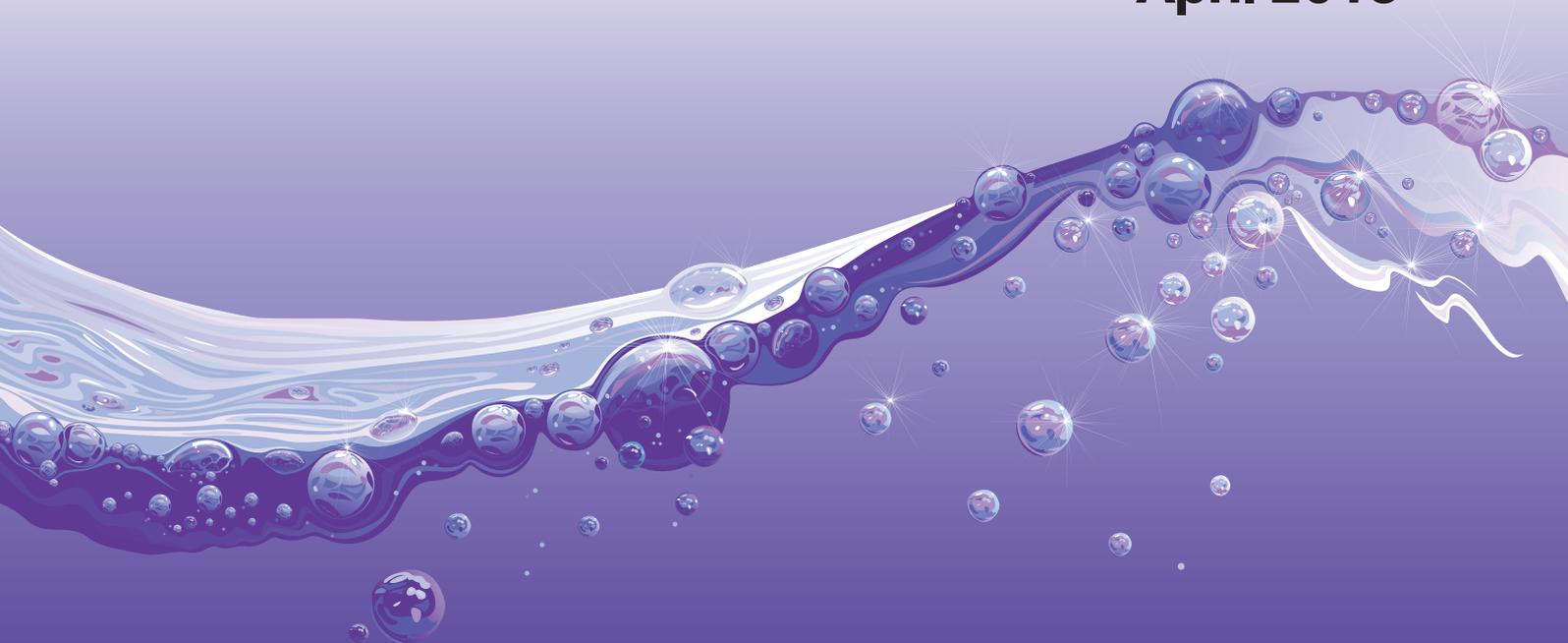


Industry Panel

Review of the Independent Competition and Regulatory Commission's 2013 Price Direction

for Regulated Water and Sewerage Services in the ACT

Final Report
April 2015





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The Industry Panel is established under the *Independent Competition and Regulatory Commission Act 1997*, following an application by ACTEW Corporation Ltd (now registered as Icon Water Ltd) for the review of the Independent Competition and Regulatory Commission's Price Direction for Regulated Water and Sewerage Services, 1 July 2013 to 30 June 2019.

The Industry Panel comprises one President and two members.

The Panel Members are President Ms Mary Anne Hartley QC, and Members Ms Sally Farrier and Ms Claire Thomas PSM.

Correspondence or other inquiries may be directed to the Industry Panel at the addresses below:

Industry Panel
GPO Box 158
Canberra ACT 2601

The Secretariat of the Industry Panel can be contacted by telephone on (02) 6207 6128, or by fax on (02) 6207 0267 or via email at industrypanel@act.gov.au

Further details of the Industry Panel process can be found at: <http://apps.treasury.act.gov.au/industrypanel>.

15/0401

Foreword

This final report ends the Industry Panel's review of the price direction made in June 2013 by the Independent Competition and Regulatory Commission (ICRC) in relation to the prices of water and sewerage services in the ACT. Our review has been unique as it is the first appeal under the review provisions of the *Independent Competition Regulatory Commission Act 1997*.

The Panel sought to ensure that it established a rigorous, robust and transparent review process that met the requirements of the legislative framework, and resulted in a 'correct and preferable' decision that the Panel feels best serves the interests of the ACT community. In doing so, the Panel consulted with stakeholders about the approach and scope of its review process, and sought feedback about its draft decision, which it released in December 2014.

The Panel's substituted price direction provides a price path for water and sewerage services until 30 June 2018. Assuming inflation of 2.5% (and in the absence of any events that would trigger cost pass-through provisions), this price path will reduce water charges by close to 1% in 2015-16 from current levels, with prices rising in line with inflation in both 2016-17 and 2017-18. Sewerage charges will rise by 3.9% in 2015-16, and then increase by the inflation rate for the remaining two years of the regulatory period.

These price changes will result in only modest changes to typical households bills over the next three years, relative to current bills which are determined by the charges set by the ICRC in its original price direction.

The Panel has relied on well-tested and widely-accepted regulatory methodologies, techniques and principles in reaching its price direction. Unlike the original price direction, there is no provision for recalibration of prices beyond the current 2014-15 year. As a result, the Panel believes its direction will improve certainty for customers and Icon Water about the charges for water and sewerage services over the next few years, and represents a solid foundation upon which future price determinations can be based.

The Panel had more than 40 meetings to deliberate over the issues and make its decisions. I would like to thank my fellow Panel members, Sally Farrier and Claire Thomas, who provided different perspectives to the decision-making process, drawing on their extensive capabilities and experiences. In addition to their unstinting and meticulous preparation and intellectual rigour, both have provided much welcomed support throughout our work.

The Panel was fortunate to be advised and assisted by a dedicated and professional team of talented individuals and expert consultants, including Katherine Lowe, Paul Webber, Lynne Griffiths, Ross Tsokas, Natalie Hoy and Cardno consultants, Alex Nash and Stephen Walker. Our project manager, Steve Martin, has managed the team and the project with exemplary skill and good humour, and made a strong intellectual contribution to the project.

I thank the Chief Minister, Treasury and Economic Development Directorate of the ACT Government for providing superlative administrative support from Matthew Smith and Nicole Wong. I would also like to acknowledge the Independent Pricing and Regulatory Tribunal of NSW for allowing the secondment of Stephanie Biesega and Jenny Suh, who each made an outstanding contribution.

Finally, I thank those members of the ACT community who took the time and effort to make written submissions and to attend public meetings. The Panel recognises the burden that consultation processes can place on customers, and appreciates the valuable input that has been made.

Mary Anne Hartley QC
President of the Industry Panel

Name change: ACTEW and Icon Water

Icon Water Limited is an unlisted public company that owns and operates the water and sewerage assets and business in the ACT.

Until 30 October 2014, Icon Water Limited was known as ACTEW Corporation Limited. Supporting documentation produced prior to that day will refer to ACTEW Corporation Limited or ACTEW Water. The brand 'Icon Water' is being implemented in stages, with the business name ACTEW Water continuing to be utilised into the first half of 2015.

As the Panel's draft report was substantially completed before this change of name, the entity was referred to as 'ACTEW' in the draft report. However, in this final report, the entity is referred to as 'Icon Water' to reflect the change in name that is coming into effect. All references to Icon Water should therefore be read as being equivalent to ACTEW.

Abbreviations and acronyms

\$m	\$ million
ACCC	Australian Competition and Consumer Commission
the Act	<i>Independent Competition and Regulatory Commission Act 1997 (ACT)</i>
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
CAPM	capital asset pricing model
COAG	Council of Australian Governments
CPA	Competition Principles Agreement
CPI	consumer price index
DORC	depreciated optimised replacement cost
CSO	community service obligation
EBIT	earnings before interest and taxes
ECD	Enlarged Cotter Dam
ERA	Economic Regulatory Authority (Western Australia)
ESC	Essential Services Commission (Victoria)
ESCOSA	Essential Services Commission of South Australia
FFO	funds from operations
GL	gigalitre
ICRC	Independent Competition and Regulatory Commission
IPART	Independent Pricing and Regulatory Tribunal (NSW)
kL	kilolitre
M2G	Murrumbidgee to Googong Pipeline
MRP	market risk premium
NCC	National Competition Council
NWC	National Water Commission
NPV	net present value
ODV	optimised deprival value
pa	per annum
Panel	Industry Panel
QCA	Queensland Competition Authority
RAB	regulated asset base
RBA	Reserve Bank of Australia
S-L CAPM	Sharpe-Lintner capital asset pricing model
SOFC	statement of facts and contentions
UNFT	Utilities Network Facilities Tax
vs	versus
WAC	Water Abstraction Charge
WACC	weighted average cost of capital

Glossary

annualised cost	The annualised cost in any one year is equal to the amount of additional operating expenditure incurred in that year plus 15% of the additional capital expenditure incurred in that year
benchmark approach	An approach that sets the rate of return in line with the <i>efficient</i> debt and equity costs in the regulated industry
biennial recalibration	Mechanism adopted by the ICRC to review the key pricing parameters of the original price direction during the regulatory period
bounceback	An increase in water use following a period of severe water restrictions
Breusch-Ward model	The regression model used by Icon Water to forecast water sales
building block model	The underlying cost components that sum to the allowed revenue of the regulated business (ie, the return on capital, depreciation, the operating expenditure, and various other components such as net tax liabilities)
capital expenditure	Expenditure that a business incurs to buy fixed assets or to add to the value of an existing fixed asset with a useful life extending beyond the taxable year
consumer price index (CPI)	The consumer price index published by the Australian Bureau of Statistics
cost pass-through mechanism	A mechanism that enables a regulated business to recover certain uncontrollable costs over the regulatory period (eg, changes in the Water Abstraction Charge, and changes in other government charges)
current regulatory period	The regulatory period that commenced on 1 July 2013. (The Panel's final decision is that it will expire on 30 June 2018; the ICRC's original price direction expired on 30 June 2019)
deadband	The range around water sales revenue, beyond which adjustments are made to the revenue requirement in the subsequent regulatory period to compensate the water authority (or its customers) for under- (or over-) recovery of revenue where water sales are lower (higher) than forecast
depreciation	An allowance that enables the regulated business to recover its investment in the asset over the economic life of the asset (also referred to as the return of capital)
firm-specific approach	An approach that sets the rate of return in line with the <i>actual</i> debt and equity costs of the regulated business
fixed charge/fixed service fee	A charge for a service that is the same regardless of the quantity used
form of price control	The manner in which prices or revenue are regulated– eg, price caps or revenue caps
inclining block tariff	The provision of two or more prices for water used, whereby each price applies to a customer's use within a defined tier. Prices rise with each successive tier

indexation	An adjustment to take into account the effect of inflation on the regulated asset base (using a 2.5% inflation forecast)
nominal dollars	Dollars expressed in 'money of the day' terms - ie, include forecast inflation
nominal vanilla weighted average cost of capital	A weighted average cost of capital (see below) that includes the impact of inflation but does not account for the impact of taxes on returns
operating expenditure	The non-capital costs of operating and maintaining a product or service
original price direction	The ICRC's price direction made in June 2013, covering the six-year period from 1 July 2013 to 20 June 2019
previous regulatory period	The period commencing 1 July 2008 and expiring 30 June 2013
price cap	An imposed limit on how high a price is charged for a product
real dollars	Dollars expressed as a constant value - ie, adjusted to exclude the effect of inflation
remaining economic life	The remaining period over which an asset will be used to provide services
revenue cap	An approved maximum amount of revenue that a regulated business is allowed to collect in each year of the regulatory period
revenue requirement	The revenue required by the regulated business to cover efficient operating costs, a return on capital, depreciation and net tax liabilities
tariff structure	The way in which prices are organised, which can provide different incentives and signals to customers - eg, a two-part tariff (a fixed service charge and an inclining block tariff variable charge)
true up	Adjustment made to take into account the over- or under-recovery of revenue as a result of Icon Water charging the ICRC's prices for 2013-14 and 2014-15
'unders and overs' mechanism	A mechanism to ensure that any under (or over) recovery in a particular year can be recovered from (or passed back to) customers
variable charge	A charge for a product/service based on the quantity used. Also known as a volumetric charge
weighted average cost of capital (WACC)	The general form of the opportunity cost (or discount rate) most commonly used and accepted in regulatory practice in Australia, and is the weighted sum of the costs of debt and equity finance

Rounding

Many of the tables in this report contain data that are rounded to two decimal places. Total figures in these tables may not always reconcile because of this rounding.

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1 Executive Summary

The Industry Panel (the Panel) was appointed in April 2014 by the ACT Treasurer to review the price direction released by the Independent Competition and Regulatory Commission (ICRC) in June 2013 for prices applying to water and sewerage services in the ACT (the original price direction).

The main features of the original price direction are presented in Box 1.1.

Box 1.1: Original price direction

The ICRC is responsible for regulating the prices Icon Water charges for water and sewerage services in the ACT. The ICRC's original price direction covered the six-year period from 1 July 2013 to 30 June 2019.

The ICRC determined that Icon Water's maximum prices for water services should increase by 4.9% in 2013-14, while its maximum price for sewerage services should fall by 18.1%. For 2014-15, the ICRC provided for prices to be adjusted to account for the change in the consumer price index and any pass-through events.

To deal with uncertainties about Icon Water's expenditure and customer demand over the regulatory period, the ICRC did not set prices for the entire length of the period. Instead, it made provision for prices in later years to be established through 'biennial recalibrations', to be conducted in 2015-16 and 2017-18.

The review of the original price direction was initiated by Icon Water Ltd (Icon Water) (formerly ACTEW Corporation Limited – see page ii) in September 2013, under the appeal process provided for in the *Independent Competition and Regulatory Commission Act 1997* (the Act). Under the Act, the Panel must:

- either substitute a new price direction for the original price direction, or confirm the original price direction, and
- make its decision on the merits of the case, having regard to the legislation that governs the price direction.

In December 2014, the Panel released a draft report that contained its draft decision and sought feedback from the ACT community. It received written submissions and held a public forum in Canberra where it heard oral submissions from Icon Water and members of the public. The Panel also sought further information from Icon Water on a number of issues. The Panel took into account the matters raised during this consultation period, and undertook additional analysis.

The Panel has now completed its review and made its final decision. This report sets out the final decision, and explains the Panel's reasons for this decision.

1.1 The Panel's final decision is to substitute a new price direction

The Panel's final decision is **to substitute a new price direction that sets prices until 30 June 2018, with no biennial recalibration**. The substituted price direction that gives legal effect to this decision is available as a separate document.¹

The substituted price direction is based on a framework that reflects well-tested and accepted regulatory techniques and principles; as such, the Panel considers the direction should provide a robust foundation for future price determinations for regulated water and sewerage services in the ACT. The Panel's final decision should:

- provide greater price certainty for all stakeholders, thereby being more conducive to efficient investment in the water and sewerage sector; and allowing customers to better plan for changes in their bills

¹ Industry Panel *Substituted Price Direction for Regulated Water and Sewerage Services 1 July 2013 to 30 June 2018*, April 2015.

- improve incentives for Icon Water to reduce its costs over time, and
- reduce the administrative burden and costs associated with regulation.

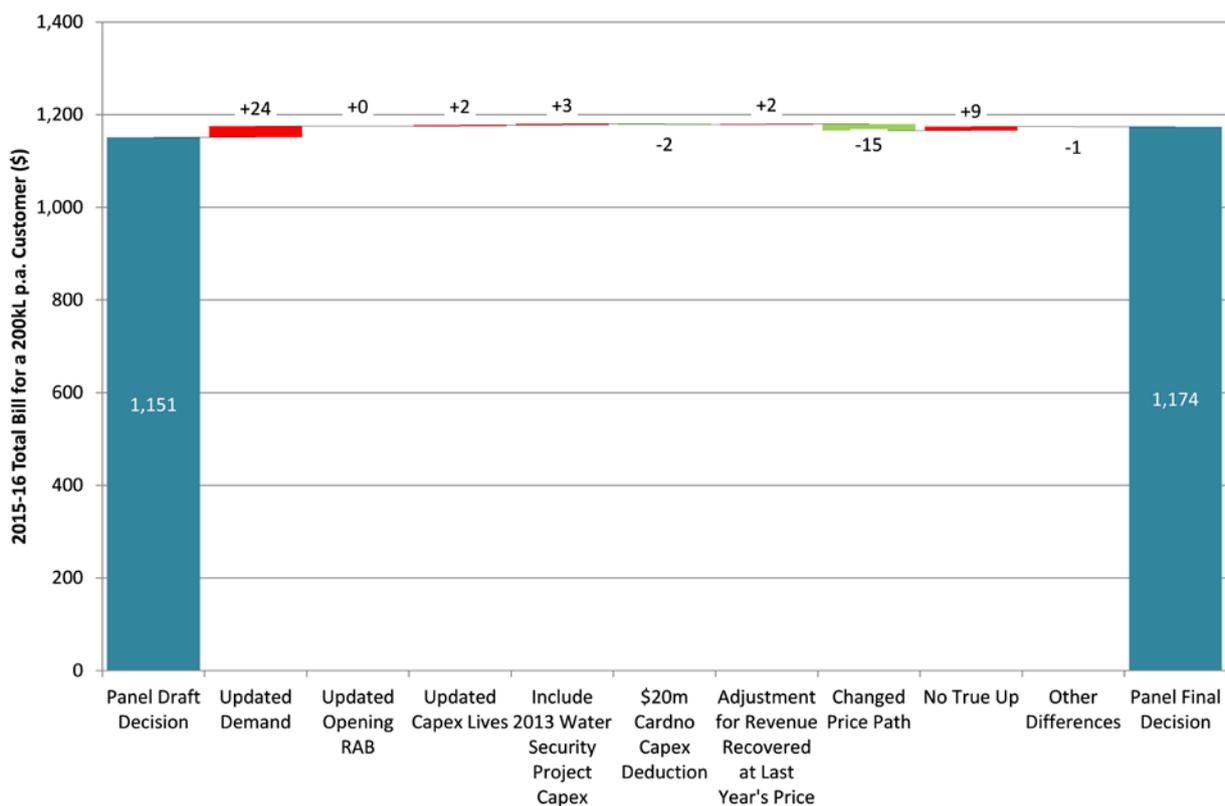
In the course of its review, the Panel identified some initiatives and a number of actions which could be taken by an economic regulator to further strengthen the regulatory arrangements. These suggested actions are listed in Appendix 2 as a basis for the ICRC's consideration. The Panel has not considered these in detail, or assessed the associated costs and benefits, but prima facie believes they warrant consideration.

