Queensland Competition Authority

Technical Paper

SEQ Long Term Framework - Annual Performance Reporting - Implementation Issues

June 2014

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SUBMISSIONS

Closing date for submissions: 31 July 2014

Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (QCA). Therefore submissions are invited from interested parties concerning its assessment of implementation and information requirements. The QCA will take account of all submissions received.

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EXECUTIVE SUMMARY

Background

The Ministers have directed the QCA to investigate and report on a long-term regulatory framework for the monopoly distribution and retail water and sewerage activities of the five SEQ distributor-retailers (the entities) - Unitywater, Queensland Urban Utilities (QUU), and the Logan, Redland and Gold Coast City Councils. If accepted, the framework would apply from 1 July 2015.

In February 2014, the QCA released its Regulatory Framework Position Paper (QCA 2014a) which recommended a light-handed annual performance monitoring approach to apply from 1 July 2015. Under the framework, the QCA would monitor prices and revenues, policies and practices relating to customer engagement, investment strategies, service quality and pricing principles.

Water retailers' price and revenue performance would be assessed against CPI-X. Costs would only be reported and reviewed by retailers' if price or revenue changes exceed CPI-X or where service quality issues arise.

Purpose

The purpose of this paper is to outline matters relevant to the implementation of the proposed annual performance monitoring regulatory framework - in particular those relating to CPI-X, mechanisms for under- and over-recovery of revenues and information requirements to implement the recommended regulatory framework.

CPI-X

An appropriate value of CPI is required for comparing the retailers' prices. The retailers use the previous year's observed CPI for setting their next year's water prices. However, a more forward-looking and readily observable approach is to use the RBA forecast CPI. This approach is used for many regulatory purposes including by the QCA for setting electricity prices.

For the CPI-X framework, QCA therefore recommends that retailers' annual changes in price (and revenues) be monitored by the QCA against the CPI based on the RBA forecast available at the time retailers' pricing decisions are made, that is February each year.

The X factor is a measure of the productivity gain that should be achievable by water retailers going forward. The QCA has estimated X using various sources - including the findings of previous prudency and efficiency reviews of the retailers and the efficiency gains identified in other jurisdictions.

On this basis, operating efficiency gains of 1-2% should be achievable. After initial significant savings upon introduction of a range of policy initiatives including price monitoring, in recent years forecasts of capital expenditure have only been about 0.04% when expressed in terms of the maximum allowable revenue.

As a result an X of 0.25% per year is proposed for each retailer. This estimate is considered to be conservative, but the recommended regulatory framework provides incentives to outperform this estimate in the form of a revenue sharing arrangement.

It is recommended that the QCA review the X factor in 5 years or earlier if it is considered a more appropriate estimate should be applied.

Under- and over-recovery

QCA proposes that the appropriate mechanism to effect unders and overs is to smooth out the impact on prices on an NPV-neutral basis over a period of up to 10 years from 1 July 2015.

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.

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.

Revenue risks

Revenue risks arising from demand variations should be managed by retailers through appropriate tariff structures. Nevertheless, revenues may vary from forecast where there are complex inclining block tariffs or other forms of differentiated tariffs in place, and demand changes on an uneven basis.

Where this results in prices that exceed CPI-X, water retailers will need to provide additional information in annual returns. Under recovery resulting from unexpected changes in demand is recommended to be recovered on a NPV-neutral basis over a period of up to 10 years from 1 July 2015.

Cost risks

Cost risks can relate to changes in market conditions for inputs (including those related to the maintenance and renewal of infrastructure) or as a result of regulatory imposts. Where a retailer has breached CPI-X to recover unforseen and unexpected changes in costs, it should provide detailed information to QCA.

It is recommended that uncontrollable costs be recovered on a NPV-neutral basis over a period of up to 10 years from 1 July 2015.

Outperformance

A key feature of incentive regulation involves offering the regulated organisation an incentive to out-perform the X factor, as doing so will enable it to increase profitability. As proposed in the Regulatory Framework Position Paper (QCA 2014a), it is recommended that the benefit of outperformance, adequately documented by retailers and approved by QCA, be retained by retailers for a period of three years, and then returned to customers.

Information Requirements

In the Regulatory Framework Position Paper (QCA 2014a), the QCA proposed to release an information returns template. However, following discussions with water retailers detailed templates are now not considered to be of assistance, as retailers are pursuing different approaches for the financial reporting information. After four previous reviews retailers are now familiar with the nature and detail of information required for regulatory purposes.

