process

Level	*If, in the retailer's self-assessment:*	*retailers submit...*	*the QCA then...*
1	Changes in prices and components of prices are </= CPI-X	Prices and tariff schedules, details relevant to customer engagement and strategic investment, service quality indicators	Compares price and price component changes to CPI-X. Reviews and assesses non-price criteria.
2	Changes in some components of prices > CPI-X but average prices remain </= CPI-X	In addition to above, revenue data for water and sewerage, residential and non-residential	Derive average prices and compare to CPI-X.
3	Changes in prices exceed CPI-X due to increases in a limited number of cost items	Details of reasons (including relevant costs) for the increase and the MAR equivalent	Reviews additional cost information and assesses whether price increases are consistent with cost increases. QCA compares submitted MAR details to its Reference MAR.
4	Changes in prices exceed CPI-X due to increases in a wide range of costs	Details of reasons (including relevant costs) for the increase and the MAR equivalent	Reviews additional cost information and assesses whether price increases are consistent with cost increases. QCA compares submitted MAR details to its Reference MAR.

Further information may also be requested by the QCA if considered necessary to its assessment.

Water retailers should be able to establish whether they need to provide further information before any such request is received from the QCA. The request for information would depend on the nature of the identified issues.

A cost of service review, including a review of demand forecasts, the prudency and efficiency of operating and capital expenditure would be triggered if there is a concern that market power is being exercised (QCA 2014e).

As noted in the position paper (QCA 2014e), where details of service quality indicate changes, breaches of standards set by technical regulators would be referred to the relevant regulator.

Also, where service quality standards are significantly higher than the minimum set by a regulator or changed evidence that the difference is supported by customers would be required when considering whether to trigger a more complete review.

8.2.2 Final report

Submissions in response to the QCA's (2014f) technical paper and the QCA responses are detailed below.

Table 43 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Trigger scenarios	QUU (2014b) sought clarification from the QCA to explain how the table with trigger scenarios from the QCA's Position Paper (Table 9 in QCA 2014e, Table 20 in chapter 3 above) aligns with the above table from the technical paper.	Table 42 outlines the information requirements associated with increasing concerns related to the retailers' performance. It is therefore not a replacement for Table 20 which outlines the scenarios which might trigger a cost of service review.
Technical Service Standards QCA comment: 'where details of service quality indicate changes, breaches of standards set by technical regulators will be referred to the relevant regulator'	QUU agreed that breaches of standards set by technical regulators should be referred to the relevant regulator, but noted that in accordance with its legal obligations, QUU has always, and will continue to refer all breaches of service standards to the relevant regulator, as stipulated by legislation.	In relation to breaches of service standards, the QCA considers it is obliged to report such breaches where identified as part of its monitoring role. Retailers have the primary role to directly report these to the technical regulator.
Level 1 and 2 information requirements	QUU (2014b) submitted that it could not distinguish between level 1 and level 2 information requirements. The imposition of the CPI-X constraint on each tariff class (level 1) and its individual component parts does not have a sound economic basis. QUU was not aware of any price capping arrangement operating in Australia that applies a CPI-X mechanism to individual tariff components. QUU considered that it would be more meaningful for the QCA to consider average water and sewerage, residential and non-residential, retail tariff changes as proposed for level 2.	Level 1 provides the opportunity for the assessment to be simplified where tariff components rise uniformly. It is not a constraint. The QCA approach does not apply price capping to individual components - rather the approach monitors the price components in the first instance. In other jurisdictions, regulators set or approve individual tariff components. Where the tariff structure changes, the average water and sewerage tariffs would be considered, and retailers would need to submit information relevant to level 2.
Information required	QUU and Unitywater (2014b) were concerned with the level of information the QCA is requiring DRs to submit even when there is no breach of the CPI-X threshold. QUU was also concerned that under level 1, the QCA is requesting examples of how internal business planning and	Other information is required to to maintain the transparency of the outcomes and processes adopted by retailers. Such transparency is essential to ensure that conformance with CPI-X does not come at the expense of service quality. Further, reporting on such matters at level 1 is considered necessary to promote

Issue	*Comment*	*QCA response*
	operational processes are being implemented. QUU was of the view that under level 1, DRs should only provide governance and process documentation; however where a significant breach of CPI-X has occurred and further investigation is required, then further documentation (i.e. examples) can be provided to show how the DR has applied the processes.	stakeholder engagement and to provide incentives for improved performance. The QCA has endeavoured to minimise the burden by requiring information that should be readily available from within the retailers. The requirements reflect the elements of the framework required under the Ministers' Direction.
Information requirements - level 3 and level 4	QUU did not understand the nature of the threshold between the level 3 and 4 scenarios. QUU considered that the number of cost items that change from one year to the next is not an appropriate metric to consider whether a business should trigger a more stringent level of information burden.	Level 3 provides the opportunity for the retailer to limit the data submitted to those items that can be identified as drivers of price increases. Where price increases are due to numerous cost impacts, level 4 information would be required.
Information requirements - level 4	QUU submitted that the information requirements under level 4 look very similar to a cost of service review.	The level 4 requirements do not involve prudency and efficiency reviews of opex and capex associated with cost of service reviews.
Likely to submit to levels 3 and 4.	GCCC (2014b) submitted that it is unrealistic for the retailers to meet level 1 or level 2 in the foreseeable future. GCCC suggested that they would need to submit to level 3 and the costs of compliance may remain similar to the 2013-15 price monitoring investigation.	Level 3 provides an option for the amount of information to be limited to those items leading to price increases. Over time, the costs of compliance should be lower.

8.3 Level 1

Level 1 provides the base-line information that each water retailer would be required to submit each year. It includes details of prices and price increases, as well as non-price information regarding customer engagement, strategic planning, service quality, and pricing principles.

The QCA would use this information to assess whether prices for different services or components of prices (for example fixed charges and variable charges) for water and sewerage services have breached CPI-X. Compliance with and changes to other non-financial matters would also be assessed.

8.3.1 Prices

Technical paper

Under the Ministers' Direction, the regulatory framework is to allow for the management of potential price shocks for customers, including price paths where appropriate, changes in tariff structures and pricing policies, and the treatment of subsidies.

QCA analysis

In annual performance monitoring, the QCA's proposed first step is to assess changes in prices (and price components) for water and sewerage against CPI-X. A simple comparison of the

separate tariff components may be all that is required if there are no tariff structure changes and limited changes in sales volumes.

Information requirements

Level 1 price information requirements necessary to perform the above analysis are set below.

Table 44 Water prices

Indicator	*Information requirements*
Bulk water charges	Bulk water charges per kL
Tariff schedules	Full tariff schedules for the relevant and previous years, including charges differentiated by regions, residential and non-residential, water and sewerage
Residential bill 200kL and any other volume considered relevant by the water retailer (by area)	Charges by tariff group/area/ council etc.

Table 45 Sewerage prices

Indicator	*Information requirements*
Tariff schedules	Full tariff schedules for the relevant and previous years, including trade waste charges, discharge factors
Residential bill (by area)	Charges by tariff group/area/ council etc.

Final report

Unitywater (2014b) submitted that the CPI-X trigger mechanism should be based on a smoothed multi-year analysis and should consider changes in aggregate prices and revenues, for example $/connection, rather than changes in individual price components.

The QCA would consider both annual changes in prices against CPI-X and over time. Changes in components of prices can alter the revenue in a manner which can result in excess revenue over costs. No changes have been made to the level 1 pricing requirements.

8.3.2 Customer engagement practices

Technical paper

The regulatory framework position paper (2014e) set out the criteria for best practice customer engagement against which water retailers' customer engagement activities would be assessed.

In summary, customer engagement should be:

(a) representative of customer views and responsive to different customer needs

(b) relevant, with different forms of engagement employed for different purposes

(c) evidence-based - information should be collected through market research, focus groups, customer surveys and WTP studies (where cost effective)

(d) open and transparent - the process should be objective and open to challenge

(e) timely - the process needs to be continuous, and occur within timeframes necessary to assist decision-making

(f) collaborative - enabling customers to define their expectations on service quality and price to the entity, and allows retailers to provide relevant information to customers

(g) cost effective - the costs of engagement mechanisms and programs should be considered against their perceived benefits.

The water retailers are required to develop a customer engagement strategy, and by September 2015 provide an initial statement to the QCA of how the strategy complies with the above requirements. Further, as a minimum retailers should:

(a) provide information to customers through multi-media options

(b) maintain a customer consultation committee or similar

(c) maintain and update a Customer Charter.

Other jurisdictions

Ofwat (2011) considered that if a company's proposals would have a significant impact on bills or service levels, the onus is on that company to demonstrate that it has engaged its customers and stakeholders effectively and that its plans are acceptable. The burden of evidence and need for robust assurance would be considerably higher in these cases.

Ofwat places weight on the need for assurance of customer buy-in when considering whether to accept the company's proposal. Even so, customers' views alone would not be the only determinant. Every company would need to show that it is complying with its legal obligations and is operating efficiently. Ofwat also considers impacts on particular types of customer, including future customers.