1.1.1 The Panel's final substituted price direction is broadly consistent with its draft decision

The Panel's final decision is broadly consistent with the draft decision released in December 2014. As shown in Figure 1.1, there has only been a minor movement in the indicative price impact (as measured by the total water and sewerage bill for a typical residential customer in 2015-16).

After considering the matters raised during consultation, and undertaking additional analysis, the Panel has reaffirmed many of the components of its draft decision. However, it has made adjustments to some parameters, some of which had offsetting effects.

Figure 1.1: Differences between the Panel's final and draft decisions on typical water and sewerage bills in 2015-16 (residential customer 200 kL pa)



Note: The data in the figure have been rounded.

Table 1.1: Main differences between the Panel's final and draft decisions

		Final decision	Draft decision	Reasons for change
Value of the regulated asset base (RAB)	Forecast capital expenditure	Water: \$157 million Sewerage: \$302 million	Water: \$154 million Sewerage: \$316 million	New information reduced the Panel's confidence that the capital program submitted by Icon Water in September 2014 will be delivered in full in the regulatory period. Hence, the Panel adopted Cardno's recommendation to deduct \$20m from forecasts. In the case of water, there was an offsetting adjustment to include 2013-14 expenditure on water security projects that was inadvertently excluded from Icon Water's initial submissions.
	Depreciation	Water: \$137 million Sewerage: \$106 million	Water: \$136 million Sewerage: \$106 million	Estimates of the economic lives of approximately 60 capital expenditure projects were updated following information provided by Icon Water in response to the Panel's draft report. The depreciation allowance has also been amended to reflect the revised forecast capital expenditure.
Forecast operating expenditure (includes WAC and UNFT)		Water: \$494 million (nominal, full 5-year period) Sewerage: \$377 million (nominal, full 5-year period)	Water: \$496 million (nominal, full 5-year period) Sewerage: \$377 million (nominal, full 5-year period)	Updated water sales forecasts result in a lower dam release forecast and a lower allowance for the Water Abstraction Charge (WAC). Correction of (immaterial) error in converting real to nominal values.
Forecast water sales		Forecasts from 2014-15 to 2017-18 range from 43.1-44.8 GL pa based on revised advice from Cardno.	Forecasts from 2014-15 to 2017-18 range from 44.0-45.8 GL pa based on original advice from Cardno.	Refinements to Cardno's forecasting model to reflect impact of water restrictions. Changes resulted in 2.0-2.2% decrease in forecasts compared to draft decision.
'True up' adjustment		No provision made for 'true up'.	The Panel allowed a 'true up' of revenue from 2013-14 and 2014-15. Prices in the last three years of the regulatory period took into account that the ICRC's prices in the first two years were set higher than would have been determined under the Panel's approach.	Given the downward revision in demand forecasts, it is no longer clear that Icon Water will over-recover revenue in 2014-15. As such, the Panel considered the rationale for the true up was less compelling, taking account of the challenge this raised in relation to setting prices at the appropriate level for the later years.
Price path		Water: Reduces water charges by 1.0% in 2015-16, with prices rising in line with CPI (ie, rate of inflation) in 2016-17 and 2017-18. Sewerage: Increases charges by around 3.9% in 2015-16, and then increases them in line with CPI (ie, rate of inflation). (Assumes inflation of 2.5% and no cost pass-through events)	Water: Reduces charges by approximately 5.2% in 2015-16 from current levels, and then holds them constant in nominal terms in 2016-17 and 2017-18. Sewerage: Increases charges by around 4.9% in 2015-16, and then increases them in line with CPI (ie, rate of inflation). (Assumes inflation of 2.5% and no cost pass-through events)	The change to the water price path primarily reflects the impact of reduced water sales forecasts (which exerts upward pressure on prices), and the Panel's decision to limit the change in bills in 2015-16 and better align forecast revenue with target revenue in the final year of the regulatory period, to assist a smooth transition into the subsequent regulatory period. The change to the sewerage price in 2015-16 reflects the downward revision made to the forecast of the net revenue requirement for Icon Water's sewerage services, and the final decision not to make a 'true up' adjustment.

	Final decision	Draft decision	Reasons for change
Measures to manage demand risk	The use of a demand volatility adjustment mechanism to account for deviations between actual and forecast volumetric water sales revenue in excess of a 6% deadband over the full five-year regulatory period (2013-14 to 2017-18).	The use of a demand volatility adjustment mechanism to account for deviations between actual and forecast volumetric water sales revenue in excess of a 7% deadband over the full five year regulatory period (2013-14 to 2017-18).	The deadband was adjusted to reflect the downward revision in the distribution of water sales forecasts in the Panel's final decision.
Other	Pricing model adjusted to recognise that bills in the first quarter of a financial year include consumption charged at the previous year's price.	Pricing model did not take into account the effect on revenue from a portion of water sales in a given financial year being charged at the prices of the previous financial year.	Submission from Icon Water alerted the Panel to this feature of the price model, which has previously been taken into account by the ICRC.

As illustrated in Figure 1.1, the most significant change between the final and draft decision – in terms of the impact on prices and household bills – has been a downward revision to the Panel's demand forecasts. As explained in further detail in section 1.4.4 below, this follows refinements made to the forecasting model adopted by the Panel after considering submissions from Icon Water, and after obtaining further advice from independent experts, Cardno. The size of the downward revision is modest, with water sales projected to be around 2% lower than forecast at the draft decision stage.

Because average water prices are sensitive to the level of expected consumption,² this downward revision in water sales forecasts means that the maximum water charges permitted under the Panel's substituted price direction are higher than those determined under the draft decision. However, the Panel's water sales forecasts remain higher (and prices commensurately lower) than the alternative forecasts provided by Icon Water.

The other major determinant of regulated price rises for water and sewerage services is the rate of return on capital. The Panel did not accept Icon Water's contention for a higher rate of return – and reaffirmed its draft decision to adopt a weighted average cost of capital of 7.20% (as discussed in section 1.4.1).

1.2 The Panel's substituted price direction covers a five-year regulatory period without a biennial recalibration process

The Panel's substituted price direction sets prices for the five-year period from 1 July 2013 to 30 June 2018, with **no** biennial recalibration process.

The Panel's final decision to adopt a five-year regulatory period, rather than the six-year period of the original price direction, reflects its view that the benefits of adding another (sixth) year to the regulatory period would not outweigh the costs and delays that would be associated with obtaining an additional year of forecasts from Icon Water who had only prepared forecasts for a five-year period for the ICRC's original pricing investigation.

The final decision does not include any biennial recalibration process because, in the Panel's view:

- the risks and uncertainties facing Icon Water and its customers in this regulatory period are not sufficiently high to require biennial recalibrations

² The way that water prices are calculated means there is an inverse relationship between price and demand – ie, all other things being equal, higher demand will result in lower water prices and vice versa.

- the benefits of the biennial recalibration process are likely to be small and outweighed by the adverse effects it will have on price stability and predictability, Icon Water's incentive to pursue efficiencies, and regulatory costs, and
- such benefits as the biennial recalibration process does offer can be achieved through other less costly measures, such as an annual reporting requirement.

The main risks in this regulatory period are that prices will be set either too low or too high due to uncertainties about actual expenditure and demand. The Panel has recognised that, as a result of these uncertainties, actual expenditure and demand are likely to deviate to some extent from the forecasts used to set regulated prices. However, in the Panel's view, the risk of significant deviations over the current regulatory period can be dealt with effectively and proportionately by adopting the following form of regulatory control and risk allocation tools:

- a hybrid price and revenue cap form of control with individual price caps for water and sewerage charges and a demand volatility adjustment mechanism that will be triggered if deviations between actual and forecast water sales revenue fall outside a 6% deadband
- a CPI escalation mechanism, which will provide Icon Water with some protection against changes in inflation over the period
- an *ex post* capital expenditure review, which will allow the ICRC to assess the prudence and efficiency of the capital expenditure actually incurred by Icon Water over the current regulatory period before rolling it into the regulated asset base in the next determination
- an annual cost pass-through mechanism, which will provide Icon Water and customers with some protection against material changes (positive and negative) in uncontrollable costs over the period, and
- a price variation trigger event mechanism, which will be used to deal with any major unforeseen event that may occur in the period (subject to meeting a materiality threshold).

Table 1.2 compares the Panel's final decision on the regulatory period, form of control and other risk allocation measures, with the ICRC's final decision and Icon Water's latest proposal.³

³ Icon Water's latest proposals are those outlined in its 31 July 2014 Statement of Facts and Contentions, unless modified by its 23 January 2015 submission to the Panel's draft report and/or 26 February 2015 response to the Panel's follow-up questions.

Table 1.2: Comparison of regulatory period, form of control and other risk allocation measures

	Panel's final decision	Original price direction (ICRC's final decision)	Icon Water's proposal
Length of regulatory period	Five years (1 July 2013 to 30 June 2018) with no biennial recalibrations.	Six years (1 July 2013 to 30 June 2019) with two biennial recalibrations during the period.	Five years (1 July 2013 to 30 June 2018) with no biennial recalibrations.
Form of control	Hybrid price and revenue cap, with individual price caps for water and sewerage charges and a demand volatility adjustment mechanism to account for deviations between actual and forecast volumetric water sales revenue in excess of a 6% deadband over the full five-year regulatory period (2013-14 to 2017-18).	Individual price caps, with maximum prices for water and sewerage.	Revenue cap with an 'unders and overs' mechanism to ensure that any under (or over) recovery in a particular year can be recovered from (or passed back to) customers.
Measures to deal with demand risks	If this mechanism is triggered, then the ICRC will be required through a reset principle to include any under- or over-recovery of revenue (measured in NPV terms) in the calculation of Icon Water's revenue requirement for water for the next regulatory period.	Biennial recalibrations of water sales and customer numbers. Conservative water sales estimate used in setting the tier 1 and tier 2 prices for the volumetric water charges.	'Adaptive approach' to estimating prices, which involves updating the volumetric and supply charges each year to reflect updated water sales forecasts (estimated using the Breusch-Ward model) and the latest customer and fixture numbers. If a hybrid price and revenue cap is to be adopted, then the revenue deadband should be 3%.
Measures to deal with expenditure risks	CPI escalation mechanism. <i>Ex post</i> capex review. Annual cost pass-through mechanism to deal with changes in Commonwealth subvention payments, changes in the amount Icon Water is required to pay the ACT Government for the Water Abstraction Charge (WAC), Utilities Network Facilities Tax (UNFT), changes in taxes, changes in service standards, changes in regulation and the Tantangara Transfer Payment event. The materiality threshold will be \$0 for WAC, UNFT and subvention payments, and \$2 million (\$2012-13) per event for all other cost pass-through categories.	Biennial recalibrations of expenditure. CPI escalation mechanism in intervening years. Cost pass-through mechanism in intervening years to deal with changes in subvention payments and the WAC and UNFT.	CPI escalation mechanism. Cost pass-through mechanism to deal with changes in taxes, contingent capital expenditure projects, changes in subvention payments, changes in service standards and changes in regulation. A materiality threshold of \$1 million (\$2012-13) for cost pass-through events, with the exception of subvention payments and the WAC and UNFT, where no materiality threshold applies.
Measures to deal with unforeseen events	Price variation trigger event mechanism to deal with the following unforeseen events if they satisfy the materiality threshold: an act of terrorism; a major natural disaster; major damage to infrastructure; a significant change in Icon Water's financial or corporate structure; and a force majeure event. The materiality threshold will be defined as 'an event that severely restricts Icon Water's ability to provide services' and imposes a total annualised cost on Icon Water for the remainder of the regulatory period of more than \$12 million (\$2012-13).	A price variation trigger event mechanism, which allows the ICRC to initiate a variation to the price direction if there is an act of terrorism, major natural disaster, major damage to infrastructure, a significant change in Icon Water's financial or corporate structure, an unforeseen or force majeure event.	Cost pass-through mechanism to deal with a major natural disaster. A materiality threshold of \$1 million (\$2012-13) for this type of event.

1.3 The Panel's substituted price direction provides for prices to rise in line with inflation and reduces the likelihood of future bill instability

Because the Panel's review was conducted part way through the regulatory period, and the prices determined under the original price direction for 2013-14 and 2014-15 have already been used to calculate customer bills in these years, the Panel has not made retrospective changes to prices for the first two years of the regulatory period.

For the remaining three years (ie, 2015-16 to 2017-18), the Panel's final decision is to adopt the maximum charges and price path set out in Table 1.3.

Table 1.3: Final decision - Maximum water and sewerage charges and price path

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices set by the ICRC and paid by customers		Panel's final decision Price path for the remaining years*		
Water					
Fixed (\$ pa)	100.00	102.56	$(1+CPI) \times (1-3.4\%)$	$(1+CPI)$	$(1+CPI)$
Tier 1 (0-200 kL pa) (\$/kL)	2.55	2.64	$(1+CPI) \times (1-3.4\%)$	$(1+CPI)$	$(1+CPI)$
Tier 2 (200+ kL pa) (\$/kL)	5.10	5.29	$(1+CPI) \times (1-3.4\%)$	$(1+CPI)$	$(1+CPI)$
Sewerage					
Supply charge (\$ pa)	492.02	505.41	$(1+CPI) \times (1+1.4\%)$	$(1+CPI)$	$(1+CPI)$
Fixtures charge - non-residential customers (\$ pa)	481.18	494.28	$(1+CPI) \times (1+1.4\%)$	$(1+CPI)$	$(1+CPI)$

* Note: The price path is also subject to the operation of the cost pass-through mechanism.

In setting this price path, the Panel has had regard to:

- smoothing out price movements during the regulatory period
- aligning the forecast revenue recovery in the final year of the regulatory period so that it is similar to the target revenue in that year, which should reduce the likelihood of significant changes to prices and bills in the next regulatory period, and
- maintaining the existing structure of tariffs (noting its decision that it was not pragmatic to examine tariff structures as part of the Panel's review).

Table 1.4 sets out the **indicative** water and sewerage charges payable under the Panel's substituted price direction, assuming the inflation rate (as measured by the CPI) is 2.5% per annum, and the cost pass-through mechanism is not triggered (for example, by changes to the Water Abstraction Charge or Utilities Network Facilities Tax). In other words, the table indicates the *underlying* price impacts of the Panel's substituted price direction, but not the potential impacts of any pass-through events that may occur.

Table 1.4: Final decision - Indicative maximum water and sewerage charges (\$, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices set by the ICRC and paid by customers		Panel's final decision: Indicative estimates*		
Water charges					
Fixed (\$ pa)	100	102.56	101.58	104.12	106.73
Tier 1 (0-200 kL pa) (\$/kL)	2.55	2.64	2.61	2.68	2.75
Tier 2 (200+ kL pa) (\$/kL)	5.1	5.29	5.24	5.37	5.50
% Change on previous year					
Fixed (\$ pa)	0.2%	2.6%	-1.0%	2.5%	2.5%
Tier 1 (0-200 kL pa) (\$/kL)	4.9%	3.5%	-1.0%	2.5%	2.5%
Tier 2 (200+ kL pa) (\$/kL)	4.9%	3.7%	-1.0%	2.5%	2.5%
Sewerage charge					
Supply charge (\$ pa)	492.02	505.41	525.05	538.17	551.63
Fixtures charge (\$ pa)	481.18	494.28	513.48	526.32	539.48
% Change on previous year					
Supply charge (\$ pa)	-18.1%	2.7%	3.9%	2.5%	2.5%
Fixtures charge (\$ pa)	-18.1%	2.7%	3.9%	2.5%	2.5%

* Note: The actual water charges payable in the remaining three years could differ from the indicative charges in this table if actual inflation differs from forecast inflation and/or if the cost pass-through mechanism is triggered.

As this table shows, the effect of the Panel's substituted price direction is to:

- **Reduce** water charges by close to 1.0% in 2015-16 from current levels,⁴ with prices rising in line with the rate of inflation (as measured by CPI) in the remaining two years of the regulatory period.
- **Increase** sewerage charges by approximately 3.9% in 2015-16 from current levels,⁵ and then adjust these charges for changes in CPI over the following two years.

Table 1.5 translates what these indicative prices will mean for the annual water and sewerage bills of residential customers (for varying levels of water consumption) over the five-year regulatory period.⁶ The shaded row in this table highlights the effects the changes are likely to have on a typical residential customer using 200 kL of water per annum.

The final decision changes the mix of the contribution of water and sewerage charges in the total bill. In most cases, there is only a modest increase in the combined bill amount, with the typical residential customer seeing a total annual bill increase of \$14 in 2015-16 compared to the current 2014-15 year (assuming inflation of 2.5% and no cost pass-through events occur). Over the remainder of the period, total bills will rise close to the rate of inflation.

4 This is subject to the cost pass-through mechanism. The 2015-16 price change assumes inflation of 2.5%.

5 *ibid.*

6 The bill impacts in this report are all expressed in nominal dollars. Nominal dollars in future years include the Panel's forecast inflation of 2.5% per annum. The use of nominal dollars makes it easier for customers to understand the combined impact of new prices and inflation on the amount they can expect to pay in their bills.

The Panel considers that the prices under its substituted direction are unlikely to have a material impact on the bills of vulnerable customers.