By way of general guidance, several scenarios are discernible which will require increasing levels of information to enable the QCA to establish whether a water retailer is exercising its market power:

(a) Level 1: prices and tariff schedules, details relevant to customer engagement and strategic investment, service quality indicators and pricing principles

(b) Level 2: if any price increases, or changes in particular components of the tariff structure exceed CPI-X, the QCA will need to review average prices for water and sewerage. In addition to the

financial information require for Level 1, retailers will need to provide revenue data for water and sewerage, residential and non-residential

(c) Level 3. If average prices increase by more than CPI-X, and this is due to a limited number of cost increases, retailers will need to provide details of reasons (including relevant costs) for the increase and the MAR equivalents

(d) Level 4. Where average prices increase by more than CPI-X due to increases in a wide range of costs, retailers will need to submit full details, including RAB, depreciation, WACC and operating costs.

At any stage, the QCA can request further information. A full cost review, including a review of demand forecasts, the prudency and efficiency of opex and capex would be triggered if there is a concern that market power is being exercised. Should that be the case a price determination may be considered necessary.

THE ROLE OF THE QCA – TASK, TIMING AND CONTACTS

The Queensland Competition Authority (QCA) is an independent statutory authority to promote competition as the basis for enhancing efficiency and growth in the Queensland economy.

The QCA's primary role is to ensure that monopoly businesses operating in Queensland, particularly in the provision of key infrastructure, do not abuse their market power through unfair pricing or restrictive access arrangements.

Task, timing and contacts

The QCA has conducted four price monitoring reviews of distribution-retail water providers in south east Queensland covering the pricing periods from July 2010 to June 2015.

On 28 June 2013, the QCA received a Ministerial Direction to investigate and develop a long-term regulatory framework (and pricing principles). The over-arching objective is to protect customers' interests by ensuring that water and sewerage prices do not exceed prudent and efficient costs, while promoting efficient investment in services and having regard to service reliability, safety and security. The Direction required that the costs of implementing the regulatory regime do not exceed the benefits and that it should facilitate water retailers moving to light-handed prices oversight over time.

Key dates

Ministerial Direction	28 June 2013
Position Paper - Regulatory Framework	24 February 2014
Position Paper - Pricing Principles	28 March 2014
Position Paper - Return on Capital	30 May 2014
Submissions due on Position Papers	30 June 2014
Submissions due on Technical Paper	31 July 2014
Final Report	30 September 2014

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1 INTRODUCTION

1.1 Background

The Ministers have directed the QCA to investigate and report on a long-term regulatory framework for the monopoly distribution and retail water and sewerage activities of the five SEQ distributor-retailers (the entities) - Unitywater, Queensland Urban Utilities (QUU), and the Logan, Redland and Gold Coast City Councils. If accepted, the framework would apply from 1 July 2015.

The QCA is required to outline how the regulatory framework will be implemented on an ongoing basis, and is to ensure that the costs of implementing the regulatory regime do not exceed the benefits.

The Ministers required that the form of prices oversight should minimise the administrative burden on the entities and facilitate a move to a more light-handed framework over time.

The regulatory framework

In February 2014, the QCA released its Position Paper on the proposed long-term regulatory framework for SEQ water retailers (QCA 2014a).

The QCA recommended a light-handed annual performance monitoring approach to apply from 1 July 2015, with the QCA annually monitoring and reporting water retailers' performance against a range of measures. These measures include prices and revenues, and policies and practices relating to customer engagement, investment strategies, service quality and pricing principles.

Water retailers' price and revenue performance would be assessed against CPI-X. Costs would only be reported and reviewed by retailers' if price or revenue changes exceed CPI-X or where service quality issues arise.

Purpose

This paper outlines matters relevant to the implementation of the proposed annual performance monitoring regulatory framework - that is, defining CPI and the X factor, mechanisms for under- and over-recovery of revenues, and related information requirements.

The recommended approach and information requirements remain subject to any modifications to the light-handed regulatory framework consequent upon the receipt and consideration of submissions for the Final Report and the Minister's decision.

Comments on these issues should be provided to the QCA by 31 July 2014.

2 CPI-X

2.1 Introduction

Under the Ministers' Direction, the QCA's regulatory framework is to ensure prices reflect prudent and efficient costs while promoting efficient investment in and use of these services.