QCA analysis

In addition to reviewing the initial statement for compliance with the above criteria, the QCA would assess how the water retailer has responded to customer concerns. This is likely to vary from review to review and retailer to retailer. The extent of detail would vary depending on the materiality of changes proposed by the water retailer.

Where there are significant changes that impact customer service or bills, the onus is on the water retailer to provide sufficient evidence that it has engaged with customers. Where changes in tariff structure and service quality are proposed a retailer would need to demonstrate that these changes have the support of customers (or if, not why such support is not required).

The QCA proposes to apply a rating or score of 'good' performance (meets or exceeds compliance with stated principles) or 'poor' performance (not consistent with principles).

While performance in customer engagement would not on its own trigger a review, it may be a contributory factor in such decisions.

Information requirements

Information required for the QCA to complete the above assessment is detailed below.

Table 46 Information return - customer engagement indicators

Indicators	*Information requirements*
Customer Engagement Strategy	Initial statement of customer engagement strategy or policy to be submitted by water retailer in September 2015
Direct Consultation - information provision	Newsletters and media releases relevant to customers
	Details of customer forums and other activities (if any)
Customer Consultation Committee or similar	Committee description - membership, meeting frequency
	Issues nominated by customers (examples of meeting minutes and submissions), responses to issues raised.
Customer surveys and studies if any	Purpose and objectives
	Process and methodology, eg sampling approach
	Relevant findings and policy implications
Customer Charter	Customer Charter
	Customer feedback on the charter, if any
Customer Service Standards	CSS Document
	Customer feedback, if any

Final report

Submissions

QUU (2014b) considered that the development of a specific strategy document is unnecessary if the retailer can provide examples of how it is meeting minimum customer engagement requirements.

Unitywater (2014a) submitted that the QCA is focusing on the process of customer engagement rather than outcomes, for example, customer satisfaction survey results. Unitywater suggested submitting customer satisfaction results instead of the process-related details.

QCA analysis

A customer engagement strategy underpins a retailer's actions. Details should be transparent and on the public record to support a review of its effectiveness.

Information relating to customer satisfaction surveys would be relevant to the QCA's assessment. However, details of the strategy and process of customer engagement are also relevant to ascertain the effectiveness of customer engagement.

No changes have been made to the level 1 information requirements for customer engagement.

8.3.3 Strategic approach to long-term investment

Technical paper

As part of the recommended annual performance monitoring framework, water retailers are required to demonstrate that they have followed appropriate procedures in planning and co-ordinating capital investment decisions.

The water retailers are required to demonstrate that:

(a) there is a Water Netserv Plan in place with the requisite board/council approval and Ministerial endorsement, together with any updates

(b) annual capital works plans or annual performance plans are consistent with the Water Netserv Plan (or that any variations have the appropriate approvals)

(c) relevant asset management standard are being applied, and evidence of compliance with that standard

(d) project evaluation practices are appropriate and include options and risk analyses.

Other jurisdictions

Ofwat (2010) in its review of water and sewerage charges for water and sewerage companies in England and Wales for the period 2010-15, conducted an asset management assessment of each company's final business plan to assess the technical and managerial processes applied in developing capital maintenance business plan submissions.

Ofwat scores, by sub-service, each of the components from 0 (lowest) to 5 (highest) against an 'aspirational statement' which defines "the upper limit of expectations for a frontier company in the 2009 price review". A score of 4 out of 5 represents a fully justified plan.

QCA analysis

Assessment largely relates to reviewing evidence of planning activities and compliance.

Provision of Part A Water Netserv Plans and evidence of approval by the board/council and endorsement by the Planning Minister demonstrates to the QCA that a strategic approach to long-term planning has been undertaken. The QCA may request information from Part B of the Netserv Plan if required.

Annual capital works plans are required to be prepared by QUU and Unitywater under section 100B of the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*. The councils have similar capital expenditure planning requirements in the *Local Government Act 2009*.

It is envisaged that the annual capital works plan (or annual performance plan) developed by each retailer would serve as the initial reference for annual monitoring of capital investments.

The QCA did not propose to further monitor co-ordination with other planning instruments (other than the Water Netserv Plan) unless prices and/or costs are considered to have exceeded CPI-X after allowing for relevant adjustments.

In relation to asset management standards, the QCA would review the statement of practices and evidence of compliance and review progress in improvements towards good industry practice.

The water retailers' approach to project evaluation would be assessed to ensure that for material capital expenditure, a process has been undertaken that incorporates:

(a) cost-benefit analysis or cost-effectiveness analysis of various options, including non-infrastructure alternatives and reviewing non-quantifiable costs and benefits

(b) risk assessments including costs of risk mitigation measures.

The QCA's assessment of planning instruments should identify any material shortcomings. While performance in investment planning and co-ordination would not on its own trigger a review, it may be a contributory factor in such decisions.

Information requirements

In order for the QCA to assess planning processes, retailers should submit the information outlined below.

Table 47 Long term investment information requirements

Indicator	*Information requirement*
Adopted Water Netserv Plan - strategic approach to long-term planning	Submit Part A Water Netserv Plans and any subsequent updates for minor and major amendments. The QCA may request Part B Netserv Plans or relevant extracts if it considers more information is necessary.
Co-ordination with other plans	Water Netserv Plan as above. Submit annual capital works programs (QUU and Unitywater) or annual performance plans (councils).
Asset management standards	Statement of asset management standard(s) being implemented. Steps to address areas of improvement.
Project evaluation and options analysis	Statement of processes applied for project evaluation and options analysis. Examples of options analyses for significant capex projects.

Final report

Relevant submissions and responses to the QCA's (2014f) regulatory framework implementation technical paper are summarised below.

Table 48 Summary of submissions and responses

Issue	*Comments*	*QCA response*
Annual capital works plans	In respect of annual capital works plans, QUU (2014b) had an overarching concern that detailed annual capital project monitoring could potentially be administratively onerous for the DRs (and the QCA) and simply demonstrate that capital projects are not always undertaken and completed in line with annual capital plans.	Annual capital works plans for the DRs are already required under the DR Act (for QUU and Unitywater) and annual performance plans are required under the LGA for the councils. It is accepted that capital plans can change from year to year and diverge from long term plans. Retailers should briefly report on these variations - and the key drivers - to provide assurance that capital works planning is following a process that results in efficient outcomes.
Consistency of annual plans with Water Netserv Plans	QUU requested clarity as to what the retailers are required to do to demonstrate that 'annual capital works plans or annual performance plans are consistent with the Water Netserv Plan (or that any variations have the appropriate approvals)'	Retailers should provide brief details of any material variations and the reasons.
Use of capital works plans	QUU did not understand the QCA's intent and use of annual capital plans to assess prudent and efficient investment by the DRs.	The QCA does not propose to use the plans to assess whether expenditure is prudent and efficient. The intention is that retailers demonstrate they are following appropriate planning processes.

Issue	*Comments*	*QCA response*
Asset management standards	QUU requested QCA provide information on what evidence is sought with regard to compliance with asset management standards.	Retailers are to detail the asset management standards applied. Evidence of audits may be used to demonstrate compliance - in the absence of audits, retailers may provide a statement of how the standards are being applied.
Governance framework	QUU was of the view that QCA should be more concerned that the DRs have an appropriate governance framework in place in relation to planning and operational activities to provide comfort that expenditure and investment is being managed prudently and efficiently. Therefore, the QCA should be requesting that DRs provide evidence that this governance framework exists.	The QCA agrees that retailers should have appropriate governance frameworks in place. This is the basis for the information requested, including Water Netserv Plans (and updates), annual capital works plans or annual performance plans, and a statement of asset management standards.

8.3.4 Service quality

Technical paper

The QCA has established a range of service quality indicators to enable assessment of whether market power is being exercised through reductions in quality of service.

The indicators are categorised according to baseline and performance indicators, the latter being those of relevance to assessment of market power.

Approaches for assessment of service standards are:

(a) simple comparative analysis of performance in the KPIs:

  (i) against previous years for the service provider

  (ii) against other utilities

  (iii) against pre-set or target standards (e.g. CSS)

(b) comparative analysis of composite indicators – assessing the retailers' overall performance - which may be derived from a subset of at least two KPIs:

  (i) against previous years for the service provider

  (ii) against other utilities, whether in their peer group or all groups

(c) use of scoring techniques to categorise performance into levels, e.g. good, average or poor, for individual KPIs.

(d) analysis of performance using parametric and non-parametric approaches, such as Total Factor Productivity (TFP) and Data Envelopment Analysis (DEA), respectively.

Other jurisdictions

In Victoria, an annual Water Performance Report is published by the Essential Services Commission (ESC 2013a). The report presents Victorian service providers' achievement (or otherwise) of several KPIs. IPART (2013b) annually reports on the performance of public water utilities, and uses comparative tables to provide information to the public.