Table 1.5: Final decision - Indicative impacts on residential bills (\$, nominal)

Annual water consumption (kL)	Annual bill						Change from current bill (2014-15 to 2017-18)	Change over regulatory period (2012-13 to 2017-18)
	2012-13	Prices set by the ICRC and paid by customers		Panel's final decision: indicative estimates*				
		2013-14	2014-15	2015-16	2016-17	2017-18		
50 kL	822	720	740	757	776	796	56	-26
% change		-12.0%	3.0%	2.3%	2.5%	2.5%	7.5%	-3.2%
100 kL	943	847	872	888	910	933	61	-10
% change		-10.0%	3.0%	1.8%	2.5%	2.5%	7.0%	-1.1%
150 kL	1,065	975	1,004	1,019	1,044	1,070	66	5
% change		-8.0%	3.0%	1.5%	2.5%	2.5%	6.6%	0.5%
200 kL	1,209	1,125	1,160	1,174	1,203	1,233	73	24
% change		-7.0%	3.0%	1.2%	2.5%	2.5%	6.3%	2.0%
250 kL	1,429	1,357	1,400	1,412	1,447	1,483	83	54
% change		-5.0%	3.0%	0.8%	2.5%	2.5%	5.9%	3.8%
300 kL	1,672	1,612	1,665	1,674	1,715	1,758	93	86
% change		-4.0%	3.0%	0.5%	2.5%	2.5%	5.6%	5.2%
400 kL	2,158	2,122	2,194	2,197	2,252	2,309	115	151
% change		-2.0%	3.0%	0.2%	2.5%	2.5%	5.2%	7.0%
500 kL	2,644	2,632	2,723	2,721	2,789	2,859	136	215
% change		0.0%	3.0%	-0.1%	2.5%	2.5%	5.0%	8.1%
750 kL	3,859	3,907	4,045	4,031	4,132	4,235	190	376
% change		1.0%	4.0%	-0.3%	2.5%	2.5%	4.7%	9.8%

* Note: Indicative bills assume inflation of 2.5% pa and no material changes in costs or government charges that would trigger the cost pass-through mechanism.

Table 1.6 presents indicative bill impacts for non-residential customers. As the table shows, the likely bill changes over the period range from 7% decreases to 11% increases over the five years of the regulatory period, depending on the level of annual water consumption and number of billable fixtures.

The Panel has considered the impacts of its substituted price direction and is satisfied that its prices should enable Icon Water to earn sufficient revenue to operate, maintain, renew or develop the assets required to deliver services in the remainder of the regulatory period. In addition, the Panel is satisfied that Icon Water will remain financially viable under its substituted price direction.

Table 1.6: Final decision - Indicative impacts on non-residential bills (\$, nominal)

Annual water consumption (kL)	Number of billable fixtures	Annual bill						Change from current bill (2014-15 to 2017-18)	Change over regulatory period (2012-13 to 2017-18)
		2012-13	Prices set by the ICRC and paid by customers		Panel's final decision indicative estimates*				
			2013-14	2014-15	2015-16	2016-17	2017-18		
1,000 kL	10	10,949	9,994	10,311	10,476	10,738	11,006	7%	1%
	50	34,445	29,241	30,082	31,015	31,791	32,586	8%	-5%
	100	63,816	53,300	54,796	56,690	58,107	59,559	9%	-7%
2,000 kL	10	15,809	15,094	15,601	15,716	16,109	16,511	6%	4%
	50	39,305	34,341	35,372	36,255	37,161	38,090	8%	-3%
	100	68,676	58,400	60,086	61,929	63,477	65,064	8%	-5%
5,000 kL	10	30,389	30,394	31,471	31,434	32,220	33,026	5%	9%
	50	53,885	49,641	51,242	51,974	53,273	54,605	7%	1%
	100	83,256	73,700	75,956	77,648	79,589	81,579	7%	-2%
10,000 kL	10	54,689	55,894	57,921	57,632	59,073	60,550	5%	11%
	50	78,185	75,141	77,692	78,172	80,126	82,129	6%	5%
	100	107,556	99,200	102,406	103,846	106,442	109,103	7%	1%

* Note: Indicative bills assume inflation of 2.5% pa and no material changes in costs or government charges that would trigger the cost pass-through mechanism.

1.4 What are the differences between the Panel's substituted price direction, the original price direction, and Icon Water's proposal?

As discussed in section 1.2 above (and highlighted in Table 1.2), the Panel's substituted price direction adopts a different form of control and measures to allocate risk to those implemented by the ICRC in the original price direction, and those proposed by Icon Water. There are other important differences.

While both the Panel and the ICRC used a 'building block' approach to determine the revenue to be recovered through prices, in some cases, there are differences between the Panel's methodological approach and choice of values for key pricing parameters, and those adopted by the ICRC and/or proposed by Icon Water.⁷ Table 1.7 summarises these differences, while the following sections discuss the key areas of difference and contention, which relate to:

- the rate of return that is used to calculate the return on capital
- forecasts of capital expenditure
- the indexation of the value of the regulated asset base (RAB), and
- water sales forecasts.

⁷ In the discussion that follows, Icon Water's proposed approach is taken to be that presented in its 31 July 2014 Statement of Facts and Contentions, unless modified by its subsequent 23 January 2015 response to the Panel's draft report and/or its 26 February 2015 response to the Panel's follow-up questions.

Table 1.7: Comparison of methodological approaches

		Panel's final decision	Original price direction (ICRC's final decision)	Icon Water's revised proposal
Value of the Regulated Asset Base (RAB)	Opening value (1 July 2013)	Water: \$1.37 billion Sewerage: \$0.66 billion	Water: \$1.37 billion Sewerage: \$0.66 billion	Water: \$1.35 billion Sewerage: \$0.66 billion (Icon Water's estimates are lower than the Panel's because it excluded CSO expenditure from the RAB)
	Forecast capital expenditure	Water: \$157 million (nominal full 5-year period) Sewerage: \$302 million (nominal full 5-year period)	Water: \$62 million (nominal first 2 years only) Sewerage: \$97 million (nominal first 2 years only)	Water: \$171 million (nominal 5 years) Sewerage: \$325 million (nominal 5 years)
	Depreciation	Straight line depreciation using accounting and engineering weighted average asset lives for existing assets and asset specific lives for new assets and the water security assets	Straight line depreciation using notional weighted average asset lives for existing assets and for all new assets	Straight line depreciation using accounting and engineering based weighted average asset lives for existing assets and new assets
	Indexation	Provision made for indexation (2.5% inflation forecast)	No provision made for indexation	Provision made for indexation (2.5% inflation)
Rate of return	Method	Benchmark efficient entity approach	Firm-specific approach with cost of equity set below firm-specific range as a transitional measure	Benchmark efficient entity approach
	Rate	Post-tax nominal WACC: 7.20%	Nominal WACC: 4.42%	Post-tax nominal WACC: 7.78%. (higher equity beta than the Panel)
Net tax liabilities		Provision made for net tax liabilities calculated assuming a 0.5 gamma value (value of imputation credits)	No provision made for net tax liabilities	Provision made for net tax liabilities calculated assuming a 0.25 gamma value (note a lower gamma value leads to a higher allowance)
Forecast operating expenditure (incl. Water Abstraction Charge (WAC) and Utilities Network Facilities Tax (UNFT))		Water: \$494 million (nominal full 5-year period) (4% higher than the ICRC for the first two years) Sewerage: \$377 million (nominal full 5-year period)	Water: \$183 million (nominal first 2 years only) Sewerage: \$144 million (nominal first 2 years only)	Water: \$484 million (nominal 5 years) Sewerage: \$374 million (nominal 5 years) (Icon Water's estimates are lower than the Panel's because it has adopted a lower water sales forecast and excluded CSO expenditure from sewerage expenditure)
Forecast demand		Water sales: 41.9 GL pa (actual) for 2013-14. 43.1-44.8 GL pa (between 2014-15 and 2017-18) Customer numbers growth: 2.48% -2.5% pa Billable fixtures growth: 2.2% pa	Water sales: 38 GL pa in 2013-14 and 2014-15 Customer numbers growth: 2.17% -2.32% pa Billable fixtures growth: 2.49% pa	Water sales: 41.9 GL pa (actual) for 2013-14. 39.6-42.5 GL pa (between 2014-15 and 2017-18) Customer numbers growth: 2.48% -2.5% pa Billable fixtures growth: 2.2% pa

1.4.1 The Panel used a different reference point to the ICRC for estimating the rate of return and adopted a lower WACC than proposed by Icon Water

Under the building block methodology, the rate of return is used to calculate the return on capital. In capital intensive businesses, such as Icon Water's provision of water and sewerage services, this allowance accounts for a large proportion of the total revenue requirement and so the rate of return is one of the major determinants of regulated prices. Regulators typically determine the rate of return based on the estimated weighted average cost of capital (WACC).

In the original price direction, the ICRC adopted a firm-specific approach to estimate the WACC, setting the rate of return in line with the *actual* debt and equity costs of the regulated business, said to be a nominal WACC of 4.42%. In its application for a review of the original price direction, Icon Water argued that the benchmark (or typical firm) approach should be adopted, which sets the rate of return in line with the *efficient* debt and equity costs in the regulated industry. Icon Water contended for a nominal vanilla WACC of 7.78%.⁸

The Panel's substituted price direction is based on the use of the benchmark approach to calculate the rate of return, because it is:

- **Consistent with the requirements of the Act:** In the Panel's view, the benchmark efficient entity approach is more consistent with section 20(2) of the Act (in particular section 20(2)(i))⁹ than the firm-specific approach because using efficient financing costs allows the regulated service provider to attract the necessary investment capital to maintain a reliable service while minimising the costs to consumers.¹⁰
- **Consistent with the approach used by the majority of Australian regulators:** When applying the building block methodology, most regulators aim to provide the service provider with a return on capital that reflects the efficient financing costs of a benchmark efficient entity and the risks involved in delivering the regulated services.
- **Consistent with the competitive neutrality principles and the allocative efficiency principle:** To be consistent with competitive neutrality principles set out in the Competition Principles Agreement and the ACT Government's competitive neutrality policy and the allocative efficiency principle, more generally, the rate of return applied to regulated service providers should reflect the opportunity cost of capital. This rate of return will be the same irrespective of that business' ownership and, in the Panel's view, can best be approximated using the benchmark efficient entity approach.

Consistent with its draft decision, the Panel adopted a nominal post-tax WACC of 7.20%, which is lower than Icon Water's proposal because the Panel adopted a lower estimate for the equity beta parameter.¹¹ The Panel tested the reasonableness of its final decision by comparing it with the decisions made by other water utility regulators around the time of the ICRC's final decision (which ranged from between 6.85% and 7.5%).

8 Icon Water, *Response to follow-up questions*, 26 February 2015, p.4.

9 This section of the Act requires the Panel to have regard to "the borrowing, capital and cash flow requirements of people providing regulated services and the need to renew or increase relevant assets in the regulated industry".

10 By contrast, under a firm specific approach, actual financing costs may be higher or lower than the efficient cost. If they are lower, it could result in prices that are insufficient to meet the borrowing, capital and cash flow requirements of the regulated business in the long term, and/or discourage the business from making efficient investment. If they are higher than efficient costs, then the business could earn excess profits and has an incentive to over-invest.

11 The equity beta is the component of the WACC calculation that measures the extent to which the returns of a stock vary in line with the overall returns of the market. The Panel adopted an equity beta of 0.7, while Icon Water proposed an equity beta of 0.9.

1.4.2 The Panel's forecasts for capital expenditure reflect updated evidence about the delivery of Icon Water's capital program

In its final decision, the Panel has adopted lower capital expenditure forecasts than those contained in the revised proposal from Icon Water (and has revised downwards its forecasts compared to those in its draft decision).

Since the Panel's draft report was released, new information has caused the Panel to reconsider whether Icon Water will be able to deliver all of the proposed capital expenditure projects in this regulatory period. This new information was provided to the ICRC as part of the first biennial recalibration process and is publicly available. It suggests that capital expenditure in the last two years of the regulatory period is likely to be lower than was envisaged in September 2014 (when Icon Water submitted information which informed the Panel's draft decision).

This new information has reduced the Panel's confidence in Icon Water's ability to deliver the capital program it had forecast in September 2014 and, in its final decision, the Panel has adopted the recommendation made by independent experts Cardno to deduct \$20 million from capital expenditure forecasts (\$10 million each in 2016-17 and 2017-18).

1.4.3 The Panel indexed the value of the RAB to ensure the real value of assets is maintained over time

To ensure that the real value of the RAB is maintained over time, most Australian regulators provide for inflation by multiplying the value of the RAB in each year of the regulatory period by forecast inflation. The purpose of maintaining the real value of the RAB over time is to ensure that customers in each time period contribute to the recovery of investments from which they derive benefits in accordance with their share of the benefits.

In the original price direction, the ICRC modelled Icon Water's revenue requirement by applying a nominal return to a non-indexed RAB. No provision was therefore made for indexation. Icon Water contested the decision not to index the RAB.

The Panel decided to follow standard regulatory practice and index the value of the RAB by its 2.5% inflation forecast, noting that both an indexed RAB and non-indexed RAB approach recover the same net present value of revenues over time, but the indexed RAB methodology is preferable because it:

- provides a more constant revenue requirement over time, and
- is more consistent with the intergenerational equity principle that consumers in each time period should contribute to the recovery of the costs of water investments from which they derive benefits, in accordance with their share of those benefits. This principle is particularly relevant to the treatment of the costs of water security projects in the ACT.

1.4.4 The Panel adopted multi-year demand forecasts generated by an independent forecasting model

Because prices are highly sensitive to the level of expected water sales, the demand forecasts used in setting prices have a material impact on the level of prices within a regulatory period. For any given revenue level, a higher demand forecast will lead to lower prices, while a lower demand forecast will lead to higher prices. In recent years, the imposition (and subsequent lifting) of water restrictions during severe drought conditions has increased the uncertainty of projecting water demand given that it is still not known how much consumption patterns have been changed permanently as a result of the drought.

The Panel adopted actual water sales for 2013-14, and then multi-year demand forecasts for the remainder of the regulatory period based on a forecasting model developed by independent experts Cardno. This represents a departure from the ICRC’s approach in the original price direction, and from Icon Water’s preferred methodology:

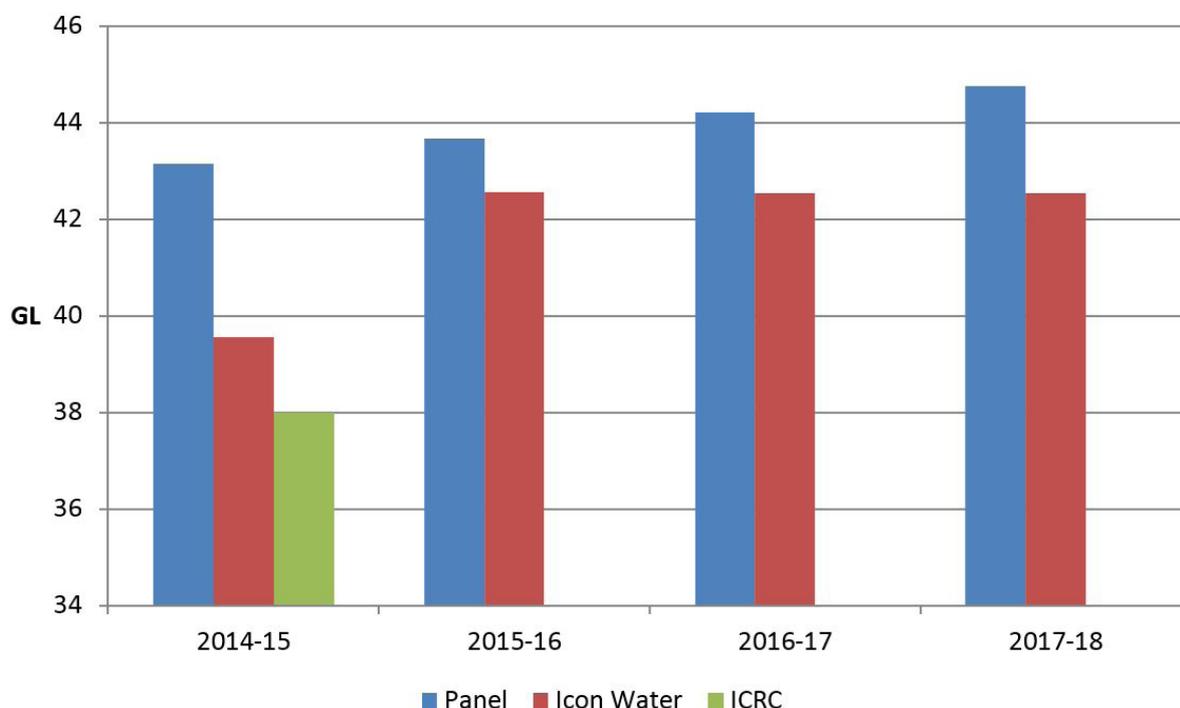
- The ICRC adopted “conservative” water sales forecasts of 38 GL for each of the first two years of the regulatory period, with water sales forecasts for the remaining years left to be determined as part of the biennial recalibration process.
- Icon Water contended that demand should be determined on an annual basis, using a model developed by Professors Breusch and Ward.

In its draft decision, the Panel’s forecasts for water sales ranged from 44.0 GL in 2014-15 to 45.8 GL in 2017-18. Icon Water submitted that these forecasts were too high. It proposed alternative forecasts of between 39.6 GL and 42.5 GL, with the 2014-15 forecast based on observed data for water sales and total releases from storage from the first half of the year, reflecting the wetter-than-average summer weather. Icon Water also provided feedback on various technical aspects of Cardno’s forecasting model.

Cardno advised the Panel that it accepted contentions made by Icon Water in relation to the treatment of water restrictions in its model, and made adjustments to model coefficients that resulted in a higher impact of permanent water conservation measures on future water sales, lowering the ‘baseline’ for future forecasts by between 2.0% and 2.2% compared to the Panel’s draft decision. The Panel accepted this adjustment as being appropriate.