The Ministers' Direction also requires that the regulatory framework provide incentive mechanisms to support innovation.

As noted in the Regulatory Framework Position Paper (QCA 2014a), in the Australian urban water sector, economic regulators generally establish an [efficient] cost of service and then apply incentives for improved performance - typically by reference to changes in CPI less an X factor.

In the context of the south east Queensland water retailers, a CPI-X pricing framework would provide the reference point against which water retailers' changes in the distribution and retail component of prices would be monitored.

Regulatory frameworks using CPI-X essentially follow from Baumol (1982) who argued that prices should increase at a rate reflecting the average rise in the firm's input costs less a productivity offset.

Baumol also noted, however, that using an index of the firm's own input prices could lead to gaming by the firm which could seek to manipulate the index. To avoid such gaming, a broad index [such as CPI] was considered appropriate to reflect input price growth in the economy and is generally preferred (see Littlechild 1986 for its application in the UK).

Baumol further noted that setting prices by reference to an exogenous measure not linked to a particular entity's specific values provides strong incentives for improved performance.

Bernstein and Sappington (1999) argued that where growth in the regulated firm's output [is expected or desired to] differ from a broad measure [such as CPI] these latter effects can be captured by the X factor.

2.2 CPI

Australian regulators have consistently used CPI as an input cost index in regulatory decisions (ESC 2013b, ERA 2009, ESCOSA 2013a, ICRC 2008, 2013 and IPART 2010).

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 broadly based that the actions of any regulated business cannot affect it. 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 appropriate 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 are 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) an actual [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 5 years. For this purpose, ESCOSA (2013a) used the previous year's observed CPI to set prices. IPART (2012) used the midpoint of the RBA target range.

AER used the RBA's short term inflation forecast for the first 2 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 will be assessed over a long term period.

However, 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.

The QCA prefers 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 2014b).

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.

Draft Recommendation

2.1 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.

X Factor

As noted above, the Ministers' Direction requires that prices reflect prudent and efficient costs, and that the regulatory framework provide incentive mechanisms to support innovation.

The X factor in a CPI-X framework is, in particular, intended to provide incentives for the service provider to achieve efficiency gains (IRIC 2004).

The Regulatory Framework Position Paper (QCA 2014a) 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 are linked to a firms 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, 2012b; Bernstein and Sappington, 1999).[1]

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, 2013a), the Essential Services Commission of South Australia (ESCOSA, 2013) and the Economic Regulatory Authority (ERA, 2013).

IPART, ESC, ESCOSA and ERA undertake efficiency assessments of the expenditure proposals of regulated entities, 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.

[1] Input prices of the regulated industry may grow at a different rate from input prices in the broader economy where the regulated industry uses one input more intensively than the broader economy (regulated industries tend to be more capital intensive than the broader economy) and that input's price grows at a different rate to other input prices.

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 (2012) 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 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 (2012), ESC (2013b), ESCOSA (2013a) and ERA (2009, 2013)).

In an extensive review of the use of PPI in regulatory applications in the energy sector, the ACCC (2012b) 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 2012b).

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[2]the assumptions underlying the estimation methodology and errors in the selection and measurement of inputs and outputs.

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, 2012b).

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, and

(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.

[2] See, for example, Biggar (2005).

Table 1 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 there is a wide range of estimates of savings identified by 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 entities' 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 $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 entities.

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 entities. 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.[3]

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 factors 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 distribution/retail businesses as noted below.

[3] Assumes that the return on and of capital is 11% per year.

Table 2 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 (2013b) imposes a 1% (real) per year annual efficiency target[4] in baseline operating costs (business as usual costs) for metropolitan Melbourne water retailers and Melbourne Water. 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, 2012) 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, 2012) 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 entities 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, 2012). 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 (2013b), IPART (2012), ESCOSA (2013a) and ERA (2013) typically assess capital expenditures using cost-linked methods with the aid of a consultant. Typically, the capital expenditure program is broken down into components

[4] These savings are based on analysis by the Victorian Competition and Efficiency Commission (VCEC, 2008) following a review of the metropolitan Melbourne water industry.

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[5]

(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 entities 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 entities 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

[5] This consisted of a 1.9% reduction for Melbourne Water, an 8% reduction for Western Water and a 14.4% reduction for City West Water.

for the SEQ water retailers. It is reasonable to expect that the scope for efficiency gains will 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 Redlands are still under review) nor for any group of entities.