Ofwat (2010) introduced a service incentive mechanism (SIM) in 2010 to measure customer service quality. It assigns a score out of 50 to a quantitative component (with 6 customer metrics - number of calls abandoned or engaged, unwanted phone contacts, written complaints and escalated complaints to the company and to the Consumer Council for Water). A score out of 50 is also applied to a qualitative component based on customer satisfaction surveys. Companies are rewarded (up to 0.5% of revenue) or penalised (up to 1% of revenue) according to whether they are above or below the average score.

In combination with composite indexes, Ofwat uses some descriptions to distinguish whether retailers' achievements are in line with, or better or worse than expectation.

For simplicity Ofwat refers to this as the 'traffic light' approach, as it presents utilities' performance in traffic light colours to indicate whether actual performance:

(a) is in line with or better than expected (green)

(b) not in line with expectation but performance has slipped only slightly (yellow)

(c) is significantly below target or expectation (red).

QCA analysis

Simple comparative analyses provide peer performance assessments and are easy to understand, but leave the interpretation to the reader. Individual measures may have particular relevance to particular customers.

Scoring techniques may be particularly useful in terms of evaluating whether market power is being exercised - for example, a score consistently below expectations may indicate excessive cost-cutting.

However, such individual measures typically do not provide a summary of overall performance.

Composite indicators and scoring indexes can address performance against multiple criteria. However, the calculation of a composite index requires that weights be placed on the individual KPIs. The weights chosen are often difficult to determine objectively, and hence, the composite index must be interpreted carefully.

The TFP approaches, including DEA and other techniques are sophisticated techniques that can provide a more objective analysis than the relatively subjective composite indicators or scoring techniques. However, they can be complex, potentially difficult for customers to understand, costly to apply and are data-intensive. Nevertheless, such techniques may have merit and may be considered for application where sufficient information is available (over time).

The QCA initially proposed to analyse service quality through a combination of comparative analysis and scoring techniques involving:

(a) a comparison of against customer service targets where relevant

(b) a comparison against other SEQ retailers

(c) a comparison against other jurisdictions, where provided in NPR

(d) over time, a comparison in trends in performance for the retailer.

It was recognised that performance in one or more indicators may vary from year to year due to external factors. Water retailers should provide any relevant explanations where such effects occur.

Against each performance indicator, the QCA proposed to apply a score - attributing performance to be good (surpassing targets, or demonstrating improving standards), average

(meeting targets or maintaining standards) or poor (below targets or indicating declining standards). This approach is comparable to the 'traffic light' method used by Ofwat (2013).

Unless there are extenuating circumstances (for example flood impacts) or other explanations, an assessed poor overall performance may trigger a request for further information.

As service quality performance data is accumulated over a number of years, the QCA proposed to explore the use of more holistic approaches to performance measurement perhaps using such techniques as DEA.

Information requirements

The draft service quality indicators to be reported were summarised in the regulatory framework position paper (QCA 2014e).

The metrics for the indicators were proposed to be consistent with DEWS' proposed KPIs, and may be subject to revision before the first annual reporting process.

Final report

Relevant submissions and responses to the QCA's (2014f) technical paper are summarised below. The changes to the service quality indicators are set out in Chapter 7.

Table 49 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Targets for indicators	QUU noted that the QCA has not established targets for any of the 39 service quality indicators so it is impossible for the DRs to understand whether their current performance exceeds, meets, or is below target.	The QCA does not propose to establish targets, but notes that for some indicators retailers have set targets for their own purposes. In other cases, service quality measures refer to maximum or minimum requirements or simply relate to improving or declining performance. The QCA's analysis would monitor retailers' performance over time, to identify any trends in performance.
Service quality performance QCA comment: "The QCA initially proposes to analyse service quality through a combination of comparative analysis and scoring techniques involving: (a) a comparison against customer service targets where relevant (b) a comparison against other SEQ retailers (c) a comparison against other jurisdictions, where provided in NPR (d) over time, compare trends in performance for the retailer."	QUU had issues with the QCA's proposed comparative analysis. This is because there are significant difficulties in undertaking meaningful comparisons across DRs – let alone across other jurisdictions. QUU considered that a simple comparison as appears to be proposed in bullet point (b) and (c) is flawed as it ignores numerous factors that are unique to the DRs which have an impact on service standards. These factors include the overall business environment the DR is operating in, the level of maturity of the business, and the business model employed by the businesses to deliver its services.	Comparisons with other retailers and against other jurisdictions would be made cautiously recognising differences in circumstances, but nonetheless may indicate instances where performance is markedly at variance from other retailers.
Service quality QCA comment:	QUU submitted that there are significant issues associated with	The QCA proposes to address such issues in consultation with retailers

Issue	*Comment*	*QCA response*
"As service quality performance data is accumulated over a number of years, the QCA proposes to explore the use of more holistic approaches to performance measurement perhaps using such techniques as data envelopment analysis (DEA)."	DEA and TFP. To apply DEA would be a fundamentally different and heavy handed approach to service performance assessment and would be very onerous on the DRs. QUU considered that the focus should be on considering and explaining how to apply the proposed 'traffic light' mechanism.	over successive reviews.

8.3.5 Pricing principles

Technical paper

The QCA's pricing principles position paper (QCA 2014g) set out principles for pricing of water and sewerage services, trade waste, recycled water and stormwater reuse, as required under the Ministers' Direction.

The QCA proposed to monitor performance against these pricing principles. Retailers would need to initially (in September 2015) establish that pricing principles are being applied, advise of any departures from the principles and provide reasons and supporting information for any departures.

Other jurisdictions

In most other jurisdictions, regulators assess service providers' proposed prices and tariff structures (ERA 2013a, IPART 2012a, ESC 2013b).

QCA analysis

To assess water retailers' performance against pricing principles, the QCA would refer to the full tariff schedule submitted under level 1 information requirements. The QCA would also review water retailers' calculation of LRMC.

The QCA would then seek to prioritise the actions required by water retailers to address the identified shortcomings.

While non-performance against the approved pricing principles would not on its own trigger a cost of service review, it may be a contributory factor in such decisions.

Information requirements

Water retailers should include information to support their application of the QCA's pricing principles outlined in the pricing principles position paper (QCA 2014g). This includes:

(a) relevant supporting details where tariff structures have changed, including

  (i) analyses and studies used as a basis for the changes, including any assessments of demand responses, cost attribution, any material administration costs of changes, implications for cross-subsidies

  (ii) customer consultation processes and outcomes (see also customer engagement section of the information requirements)

  (iii) anticipated implications if any for long term investment

(b) basis for estimating LRMC for water and sewerage services (differentiated by residential and non-residential where possible or appropriate).

Details should also be provided of any tariff differentiation or structural change that has been introduced over the previous year. For example:

(a) inclining block tariffs - basis for blocks and charges

(b) nodal/ regional tariff differentials or moves to uniform tariffs (indicate area)

(c) any other tariff differentiation (service quality, seasonal, peak period, etc)

Final report

Relevant submissions and responses to the QCA's (2014f) technical paper are summarised below. There are no changes to the information requirements for pricing principles.

Table 50 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Pricing principles QCA comment: "Retailers should include information to support their application of the QCA's pricing principles by submitting their basis for LRMC for water and sewerage services for residential and non-residential customers."	GCCC (2014b) also suggested a template with clear steps as per the Victorian framework: (a) identify the relevant dimensions of each service provided (b) determine whether it is practical to measure how much of each service is 'consumed' and determine whether customers are able to make independent decisions about quantities consumed (c) assess the magnitude of customer response to price signals for each measurable service dimension	GCCC's suggestion would be taken into account in the recommended guidance paper.
LRMC estimation	QUU submitted that it will not be providing this [LRMC] information. QUU is of the view that going into this level of detail would impose an additional and unnecessary administrative burden on the DRs.	QUU should have sufficient knowledge of its cost base to readily derive LRMC estimates. The proposed guidance paper should simplify the process.
Sundry charges	QUU sought clarification from the QCA as to whether sundry charges would be assessed under the framework.	The QCA's focus is on water and sewerage charges. Sundry charges would generally not be monitored as the relevant revenue amounts should not be material.

Recommendation

8.1 Level 1 information requirements include:

(a) prices and components of prices

(b) customer engagement practices

(c) strategic planning and co-ordination

(d) service quality performance indicators.

8.4 Level 2

8.4.1 Technical paper

The level 2 information requirement would only be required if increases in prices or components of prices exceed CPI-X, that is, if the tariff structure has changed substantially.

Level 2 allows the retailer's average prices for water and sewerage services to be compared to CPI-X.

Other jurisdictions

ESCOSA's monitoring SA ports (2012b) provides a relevant example comparable to the QCA's level 2 information requirements for prices.

ESCOSA collects and reports relevant throughput data (annual cargo volumes, vessel calls by port, and numbers of containerised goods). ESCOSA reports average prices for the separate services for the monitored and previous years, and determines the nominal % increase in average prices. Ports operators also provide any relevant information that would justify an average price increase above CPI.

QCA analysis

For the level 2 analysis, the QCA would identify average prices/revenues for water and sewerage for residential and non-residential customers and compare these to the previous year's average prices.