However, the Panel did not accept other arguments made by Icon Water in relation to water sales projections and, in its final decision, the Panel has adopted Cardno’s revised water forecasts, which range from 43.1 GL in 2014-15 to 44.8 GL in 2017-18, and are still materially higher than those contended by Icon Water (see Figure 1.2).

Figure 1.2: Comparison of water sales forecasts (GL)



Note: The ICRC did not provide a forecast beyond 2014-15.

The Panel considered Cardno's modelling approach to forecast water sales to be reasonable, on the basis that it:

- is consistent with models typically accepted by Australian regulators to forecast water demand, particularly because it includes customer numbers, the weather, and demographic changes as explicit explanatory variables
- uses an evidence-based approach to account for changes in water efficiency (through an analysis of changes to the housing stock in the ACT)
- makes reasonable assumptions about the extent of the 'bounceback' in per capita consumption, given the available evidence, and
- has a reasonably good fit when used to predict actual historical data, leading to an acceptable level of expected error for predictions.

The Panel recognised the inherent unpredictability about making water sales forecasts, but has adopted other mechanisms – the hybrid price and revenue cap, with a demand volatility adjustment mechanism – to account for any significant deviations between actual and forecast water sales. The Panel considers this to be the preferable way of sharing the 'demand risk' between the water utility and water customers.

1.5 How did the Panel approach its task?

In undertaking its review, the Panel worked within the regulatory framework provided by the Act and the terms of reference for the ICRC's original price direction. This framework both defines and limits the Panel's powers. It also imposes certain obligations on the Panel, such as the need to release a draft report, take into consideration matters raised in written submissions to this draft report, and conduct a public hearing.

Under the Act, the Panel has been required to take account of a broad range of matters in reaching its decisions and exercise its own judgement in striking an appropriate balance between various objectives related to:

- consumer protection
- economic efficiency in the use of water and the provision of water services, and
- the financial viability of the water services provider.

The Act stipulates that the Panel must make a decision on the merits of the case. In keeping with the traditional approach to merits-based appeals, the Panel considered all the evidence in order to arrive at a **correct or preferable** decision:

- **'correct'** in the sense that the decision is made according to law, and consistent with the relevant legislative mandate, and
- **'preferable'** in the sense that if there is a range of decisions that are correct in law, the decision ultimately settled upon is the best that could be made on the basis of the available evidence and relevant facts.

To ensure its methodologies are robust and its decisions will stand up to scrutiny, the Panel has been mindful of well-tested techniques and best practice regulatory principles in its analysis and decision making.

The Panel also recognised the need to reach decisions in a timely manner, given the potential impacts on Icon Water and its customers, and the fact that the regulatory period covered by the review has already begun. The need for timeliness and the limited resources available to the Panel made it impractical to examine every component of the original price direction in detail. Instead, the Panel focused its review on the decisions about which Icon Water or other stakeholders raised issues, and which have a material impact on prices or Icon Water's financial position. The Panel also made new decisions for 2015-16 to 2017-18 where the original price direction covered only the first two years of the regulatory period.

In reaching its final decision, the Panel conducted further analysis and modelling, took into account matters raised in submissions, and sought expert advice to form its own view on the costs of providing Icon Water's water and sewerage services, and the forecast demand for these services, over the regulatory period.

By transmitting this final report, along with the substituted price direction, to the ACT Treasurer (as the responsible minister under the Act), the Panel has completed its review.

2 Review framework, process and analytical approach

The Panel was appointed by the ACT Treasurer in April 2014 to review the June 2013 price direction made by the ICRC in relation to the prices Icon Water can charge for water and sewerage services from 1 July 2013 to 30 June 2019 (the original price direction). The completion of this final report concludes the Panel's review process.

This chapter provides an overview of:

- the regulatory framework that defines and limits the Panel's powers, and identifies the various matters that the Panel has had to have regard to in making its decision¹²
- the process adopted by the Panel in undertaking its review¹³
- the Panel's analytical framework and decision-making approach, and
- the structure and format of this final report.

The chapter concludes with details about the completion of the process and the implementation of the Panel's final decision.

2.1 The regulatory framework

The review was triggered by Icon Water's application for a review, which was made under Part 4C of the *Independent Competition and Regulatory Commission Act 1997* (the Act). In conducting its review, the Panel worked within the regulatory framework prescribed by the Act, and the terms of reference for the ICRC's original price direction (issued by the ACT Treasurer and shown in Box 2.1).

Box 2.1: The terms of reference

Section 240 of the Act states that in conducting its review, several provisions of the Act apply to the Panel "as if it were the commission conducting a price regulation investigation". In line with one of these provisions (section 17(1)), the Panel has been required to conduct its review as authorised by the terms of the reference for the ICRC's original price regulation investigation. These require the Panel to have regard to the following matters in making its pricing decisions:

- policies of the ACT Government as they relate to water security and the use of water
- national water initiatives, policies and agreements
- the impact of a price of carbon on the provision of water and sewerage services
- the ability of the price path to align the recovery of revenue with consumer benefits accrued from the water security projects, and
- all potential regulatory models, including consideration of the provision of sufficient flexibility in price setting to minimise the impact of significant price fluctuations.

In keeping with section 24N(1) of the Act, the Panel, on an application for review of a price direction, may:

- substitute a new price direction for the original price direction made by the ICRC in relation to the prices for regulated water and sewerage services, or
- confirm the original price direction.

¹² A more detailed description of this framework can be found in Chapter 4 of the draft report.

¹³ This also covers the scope of the Panel's review, providing a summary of the discussion presented in Chapter 5 of the draft report.

In undertaking this task, section 24N(2) of the Act requires the Panel to make a decision:

- on “the merits of the case”, having regard to the criteria listed in section 20(2), which can be broadly categorised as consumer protection, economic efficiency, financial viability and environmental protection, and
- as required by sections 20A, 20B and 20C, which specify matters relating to the form of a price direction.

In keeping with the law relating to merits-based appeals, the Panel has been required to consider all the evidence about the merits of a decision. Then, if it decided the original decision should not stand, it must determine a **correct or preferable** decision:

- **‘correct’** in the sense that the decision is made according to law, and consistent with the relevant legislative mandate, and
- **‘preferable’** in the sense that if there is a range of decisions that are correct in law, the decision ultimately settled upon is the best that could be made on the basis of the available evidence and relevant facts.

Section 24O of the Act confers on the Panel the same price investigation powers as the ICRC in considering the application for review. Therefore, in making the correct or preferable decision, the Panel has been permitted to conduct its own analysis and consider all the evidence from a fresh perspective. The Panel chose to be mindful of best practice regulatory principles¹⁴ in both its analysis and decision making, given that tried and tested methods assist with ensuring a correct or preferable decision.

2.2 Panel’s review process

Apart from some prescriptions in the Act (relating to requirements to prepare draft and final reports, invite public submissions, and conduct public hearings), there is no defined process for the Panel’s review. In addition, as this was the first review of a price direction conducted under the Act, the Panel had no precedent to guide it other than the legal principles that apply to merits reviews.

Therefore, the Panel developed its own review process and analytical approach, drawing on best regulatory practice and taking account of the context and timing of the appeal and review.

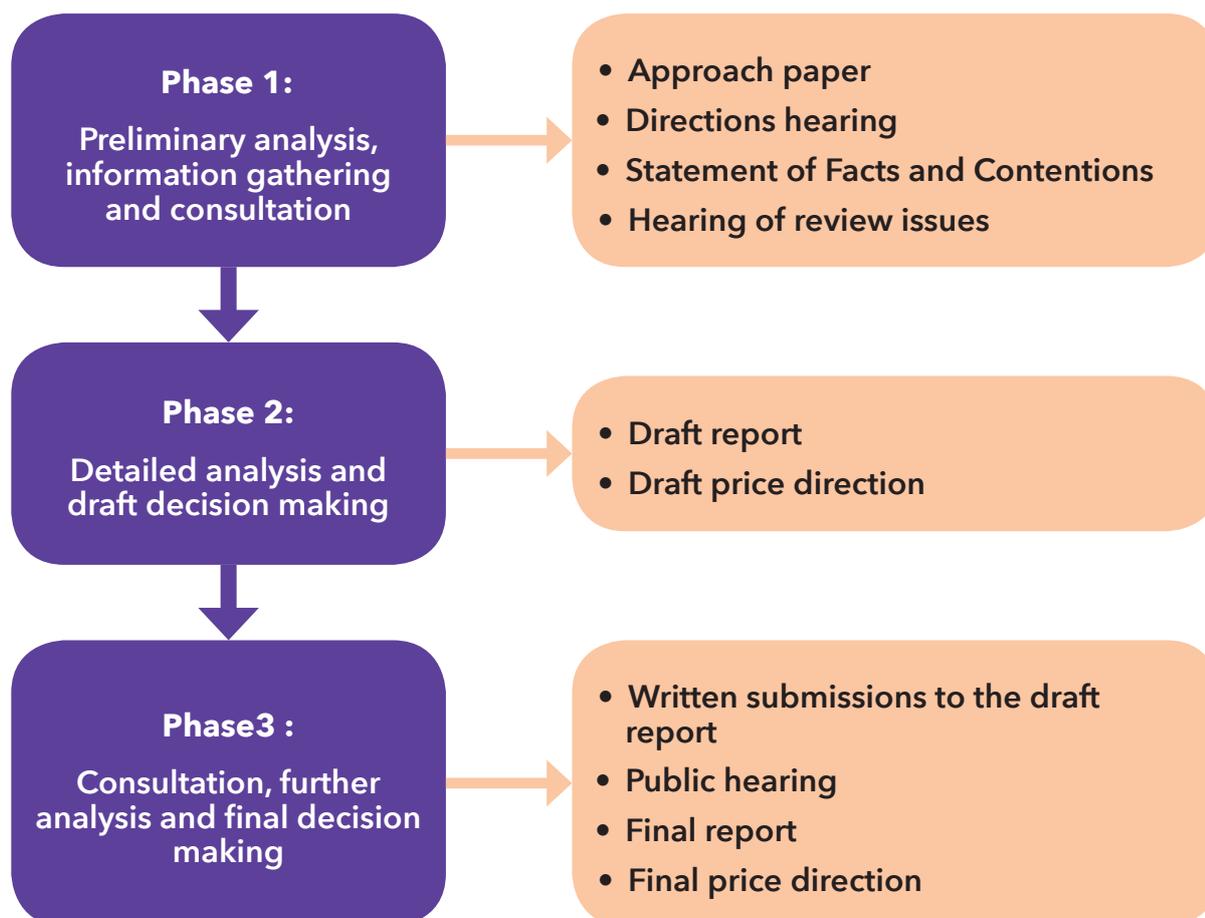
The process the Panel followed in conducting this review involved three phases:

1. preliminary analysis, information gathering and consultation
2. detailed analysis and draft decision-making, and
3. public consultation, further analysis and final decision-making.

These are illustrated diagrammatically in Figure 2.1, which includes a summary of the main outputs arising from, and inputs into, each of these phases.

¹⁴ Such principles are discussed in section 4.3 in Chapter 4 of the draft report.

Figure 2.1: Overview of the Panel's process



The sections below describe these phases in more detail.

The Panel's website (<http://apps.treasury.act.gov.au/industrypanel>) includes the transcripts from all the hearings referred to below, along with copies of all submissions made to the Panel throughout the review process.

2.2.1 Phase 1: Preliminary analysis, information gathering and consultation

Section 24R of the Act empowers a Panel to decide at any stage in the review process whether an application for review should be dismissed on the grounds that it is frivolous or vexatious. Therefore, one of the Panel's objectives in Phase 1 was to form a preliminary view on this issue and, if warranted, gather information needed to proceed with the review. As part of this phase, the Panel:

- **Examined the ICRC's original price direction and Icon Water's letter of application.** It formed the preliminary view that Icon Water's application was **not** frivolous or vexatious. It considered the matters raised in Icon Water's letter of application which could potentially have a material impact on Icon Water's business, and were therefore worthy of further investigation.
- **Released an approach paper in June 2014** that explained the background to the review, outlined the above preliminary view, and invited submissions from Icon Water and other stakeholders who had made submissions to the original price investigation and had informed the ICRC of their intention to provide input to the review once Icon Water's letter of application was made.¹⁵ The Panel received five submissions in response to this paper.

¹⁵ In the first phase of the review process, the Panel adopted a targeted approach to consultation in the interests of timeliness.

- **Held a directions hearing in Canberra on 25 July 2014** to give directions after taking account of the submissions and any matters raised at the directions hearing. As no submissions disagreed with its preliminary position, the Panel determined that Icon Water’s application was not frivolous or vexatious, and decided to proceed with the review. It directed Icon Water to submit a Statement of Facts and Contentions (SOFC), and invited other stakeholders to make further submissions. The Panel indicated that Icon Water’s SOFC was to include:
 - the full list of matters that were the subject of Icon Water’s application for review and, potentially, any other contentious matters raised on its behalf in submissions to the ICRC
 - the alternative form of price direction proposed by Icon Water, and
 - in respect of each matter it has raised, the facts and contentions Icon Water was relying on in support of that matter.
- **Obtained information from the ICRC** that was provided to it in the original price investigation.
- **Received Icon Water’s SOFC on 31 July 2014**, as well as five other submissions by 15 August 2014. In the course of the Panel’s review, Icon Water also responded to a number of other information requests from the Panel and its advisers.
- **Held a hearing of review issues in Canberra on 1 September 2014** to discuss the matters identified in Icon Water’s SOFC and the issues raised in other submissions,¹⁶ and to hear oral submissions from participants. The primary purpose of this hearing was to assist the Panel in its deliberations about the scope of its review. The results of these deliberations are presented in Box 2.2, which summarises the decision about scope that was contained in the Panel’s draft report.¹⁷

16 In addition to the five submissions received in response to the directions hearing, the Panel considered another submission it received earlier in the process from the Ratepayers’ Association.

17 See Chapter 5 of the draft report for a more detailed description.

Box 2.2: The scope of the Panel's review

Matters raised by Icon Water in its SOFC:

- **The six-year regulatory period and biennial recalibration mechanism.** Icon Water contended that, in deciding on a six-year regulatory period with biennial recalibrations, the ICRC did not have proper regard to sub-sections 20(2)(d), (e) and (i) of the Act. It also contended this decision may be inconsistent with section 20A of the Act because there are no clear principles or methods for determining forecast demand or the cost of equity. Further, it argued that the biennial recalibration mechanism:
 - provides an uncertain basis for its investment decisions
 - reduces its incentives for efficiency, and
 - increases the cost of the regulatory regime.

Instead of a six-year regulatory period and biennial recalibration mechanisms, Icon Water proposed a five-year period from 2013-14 to 2017-18, and a range of alternative measures to address risk and uncertainty – including a revenue cap form of regulation (rather than a price cap) with an 'unders and overs' mechanism, annual demand updates and more extensive pass-through provisions.

- **The firm-specific approach the ICRC used in calculating the rate of return** (including the failure to recognise tax). Icon Water contended that the Competition Principles Agreement requires the application of competitive neutrality principles to Icon Water and that these principles preclude the use of a firm-specific approach to calculating the rate of return. It also argued that its use results in a less efficient allocation of resources, and leads to the absence of a clear methodology for estimating the cost of equity. Icon Water noted that all other regulators in Australia have rejected this approach and proposed that the benchmark entity (or typical firm) approach be adopted.
- **The cost of equity the ICRC adopted for the first two years of the regulatory period.** In determining the rate of return, the ICRC adopted a value for the cost of equity that was below the lower bound of the range it had previously identified for this value. Icon Water claimed that, in making this decision, the ICRC did not have proper regard to sections 20(2)(d), (e) and (i) of the Act. It also noted that the ICRC did not provide clear principles or theory on how the cost of equity should be calculated after the first two years of the period. In addition, it argued that the decision subjects Icon Water to a significant loss, creates uncertainty over future decisions, and hampers incentives for efficient investment. It proposed that the cost of equity be calculated using the Capital Asset Pricing Model.
- **The calculation of depreciation.** Icon Water submitted that the ICRC made a number of errors when calculating depreciation and that if these were not corrected, they would reduce Icon Water's cash flow in the short term, and create uncertainty about how depreciation will be calculated in future regulatory decisions. Icon Water also proposed that depreciation for new capital expenditure be calculated using the accounting and engineering based asset lives.

Icon Water also noted that if the Panel decided not to implement the biennial recalibration process, it would need to make decisions about forecast expenditure, demand and a number of other matters for 2015-16 to 2017-18 because no decisions were made about these in the original price direction.

Additional matters raised in other submissions

- the regulatory treatment of the water security projects
- the value of the regulated asset base, and
- the social impact of increases in the prices of water and sewerage services.

2.2.2 Phase 2: Detailed analysis and draft decision-making

Phase 2 of the Panel's process involved detailed analysis and draft decision-making. As part of this phase, the Panel:

- **Considered the data and information available to it**, noting that this review took place part way through the regulatory period covered by the original price direction (see Box 2.3).

- **Engaged technical experts and commissioned the services of a consultant** - Cardno (QLD) Pty Ltd (Cardno)¹⁸ - to provide independent analysis and advice on:
 - Icon Water's operating and capital expenditure forecasts for the regulatory period
 - forecast water sales for the regulatory period, and
 - the regulatory treatment of the water security projects.
- **Undertook its own technical analysis** of the remaining matters within the scope of its review.
- **Considered all of the above analysis to make its draft decision**, which was presented in a draft report that was publicly released on 3 December 2014.¹⁹ The key components of the Panel's draft decision are discussed in section 2.3.1 below.

Box 2.3: Review conducted part way through the regulatory period

One of the key differences between the Panel's review and a typical price regulation investigation is that this review has taken place part way through the regulatory period covered by the original price direction (2013-14 to 2018-19).

For a typical price direction, the regulator makes its decisions before the start of the period. Therefore, it must rely entirely on forecast data about the regulated business' operating and capital expenditures in each year of the regulatory period, and the forecast demand for its services in each year of this period.

In this case, the Panel conducted its review in the second year of the regulatory period. Thus, the Panel has had access to some actual or revised data for at least the first year of the period and some revised forecasts for the second year. The Panel obtained the actual and revised data, and made careful decisions about the use to be made of the data when evaluating the individual variables included in the pricing decision. Where the Panel has determined that ignoring new information would prevent it making the correct or preferable decision, it used the new information.