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 (excluding Redland Water), as shown below.

Table 3 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 will 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 will apply in monitoring from 1 July 2015 onwards.

Draft Recommendation

2.2 An X factor of 0.25% be applied annually (to the MAR from 1 July 2015) for the 5 SEQ water retailers

Reviewing and resetting the X factor

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 through to customers.

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

Given its importance, the QCA should review the X factors in 5 years, or earlier should evidence emerge that the X factor is inappropriate.

Draft Recommendation

2.3 The QCA review the X factor in 5 years or earlier if it is considered a more appropriate estimate should be applied.

3 UNDER- AND OVER-RECOVERY

3.1 Introduction

The Ministerial Direction states that the treatment of aggregate annual revenue under/over recoveries in relation to core water and sewerage services should be considered as part of the permanent price monitoring framework in a manner that balances the interests of the water entities and their customers.

This paper sets out the rules and mechanisms for managing the under-and-over recovery.

Key issues

The basic aim of incentive regulation is to provide incentives for the regulated firm to take appropriate actions—in terms of cost, innovation, service quality and investment—that mimic as much as possible outcomes in perfectly competitive markets and at the same time ensure that the firm is allowed to earn enough revenue to recover the efficient cost of providing the services (QCA 2014i).

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.

3.2 Past under or over recovery

QCA' s price monitoring of the SEQ water retailers for 2013-15 (for example, QCA 2014d, 2014e, 2014f, 2014g, 2014h) 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 2014a) 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 entities, 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 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.

Draft Recommendation

3.1 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.

3.2 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.

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.

3.3 Revenue risks

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 (2012) 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 will 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 will 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 (2013b) 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 light-handed 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 light-handed 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 will need to provide additional information in annual returns.

The recommended mechanism to account for unders and overs is for demand variations from year to year to be adjusted on a NPV-neutral basis over a period of up to 10 years from 1 July 2015.

Draft Recommendation

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.

3.4 Cost risks

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 2014a) stated that uncontrollable costs such as bulk water charges and changes to Government legislation will 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 (2013b) allowed cost pass-through for desalination water order and security costs for Melbourne Water and the metropolitan retailers. Similarly, IPART (2012) 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 (2014c) 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 (2012) 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 (2012) 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 will 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.

The Regulatory Framework Position Paper (QCA 2014a) noted that in addition to these costs, bulk water costs, which make up over 50% of the entities 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 proposes that they be limited to the circumstances listed above.

As the retailers set prices annually, and these are locked in, cost pass-throughs will not be reflected in prices within the pricing period. Rather, they will 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 will be required to provide detailed information to QCA regarding these over-recoveries and potential cost pass-throughs (in terms of the MAR).

Draft Recommendation

3.5 Under-recovered uncontrollable costs be recovered on a NPV-neutral basis over a period of up to 10 years from 1 July 2015.

3.5 Outperformance

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

The Regulatory Framework Position Paper (QCA 2014a) states 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 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

As proposed in the Regulatory Framework Position Paper (QCA 2014a), it is 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 incentive to reveal to QCA undetected over-recoveries or outperformance. Furthermore, without adequate cost information, QCA will 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.

Draft Recommendation

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

4 INFORMATION REQUIREMENTS

4.1 Introduction

To implement the QCA's recommended regulatory framework it has been proposed (see Regulatory Framework Position Paper, QCA 2014a) that the level of information provided by entities will increase according to whether prices exceed CPI-X:

> *Entities will 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 will be required depending on the reason for the difference.*
>
> *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 will require entities to provide broad data to estimate the MAR.*

This approach is designed to minimise the cost of regulation. Essentially, it is recommended that the information sought and provided to the QCA reflects that necessary to ascertain whether market power is being exercised.

Information templates

In its Regulatory Framework Position Paper the QCA (2014a) indicated that it 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 indicate that detailed templates are now not of assistance, as entities 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 now 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.

4.2 Overview of information requirements

Four scenarios requiring increasing levels of information for the purposes of price monitoring from entities are identifiable. These are as outlined below. A final scenario occurs where a full 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 will issue a public request for further information.

Table 4 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 RFI will depend on the nature of the identified issues.

A full cost review, including a review of demand forecasts, the prudency and efficiency of opex and capex would be triggered if there is a concern that market power is being exercised (see potential circumstances to trigger a review in Table 9, Regulatory Framework Position Paper, QCA 2014a).