Where there have been tariff restructures, or changes to address cross-subsidies between user groups, this would provide a clearer comparison for identifying whether market power is being exercised by increasing unit revenues above CPI-X.

However, there are potential errors if average revenue per kL or per connection in, for example, 2015-16 is compared to the average revenues of 2014-15. Fluctuations in demand can distort the average price comparisons from year to year. This can be avoided in this example by using the volumes in 2014-15 to weight the average prices for both years, thus removing this distortion from the comparisons. This approach is referred to as the Paasche index. Alternatively comparisons against consistent usage may be employed.

Information requirements

Level 2 information requirements are in addition to level 1 information.

To determine average revenues, water retailers would be required to submit total revenues for water and sewerage services, residential and non-residential for the year being monitored as well as the prior year.

Relevant volume information (water sales volumes and number of connections) would be collected as part of the service quality baseline indicators.

Taken together, the QCA would be able to compile weighted average prices for water and sewerage, residential and non-residential. The information requirements are set out below.

Table 51 Water revenues

Indicator	*Information requirements*
Bulk water revenues	Total volume delivered by bulk water entity. Bulk water charges passed through for previous year.
Revenue per kL (average price) - residential	Total distribution/retail water revenue - residential
Revenue per kL (average price) - non- residential	Total distribution/retail water revenue, non-residential

Table 52 Sewerage revenues

Indicator	*Information requirements*
Revenue per connection - residential	Total sewerage revenue - residential
Revenue per connection - non-residential	Total sewerage revenue - non-residential

8.4.2 Final report

Relevant submissions and responses to the QCA's (2014f) technical paper are summarised below. The level 2 information requirements remain unchanged from those outlined in the technical paper.

Table 53 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Level 2 information requirements	QUU (2014b) queried whether at the level 2 information requirements, average prices refer to the QUU whole-of-business level, or average prices at the regional level.	Level 2 information requirements are for aggregate revenues for water and sewerage services, divided between residential and non-residential.
Implications of tariff change	Given the QCA's proposal for a CPI-X tariff constraint of around 2.25% to apply to individual tariff components in the medium-term, QUU expected the level 2 requirements to apply regardless of substantial tariff change.	This may be the case where retailers undertake tariff reform, or where there are justifiable increases as a result of pass-throughs or escalation in uncontrollable costs. Once the application of pricing principles is considered and any changes implemented (if considered appropriate), it would be expected that in future years subsequent information requirements should be minimal.
Water losses	QUU indicated that the total volume of water delivered by Seqwater to QUU is not equal to the total volume charged to customers due to non-revenue	The QCA is aware of this difference.

Issue	*Comment*	*QCA response*
	water.	
Trade waste revenue	QUU suggested that trade-waste revenue should be considered as part of sewerage revenue.	Agreed.

Recommendation

8.2 Level 2 information requirements, in addition to level 1, include revenue for water and sewerage activities, residential and non-residential.

8.5 Level 3

8.5.1 Technical paper

Water retailers may find in their self-assessments that changes in average prices or revenues or other cost items for water and /or sewerage services exceed CPI-X due to certain limited costs.

Where this is the case, level 3 submissions of relevant cost data would be required.

The information should relate to the particular costs driving the change in price and could, for example, relate to specified adjustments (cost pass-throughs, carry-forward of past under- or over-recovery, other adjustments), or could reflect legitimate cost variations that result in a change in MAR.

QCA analysis

The QCA proposed to assess the changes in prices against the cost items identified by retailers. In addition, the QCA proposed to monitor the impact of the changes in costs against a Reference MAR that would be calculated and updated annually for each retailer using principles consistent with the CPI-X framework. The reference MAR would be based upon that carried forward from the 2013-15 price monitoring investigation.

The QCA may follow-up with requests for further information on any particular item.

Information requirements

At level 3, cost information relevant to the increases in prices should be submitted, in addition to level 1 and level 2 information.

8.5.2 Final report

Relevant submissions and responses to the QCA's (2014f) technical paper are summarised below. The level 3 information requirements remain unchanged from those outlined in the technical paper.

Table 54 Summary of submissions and responses

Issue	*Comment*	*QCA response*
Reference MAR QCA comment: "The QCA proposes to assess the proposed changes in prices against the cost items identified by retailers. In addition, the QCA proposes to monitor the impact of the changes in costs against a reference MAR that will be calculated and updated annually for each retailer using principles consistent with the CPI-X framework. The reference MAR will be based upon that carried forward from the 2013-15 price monitoring investigation."	QUU (2014b) understood that under the proposed long-term framework, DRs would not be providing proposed changes in prices to the QCA, but rather actual prices.	Retailers would be required to provide details of the changes proposed at the time prices were forecast. The annual performance monitoring framework provides for ex post review of those proposals.
	QUU submitted that the QCA needs to provide further information on how it would calculate (and update) its reference MAR, given that it would not have actual information available to it when the CPI-X threshold is not breached. For example, under level 1 scenario, the QCA would not have information on infrastructure charges to offset against its reference MAR.	The QCA's reference MAR would reflect that established for 30 June 2015. The reference MAR can be corrected if retailers provide level 3 and 4 information to support any variations from CPI-X. The MAR would be fully reset following a cost of service review.
Publication of reference MAR	QUU asked whether the QCA would publish its reference MAR in any documentation.	The QCA would not publish its reference MAR as to do so could create a revenue target which could be inappropriate.
Use of actual information from 2013-15.	QUU and GCCC (2014b) sought confirmation that the QCA proposes to use actual information from 2013-15 if the DRs can demonstrate that the cost differences during that time are prudent and efficient. This would result in an updated and far more relevant reference MAR.	The QCA would use all available information to update the reference MAR. This would mean that the reference MAR would be updated using information submitted by the retailers, and if relevant planning, asset management, customer engagement strategies are in place.

Recommendation

8.3 Level 3 information requirements, in addition to level 2 include:

(a) details of changes in relevant costs and cost pass-throughs

(b) details of recovery of past under-recovery.

8.6 Level 4

8.6.1 Technical paper

Where prices have been increased beyond CPI-X due to increases in a wide range of costs, in addition to the relevant cost items, retailers would need to reconcile the changes with their total costs (effectively the retailer's MAR). For this potential purpose, retailers should maintain a MAR carried forward from the 2013-15 review, and should submit this summary as part of level 4 returns according to each of the categories of costs relevant to the water and sewerage activities. That is, for bulk water, operating costs, return on capital and return of capital.

Regulatory asset base - roll-forward

Retailers should provide details of the asset base roll-forward since 2014 as per below.

Table 55 Asset base roll forward

	Water	*Sewerage*	*Other*	*Total*	
	Actual	*Actual*	*Actual*	*Forecast*	*Actual*
Opening 1 July 2014					
New Assets Total					
Disposals					
Depreciation					
Escalation adjustments					
Capital contributions					
Closing 30 June 2015					

Where escalation for assets is based on an index other than CPI, the retailer should provide all relevant details and supporting documentation.

Capital expenditure

Water retailers should provide details of their total water and sewerage capital expenditure as commissioned for the monitored and preceding year (2013-14 and 2014-15 in the first year of annual performance monitoring).

Capital expenditure should be included in the RAB when it is commissioned and contributes productive capacity to the system.

Significant capex projects

Water retailers should provide details of the largest capital expenditure projects for water, sewerage and recycled water services commissioned in the monitored year. For these items, any variations occurring for the relevant year (2014-15 for the first return) from those indicated in annual capital works plans, or any projects not previously identified, should be supported with relevant details, including cost drivers, consistency with higher level planning and reasons for any variations. Updates to Water Netserv Plans for minor and major amendments be should also be submitted.

Actual costs should be compared to costs indicated in the annual capital works plan. Where the project was not identified in the annual capital works plan, water retailers should provide evidence that an appropriate approach to project evaluation, including options and risk analyses, has been applied.

Depreciation

To allow comparison with the QCA 2014-15 forecast MAR, depreciation in the first year of monitoring (2014-15) should be determined on a straight-line basis.

As indicated in the regulatory framework position paper, water retailers may change to an alternative depreciation profile. Where alternative depreciation profiles are proposed for long-life assets, the relevant details should be provided. A reconciliation with the straight-line method is required in the initial year where the alternative approach is adopted. This would allow the QCA to adjust its reference MAR.

Details regarding an alternative approach need to include:

(a) the assets to which the alternative method is applied, including value of assets

(b) the profile adopted, and the basis for adopting the alternative profile

(c) the estimated depreciation for the asset(s).

Return on capital

Water retailers must provide details of the target return on capital for each year including the values attached to the key underlying parameters and the method of calculating the WACC.

This includes the relevant cost of debt details.

Capital contributions

Water retailers must provide details of actual contributed, donated and gifted assets for the monitored year.

Operating costs

Operating costs are required for the regulated water and sewerage services.

The data should allow analysis of changes in operating expenditure from the preceding year. For example, in the first year of annual performance monitoring, operating costs for 2013-14 and 2014-15 should be submitted.