2.2.3 Phase 3: Public consultation and final decision-making

The third and final phase of the process involved seeking responses from stakeholders to the Panel's draft decision, and the analysis of issues raised, and any new evidence presented, to inform the Panel's final decision. During this phase, the Panel:

- **Invited all stakeholders including members of the community to make a written submission** in response to its draft report. The deadline for these submissions was 23 January 2015.²⁰ The Panel received three written submissions (see Appendix 3).
- **Held a public hearing in Canberra on 6 February 2015**, at which Icon Water and members of the public made oral submissions. The primary purpose of this hearing was to give a further opportunity for the community to raise issues, seek further clarification from Icon Water about the price implications of its submission, or present new evidence that the Panel should take into account before making its final decision. At the hearing, the Panel and other participants posed some questions to Icon Water about various aspects of its submission to the Panel's draft report, and Icon Water gave initial answers and later provided written responses to these questions.
- **Considered all written and oral submissions, and undertook further analysis before making its final decision.** This further analysis included further work undertaken by Cardno on water sales forecasting, and consideration of Icon Water's responses to further questions. The Panel's final decision is presented in this final report.
- **Finalised its report and price direction for delivery to the ACT Treasurer**, who is responsible for providing the report to the ACT Legislative Assembly within six sitting days of receiving it (pursuant to section 24 of the Act).

¹⁸ Cardno undertook investigations and analysis for the ICRC on similar matters.

¹⁹ Industry Panel, *Review of the Independent Competition and Regulatory Commission's 2013 Price Direction for Regulated Water and Sewerage Services in the ACT*, Draft Report, December 2014.

²⁰ This allowed over 30 business days in which written submissions could be made, more than the minimum 20 days that is mandated under the Act.

2.3 Panel's analytical and decision-making approach

In its draft report, the Panel presented an analytical framework to its decision-making that comprised the following steps:

1. **Understand the context in which its decisions are being made**, including the delineation between the roles and responsibilities of the Panel and other participants in the regulatory system. (This was discussed in Chapter 3 of the Panel's draft report.)
2. **Understand the regulatory framework and best practice regulatory principles**, to ensure it is aware of all legal matters and government directions it must have regard to in reaching its decisions, and that its analytical and decision-making methods are consistent with best practice regulation in Australia. (Chapter 4 of the draft report.)
3. **Determine the scope of the Panel's review**, to ensure it will address all matters that are within its remit and may have a material impact on water and sewerage prices and/or the financial viability of Icon Water. (Chapter 5 of the draft report.)
4. **Decide on the form of regulatory control, length of regulatory period and other risk allocation tools** to be used in the regulatory period. (Chapter 6 of the draft report.)
5. **Determine the methodology to be used to calculate water and sewerage prices**. (Chapter 7 of the draft report.)
6. **Undertake a review of all the pricing related matters** that are within scope and decide whether or not to accept the ICRC's constituent decisions. (Chapters 8 to 12 of the draft report.)
7. **Calculate Icon Water's annual revenue requirement** using the decisions in steps 4 to 6. (Chapter 13 of the draft report.)
8. **Calculate the prices for water and sewerage services** that are consistent with enabling Icon Water to generate this revenue given the forecast demand for these services (determined in step 6). (Chapter 14 of the draft report.)
9. **Consider whether these prices are reasonable** by assessing their impact on customers, inflation and Icon Water's financial viability. (Chapter 15 of the draft report.)
10. **Decide to confirm the original price direction or substitute a new price decision**, based on the outputs of the above steps. (The draft report appended a draft substituted price direction.)

In finalising its decision and reaching its final price direction, the Panel retained this analytical framework and has had regard to:

- the submissions that it received in response to the draft report
- the requirements of the Act and the original terms of reference, and
- the extent to which its decisions strike an appropriate balance between:
 - providing customers with some degree of price stability and predictability over the regulatory period
 - minimising regulatory costs
 - ensuring the service provider remains financially viable and able to meet its service obligations, and
 - promoting economic efficiency.

2.3.1 The focus and scope of this final report

This final report focuses on those areas where additional analysis has been undertaken in response to submissions to the draft decision (either in written form, or orally at the Panel's public hearing in early February), and/or where new evidence has become available.

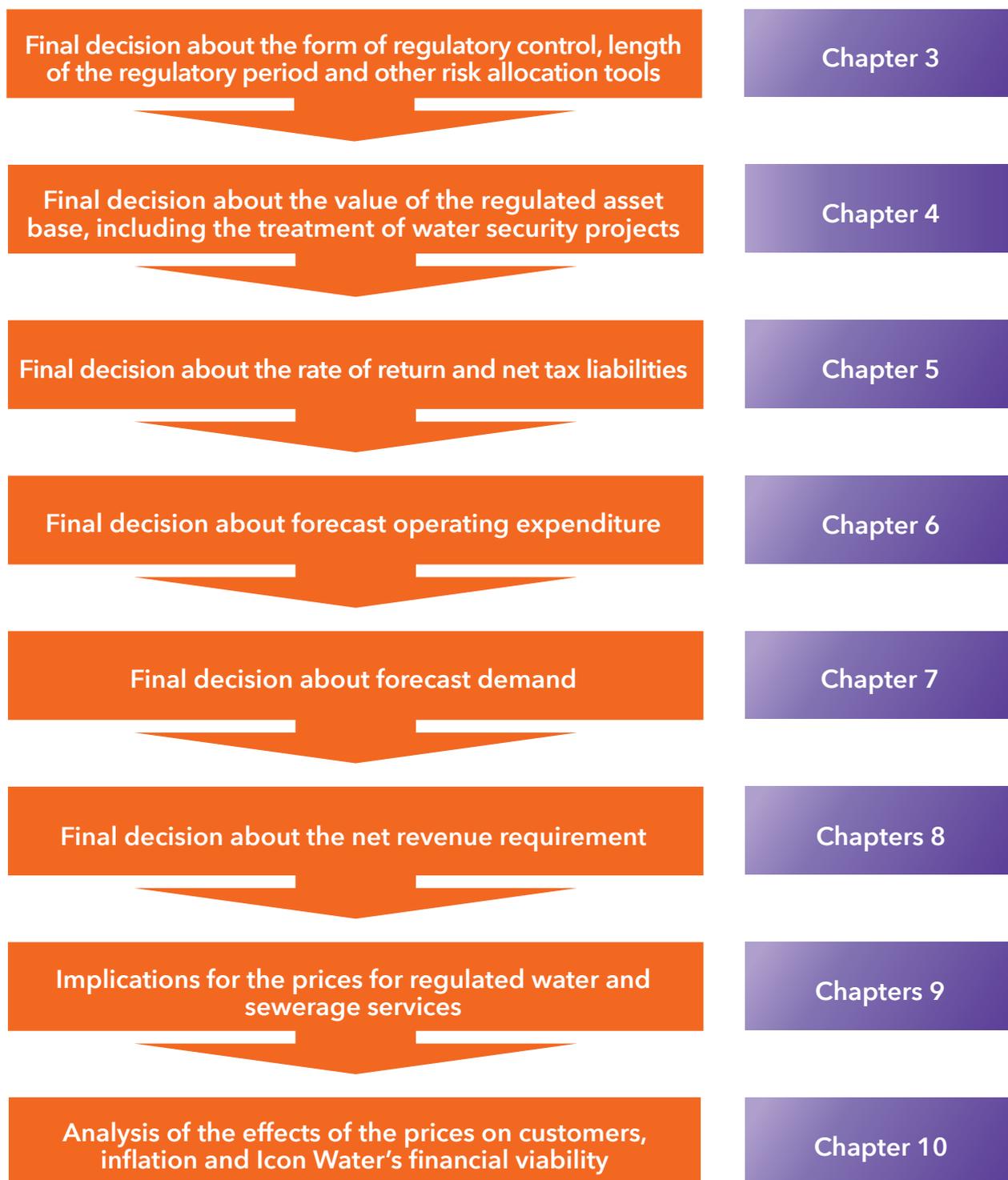
In presenting the Panel's final decision, this final report takes as its basis the Panel's draft decision. As such, this final report should be read in conjunction with the draft report. To assist readers:

- the key components of the Panel's draft decision are summarised in Appendix 4, and
- specific references to detailed analysis in the draft report are included where that analysis is central to the Panel's final decision.

2.4 Structure of this final report

The structure of the remainder of this final report is illustrated in Figure 2.2 below:

Figure 2.2: The structure of the final report



The final report also includes a number of appendices.

In presenting its final decision on the various components of the price direction (Chapters 3 to 7), the report adopts the following general format:

- a box at the beginning of each chapter that provides a summary of the Panel's final decision
- an introduction that provides some context about the relevance of the chapter to the overall price direction, and the considerations that the Panel has taken into account
- an overview of the Panel's draft decision about the subject matter
- relevant submissions made to the Panel's draft decision
- the Panel's assessment of the issues raised in the submissions and how this has impacted on its final decision-making, and
- details of the Panel's final decision, including a summary of the reasons underpinning the Panel's final decision (making reference to specific analysis contained in the draft report, if relevant).

The Panel's final price direction - the legal document that gives effect to its final decision about the prices for regulated water and sewerage services in the ACT - is presented in a separate document.²¹

2.5 Completion of the Panel's review process

The completion of this final report and its transmittal, along with the Panel's final substituted price direction, to the ACT Treasurer (as the responsible minister under the Act) ends the Panel's review process.

Pursuant to section 24(1) of the Act, a copy of this final report must be presented to the Legislative Assembly within six sitting days of it being given to the responsible minister.

21 Industry Panel, *Final Substituted Price Direction: Regulated Water and Sewerage Services 1 July 2013 to 30 June 2018*, April 2015.

3 Regulatory period, form of control and other risk allocation measures

Box 3.1: Summary of the Panel’s final decision

The Panel’s final decision on the length of the regulatory period, the form of control, measures to deal with demand and expenditure risks and unforeseen events, and whether there should be an intra-period review of tariff structures is set out in Table 3.1.

Table 3.1: Final decision – Regulatory period, form of control and other measures

Issue	Decision
Regulatory period	Five years (1 July 2013 – 30 June 2018) with no biennial recalibrations.
Form of control and measures to deal with demand risk	Hybrid price and revenue cap, with individual price caps set for water and sewerage charges and a demand volatility adjustment mechanism used to account for deviations between actual and forecast volumetric water sales revenue (ie, revenue from tier 1 and tier 2 water sales) in excess of a 6% deadband over the full five-year regulatory period (2013-14 to 2017-18). If the deadband is triggered, then the ICRC will be required to include any under or over recovery of revenue associated with this deviation (measured in NPV terms) in the calculation of Icon Water’s revenue requirement for water for the regulatory period commencing on 1 July 2018.
Measures to deal with expenditure risks	CPI escalation mechanism. <i>Ex post</i> capex review. Annual cost pass-through mechanism to deal with changes in subvention payments, changes in the amount Icon Water is required to pay the ACT Government for the WAC and UNFT, changes in taxes, changes in service standards, changes in regulation and the Tantangara Transfer Payment event. The materiality threshold for this mechanism will be: <ul style="list-style-type: none"> • \$0 for WAC, UNFT and subvention payments, and • \$2 million (\$2012-13) per event for all other cost pass-through categories.
Measures to deal with unforeseen events	A price variation trigger event mechanism to deal with the following unforeseen events if they satisfy the materiality threshold: an act of terrorism; a major natural disaster; major damage to infrastructure; a significant change in Icon Water’s financial or corporate structure; and an unforeseen or <i>force majeure</i> event. The materiality threshold in this case will be defined as ‘an event that severely restricts Icon Water’s ability to provide services and imposes a total annualised cost on Icon Water for the remainder of the regulatory period of more than \$12 million (\$2012-13)’.
Intra-period review of tariff structures	The ICRC will be required to conduct a review of tariff structures in this regulatory period and recommend amendments be made to the tariff structure either during the current regulatory period or as part of the next regulatory period.

The Panel’s final decision on:

- the length of the regulatory period, the form of control, measures to deal with unforeseen events and the intra-period review of tariff structures is unchanged from the draft decision
- the method to be used to estimate the deadband for the demand volatility adjustment mechanism is unchanged from the draft decision, but the level of the deadband has been revised down to 6% due to a changes in forecast water sales, and
- the measures to deal with expenditure risks is also largely the same as the draft decision, although some minor refinements have been made to the CPI escalation mechanism.

3.1 Introduction

Before a regulator can make a decision about the prices to be paid for regulated services, it must determine other matters such as:

- the length of the regulatory period
- the form of control to apply over the regulatory period (eg, a revenue cap, a price cap or a hybrid revenue-price cap), and
- whether any other measures are required to deal with demand or expenditure related risks, or the risk of unforeseen events.

The starting point for the Panel's assessment of each of these matters in the draft report was the ICRC's final decision (see Appendix 4).²² In reaching its draft decisions on each of these matters, the Panel also had regard to: Icon Water's SOFC and the submissions received from other parties;²³ the nature of the risks that Icon Water and its customers are likely to be exposed to in this regulatory period;²⁴ and the approaches employed by other regulators.

Following the release of the draft report, the Panel received a number of submissions from Icon Water and other parties about these matters. In considering these submissions and in reaching its final decision, the Panel has considered the extent to which its decision strikes an appropriate balance between:

- providing customers with some degree of price stability and predictability over the regulatory period
- minimising regulatory costs
- ensuring Icon Water remains financially viable and able to meet service obligations, and
- promoting economic efficiency.

This chapter sets out the matters the Panel considered in reaching its final decision on the length of the regulatory period, the form of control, measures to deal with demand and expenditure risks and unforeseen events, and whether there should be an intra-period review of tariff structures.

3.2 Length of the regulatory period

In water and other regulated industries in Australia, the length of the regulatory period is typically five years. However, the Panel is aware that shorter or longer regulatory periods have been adopted in the following circumstances:

- Shorter regulatory periods have been adopted when there has been a significant degree of uncertainty surrounding demand, expenditure or general operating conditions and where the regulator has assessed the benefits of the shortened period (eg, being able to respond more rapidly to changing circumstances) outweigh both:²⁵
 - the higher regulatory costs that are associated with shorter regulatory periods, and
 - any adverse effects the shorter regulatory period may have on price stability, predictability and a regulated business' incentive to pursue efficiencies.

22 Further detail on the ICRC's final decision on these aspects of the price direction can be found in Chapter 6 of the draft report.

23 An overview of the submissions that the Panel received from Icon Water and other parties can be found in Chapter 6 of the draft report.

24 A detailed discussion of these risks and uncertainties can be found in section 6.2 in Chapter 6 of the draft report.

25 See for example, IPART, *Final Report, Review of prices for Sydney Water Corporation's water, sewerage, stormwater drainage and other services*, June 2012, p. 31 and ESC, *Final Decision, Price Review 2013: Greater Metropolitan Water Businesses*, June 2013, Chapter 3.

- Longer regulatory periods have been adopted where the risks associated with locking in prices for a longer period are considered low, and where there have been effective safeguards in place to deal with any risks that may arise over the longer period.²⁶

3.2.1 Summary of the Panel's draft decision

In the draft report, the Panel decided to adopt a five-year regulatory period (1 July 2013 to 30 June 2018) without the biennial recalibration process that had been included in the ICRC's original price direction. The Panel also suggested that some of the benefits of intra-period reviews could be achieved through other less costly measures, such as an annual reporting requirement, which could be included in the price direction.

3.2.2 Responses to the draft decision

Icon Water was the only submitter to comment on this aspect of the Panel's draft decision. In short, it concurred with the Panel's decision to adopt a five-year regulatory period with no biennial recalibrations.²⁷ Icon Water also noted that it would be comfortable if the price direction provided for an annual reporting requirement "provided the process is cost effective, the requested information is relevant to the determination, and a reasonable timeframe is given for Icon Water's response".²⁸

3.2.3 Panel's assessment

No new matters were raised in the submissions to the draft report or the public forum about the length of the regulatory period or the removal of the biennial recalibration process. Given no contentions were made against the Panel's draft decision, nor any new evidence presented, the Panel has decided to reaffirm its draft decision, although it has decided that the annual reporting requirement should be a matter for the ICRC to consider (see Appendix 2), rather than be included in the price direction.

3.2.4 Panel's final decision on the length of the regulatory period

The Panel's final decision is to reaffirm its draft decision to adopt a five-year regulatory period (1 July 2013 to 30 June 2018) with **no** biennial recalibration process for all the reasons set out in the draft report. For ease of reference, these reasons are summarised below.

The Panel's decision to adopt a five-year regulatory period, rather than the six-year period adopted by the ICRC, reflects its view that the benefits of adding another year to the regulatory period would not outweigh:

- the costs and delays that would be associated with obtaining an additional year of forecasts from Icon Water who had only prepared forecasts for a five-year period, and
- the risk that can be associated with a longer regulatory period.

The Panel's decision not to require the biennial recalibration process, on the other hand, reflects its view that:

- the risks and uncertainties facing Icon Water and its customers in this regulatory period are not sufficiently high to require biennial recalibrations²⁹
- the benefits of the biennial recalibration process are likely to be small and outweighed by the adverse effects it will have on price stability and predictability, Icon Water's incentive to pursue efficiencies, and regulatory costs, and
- the benefits of the biennial recalibration process can be achieved through other less costly measures, such as an annual reporting requirement (see Appendix 2).

26 See for example, ACCC, *Final Decision - Central West Pipeline Access Arrangement*, 30 June 2000, p. 35, ACCC, *Final Decision - Amadeus Basin to Darwin Pipeline*, 4 December 2002, p. 156 and ACCC, *Draft Decision - DVP*, 23 May 2007, pp.94-95.

27 Icon Water, *Response to Draft Report*, 23 January 2015, p.22.

28 Icon Water, *Response to follow-up questions*, 26 February 2015, p.34.

29 A description of the risks and uncertainties that Icon Water and its customers are likely to face in this regulatory period can be found in section 6.2 in Chapter 6 of the draft report.