As noted in the Regulatory Framework Position Paper (QCA 2014a), where details of service quality indicate changes, breaches of standards set by technical regulators will 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 will be required when considering whether to trigger a more complete review.

4.3 Level 1

Level 1 provides the base-line information that each water retailer will 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 will 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 will also be assessed.

4.3.1 Prices

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 5 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 6 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.

4.3.2 Customer engagement practices

The Regulatory Framework Position Paper (2014a) sets out the criteria for best practice customer engagement against which water retailers' customer engagement activities will 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 willingness to pay (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 entities 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 will be 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 will 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 will not be the only determinant. Every company will 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 seek to assess how the water retailer has responded to customer concerns. This is likely to vary from review to review and entity to entity. 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 an entity will 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 will 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 7 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

4.3.3 Strategic approach to long-term investment

As part of the recommended light-handed 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 Netserv Plan in place with the requisite Board approval and Ministerial endorsement, together with any updates

(b) annual capital works plans or annual performance plans are consistent with the 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[6], 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.

[6] Sub-service areas are: (1) water infrastructure; (2) water non-infrastructure; (3) sewerage infrastructure; and (4) sewerage non-infrastructure.

QCA analysis

Assessment largely relates to reviewing evidence of planning activities and compliance.

Provision of Netserv Plans Part A and evidence of approval by the Board/Council and endorsement by the relevant 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 capex planning requirements in the Local Government Act 2009.

It is envisaged that the annual capital works plan (or annual performance plan) developed by each entity will serve as the initial reference for annual monitoring of capital investments.

The QCA does 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 will 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 will 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 will identify any material shortcomings. While performance in investment planning and co-ordination will 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 8 Long term investment information requirements

Indicator	*Information requirement*
Adopted Water Netserv Plan - strategic approach to long-term planning	Submit Water Netserv Plan as at 1 October 2014 and any subsequent updates. 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.

4.3.4 Service quality

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 entities' 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 (2013) annually reports on the performance of public water utilities, and uses comparative tables to provide information to the public.

Ofwat (2013) 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 entities' 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 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 proposes 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, compare trends in performance for the retailer.

It is 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 will 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 proposes to explore the use of more holistic approaches to performance measurement perhaps using such techniques as data envelopment analysis (DEA).

Information requirements

The service quality indicators to be reported are as summarised in the Regulatory Framework Position Paper (QCA 2014a).

The metrics for the indicators are proposed to be consistent with DEWS' proposed KPIs, and may be subject to revision before the first annual reporting process.[7]

4.3.5 Pricing principles

The QCA's Pricing Principles Position Paper (QCA 2014b) has 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 will 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 2013, IPART 2012, ESC 2013b).

QCA analysis

To assess water retailers' performance against pricing principles, the QCA will refer to the full tariff schedule submitted under Level 1 information requirements. The QCA will also review water retailers' calculation of LRMC.

The QCA will then seek to prioritise the actions required by water retailers to address the identified shortcomings.

While non-performance against the approved pricing principles will not on its own trigger a 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 2014b). 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)

[7] The Water Supply Services Legislation Amendment Bill 2014, cl 71, proposes to amend the Water Supply Act to require water service providers to provide performance reports to the water supply regulator. The report must be about the KPIs stated in the "report requirement" given to the provider by the regulator.

(c) any other tariff differentiation (service quality, seasonal, peak period, etc)

4.4 Level 2

The Level 2 information requirement will 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 (2013b) 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 will 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 will 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[8]. 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 will 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) will be collected as part of the service quality baseline indicators.

Taken together, the QCA will be able to compile weighted average prices for water and sewerage, residential and non-residential. The information requirements are set out below.

[8] This approach is referred to as the Paasche index.

Table 9 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 10 Sewerage revenues

Indicator	*Information Requirements*
Revenue per connection - residential	Total sewerage revenue - residential
Revenue per connection - non-residential	Total sewerage revenue - non-residential

4.5 Level 3

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 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.

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.

4.6 Level 4

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 will need to reconcile the changes with their total costs (effectively the retailers' 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

Entities should provide details of the asset base roll-forward since 2014 as per below.

Table 11 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 entity 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.

The capital expenditure recorded for the water retailer as a whole must reconcile to the relevant entries in its balance sheet.