The operating cost categories are proposed by activity and by type are outlined below.

Table 56 Operating costs

Costs by type	***Costs by activity***			
	Operations	***Maintenance***	***Corporate costs***	***Totals***
Bulk water				
Employee expenses				
Electricity				
Other materials and services				
Tax				
Total				

8.6.2 Final report

Relevant submissions and responses to the QCA's technical paper are summarised below. The level 4 information requirements remain unchanged from those outlined in the regulatory framework technical paper, except that the requirement for capital expenditure to reconcile to the balance sheet has been removed.

Table 57 Summary of submissions and responses

Issue	*Comment*	*QCA response*
QCA comment: "The capital expenditure recorded for the water retailer as a whole must reconcile to the relevant entries in its balance sheet."	In respect of the requirement for capital expenditure to reconcile to relevant entries in its balance sheet, QUU (2014b) recommended that this requirement be removed as it is an onerous requirement. It is for this reason that it was also removed from the price monitoring regime that has been in place from 2010 to 2015. Furthermore, this is the responsibility of the Queensland Audit Office.	Accepted.
'Other' category in asset base roll-forward table (Table 11 in technical paper, Table 55 above).	QUU was unsure what the column titled 'Other' in the table relating to the asset base roll-forward is referring to.	The 'other' category was included to allow provision for separation of other services, for example, recycled water, where it is relevant.

A summary of the QCA's recommendations for information requirements appears below.

Recommendations

8.4 Level 4 information requirements, in addition to level 3, include broad data to estimate the MAR such as:

- **(a) RAB roll-forward summary including total commissioned capex, depreciation and disposals**
- **(b) return on capital (WACC)**
- **(c) total operating costs for water and sewerage, by type and by activity**
- **(d) tax equivalents.**

8.5 Any cost of service review, in addition to the information required for level 4, incorporate a review of the prudency and efficiency of costs.

GLOSSARY

A	
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACL	Australian Consumer Law
ACT	Australian Capital Territory
ACTEW	ACT Energy and Water
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
AOP	Annual Operational Plan
AOR	Annual Operations Report
APP	Annual Performance Plan
ARA	Asset Renewal Annuity
ARR	Asset Renewal Reserve
B	
BBPR	Business-Based Performance Reporting
BCC	Brisbane City Council
C	
CAA	Civil Aviation Authority (UK)
CAB	Cost Allocation Basis
CBU	Commercial business unit
CCG	Customer consultative groups
CCP	Customer Challenge Panel
CEPA	Cambridge Economic Policy Associates
COAG	Coalition of Australian Governments
CPI	Consumer Price Index
CSO	Community Service Obligation
CSS	Customer Service Standards
D	
DEA	Data Envelopment Analysis
DEWS	Department of Energy and Water Supply
DLGP	Department of Local Government and Planning
DORC	Depreciated Optimised Replacement Cost
DR	Distributor-Retailer
DR Act	South-East Queensland Water (Distribution and Retail Restructuring) Act 2009 (Qld)

DRC	Depreciated Replacement Cost
DWQMP	Drinking Water Quality Management Plan
E	
ERA	Economic Regulation Authority (Western Australia)
ESC	Essential Services Commission (Victoria)
ESCOSA	Essential Services Commission of South Australia
EV	Economic Value
EWOQ	Energy and Water Ombudsman of Queensland
G	
GAWB	Gladstone Area Water Board
GCCC	Gold Coast City Council
GSL	Guaranteed Service Level
I	
ICRC	Independent Competition and Regulatory Commission (ACT)
IPART	Independent Pricing and Regulatory Tribunal (NSW)
IPWEA	Institute of Public Works Engineering Australia
IWA	International Water Association
K	
KPI	Key Performance Indicator
L	
LCC	Logan City Council
LGA	Local Government Act 2009 (Qld)
LGR	Local Government Regulation 2012 (Qld)
LGTER	Local Government Tax Equivalents Regime
M	
MAR	Maximum Allowable Revenue
MBRC	Moreton Bay Regional Council
N	
NCP	National Competition Policy
NPR	National Performance Reporting
NPV	Net Present Value
NSW	New South Wales
NWC	National Water Commission
NWI	National Water Initiative
NZCC	New Zealand Commerce Commission
O	
OBR	Outcome-Based Regulation

ODV	Optimal Deprival Value
OECD	Organisation for Economic Co-operation and Development
OFGEM	Office of Gas and Electricity Markets (UK)
Ofwat	Office of the water regulator (UK)
OTTER	Office of the Tasmanian Economic Regulator
P	
PC	Productivity Commission
Q	
QCA	Queensland Competition Authority
QCOSS	Queensland Council of Social Service
QUU	Queensland Urban Utilities
R	
RAB	Regulatory Asset Base
RBA	Reserve Bank of Australia
RTI	Right to Information Act 2009
S	
SA	South Australia
SAMP	Strategic Asset Management Plan
SEQ	South East Queensland
SEQ Regional Plan	South East Queensland Regional Plan 2009 - 2031
sewage	Sewage is household and commercial wastewater that contains, or may contain, faecal, urinary or other human waste
SFA	Stochastic frontier analysis
SIM	Service Incentive Mechanisms, a service-based incentive mechanism used by Ofwat
SQPR	Service Quality Performance Reporting
STP	Scale technology percentage
SWIM	Statewide Water Information Management
T	
TFP	Total factor productivity
Trade Waste	Trade Waste is water-borne waste from business, trade or manufacturing premises, other than (a) waste that is a prohibited substance; or (b) human waste; or (c) stormwater.
TWCM	Total Water Cycle Management
U	
UK	United Kingdom
USA	United States of America
W	
WACC	Weighted Average Cost of Capital

Wastewater	Wastewater is spent or used water generated on premises from industrial, commercial or manufacturing activities, or animal husbandry activities, other than spent or used water generated from— (a) an agricultural activity; or (b) a resource activity as defined under the Environmental Protection Act 1994, section 107.
WIRO	Water Industry Regulatory Order (Victoria)
WSAA	Water Services Association of Australia
WSP	Water service provider
WSUD	Water Sensitive Urban Design
WTP	Willingness-to-pay

REFERENCES

Australian Competition and Consumer Commission (ACCC) 1999, *Draft Statement of Principles for the Regulation of Transmission Revenues,* May.

ACCC 2011a, *A guide to the water charge (infrastructure) rules: Publishing and non-discriminatory charging requirements,* June.

ACCC 2011b, *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010*, July.

ACCC 2012a, *Airport Monitoring Report 2010–11 Price, Financial Performance and Quality of Service Monitoring*, March.

ACCC 2012b, *Container Stevedoring Monitoring Report,* October.

ACCC 2012c, *Benchmarking Opex and Capex in Energy Networks*, Working Paper 6, May.

ACCC 2013, *Airport Monitoring Report 2011-12 – Price, financial performance and quality of service monitoring,* April.

ACCC 2013, *Information paper on State Water's 2014-17 pricing application*, August.

Australian Energy Regulatory (AER) 2010, *Victorian Electricity Distribution Network Service Providers Distribution Determination 2011-15*, October.

Byrnes, J, Crase, L, Dollery, B & Villano, R 2010, 'The Relative Economic Efficiency of Urban Water Utilities in Regional New South Wales and Victoria', *Resource and Energy Economics*, vol. 32, pp. 439-55.

Australian Energy Regulator (AER) 2012, *Matters relevant to the framework and approach, ACT and NSW DNSP's 2014-2019,* April.

AER 2013a, *Better Regulation: an integrated package. Promoting efficient investment in the interests of all energy consumers,* May.

AER 2013b, *Better Regulation: AER's Consumer Challenge Panel*.

Aurora Tower 2014, *Submission on Position Paper: SEQ Long Term Regulatory Framework - Pricing Principles*, Submission to the QCA, June.

Australian Energy Market Commission 2014, *National Electricity Rules, Version 62*, April.

Averch, H & Johnson, L 1962, 'Behavior of the Firm Under Regulatory Constraint', American Economic Review, vol. 52, no. 5, pp. 1052–1069.

Ballance, T & Taylor, A 2005, *Competition and Economic Regulation in Water: The Future of the European Water Industry.*

Baumol, W 1982, 'Productivity Incentive Clauses and Rate Adjustment for Inflation', *Public Utilities Fortnightly*, 22 July, pp. 11-18.

Baumol, W & Klevorich, A 1970, 'Input Choices and Rate-of Return Regulation: An Overview of the Discussion', *Bell Journal of Economics*. vol. 1, no. 2 (Autumn), pp. 162-190.

Beesley, M & Littlechild, S 1989, 'The regulation of privatized monopolies in the United Kingdom'. *RAND Journal of Economics*, vol. 20, no. 3, pp. 454-472.

Bernstein, J & Sappington, D 1999, 'Setting the X factor in Price-Cap Regulation Plans', *Journal of Regulatory Economics*, vol. 16, pp. 5-25.

Biggar, D 2005, *Part II: The Use of Exogenous Estimates of Cost: Benchmarking, Yardstick Regulation and Factor Productivity Analysis*, Report Prepared for the Australian Competition and Consumer Commission.