3.3 Form of control and measures to deal with demand risk

Section 20A(1) of the Act states that a price direction must include a direction about the form of control that will apply, which may be:

- (a) a price, a maximum price or both a minimum and maximum price for each regulated service, and/or
- (b) a maximum total amount (revenue cap) that may be earned by a person providing regulated services from the provision of those services.

The alternative forms of control provided for by this section of the Act include:

- **A pure revenue cap:** this form of control involves placing a cap on the revenue that a regulated service provider can earn in each year. To account for deviations between actual revenue and the revenue cap arising as a result of variations between actual and forecast demand, an 'unders and overs' account will typically be established. Prices can then be adjusted in the subsequent regulatory period to reflect the extent of any under- or over-recovery.
- **An average revenue cap:** this form of control involves placing a cap on the revenue a regulated service provider can earn per unit of output (eg, revenue per customer).
- **A price cap on individual services:** this form of control involves placing a cap on the price of each regulated service.
- **A hybrid price and revenue cap:** this form of control contains elements of both a price and revenue cap. The precise elements that will be combined can vary, but one example that a number of Australian regulators have used is a price cap that can be adjusted for any under- or over-recovery of revenue above a certain threshold (deadband). Under this hybrid cap, the regulated service provider bears demand risk up to the threshold, while customers bear the risk beyond this threshold.

The choice between these alternative forms of control affects how demand risks are allocated between customers and the regulated business, how prices vary within the regulatory period, the stability of the regulated business' revenue, and its incentive to encourage efficient utilisation of the asset.

3.3.1 Summary of the Panel's draft decision

In its draft decision, the Panel decided to implement a hybrid price and revenue cap form of control, which consisted of:

- individual price caps for water and sewerage charges, and
- a demand volatility adjustment mechanism to account for deviations between actual and forecast water sales revenue in excess of a 7% deadband over the regulatory period.

3.3.2 Responses to the draft decision

Icon Water was the only submitter to comment on the Panel's draft decision on the form of control and measures to deal with demand risk. In its response, Icon Water reaffirmed its preference to be subject to a revenue cap, with prices updated annually to reflect changes in forecast demand, and raised a number of concerns about the Panel's decision to adopt a hybrid price and revenue cap.

Two of the more significant concerns that Icon Water raised about the hybrid price and revenue cap were that:³⁰

- the risk sharing mechanism is not symmetric between Icon Water and its customers, and
- there is an 84% likelihood that it will incur a revenue shortfall (with an expected cost of \$34 million), because:
 - its costs do not vary significantly but its revenue is highly dependent on tier 2 water sales

³⁰ Icon Water, *Response to Draft Report*, 23 January 2015, p.7.

- the water sales forecasts adopted by the Panel in the draft report are higher than Icon Water's modelling suggests they will be, and
- up to 7% of its water sales revenue is at risk under the demand volatility adjustment mechanism.

In its response to the Panel's follow-up questions, Icon Water confirmed that the revenue shortfall and asymmetry cited above largely stems from the fact that it expects water sales to be lower than the forecasts adopted in the Panel's draft decision.³¹ Icon Water added though that there is an inherent asymmetry in its ability to manage demand variability, because while it can put in place measures to encourage conservation, there is little it can do to encourage greater consumption of water.³²

Icon Water also made the following observations in its response to the draft report and follow-up questions about the hybrid price and revenue cap:³³

"The price cap does not provide greater incentives for cost efficiency than a revenue cap, since neither results in within-period adjustments for reductions in controllable costs. The price cap *does* provide a greater incentive to increase sales quantities and Icon Water notes that the Panel's statement that Icon Water "*is well-placed to manage some [demand-related risks] (eg, by connecting customers or by encouraging conservation measures)*." Icon Water contends that it is not well placed to manage demand risk and that there is little benefit in providing this incentive."

"While questions of impacts of service levels and financial viability are relevant to the Panel's decision on form of control, they would not be greatly impacted within a three-year timeframe by water sales revenue falling 7 per cent short of the target. The major impact of this revenue outcome would be a distortion of incentives for efficient investment. Revenue fell short of forecast efficient costs in the 2008-2013 period by around \$263 million due to the control mechanism and demand forecasts set by the regulator. Another major revenue shortfall in the 2013-2018 period would further undermine Icon Water's confidence in the regulatory system and the credibility of regulators' commitment to provide reasonable opportunity to recover the efficient costs that it incurs in operating, maintaining and investing in water and sewerage services.

A 7 per cent shortfall in water sales revenue would probably lead Icon Water to defer investment, resulting in less productive efficiency going forward."

To address the concerns outlined above, Icon Water suggested that if the Panel decides to reaffirm its decision to adopt a hybrid price and revenue cap form of control, it should:

- give greater weight to section 20(2)(e) of the Act (ie, the cost of providing the regulated service) when deciding how to deal with demand risk, and
- provide Icon Water with a reasonable opportunity to recover efficient costs by:³⁴
 - reducing the deadband to 3% over the full five-year regulatory period, and/or
 - adopting Icon Water's water sales forecasts, which range from 39.6 GL in 2014-15 to 42.5 GL in 2017-18.

31 Icon Water, *Response to follow-up questions*, 26 February 2015, p.14.

32 *ibid.*

33 Icon Water, *Response to Draft Report*, 23 January 2015, p.9.

34 *ibid.*, pp.7-10.

Elaborating further on its proposal to reduce the deadband, Icon Water stated the following:³⁵

“At the expense of a slight reduction in the stability and predictability in unit prices over the next two regulatory periods, this proposal would:

- increase predictability with respect to the total amount of consumer bills over time;
- mitigate the risk that revenue will fall short of costs to an extent that impacts on service levels; and
- mitigate the risk that Icon Water will generate revenue significantly in excess of that required to cover efficient costs.”

3.3.3 Panel’s assessment

The views expressed by Icon Water about the form of control and measures to deal with demand related risk raise two important questions:

- What is the appropriate form of control to adopt in this regulatory period?
- If a hybrid price and revenue cap is adopted, what is an appropriate level for the deadband?

The Panel’s assessment of these two questions is set out below.

3.3.3.1 What is the appropriate form of control in this regulatory period?

The first question that Icon Water’s submission raises is whether the Panel should maintain its draft decision to adopt a hybrid price and revenue cap, or implement Icon Water’s preferred form of control (ie, a revenue cap with prices updated annually to reflect changes in forecast demand).

The concerns that the Panel has with Icon Water’s proposed form of control are three-fold:

- First, the proposal to implement a revenue cap would mean that customers bear all the demand-related risks, even though Icon Water may be better placed to manage some of these risks (eg, by connecting customers or by encouraging conservation measures).
- Second, the proposal to update prices annually to reflect changes in forecast demand could result in prices exhibiting significant instability over the regulatory period, which will operate to the detriment of customers.³⁶
- Third, the proposal to update prices annually can be expected to result in higher regulatory costs, which will also act to the detriment of customers.

Given these concerns, the Panel reaffirmed its draft decision to adopt a hybrid price and revenue cap rather than implement Icon Water’s proposed form of control.

The Panel’s comments on Icon’s specific contentions about the hybrid price and revenue cap are as follows:

As to the contentions that Icon Water has made about the hybrid price and revenue cap, the Panel makes the following observations:

- **Risk of revenue shortfall and asymmetry of risk allocation:** The concerns that Icon Water has expressed about the ‘asymmetric’ allocation of demand risk and the 84% likelihood of a revenue shortfall under the hybrid price and revenue cap arise from the difference between Icon Water’s and the Panel’s views on water sales forecasts, rather than deficiencies with the hybrid price and revenue cap.

35 ibid, p.10.

36 The Panel is aware from statements made by the ICRC in the 2008 price direction that when a similar approach was adopted in the 2004 regulatory period, water prices exhibited a significant degree of variability from year-to-year and the annual reset process was quite resource intensive. Based on the information contained on page 127 of the ICRC’s 2008 Price Direction, it would appear that the three tier volumetric water charges rose by 13-14% between 2004-05 and 2005-06, 14% between 2005-06 and 2006-07 and 17%-48% between 2006-07 and 2007-08.

- **Effect on service levels:** In its initial response to the draft report, Icon Water claimed that if revenue falls short of its costs then it could impact service levels.³⁷ Icon Water has since informed the Panel that service levels would “not be greatly impacted within a three-year timeframe”³⁸ under the hybrid price and revenue cap set out in the draft report.
- **Effect on incentives:** While the Panel accepts Icon Water’s claim that the hybrid price and revenue cap will not provide it with a greater incentive to pursue cost efficiencies than with a revenue cap form of control, it remains of the view that Icon Water is well placed to manage some demand risk and that being subject to a hybrid price and revenue cap will accord it with a greater incentive to manage this risk than a revenue cap.
- **Relevance of section 20(2)(e):** In its response, Icon Water has contended that the Panel should have greater regard to section 20(2)(e) when deciding how to deal with demand risk. This section of the Act requires the Panel to consider the cost of providing the regulated services. However, this is just one provision of several in the Act that the Panel must consider when making its price direction, and other relevant provisions in the Act and the terms of reference that the Panel is required to consider are:
 - section 20(2)(c), which states that regard is to be had to the need for greater efficiency in the provision of regulated services to reduce costs to consumers and taxpayers
 - section 20(2)(g), which states that regard is to be had to the social impacts of the decision, and
 - clause 1(e) of the terms of reference, which states that the Panel is required to consider all potential regulatory models, including consideration of the provision of sufficient flexibility in price setting to minimise the impact of significant price fluctuations.

As noted in the draft report, other benefits of the hybrid price and revenue cap form of control are that:

- it will have no effect on regulatory costs within the regulatory period because deviations are accounted for only at the start of the next regulatory period
- the price cap component of the hybrid form of control will ensure that prices remain relatively stable over the period, and
- positive and negative variations within the regulatory period will offset each other, so at the end of the period, all that will be passed through to customers is the total deviation in excess of the deadband.

As with any form of control, the hybrid price and revenue cap does have some disadvantages, the most notable of which are that:

- customers will benefit from higher demand only if demand exceeds the upper bound of the deadband, and
- the regulated business may not have an incentive to implement conservation measures until demand has fallen below the deadband.

The Panel considers the hybrid price and revenue cap provides a better balance between the following competing objectives than other forms of control – particularly given the degree of uncertainty surrounding demand:

- providing customers with some degree of price stability and predictability over the regulatory period³⁹

³⁷ Icon Water, *Response to Draft Report*, 23 January 2015, p.9.

³⁸ Icon Water, *Response to follow-up questions*, 26 February 2015, p.6.

³⁹ The price cap component of the hybrid form of control will ensure that prices remain relatively stable over the period. The fact that positive and negative variations within the regulatory period will to some extent offset each other will also ensure that prices remain relatively stable over the period.

- minimising regulatory costs⁴⁰
- promoting economic efficiency, and
- ensuring Icon Water is financially viable and able to meet its service obligations.

The Panel has decided therefore to reaffirm its draft decision to adopt a hybrid price and revenue cap.

3.3.3.2 What is an appropriate level for the deadband?

The second question that Icon Water's submission raises is: what is an appropriate level for the deadband?

In its response to the draft report, Icon Water has contended that if a hybrid price and revenue cap is adopted then the Panel should:

- reduce the deadband to 3%, and/or
- adopt Icon Water's water sales forecast, which is lower than the Panel's forecasts.

The remainder of this section focuses on the matters raised by Icon Water about the level of the deadband, while Chapter 7 addresses the concerns Icon Water has raised about the central water sales forecast.

When making its draft decision about the level of the deadband to be used in the demand volatility adjustment mechanism, the Panel was cognisant of both:

- the need for Icon Water to remain financially viable over the range of possible revenue outcomes that could occur under the deadband, and
- the potential for the incentive benefits of the price cap to be undermined if the limits of the deadband are breached too frequently.

To help inform its decision on this issue, the Panel had regard to advice provided by Cardno on the 95% probability of exceedance to 5% probability of exceedance water sales forecast range. Drawing on this advice and its own analysis of the effect that reaching the lower and upper bounds of this forecast range would have on Icon Water's financial viability, in its draft decision the Panel decided to adopt a deadband of 7% of tier 1 and tier 2 water sales revenue. The Panel's decision to adopt this deadband reflected its view that Icon Water should be protected from **extreme** differences between forecast and actual water sales and, in particular, differences that would affect Icon Water's financial viability. The Panel was keen to provide a quantitative and analytical basis for its decision, rather than set arbitrary limits.

⁴⁰ This form of control will have no effect on regulatory costs within the regulatory period because deviations are only accounted for at the start of the next regulatory period.

In contrast to the approach employed by the Panel, Icon Water has suggested that a 3% deadband be adopted. The 3% deadband has not been established through any particular method. Icon Water has simply stated that it reflects the weighing up of a range of considerations, including cost recovery, price stability, incentives for demand-side management and the implications of inaccurate demand forecasting. The concerns the Panel has with Icon Water's proposal to adopt a 3% deadband are that it is much narrower than the deadbands adopted by other jurisdictional regulators⁴¹ in recent decisions and that it would:

- effectively turn the form of regulation into a revenue cap
- result in some of the incentive benefits of the price cap being undermined, because the limits of the deadband will be breached more frequently, and
- lead to lower predictability in consumer bills and prices over time, because a lower deadband means that it is more likely the deadband will be triggered and that greater revenue shortfalls or over recoveries will need to be dealt with in the following period.

In light of these concerns, the Panel has decided **not** to adopt Icon Water's suggested deadband and to maintain the same approach that it used in the draft report to determine the deadband, which is to set the level of the deadband by reference to the 95% probability of exceedance to 5% probability of exceedance water sales forecast range.

Because the Panel has decided to revise its central water sales forecasts (see Chapter 7), the bounds of the 95% probability of exceedance to 5% probability of exceedance forecast range have also changed from what was assumed when setting the level of the deadband in the draft report. The Panel has therefore revisited the question of what level the deadband should be set at.

The modelled distribution of possible outcomes around the revised central forecast now range from approximately:⁴²

- 40-41 GL (estimated to have a 95% probability of exceedance), to
- 46-48 GL (estimated to have a 5% probability of exceedance).

Using the 95% probability of exceedance to 5% probability of exceedance forecast range, the Panel estimated that if actual water sales reached:

- the lower bound of the range, then Icon Water would recover approximately 6.7% (approximately \$47 million in net present value terms) **less** in revenue from tier 1 and tier 2 water sales than it would if the central water sales forecast was achieved, and
- the upper bound of the range, then Icon Water would recover approximately 8.3% (around \$58 million in net present value terms) **more** in revenue from tier 1 and tier 2 water sales than it would if the central water sales forecast was achieved.

41 In IPART's Sydney Water and Hunter Water decisions a deadband of 10% of water sales volumes was adopted, which the Panel has estimated equates to approximately 4% of total revenue. In the QCA's recent draft decision for the Gladstone Area Water Board, a deadband of 10% of total revenue was adopted. The 7% deadband adopted by the Panel in the draft decision was expressed as a percentage of water revenue from volumetric charges. If this is converted into a percentage of total revenue measure, then it equates to around 3.5% of total revenue, which is lower than the deadbands adopted by IPART and the QCA. Icon Water's proposed deadband is the equivalent of 1.5% of total revenue. See IPART, *Final Report - Review of prices for Sydney Water Corporations water sewerage stormwater drainage and other services from 1 July 2012 to 30 June 2016*, June 2012, p39; IPART, *Final Report - Hunter Water Corporation's water sewerage stormwater drainage and other services - 1 July 2013 to 30 June 2017*, June 2013, p91 and QCA, *Draft Report Gladstone Area Water Board Price Monitoring 2015-2020*, February 2015, p.47.

42 Cardno, *Briefing Note - Response to Icon Water comments on Industry Panel Draft Report*, March 2015, p.13.

While there is a significant difference between the revenue that Icon Water could earn from water sales under these two extreme water sales forecasts, the Panel is satisfied that if the deadband is set by reference to these forecasts:

- Icon Water will, all else being equal, remain financially viable over this range of revenue outcomes, and
- the incentive benefits associated with a price cap will not be undermined because the deadband is unlikely to be frequently breached.

The Panel has applied the same methodology for determining the deadband that was used for the draft decision. The distribution of water sales forecasts is an important input to this methodology. Cardno's revised advice for the Panel's final decision included a tighter distribution of water sales forecasts. This has resulted in a slightly narrower deadband than for the draft decision.

Specifically, as discussed above, applying the 95% probability of exceedance forecast yields water sales revenue 6.7% below the target level. Taking account of the need to ensure that consumer interests are protected through maintaining the viability of Icon Water in extreme events, and noting the financeability ratios for Icon Water (as detailed in Chapter 10) are close to the lower bound of acceptability, the Panel has decided to set the deadband at 6% of water sales revenue (ie, the revenue derived from tier 1 and tier 2 water charges).

3.3.4 Panel's final decision on the form of control

The Panel's final decision is to adopt a hybrid price and revenue cap that consists of:

- individual price caps for water and sewerage charges, and
- a demand volatility adjustment mechanism that will be used to account for deviations between actual and forecast water sales revenue above or below a 6% deadband over the regulatory period (1 July 2013 to 30 June 2018).

If the demand volatility adjustment mechanism is triggered, then the net present value of any under- or over-recovered revenue will be included in the calculation of water charges in the next regulatory period. This requirement will be given effect through a future reset principle, which the ICRC will be required by section 20A(2) of the Act to comply with. The form that this reset principle will take is set out below:

The demand volatility adjustment will be determined as the difference between:

- (i) the net present value of the revenue earned through tier 1 and tier 2 water charges over the period 1 July 2013 to 30 June 2018; and
- (ii) the net present value of the volumetric water sales revenue (ie, the revenue to be recovered from tier 1 and tier 2 charges) allowed in the Final Report (see Table 11.1 below), adjusted where necessary for any pass-through amounts approved by the Commission in the period, plus or minus 6% depending on whether there has been an over collection or an under collection of revenue.

The net present value in (i) and (ii) is to be measured as at 1 July 2013.

Forecast revenue will be used for those quarters of the financial year 2017-18 for which actual revenue data is unavailable.

The rate of return to be used in the calculation of the net present value is 7.2% (nominal vanilla Weighted Average Cost of Capital (WACC)).