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 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 to the straight-line method is also required for the initial year where the alternative approach is adopted. This will allow the QCA to adjust its Reference MAR.

This includes:

(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 12 Operating Costs

Costs by type	***Costs by activity***			
	Operations	***Maintenance***	***Corporate costs***	***Totals***
Bulk water				
Employee expenses				
Electricity				
Other materials and services				
Tax				
Total				

4.7 Binding Rulings

Water retailers may submit to the QCA for a binding ruling to reduce regulatory risk. To differentiate issues that are subject to binding ruling from under-recoveries or cost pass-throughs, the QCA requires that binding rulings are:

(a) ex-ante. That is, submitted to the QCA before the operating or capital expenditure has been expended

(b) on costs that are controllable. Binding rulings should relate to material business decisions being considered by the retailers, such as large capital augmentation or a restructured operational model.

The QCA will assess the merits of a binding ruling in isolation. Water retailers will be required to submit all details relevant to the issue in question.

GLOSSARY

A	
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
AER	Australian Energy Regulator
B	
C	
CPI	Consumer price index
CSS	Customer service standards
D	
DEA	Data envelopment analysis
E	
ERA	Economic Regulation Authority (WA)
ESC	Essential Services Commission (Victoria)
ESCOSA	Essential Services Commission of South Australia
F	
FTE	Full time equivalent
G	
H	
I	
ICRC	Independent Competition and Regulatory Commission (ACT)
IPART	Independent Pricing and Regulatory Tribunal (NSW)
J	
K	
KPI	Key performance indicators
kL	Kilolitre
L	
LRMC	Long run marginal cost
M	
MAR	Maximum allowable revenue
N	
NPV	Net present value

O	
Ofwat	Office of Water Services (UK regulator)
P	
PPI	Partial performance indicators
Q	
QUU	Queensland Urban Utilities
R	
RAB	Regulatory asset base
RBA	Reserve Bank of Australia
S	
SCA	Sydney Catchment Authority
SEQ	South East Queensland
SIM	Services incentive mechanism (Ofwat, UK)
T	
TFP	Total factor productivity
U	
V	
W	
WACC	Weighted average cost of capital
X	
Y	
Z	

APPENDIX A: STUDIES OF TFP IN THE AUSTRALIAN WATER SECTOR

Study	*Method ology*	*Sample size and period of study*	*Measured inputs and outputs*	*Average annual TFP growth (%)*	*Findings*
Coelli and Walding (2006)	DEA	18 major urban water businesses (excludes sewerage services) 1994-95 to 2002-03	Outputs: number of properties connected, volume of water delivered Inputs: operating and capital expenditure	-1.1	Demand management policies were a significant contributor to declining productivity although much better data would be required for this result to be conclusive.
Byrnes et al. (2010)	DEA	52 regional water businesses in Victoria and NSW 2001-02 to 2003-04	Outputs: water supplied, customer satisfaction Inputs: operating costs	-10	The unusually high decline in productivity was attributed to water conservation policies over the period studied - i.e. with a given network size and given number of customers, utilities with higher demand per customer tend to be significantly more efficient
Worthington (2011)	DEA	55 major urban water businesses (excludes sewerage services) 2005-06 to 2008-09	Outputs: quality of water supplied, customer satisfaction, water losses, water mains breaks Inputs: total operating costs	1.0	The measured productivity improvement was attributed to efficiency gains with little apparent gain from technological improvements. Regulatory and compliance costs were likely to have stifled technological innovation.
ESC (2012)	SFA	11 major urban water utilities and 43 regional water businesses (excludes bulk water suppliers) 2005-06 to 2009-10	Outputs: number of customers, normalised and quality adjusted quantity of water supplied, quality-adjusted quantity of treated sewage Inputs: bulk water purchases, non-bulk operating and maintenance expenditure, gross capital stock, length of mains	-0.5*	Investments in desalination plants in Perth, the Gold Coast and Sydney were possible contributing factors to the measured decline in productivity of Major Utilities outside of Victoria. Increases in capital and non-capital inputs per customer were key contributors to decreasing productivity for Non-major Utilities in Victoria.

** Represents the average annual decline in productivity for all utilities in the sample over the period studied. Within the sample, average annual productivity declined over the period by 0.1% for major urban Victorian utilities, 0.6% for major urban utilities in other states, 0.8% for regional Victorian urban water utilities and 0.4% for the non-major utilities in other states.*

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