Borenstein, S & Shepard, A 2002, 'Sticky prices, inventories, and market power in wholesale gasoline markets', *RAND Journal of Economics,* vol 33, no. 1 (Spring).

Brisbane City Council (BCC) 2013a, *Initial Submission - Long-term Regulatory Framework for South East Queensland Water Retailers,* August.

BCC 2013b, *Brisbane's Total Water Cycle Management Plan*, June.

British Standards Institution 2008, *Publicly Available Specification 55 – Asset Management*, September.

Brown, S & Sibley, D 1986, *The Theory of Public Utility Pricing.*

Busselton Water 2012, *Busselton Water 2012 Customer Satisfaction Survey - Summary*, by Research Solutions, April.

Cambridge Economic Policy Associates Ltd (CEPA) 2011, *Regulated Monopoly Service Providers and Customer Views, Preferences and Willingness to Pay*, A report prepared for IPART, June.

Civil Aviation Authority (CAA) (UK) 2005, *Airport Regulation the process for constructive engagement,* May.

COAG 2004, *Intergovernmental Agreement on a National Water Initiative,* June.

COAG 2006, *Competition and Infrastructure Reform Agreement*, February.

COAG 2007, *Competition Principles Agreement - as amended,* April.

COAG 2013, *COAG Legislative and Governance Forum on Consumer Affairs*, Strategic Agenda 2013-15, July.

Coelli, T & Walding, S 2006, 'Performance Measurement in the Australia Water Supply Industry: A preliminary analysis', in *Performance Measurement and Regulation of Network Utilities*, eds Coelli, T Lawrence, D, & Elgar, E.

Coglianese, G & Lazer, D 2003, 'Management-based regulation: Prescribing Private Management to Achieve Public Goals'. *Computer and Information Systems Faculty Publications, Paper 3.*

Coolum Residents' Association (CRA) 2014, *Submission on QCA's Transition to light-handed performance monitoring - Unitywater (May 2014)*, Submission to the QCA, June.

Crew, MA and Kleindorfer, PR 1995, *Pricing in the Postal Service under competitive entry*, Kluwer Academic Publishers, Boston.

Decker, C 2013, *Customer Involvement in Regulatory Decision-Making*. Presentation to ACCC/AER Regulatory Conference 2013. Brisbane. 25-26 July.

Deloitte 2011, *SunWater – Working Capital Allowance,* August.

Deloitte 2014, *ESC comparison of water regulatory approaches*, Final report, April.

Department of Energy and Water Supply (DEWS) 2010a, *Drinking Water Quality Management Plan Guideline*, September.

DEWS 2010b, *Water Quality and Reporting Guideline for a Drinking Water Service*, September.

DEWS 2012, *Bulk Water Supply Code*, January.

DEWS 2013a, *Queensland's water sector: a 30-year strategy, Discussion paper: Shaping our water future.*

DEWS 2013b, *Water sector reform*, <http://www.dews.qld.gov.au/policies-initiatives/water-sector-reform>, viewed 21 August 2013.

DEWS 2013c, *Water and Sewerage Services Code for Small Customers in South East Queensland*, April.

DEWS 2013d, *Planning Guidelines for Water Supply and Sewerage.*

DEWS 2014a, *WaterQ: a 30-year strategy for Queensland's water sector*, June.

DEWS 2014b, *Key performance indicators for Queensland urban water service providers*, Definitions Guide, Version 1.1, June.

Department of Environment and Heritage Protection (DEHP) 2014, *Flexible options or managing point source emissions: A voluntary market-based mechanism for nutrient management*, April.

Department of Local Government and Communities (WA) 2011, *Asset management - framework and guidelines*.

Department of Local Government, Community Recovery and Resilience 2013, *Issues of interest to the Department*, Initial Submission to the QCA, email dated 24 July.

Department of Local Government and Planning 2011, *Asset Management Advancement Program 2011-2012*, August.

Department of Infrastructure and Planning (DIP) 2009, *South East Queensland Regional Plan 2009-2031*, July.

Department of Planning, Transport and Infrastructure (SA) 2013, <http://www.infrastructure.sa.gov.au/buildingmanagement/systems_and_reports/samis>.

Department of Sustainability and Environment (DSE) 2011, *Living Melbourne, Living Victoria Roadmap*, March.

DSE 2012, *Living Melbourne, Living Victoria Implementation Plan*, February.

Department of Sustainability, Environment, Water, Population and Communities, *National Urban Water Planning Principles.*

Department of State Development, Infrastructure and Planning (DSDIP) 2013, *Discussion paper: Infrastructure planning and charging framework review: Options for the reform of Queensland's local infrastructure planning and charges framework*, June.

DSDIP 2014*, Local Government Infrastructure Planning and Charging Framework review*, <http://www.dsdip.qld.gov.au/infrastructure-planning-and-reform/infrastructure-charges.html. July>, viewed 22 August 2014.

Environmental Protection Act 1994 (Qld).

Environmental Protection (Water) Policy 2009 (Qld).

Economic Regulation Authority (ERA) 2008, *Inquiry on competition in the water and wastewater service sector*, Draft Report.

ERA 2009, *Inquiry into the Tariffs of the Water Corporation, Aqwest and Busselton Water Board*, August.

ERA 2013a, *Inquiry into the Efficient Costs and Tariffs of the water Corporation, Aqwest and the Busselton Water Board, Revised Final Report,* March.

ERA 2013b, Economic Regulation Authority Consumer Consultative Committee, <http://www.erawa.com.au/for-consumers/consumer-consultative-committee/>.

ERA 2014, *2012 water, wastewater and irrigation performance report*, May.

Ergas, H et al 2001, *Regulatory Risk*, March.

Essential Services Commission (ESC) 2004, *Performance Reporting Framework Metropolitan and Regional Businesses. Decision Paper,* July.

ESC 2008, *Water Price Review, 2008-13*, June.

ESC 2009. *Review of Victorian Ports Regulation*, Final Report, June.

ESC 2011a, *2013 Water Price Review: Guidance on Water Plans*, October.

ESC 2011b, *Customer Engagement Seminar*. Summary Paper, December.

ESC 2011c, *2013 Water Price Review – Guidance on Water Plans*, October.

ESC 2012a, *Review of Water Performance Report Indicators*, Staff Discussion Paper, April.

ESC 2012b, *An analysis of the productivity of the Victorian Water Industry*, Staff Research Paper 12.

ESC 2013a, *Price Review 2013: Greater Metropolitan Water Businesses*, Final Report Volume 1, June.

ESC 2013b, *Water Price Review 2013: Regional Urban Water Businesses*, Final Decision, Volume 1.

ESC 2013c, *Performance Report 2012-13, Metropolitan and regional water businesses*, December.

ESC 2014a, *Information paper for the independent review of the economic regulatory framework*, ESC Submission No 1, April.

ESC 2014b, *The facts: investment incentives in the Victorian water industry*, ESC Submission No 2, May.

ESC 2014c, *Response to preliminary advice from the independent reviewer*, ESC Submission No 3, June.

Essential Services Commission of SA (ESCOSA) 2005, *2005-10 Electricity Distribution Price Determination Part A – Statement of Reasons*, April.

ESCOSA 2012a, *Ports Pricing and Access Review – Final Report,* October.

ESCOSA 2012b, *2010 Ports Industry Guideline No.2 – Regulatory Accounts,* May.

ESCOSA 2012c, *Proposed Price Regulation For Water and Sewerage Service Providers Other Than SA Water – Discussion Paper*.

ESCOSA 2012d, *Economic regulation of SA Water's revenues: statement of approach*, July.

ESCOSA 2013a, *SA Water's Water and Sewerage Revenues – 2013/14-2015-16, Final Determination – Statement of Reasons,* May.

ESCOSA 2013b, *Economic Regulation of Minor and Intermediate Retailers of Water and Sewerage Services – Final Decision*, June.

ESCOSA 2013c, *Water Regulatory Information Requirements For Minor and Intermediate Retailers – Water Industry Guideline No.3 (WG3/01),* June.

ESCOSA 2014, *Inquiry into reform options for SA Water's drinking and sewerage prices, Draft Inquiry Report*, July.

Faulhaber, G 1975, 'Cross-Subsidization: Pricing in Public Enterprises', *The American Economic Review*, vol. 65, no. 5, pp. 966-977.

Fearon, P. 2006, *Public Utility Regulation, A Practitioner's Perspective*, ESC January.

Frontier Economics 2010, *Future price limits — Form of control and regulated/unregulated business,* July.

Frontier Economics 2013, *Review of urban water customer choice options, policy drivers and regulatory instruments*. A report prepared for the National Water Commission, July.

Frontier Economics 2014, *Improving economic regulation of urban water*. A report prepared for the Water Services Association of Australia, August.

Gilbert and Tobin 2014, *Review of Victoria's framework for economic regulation of the water sector*, A report prepared for the ESC, March.