The Panel has decided to implement this form of control because in its view:

- Icon Water should bear demand-related risk⁴³ up to the level of the deadband and customers should bear the risk beyond this, and
- the hybrid price and revenue cap provides a better balance between the objectives set out in section 3.3.3.1, the provisions set out in section 20(2) of the Act and clause 1(e) of the terms of reference, than other approaches, particularly given the uncertainty surrounding demand.

The Panel also considers this form of control to be consistent with sections 20A(1) and 20(2) of the Act.

3.4 Measures to deal with expenditure risks

Regulators deal with the risk that actual expenditure within a regulatory period deviates from the forecasts used to derive the revenue requirement through tools such as:

- a consumer price index (CPI) escalation mechanism⁴⁴
- a cost pass-through mechanism⁴⁵
- an *ex post* capital expenditure review mechanism,⁴⁶ and
- an intra-period capital expenditure review or a capital expenditure trigger event.⁴⁷

A regulator's decision to employ any of these tools will depend on how significant it considers the risks to be and the relative importance it places on:

- providing the regulated business with an opportunity to recover efficient costs
- price stability over the regulatory period
- minimising regulatory costs, and
- providing the regulated business with incentives to pursue efficiency gains.

Invariably, there are trade-offs between these factors.

43 Note that the risk may be positive or negative. For example, if demand exceeds the upper bound of the deadband, then customers will benefit through lower water charges. If, on the other hand, demand is lower than the lower bound of the deadband customers will be required to pay higher water charges.

44 A CPI escalation mechanism is used to deal with changes in inflation over the regulatory period.

45 A cost pass-through mechanism can be used to deal with positive and negative changes in uncontrollable costs (eg, taxes, externally determined service standards and regulatory obligations) in the period.

46 As *ex post* capital expenditure review allows the regulator to undertake a review of the prudence and efficiency of capital expenditure actually undertaken in the regulatory period at the commencement of the next regulatory period and can therefore be used to deal with the risk that a regulated service provider spends less than it proposed or undertook imprudent or inefficient expenditure in the period.

47 Both these tools can be used to deal with the risk that a regulated service provider is required to carry out a major capital expenditure project, which either wasn't anticipated when the regulatory determination was made, or was considered too uncertain in terms of timing, costs or need. The key difference between these tools is that the trigger event provision allows prices to be varied within the regulatory period while the intra-period review provision does not.

3.4.1 Summary of the Panel's draft decision

In its draft decision, the Panel decided to deal with expenditure risks through:

- a CPI escalation mechanism
- an *ex post* capex review mechanism, and
- an annual cost pass-through mechanism to deal with changes in subvention payments, changes in the amount Icon Water is required to pay the ACT Government for the Water Abstraction Charge (WAC) and Utilities Network Facilities Tax (UNFT), changes in other taxes, changes in service standards and regulatory obligations, and the Tantangara Transfer Payment event. The materiality threshold that the Panel decided to adopt for this mechanism was:
 - \$0 for WAC, UNFT and subvention payments, and
 - \$2 million (\$2012-13) per event for all other cost pass-through categories.

While prior price directions passed through only changes in the WAC and UNFT **rates**, the Panel's draft price direction proposed that differences between the total amount of WAC and UNFT payable and the forecast amounts be passed through to consumers. The mechanism in the Panel's draft price direction therefore allowed changes in the WAC and UNFT rates as well as differences between actual and forecast dam releases and network lengths to be taken into account when calculating the pass-through amount for the WAC and UNFT.

3.4.2 Responses to the draft decision

Icon Water and Mr Crawford were the only submitters to comment on the measures that the Panel decided to adopt to deal with expenditure risks in the draft report. An overview of the submissions is provided below.

3.4.2.1 Icon Water's response

Icon Water noted that, while it generally supported the Panel's draft decision on the cost pass-through mechanism, it questioned whether the amendments made to the WAC pass-through provision would outweigh the administrative costs.⁴⁸ It also noted that if water sales are lower than forecast, then any revenue shortfall "will be exacerbated by a WAC pass-through".⁴⁹ Icon Water suggested that the Panel consider whether the pass-through event should be based only on the WAC rate with a further 'true up' based on the total WAC payable to the ACT Government allowed at the end of the period if the demand volatility adjustment mechanism is triggered.⁵⁰

Elaborating further on this issue, Icon Water noted the following:⁵¹

"Our concern is not derived from the associated administrative costs, which wouldn't be particularly high. Our concern relates to the consistency in treatment of demand risk in relation to revenue and expenditure. The Panel's draft decision is to achieve full accuracy via 'true up' adjustments in relation to the effect of water volumes on WAC expenditure, but to make no adjustment in relation to the effect of water volumes on revenue unless that effect exceeds 7 per cent. Our proposal to align these treatments would ensure that where lower water sales lead to a revenue shortfall, Icon Water would offset some of this shortfall against a lower-than-forecast WAC amount."

48 Icon Water, *Response to Draft Report*, 23 January 2015, p.22.

49 *ibid.*

50 *ibid.*

51 Icon Water, *Response to follow-up questions*, 26 February 2015, p.33.

3.4.2.2 Mr Crawford's response

Mr Crawford raised a number of concerns about the following aspects of the CPI escalation mechanism:⁵²

- the index to be used to measure inflation (eg, a Canberra measure or a weighted average of eight capital cities measure), which Mr Crawford pointed out had not been defined in the draft price direction
- the CPI formula set out in the draft price direction, which Mr Crawford noted was missing a minus one at the end of the formula, and
- the use of the 'four quarter on four quarter' approach to measuring the change in inflation, which Mr Crawford observed "does not always produce an accurate 'percentage change from previous year' CPI value for the entire year".

3.4.3 Panel's assessment

3.4.3.1 WAC cost pass-through provision

For the reasons set out below, the Panel remains of the view that its draft decision on the WAC and UNFT cost pass-through mechanism is appropriate:

- The WAC is a statutory fee levied by the ACT Government and Icon Water is collecting the fee on behalf of (or as an agent for) the Government. It should not be used to cross-subsidise any shortfall in revenue that Icon Water may incur if demand is lower than expected. In the Panel's view, shortfalls of this nature should instead be dealt with through the demand volatility adjustment mechanism.
- While the Panel accepts the amendment it has made to the WAC cost pass-through provision is likely to result in the mechanism being triggered more frequently than it has to date, it does not expect the additional administrative costs to be significant, given that:
 - the information Icon Water will have to provide to the ICRC will be the same information it has to provide the ACT Government when paying the WAC, and
 - the cost pass-through provisions are already expected to be triggered in each of the remaining years of the regulatory period because the ACT Government has already signalled its intention to increase the UNFT by 5% per annum up to 2017-18.⁵³

3.4.3.2 CPI escalation mechanism

The Panel agrees with Mr Crawford that the index to be used to measure inflation must be defined in the final price direction. In keeping with the approach the ICRC has taken in the 2004 and 2008 determinations,⁵⁴ the Panel has decided to use the Australian Bureau of Statistics' weighted average of eight capital cities CPI. The Panel also agrees with Mr Crawford that the CPI formula in the price direction needs to be amended to include a 'minus one' at the end of the formula.⁵⁵ These two amendments have been incorporated in the final price direction.

As to the issues raised by Mr Crawford about the 'four quarter on four quarter'⁵⁶ approach to measuring inflation, the Panel notes that this issue was not raised in the original round of submissions or in the ICRC's review process. A decision by the Panel to adopt a different approach at the late stage of the review process would mean that other stakeholders would not have had an opportunity to comment on the Panel's decision. The Panel was reluctant to amend this aspect of the draft decision, particularly

52 Crawford, S., *Submission to the Industry Panel in response to the Industry Panel's December 2014 draft report*, 23 January 2015.

53 ACT Government, *2014-15 Budget Paper No. 3*, p.231.

54 In the 2013 price determination, the ICRC also did not define what CPI measure would be used.

55 The revised formula is as follows:
$$CPI_t = \frac{CPI_{June(t-2)} + CPI_{Sep(t-1)} + CPI_{Dec(t-1)} + CPI_{Mar(t-1)}}{CPI_{June(t-3)} + CPI_{Sep(t-2)} + CPI_{Dec(t-2)} + CPI_{Mar(t-2)}} - 1.$$

56 The 'four quarter on four quarter' approach involves dividing the sum of the preceding four quarters of CPI by the sum of the four quarters of CPI from the prior year.

given that the ICRC has used the ‘four quarter on four quarter’ approach in the last four price directions, and there are pros and cons associated with both approaches.

For example, if inflation is changing over the period then the ‘four quarter on four quarter’ approach will not, as Mr Crawford has pointed out, provide an accurate measure of the percentage change on previous year’s inflation because it averages out the effect of changes in inflation over the year. So if inflation is higher in year 2 than it was in the year 1, it will take longer under the four quarter on four quarter approach for the increase to influence prices, which will benefit consumers. Conversely, if inflation is lower in year 2 than in year 1 it will take longer for the lower level of inflation to affect prices, which will operate to the detriment of consumers.

While the Panel has decided not to change the way in which inflation is measured in this regulatory period, it suggests that as part of its next regulatory review the ICRC carefully consider the concerns raised by Mr Crawford and the pros and cons of the alternative approaches to measuring inflation.

3.4.4 Panel’s final decision on measures to deal with expenditure risks

The Panel’s final decision includes the following measures to deal with expenditure risks in the regulatory period:

1. **A CPI escalation mechanism**, which will provide Icon Water with some protection against changes in inflation over the period and will take the form set out in Box 3.2.

Box 3.2: Form of the CPI escalation mechanism

The CPI escalation mechanism will take the following form in the price direction:

$$P_t = P_{t-1} \times (1 + CPI_t) \times (1 - X\%)$$

Where:

P_t is the price to be charged for the relevant service in the regulatory year t

P_{t-1} is the price charged for the relevant service in the preceding regulatory year

$$CPI_t = \frac{CPI_{June(t-2)} + CPI_{Sep(t-1)} + CPI_{Dec(t-1)} + CPI_{Mar(t-1)}}{CPI_{June(t-3)} + CPI_{Sep(t-2)} + CPI_{Dec(t-2)} + CPI_{Mar(t-2)}} - 1$$

CPI means the All Groups consumer price index (weighted average of eight capital cities) as published by the Australian Bureau of Statistics. If the Australian Bureau of Statistics does not (or ceases to) publish the index, then *CPI* will mean the ICRC’s estimate of the level of consumer prices.

t can take on the value of 2015-16, 2016-17 or 2017-18 for the relevant year.

X is the value specified in the price direction.

2. **An ex post capital expenditure review**, which will allow the ICRC to assess the prudence and efficiency of the capital expenditure actually incurred by Icon Water over the current regulatory period before rolling it into the regulated asset base in the next determination.
3. **An annual cost pass-through mechanism**, which will provide Icon Water and customers with some protection against material changes (positive and negative) in uncontrollable costs over the period. This mechanism will enable changes in the following costs to be passed through if they satisfy the materiality threshold:
 - Changes in the amount payable to the ACT Government for the WAC and UNFT, which will be calculated as follows:

$$WAC_t \text{ pass through} = (\text{Actual dam releases}_t \times \text{Actual WAC rate}_t) - (\text{Forecast dam releases}_t \times \text{Forecast WAC rate}_t)$$

$$UNFT_t \text{ pass through} = (\text{Actual network length}_t \times \text{Actual UNFT rate}_t) - (\text{Forecast length}_t \times \text{Forecast UNFT rate}_t)$$
 - Changes in the subvention payments received from the Commonwealth Government.

- Changes in other taxes.
- Changes in service standards or regulatory obligations that result in a material increase or decrease in the cost of providing water or sewerage services.
- A Tantangara Transfer Payment event, which will be triggered if Icon Water is required to exercise its option to transfer water from the regulated Murrumbidgee River to the ACT via the Snowy Mountains Scheme.

The materiality threshold for the cost pass-through mechanism will be:

- \$0 for WAC, UNFT and subvention payments, and
- \$2 million (\$2012-13) per event for all other cost pass-through categories.

In the Panel's view, this materiality threshold provides an appropriate balance between the following factors, both of which are in the best interests of consumers:

- minimising the degree of price variability in the regulatory period by limiting the number of occasions that the cost pass-through provisions are likely to be triggered beyond that provided for changes in the WAC, UNFT and subvention payments, and
- allowing Icon Water to remain financially viable and meet its service obligations.

In reaching this decision, the Panel was cognisant that allowing frequent adjustments to prices can increase regulatory costs, result in greater price variability, and decrease the regulated service provider's incentives to pursue efficiencies, all of which act to the detriment of consumers. At the same time, the absence of risk adjustment mechanisms could adversely affect Icon Water's financial viability and/or its ability to meet its service obligations, which would also act to the detriment of consumers. The Panel has decided to make provision for these measures in its substituted price direction but, where relevant, to limit the scope of their use.

With the exception of the refinements that have been made to the CPI escalation mechanism, the Panel's final decision is unchanged from its draft decision.

3.5 Measures to deal with unforeseen events

To minimise a regulated business' exposure to unforeseen events in the regulatory period, some regimes include a trigger event mechanism, which allows the determination to be re-opened and prices to be reset if:

- a major event occurs that is beyond the control of the service provider, such as a natural disaster, and
- the event adversely affects the business' financial viability or ability to provide services.

The Act is one such regulatory regime, with section 20A(3)(c) stating that a price direction may include a price variation trigger 'the happening of which would entitle the commission to initiate a reference for an investigation into a variation of the direction'.

3.5.1 Summary of the Panel's draft decision

In its draft decision, the Panel included a price variation trigger event mechanism that enabled the price direction to be varied if:

- there was an act of terrorism, major natural disaster, major damage to Icon Water's infrastructure, a significant change to Icon Water's financial or corporate structure and other unforeseen or *force majeure* events, and
- the event severely restricts Icon Water's ability to provide services and imposes a total annualised cost on Icon Water for the remainder of the regulatory period of more than \$12 million (\$2012-13).

3.5.2 Responses to the draft decision

Icon Water was the only submitter to comment on the Panel's draft decision to implement the price variation trigger event mechanism outlined above. In short, Icon Water supported the Panel's decision to use a price variation trigger event mechanism to deal with the unforeseen events listed above.⁵⁷

3.5.3 Panel's assessment

No new matters were raised in the submissions to the draft report or the public forum about the measures to deal with unforeseen events. Given no contentions have been made against the Panel's draft decision, nor any new evidence presented, the Panel has decided to reaffirm its draft decision on the measures to deal with unforeseen events.

3.5.4 Panel's final decision on measures to deal with unforeseen events

The Panel recognises that the regulatory framework should accommodate any major unforeseen events that may occur in the regulatory period and have a material impact on Icon Water's ability to provide services or its financial viability. The Panel's final decision is therefore to include a price variation trigger event mechanism in the price direction that can be activated if one of the following unforeseen events occurs and it satisfies the materiality threshold:

- (a) an act of terrorism
- (b) a major natural disaster
- (c) major damage to infrastructure
- (d) a significant change in Icon Water's financial or corporate structure, and
- (e) an unforeseen or *force majeure* event.

The materiality threshold the Panel has decided to apply in this case is as follows:⁵⁸

The event must severely restrict Icon Water's ability to provide water and/or sewerage services and impose a total annualised cost on Icon Water for the remainder of the regulatory period of more than \$12 million.

In the Panel's view, the level of this materiality threshold should ensure that the trigger event mechanism does not undermine Icon Water's incentive to act in a prudent and efficient manner, or give rise to frequent price changes and higher regulatory costs.

3.6 Intra-period review of tariff structures

The manner in which tariffs are structured can have important implications for the price signals that customers face and economic efficiency, more generally. In a standard regulatory review, consideration will usually be given to whether the existing tariff structures are working effectively and if they are found not to be then changes to the tariff structure will generally be implemented when the new regulatory period commences.

3.6.1 Summary of the Panel's draft decision

In the ICRC's original price direction, provision was made in the future reset principles for the ICRC to carry out a review of the water and sewerage tariff structures during the regulatory period and to recommend amendments be made to the tariff structure either:

- (a) during the current regulatory period, or
- (b) as part of the next regulatory period.

⁵⁷ Icon Water, *Response to Draft Report*, 23 January 2015, p.22.

⁵⁸ This materiality threshold is consistent with the threshold the ICRC adopted for the price variation trigger mechanism in its 2008 price direction, which was \$10 million in 2006-07 dollar terms (or \$12 million in 2012-13 dollar terms).

To give effect to option (a), a trigger event was included in the price direction, which enabled the ICRC to initiate a reference for the variation of the price direction within the regulatory period if it decided that the tariff structure must be amended during the regulatory period.

No concerns were raised with these provisions in Icon Water's SOFC or any other submissions that the Panel received from stakeholders. These provisions were therefore maintained in the Panel's draft substituted price direction.

3.6.2 Responses to the draft decision

The only party that commented on this aspect of the Panel's draft report was Icon Water, who questioned the Panel's decision to enable the price direction to be varied to accommodate a decision by the ICRC to amend the tariff structure within the regulatory period.⁵⁹ In doing so, Icon Water noted that "substantive changes to tariff structures would appear to be prohibited by the maximum prices determined in Section 6 [of the price direction]".⁶⁰

3.6.3 Panel's assessment

The matters raised by Icon Water about the intra-period tariff structure review were not raised in its original SOFC or during the ICRC's original price direction. It is not open for the Panel to revisit this aspect of the ICRC's original price direction, given the limitations imposed by section 24N(3) of the Act.

Nevertheless, the Panel has considered whether a change in the maximum prices specified in the price direction brought about by a change in tariff structures part way through the regulatory period would be "prohibited" as Icon Water has suggested. Having reviewed the relevant provisions of the Act, the Panel is satisfied that maximum prices could be changed in this way, just as the maximum prices can be changed part way through the period if one of the unforeseen events listed in the preceding section occurs (eg, a natural disaster). Thus, it is unnecessary to make any amendments to the substituted price direction to address this issue.