Gold Coast City Council (GCCC) 2012, *Water and Wastewater Customer Service Charter and Standards*, July.

GCCC 2013a, *Initial Submission - Long-term Regulatory Framework for South East Queensland Water Entities,* August.

GCCC 2013b, *unpublished response to SKM's draft report for 2013-15 price monitoring investigation*.

GCCC 2014a, *Long Term Regulatory Framework (and Pricing Principles) for South East Queensland Water Entities,* Submission to the QCA*,* June*.*

GCCC 2014b, *Long Term Regulatory Framework - Implementation Issues,* Submission, August.

Gomez-Ibanez, J 2003, *Regulating Infrastructure: Monopoly, Contracts and Discretion.*

Goulburn Murray Water 2006, *Media release - Goulburn-Murray Water announces 2006-07 water prices,* 20 June, <http://www.g-mwater.com.au/news/media-releases/media-releases-2006/200607prices.html>.

Haucap, J, Heimeshoff, U & Uhde, A 2006, 'Credible Threats as an Instrument of Regulation for Network Industries', *Regulatory Changes, Innovations and Investment Dynamics in the Digital World Economy.*

Hildebrand, C 2002, *Independent Assessment of the Sugar Industry,* June.

Independent Competition and Regulatory Commission (ICRC) 2004, *Investigation into prices for water and wastewater services in the ACT, Final Report and Price Direction,* March.

ICRC 2006, *Water and Wastewater Discussion Paper 1: Technical Regulatory Issues,* November.

ICRC 2008, *Water and Wastewater Price Review, Report 1*, April.

ICRC 2012, *Compliance and performance report for 2010-11, Licensed electricity, gas, water and sewerage utilities*, November.

ICRC 2013, *Final Report – Regulated Water and Sewerage Services*, Report 5, June.

Independent Reviewer 2014, *Economic regulation, governance and efficiency in the Victorian water sector*, Preliminary advice from the Independent Reviewer, May.

Independent Pricing and Regulatory Tribunal (IPART) 2002, *Discussion Paper on the Form of Regulation for NSW Distribution Network Service Providers,* January.

IPART 2003a, *Hunter Water Corporation - Prices of water supply, wastewater and stormwater services from 1 July 2003 to 30 June 2005.*

IPART 2003b, *Sydney Catchment Authority, Prices of Water Supply Services. Mid term review of price path from 1 October 2000 to 30 June 2005*, May.

IPART 2005a, *State Water Corporation and Water Administration Ministerial Corporation, Bulk Water Prices, Determination for 2005-06*.

IPART 2005b, *Sydney Water Corporation, Hunter Water Corporation, Sydney Catchment Authority, Prices of Water Supply Wastewater and Stormwater Services 2005-09.*

IPART 2008, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater and other services, Water — Determination and Final Report*, June.

IPART 2010, *Review of bulk water charges for State Water Corporation, July 1 2010 to 30 June 2014*, Determination.

IPART 2012a, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater drainage and other services, Water – Final Report,* June.

IPART 2012b, *Review of prices for the Sydney Catchment Authority from 1 July 2012 to 30 June 2016,* Final Report*,* June.

IPART 2012c, *Customer engagement on prices for monopoly services*, Research - Final Report, August.

IPART 2012d, *Hunter Water Corporation Operating Licence - End of Term Review*, April.

IPART 2013a, *Hunter Water Corporation's water, sewerage, stormwater drainage and other services, Water – Final Report,* June.

IPART 2013b, *NSW water utilities performance, 2011-12*, February.

Ipswich City Council 2012, *Corporate Plan 2012 – 2017*.

Jin, X 2009, 'Allocating risks in Public-Private Partnership projects using a transaction cost economics approach - A case study', *Australasian Journal of Construction Economics and Building*, 8.

Joskow, P & Kahn, E 2001, 'A Quantitative Analysis of Pricing Behavior in California's Wholesale Electricity Market During Summer 2000', *NBER Working Papers 8157, National Bureau of Economic Research, Inc*.

Kahn, A 1971, *The Economics of Regulation: Principles and Institutions, Volume I*.

Kaufman, L & Lowry, M 1999, Competition for metering billing and informational services, Edison Electrical Institute.

King, SP (undated), *Principles of price cap regulation*.

Koerner, RJ 2014, *Submission to the QCA*, email correspondence, June.

KPMG 2007, *Valuation of SEQ Councils' Bulk Water Assets Approach and Process*, December.

Laffont, J-J. & Tirole, J 1993, *A Theory of Incentives in Procurement and Regulation.*

Littlechild 2010*, A customer consultation process for water and sewerage sectors, A paper for Ofwat,* May.

Local Government Act 2009 (Qld).

Local Government Regulation 2012 (Qld).

Local Government and Planning Ministers' Council (LGPMC) 2009, *Local Government Financial Sustainability, Nationally Consistent Frameworks, Asset Planning and Management*, May.

Lockyer Valley Regional Council (LVRC) 2012, *Lockyer Valley Planning Scheme (Strategic Framework only)*, September.

LVRC 2013, *Submission to the Queensland Water Strategy*. Initial Submission to the QCA. Dated April. Received September.

Logan City Council (LCC) 2012, *Water and Wastewater Customer Service Standards*, July.

LCC 2013a, *Long-term Regulatory Framework for South East Queensland Water Entities*, July.

LCC 2013b, *Logan Rivers and Wetlands Recovery Program*.

LCC 2013c, *2013/2014 Water and Sewerage Pricing*, May.

LCC 2013d, *Logan City Council 2012-2013 Annual Report.*

LCC 2013e, *Long Term Regulatory Framework for SEQ water entities*, *i*nitial Submission to the QCA, dated July; received September.

LCC 2014, *Proposed Queensland Competition Authority Regulatory Framework for South-East Queensland Water Entities*, submission to the QCA, June.

Meyrick & Associates and Pacific Economics Group 2003, Development of an Electricity Distribution Service Quality Regime to Take Effect in Future Regulatory Periods, August.

Means, G 1935, 'Price inflexibility and the requirements of a stabilizing monetary policy', *Journal of the American Statistical Association*, 30.

Melbourne Water 2014, *Economic regulation, governance and efficiency in the Victorian water sector*, submission.

Minister for Water, Environment and Climate Change 2008, *Statement of Obligations Melbourne Water Corporation*, October.

Minister for Water [Victoria] 2012, *Statement of Obligations*, September.

Moreton Bay Regional Council (MBRC) 2012, *Total Water Cycle Management Plan*, October.

MBRC 2013, *Initial Submission - Long-term Regulatory Framework for South East Queensland Water Entities*, August.

National Water Commission (NWC) 2011, *Urban Water in Australia: future directions.*

NWC 2013, *2012-13 National Performance Framework: Urban performance reporting indicators and definitions handbook*, July.

NERA 2004, *Alternative Approaches to 'Light-Handed' Regulation,* March.

New South Wales Office for Water 2010, *2010 Metropolitan Water Plan*, August.

New Zealand Commerce Commission (NZCC) 2006, *Authorisation for the Control of Supply of Natural Gas Distribution Services by Vector Ltd and Powerco Ltd - Form of Control*, Discussion Paper, July.

NZCC 2010, *Decision No. 715 – Airport Information Disclosure Determination.*

NZCC 2013, *Final report to the ministers of Commerce and Transport on how effectively information disclosure regulation is promoting the purpose of Part 4 for Auckland Airport,* July.

North East Water 2013, *2013 Annual Customer Perception Survey.*

OECD 2005, *Guiding Principles for Regulatory Quality and Performance.*

Ofgem 2010, *Regulating energy networks for the future: RPI-X@20. Delivering outcomes: consumer engagement in the regulatory process.*

Ofgem 2012, *Electricity and Gas Supply Market Indicators*, December.

Ofwat 2007, *Review of form of price control mechanism*, RD 14/07, July.

Ofwat 2008, *Ofwat's review of competition in the water and sewerage industries: Part II,* April.

Ofwat 2009a, *Future water and sewerage charges 2010-15: Final determinations.*

Ofwat 2009b, *PR09/23: Asset Management Assessment (AMA) and baseline setting*, January.

Ofwat 2010, *Setting price limits.* April.

Ofwat 2011, *Involving customers in price setting* - Ofwat's customer engagement policy statement.

Ofwat 2012, *Key performance indicators - guidance*.

Ofwat 2013a, *Setting Price Controls for 2015-20 – Framework and Approach: a Consultation*, January.

Ofwat 2013b, *Changes to the regulatory model for PR14 - getting greater customer involvement*, presentation by Andrew Beaver, Director of Strategy, August.

Ofwat 2013c, *Notes of the Consumer Advisory Panel meeting*, 18 June 2013.

Office of the Tasmanian Economic Regulator (OTTER) 2012, *2012 Price Determination Investigation - Regulated Water and Sewerage Services in Tasmania, Final Report*, May.

OTTER 2013, *Tasmanian water and sewerage industry performance and information reporting guideline*, April.

OTTER 2014, *Tasmanian water and sewerage state of the industry report, 2012-13*, March.

Owen, G 2013, *The potential role of consumer challenge in energy network regulation in Australia: a think piece for the Australian Energy Regulator*, March.

Oxera 2012, *Out of the dark: the role of information disclosure regulation in New Zealand*, Agenda, September.

Oxera 2013, *Getting the outcome right for water customers*, Agenda, February.

Pindyck, R & Rubinfeld, D 2008, *Microeconomics*, 7th edn.

Productivity Commission (PC) 2002, *Price Regulation of Airport Services,* January.

PC 2003, *Review of the Gas Access Regime, Draft Report.*

PC 2009, *Review of Regulatory Burden on the Upstream Petroleum (Oil and Gas) Sector, Research report,* April.

PC 2011a, *Australia's Urban Water Sector, Report No. 55, Final Inquiry Report.*

PC 2011b, *Economic Regulation of Airport Services*, *No.57*, December.

QCA 2000, *Statement of Regulatory Pricing Principles for the Water Sector,* December.

QCA 2009, *Criteria for the Identification of Government Monopoly Business Activities*, March.

QCA 2010a, *Final Report SEQ Interim Price Monitoring Framework*, April.

QCA 2010b, *Final Report Gladstone Area Water Board: Investigation of Pricing Practices*, June.

QCA 2011, *Final Report SEQ Price Monitoring for 2010-11 Part A – Overview*, March.

QCA 2012a, *Final Report SEQ Price Monitoring for 2011-12 Part A – Overview*, March.

QCA 2012b, *Final Report SunWater Irrigation Price Review: 2012-17 Volume 1*, May.

QCA 2012c, *Final Report SEQ Grid Service Charges 2012-13*, July.

QCA 2012d, *Risk and the Form of Regulation*, Discussion Paper, November.

QCA 2013a, *Final Report SEQ Price Monitoring for 2012-13 Part A – Overview*, March.

QCA 2013b, *Best Practice Regulation: Principles, Concepts and Examples*, Discussion Paper.

QCA 2013c, *Final Report Seqwater Irrigation Price Review: 2013-17 Volume 1*, April.

QCA 2013d, *Statement of Regulatory Pricing Principles*, August.

QCA 2014a, *SEQ Price Monitoring for 2013-15 Part A - Overview*, March.

QCA 2014b, *SEQ Price Monitoring for 2013-15 Part B - QUU, Final Report*, March.

QCA 2014c, *SEQ Price Monitoring for 2013-15 Part B - Redland Water, Final Report*, March.

QCA 2014d, *Financial Capital Maintenance and Price Smoothing*, Information Paper, February.

QCA 2014e, *Long-term regulatory framework for SEQ water entities*, Position Paper, February.

QCA 2014f, *SEQ Long Term Framework - Annual Performance Reporting - Implementation Issues*, Technical Paper, June.

QCA 2014g, *SEQ long-term regulatory framework, pricing principles*, Position Paper, May.

QCA 2014h, *SEQ Price Monitoring for 2013-15 Part B - Unitywater*, Final Report, March.

QCA 2014i, *SEQ Price Monitoring for 2013-15 Part B - Logan Water*, Final Report, March.

QCA 2014j, *SEQ Price Monitoring for 2013-15 Part B - Gold Coast Water*, Final Report, March.

QCA 2014k, *Regulated retail electricity prices 2014-15*, Final determination, May.

QCA 2014l, *Incentive regulation: theory and practice*, Discussion paper, A research paper prepared for QCA by F Menezes, September.

QCA Ministers 2013, *Ministers' Referral Notice*, February.

QCOSS 2012, *Customer Service Standards, A comparative survey of standards applying to selected water businesses*, Final QCOSS report, April.

QCOSS 2014, *Submission to QCA Long Term Regulatory Framework for SEQ Water Entities*, Submission to the QCA, July.

Queensland Commission of Audit 2013*, Final Report*, February.

Queensland Treasury 1997, *Project Evaluation Guidelines.*

Queensland Treasury and Trade 2010, *Local Government Tax Equivalents Manual*, September.

Queensland Treasury and Trade 2013, *A Plan - Better Services for Queenslanders. Queensland Government Response to the Independent Commission of Audit*, April.

QUU 2012, *Customer Service Standards*, October.

QUU 2013a, *QCA Interim Price Monitoring Information Return 2013-15*, June.

QUU 2013b, *Initial Submission to Long-Term Regulatory Framework and Pricing Principles Review,* Initial Submission to the QCA*,* August.

QUU 2014a, *Submission: SEQ long-term regulatory framework review*, June.

QUU 2014b, *Submission to Long-Term Regulatory Framework Review: Technical Paper*, July.

Qldwater 2013, *Long-term Regulatory Framework and Pricing Principles,* Initial Submission to the QCA, August.

Qldwater 2014, *SEQ Long Term Regulatory Framework - Pricing Principles Position Paper March 2014*, submission to the QCA, June.

QWC 2010, *South East Queensland Water Strategy 2010.*

QWC 2012, *South East Queensland Water Strategy Annual Report 2012.*

Public Health Regulation 2005 (Qld).

Raftelis, GA 2005, *Water and Wastewater Finance and Pricing: A Comprehensive Guide*, 3rd edn.

RBA (Reserve Bank of Australia) 2014, *Statement on Monetary Policy*, February.

Redland City Council (RCC), 2012, *Redland Water Customer Service Standards*, July.

RCC 2013, *Total Water Cycle Management Plan for Redland City Council Final Report*, February.

RCC 2014a, *Submission to QCA Draft Position Papers*, June.

RCC 2014b, *Submission on Implementation paper*, July.

Seqwater 2013*, Response to Questions on Notice* [from the State Development, Infrastructure and Industry Committee Inquiry into the Queensland Audit Office Report to Parliament 14 for 2012-13: Maintenance of water infrastructure assets], November <https://www.parliament.qld.gov.au/work-of-committees/committees/SDIIC/inquiries/current-inquiries/12-WaterInfraAssets>*.*

SKM 2013, *Price Monitoring of South East Queensland Water & Sewerage Distribution & Retail Activities 2013 - 2015, Queensland Urban Utilities, Final Report*, September.

SEQ service providers 2012, *SEQ Water and Sewerage Planning Guidelines*, May.

South-East Queensland Water (Distribution and Retail Restructuring) Act 2009 (Qld).

South-East Queensland Water (Distribution and Retail Restructuring) Regulation 2010 (Qld).

Sunshine Coast Regional Council 2013, *Long-term Regulatory Framework for SEQ Water Entities*, initial Submission to the QCA*,* August*.*

Sustainable Planning Act 2009 (Qld).

Sparrow, M 2000, *The Regulatory Craft.*

Sydney Water Act 1994 (NSW).

Sydney Water 2011, *Publication guide 2011,* July.

Tirole, J 1988, The Theory of Industrial Organization.

Train, K 1991, *Optimal Regulation: The Economic Theory of Natural Monopoly.*

Treasurer and Minister for Trade and Minister for Energy and Water Supply 2013, *Statement of Obligations for Queensland Bulk Water Supply Authority.*

Unite against Unity 2014. *Submission to the QCA,* June*.*

Unitywater 2011, *Sustainable Sewage Treatment Services and Total Water Cycle Management in SEQ*, November.

Unitywater 2012, *Customer Charter.*

Unitywater 2013a, pers comm email of 2 August.

Unitywater 2013b, *Price Monitoring Submission 2013-15,* June.

Unitywater 2013c, *Initial Submission - Longer term Regulatory Framework for South East Queensland Water Entities,* August.

Unitywater 2014a, *Unitywater response to QCA Position Papers: Submission Long-Term Regulatory Framework and Pricing Principles*, submission to the QCA, June.

Unitywater 2014b, *Unitywater response to the QCA Annual Performance Reporting Implementation Technical Paper*, July.

Van den Berg, C 1997, *Water Privatisation and Regulation in England and Wales, Public Policy for the Private Sector, the World Bank Group, no 115*, May.

Victorian Government 1996, *Investment Evaluation Policy and Guidelines.*

Vogelsang, I 2001, 'Price Regulation for Independent Transmission Companies', *Journal of Regulatory Economics,* vol. 20, issue 2 (September), pp. 141-165.

Water Act 2000 (Qld).

Water Corporation (WA) 2012, *Customer Charter* (June).

Water Bill 2014 (Vic).

Water Industry Act 1994 (Vic).

Water Supply (Safety and Reliability) Act 2008 (Qld).

Water Supply Services Legislation Amendment Act 2014 (Qld).

West, A-R 2014, *Submission to the QCA,* June.

Western Water 2013, *Customer Advisory Groups and Community Reference Groups - Terms of Reference*, February.

Williams, H 2013, *Submission to the QCA on Pricing Principles,* correspondence 30 June.

Worthington, A 2011, 'Productivity, Efficiency and Technological Progress in Australia's Urban Water Utilities', *Waterlines Report*, National Water Commission, Canberra.

Yarra Valley Water 2012, *Yarra Valley Future Water Plan 2013-14 to 2017-18*, October.