Finally, while the Panel supports a review of tariff structures being carried out in this regulatory period (and so has retained this review as a reset principle in the substituted price direction), it has some concerns about the effect that a change to the tariff structure in the last three years of the regulatory period may have on price stability and customers. The Panel's preference is for any change in tariff structure that is expected to result in a material change in prices to be deferred until the next regulatory period, although it accepts that the discretion as to whether or not prices should be varied in this regulatory period ultimately rests with the ICRC.

59 Icon Water, *Response to Draft Report*, 23 January 2015, pp.22 and 29.

60 *ibid*, p.29.

4 Value of the regulated asset base and treatment of water security projects

Box 4.1: Summary of the Panel's final decision

The Panel's final decision on the value of the water and sewerage RABs is set out in Tables 4.1 and 4.2 below.

Table 4.1: Final decision - Value of the water RAB (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Opening value of the RAB	1,369.80	1,414.50	1,451.07	1,484.64	1,522.21
Capital expenditure (net of capital contributions)	34.64	26.99	24.44	28.87	42.19
Asset disposals	-	-	-	-	-
Depreciation	-24.63	-26.12	-27.45	-28.77	-30.30
Indexation	34.68	35.70	36.58	37.48	38.58
Closing value of the RAB	1,414.50	1,451.07	1,484.64	1,522.21	1,572.69

Table 4.2: Final decision - Value of the sewerage RAB (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Opening value of the RAB	656.72	674.83	711.28	775.22	882.42
Capital expenditure (net of capital contributions)	18.11	38.23	65.57	109.86	70.19
Asset disposals	-	-	-	-	-
Depreciation	-16.64	-19.13	-20.23	-23.42	-26.94
Indexation	16.64	17.35	18.60	20.75	22.94
Closing value of the RAB	674.83	711.28	775.22	882.42	948.61

The Panel's final decision on the value of the water RAB for each year in the regulatory period is \$2.5 million to \$8.7 million *higher* than the draft decision, while the value of the sewerage RAB is \$1.1 million to \$15.3 million *lower* than the draft decision. These differences reflect the following changes from the draft decision:

- Capital expenditure – The Panel has decided to:
 - increase the water capital expenditure forecast by \$8.7 million to reflect the expenditure that was incurred completing the water security projects in 2013-14, but which was inadvertently excluded from Icon Water's initial submissions about its capital expenditure program, and
 - accept Cardno's recommendation that \$10 million be deducted from the capital expenditure forecast in both 2016-17 and 2017-18 because, in the light of new information since its draft report, the Panel has assessed there is an increased risk about Icon Water's ability to deliver the proposed capital expenditure program in these two years.
- Depreciation – The Panel has decided to replace the simplifying assumptions made in the draft report about the economic lives of approximately 60 capital expenditure projects with more accurate information since provided by Icon Water. The depreciation allowance has also been amended to reflect the revised capital expenditure forecasts.

The Panel's final decision on the opening value of the RAB and the methods used to calculate the opening value of the RAB, depreciation and indexation are unchanged from the draft decision.

The Panel has decided to reaffirm its draft decision **not** to defer the recovery of any of the ECD or M2G water security project capital costs because such a deferral, in conjunction with the 6% deadband, could place strain on Icon Water's financial viability in the short-term. The Panel has decided instead to rely on the deferral inherent in the traditional straight line depreciation approach (with indexation of the RAB) to recover the costs of the ECD and M2G over the economic lives of these assets.

4.1 Introduction

The value of the regulated asset base (RAB) is an integral component of the building block methodology and is used in the calculation of both the return on capital and the depreciation (or return of capital) building blocks.

To calculate the value of the RAB **within** a regulatory period, regulators first establish the value of the RAB at the **commencement** of the regulatory period (ie, the opening value of the RAB). Once this is established, the value of the RAB in subsequent years of the regulatory period (year t), is usually calculated as follows:

- the opening value of the RAB *plus*
- forecast capital expenditure (net of the value of any capital contributions) between the commencement of the regulatory period and year t *less*
- depreciation between the commencement of the regulatory period and year t *less*
- the value of any assets to be sold or disposed of between the commencement of the regulatory period and year t *plus*
- indexation of the RAB between the commencement of the regulatory period and year t.

The starting point for the Panel's assessment of the value of water and sewerage RABs in the draft report was the ICRC's final decision (see Appendix 4).⁶¹ The Panel also had regard to Icon Water's SOFC, the issues raised by other stakeholders, the techniques employed by other Australian regulators, and intergenerational equity and economic efficiency principles.⁶² As required by clause 1(d) of the terms of reference, the Panel also considered whether it was possible to align the recovery of the costs associated with the water security projects with the benefits customers are expected to derive over the lives of these assets, when reaching its draft decision on the value of the water RAB.⁶³

Following the release of the draft report, the Panel received submissions from Icon Water and other stakeholders about its draft decision on the various inputs into calculation of the value of the water and sewerage RABs and the treatment of the water security projects. The Panel has considered whether any amendments to its draft decision on these inputs and the treatment of the water security projects are required.

This chapter sets out the matters the Panel considered in reaching its final decision on the opening value of the water and sewerage RABs, forecast capital expenditure, depreciation, indexation and how the costs associated with the water security projects should be recovered.

4.2 Opening value of the RAB as at 1 July 2013

To establish the opening value of the RAB, regulators generally use the following roll forward formula:

*Opening RAB*_{New regulatory period} =

*Opening RAB*_{Prior regulatory period} + *Capital Expenditure*_{Prior regulatory period} – *Depreciation*_{Prior regulatory period}
– *Asset Sales or Disposals*_{Prior regulatory period} + *Indexation*_{Prior regulatory period}

61 Further detail on the ICRC's final decision on the opening value of the RAB, forecast capital expenditure, depreciation and indexation can be found in Chapter 8 of the draft report.

62 Further detail on each of these matters can be found in Chapter 8 of the draft report.

63 Further detail on the Panel's draft decision on the treatment of the water security projects can be found in Chapter 7 of the draft report.

When applying this formula, regulators usually consider the extent to which any adjustments need to be made to:

- the opening value of the RAB in the previous regulatory period to account for differences between forecast and actual capital expenditure and inflation in the final year of the penultimate regulatory period⁶⁴
- the capital expenditure undertaken in the previous regulatory period to remove any imprudent or inefficient expenditure
- the depreciation allowance in the previous regulatory period, and
- the indexation allowance to account for differences between forecast and actual inflation in the previous regulatory period.

4.2.1 Summary of the Panel's draft decision

In its draft decision, the Panel decided to adopt the following opening values for the water and sewerage RABs as at 1 July 2013:

- Water: \$1.37 billion.
- Sewerage: \$656.7 million.

The Panel's draft decision on the opening value of the water RAB was \$3.7 million lower than the value adopted by the ICRC, while the opening value of the sewerage RAB was \$4.2 million lower. These differences reflected the Panel's decision to account for:

- the time value of money associated with the difference between forecast and actual capital expenditure in 2007-08, and
- the sewerage rectification works associated with the Uriarra Village sewerage plant, which appeared to have been inadvertently excluded from the ICRC's final decision on the opening value of the sewerage RAB.

4.2.2 Responses to the draft decision

Submissions on this aspect of the Panel's draft decision were received from Icon Water and Dr Dwyer. Further detail on the matters raised in these submissions is provided below.

4.2.2.1 Icon Water

In its response to the draft report, Icon Water noted that it "supported the draft decision on the opening value of the regulated asset base".⁶⁵

4.2.2.2 Dr Dwyer

In his response to the draft report, Dr Dwyer contended that the opening value of the RAB should be based on the actual cost of the assets and not a "notional or inflated or hypothetical replacement or indexed cost" approach.⁶⁶

4.2.3 Panel's assessment

The only new matter that the Panel has had to consider in reaching its final decision on the opening value of the RAB is the concern raised by Dr Dwyer about the method used to calculate the opening value of the water and sewerage RABs.

64 This adjustment is required because a regulator's decision on the opening value of the RAB is usually made in the final year of the penultimate regulatory period, which means that the regulator must rely on forecasts for this final year rather than information on actual capital expenditure and inflation.

65 Icon Water, *Response to Draft Report*, 23 January 2015, p.27.

66 Dwyer, T., *Industry Panel - Draft Report*, December 2014, p.5.

In the draft report, the Panel calculated the opening value of both the water and sewerage RABs using the roll forward methodology (see section 4.2), which is the methodology commonly used by regulators to determine the value of the regulated asset base once the initial value of the assets is established.

The Panel notes that the roll forward methodology does **not** involve a “notional” or “hypothetical replacement” cost approach, as contended by Dr Dwyer. Rather, it takes the opening value of the assets from the last regulatory period as given and only allows the **real** value of the asset base to be increased by the cost of any prudent and efficient capital expenditure actually carried out in the last regulatory period. This approach has been used by the ICRC since the initial value of the water and sewerage RABs was established in 1999, as noted in Box 4.2.

Further, as set out in Box 4.2, the initial values of the water and sewerage assets were determined by the ICRC using a ‘line in the sand’ approach, rather than a hypothetical replacement cost approach. Under the line in the sand approach, the initial value of the water and sewerage assets was based on the tariffs prevailing at the time of the valuation, which was lower than the replacement cost estimate.⁶⁷

Box 4.2: Method used to determine the values of the water and sewerage RABs

The manner in which the values of the water and sewerage RABs have been determined over the last 15 years is outlined below:

- The initial values of the water and sewerage RABs were set by the ICRC in 1999 using the optimised deprival value (ODV) approach. The ODV is a hybrid valuation technique that takes into account both the depreciated optimised replacement cost⁶⁸ and economic value of an asset. At a conceptual level, the ODV is intended to provide a measure of the compensation that an asset owner would require if it was to be deprived of the asset and took steps to minimise its losses. The ODV is therefore defined as the *lesser* of:
 - the depreciated optimised replacement cost (DORC), and
 - the economic value of the asset (calculated as the maximum of the present value of after tax future cash flows and the net realisable value from selling the asset for scrap value).

In this case, the ICRC found the economic value (calculated using a ‘line in the sand approach’) for water and sewerage assets to be lower than the DORC valuations and therefore adopted an economic valuation of \$329.6 million for water and \$367.3 million for sewerage.⁶⁹

- In the 2004 and 2008 price directions, Icon Water proposed that the value of its water and sewerage assets be revalued. This proposal was rejected by the ICRC, who decided that the opening values of the water and sewerage RAB should be calculated using the simple roll forward model.
- In the 2013 price direction, the ICRC decided to adopt the same roll forward approach that it did in the 2004 and 2008 price directions.

As to Dr Dwyer’s concerns about the use of an “inflated” or “indexed cost” approach, the Panel has, for the reasons set out in section 4.6, decided that the value of the RAB should be indexed so that the real value of the assets are maintained over time. This approach is consistent with standard regulatory practice and intergenerational equity principles.

67 *ibid.*

68 DORC is a forward looking valuation method, which has been described as the maximum price that a hypothetical new entrant would pay for the existing asset given the alternative of installing a new asset that embodies the latest technology, has lower operating costs and a greater remaining service potential. This valuation tends therefore to be viewed as the upper bound of the range within which the asset value should fall, because a value in excess of this would place the asset at risk of by-pass.

To calculate the depreciated optimised replacement cost, the following two-step process must be applied:

Step 1: Estimate the efficient cost of replacing the existing asset with a new optimally configured and sized asset that is constructed using modern equivalent assets (the optimised replacement cost (ORC)); and

Step 2: Account for differences between the service potential, service quality and the costs of operating the existing asset and the optimised asset by ‘depreciating’ the ORC (DORC) using the straight line or net present value (NPV) cost based approach.

69 Independent Pricing and Regulatory Commission, *ACTEW’s Electricity, Water & Sewerage Charges for 1999/2000 to 2003/04, Price Direction*, May 1999, p.39.

As discussed in section 4.6, the amount of “indexed cost” added to the RAB is deducted from the revenue required to be recovered from customers in that year. Therefore, over time, tariffs will only recover the present value of 1999 original RAB plus Icon Water’s actual costs (actual capital expenditure accepted as efficient at a regulatory review).

Having considered the concerns raised, the Panel was satisfied that the method it used in the draft report to determine the value of the opening value of the RAB is appropriate and should be maintained in the final decision.

4.2.4 Panel’s final decision on the opening value of the RAB

The Panel’s final decision on the opening value of the RAB as at 1 July 2013 is set out in Table 4.3 and Table 4.4. As the highlighted cells in these tables indicate, the Panel has decided to adopt the following opening RAB values:

- Water: \$1.37 billion (see Table 4.3).
- Sewerage: \$656.7 million (see Table 4.4).

Table 4.3: Final decision - Opening value of water RAB calculation (\$m, nominal)

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Opening value of the RAB	496.57	542.30	659.98	836.60	1,063.66	1,273.26
Depreciation adjustment	-	-1.03	-	-	-	-
Capital expenditure (net of capital contributions)	40.06	113.70	175.71	216.71	203.17	108.42
Depreciation	11.71	13.67	16.44	19.06	20.41	21.41
Asset sales and disposals	-	-	-	-	-	11.78
Indexation	17.39	18.68	17.36	29.41	26.83	33.04
Adjustment to account for difference between actual and forecast capital expenditure in 2007-08						(11.73)
Closing value	542.30	659.98	836.60	1,063.66	1,273.26	1,369.80

Table 4.4: Final decision - Opening value of sewerage RAB calculation (\$m, nominal)

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Opening value of the RAB	467.50	499.77	567.46	594.49	620.48	644.26
Depreciation adjustment	-	-	-	-	-	-
Capital expenditure (net of capital contributions)	28.12	64.00	27.33	21.58	24.22	25.30
Depreciation	12.06	12.89	13.79	14.43	15.00	15.62
Asset sales and disposals	-	-	-	-	-	-
Indexation	16.21	16.58	13.49	18.84	14.56	16.42
Adjustment to account for difference between actual and forecast capital expenditure in 2007-08						(13.65)
Closing value	499.77	567.46	594.49	620.48	644.26	656.72

4.3 Treatment of the water security projects

In the last regulatory period, Icon Water spent approximately \$420 million on the Enlarged Cotter Dam (ECD) and \$140 million on the Murrumbidgee to Googong pipeline (M2G) (\$2012-13).⁷⁰ It spent a further \$48 million on the Tantangara Transfer Option.^{71,72} While the ICRC has already approved the inclusion of these costs into the water RAB,⁷³ the Panel is required by clause 1(d) of the terms of reference to consider:⁷⁴

“the ability of the pricing path to match revenue recovery requirements to the consumer benefits accrued from the water security program”.

4.3.1 Summary of the Panel’s draft decision

In the draft report, the Panel considered whether it was possible to align the recovery of the costs of the ECD and M2G⁷⁵ with the benefits that customers are expected to derive over the lives of these assets, whilst also allowing Icon Water to remain financially viable, as required by section 20(2)(i) of the Act.⁷⁶ In doing so, the Panel considered:

- the consistency of the approach employed by the ICRC with the intent of clause 1(d) and intergenerational equity and economic efficiency principles, and
- the techniques used by other regulators and the extent to which any of these techniques could be implemented, given the information before the Panel and other constraints in section 20(2) of the Act.

On the first of these matters, the Panel found that, contrary to the intent of clause 1(d) and intergenerational and economic efficiency principles,⁷⁷ the ICRC’s approach resulted in current customers paying a greater proportion of the costs of the ECD and M2G than would arise under the traditional straight line depreciation (with indexation) approach. The Panel decided to investigate whether any other regulatory techniques would be preferable.

70 ICRC, *Price Direction Attachment 2: Pricing Model*.

71 This option involves transferring water the regulated Murrumbidgee River to the ACT via the Snowy Mountains Scheme. According to Icon Water, under this option:

- NSW water entitlements must be purchased from Murrumbidgee Regulated River licence holders downstream of the ACT.
- A long-term, secure and flexible commercial agreement must be entered into with Snowy Hydro Limited for the release of water from Tantangara Reservoir.
- Interstate trading arrangements between the NSW and ACT Governments must be established to allow for transfer of water from NSW to the ACT via the Tantangara Reservoir and return transfers if unused.
- The water must be delivered to the ACT via the unregulated Murrumbidgee River.
- The water must be extracted from the Murrumbidgee River via the Murrumbidgee to Googong Water Transfer pipeline at Angle crossing.
- The water can be stored in the Googong Dam until used.
- Water allocations in a particular year can be sold back to NSW if they are not used.

72 ICRC, *Price Direction Attachment 2: Pricing Model*.

73 ICRC, *Final Report, Regulated Water and Sewerage Services*, June 2013.

74 Clause 1(d) of the Terms of Reference, 13 October 2011.

75 The limitation of this analysis to the ECD and M2G is consistent with the ACT Treasurer’s expectation as noted in his 12 April 2013 submission to the ICRC.

76 This section of the Act requires the Panel to have regard to the borrowing, capital and cash flow requirements of people providing regulated services and the need to renew or increase relevant assets in the regulated industry.

77 These principles are as follows:

- Economic efficiency principle: Depreciation should be recovered over the economic life of the asset and in a manner that encourages both the efficient use of, and efficient investment in, the assets over this period.
- Intergenerational equity principle: Consumers in each time period should contribute to the recovery of investments from which they derive benefits in accordance with their share of those benefits.

To assist with its investigations, the Panel engaged an independent expert, Cardno, to assess whether there was sufficient information to apportion the costs of the ECD and M2G between customers in this regulatory period and in future regulatory periods. Cardno apportioned the costs with reference to the least cost method of achieving the mandated security standard in this regulatory period using an alternative source of short-term water security.⁷⁸ The alternative source of short-term water security Cardno investigated was the Tantangara Transfer Option.

Drawing on a number of assumptions that were made by Icon Water about the Tantangara Transfer Option in its 2007 Future Water Options review, Cardno estimated that up to 30% of the annual costs associated with these two projects could be deferred to future regulatory periods on intergenerational equity grounds.

To determine whether it would be feasible to defer 30% of the annual ECD and M2G costs to future regulatory periods, the Panel considered the effect that such a deferral would have on Icon Water's financial viability. This investigation revealed that, while deferring a portion of the water security costs to a future regulatory period better align the recovery of costs and the benefits to be derived from these projects, in conjunction with the deadband adopted by the Panel to mitigate demand risk (see Chapter 3), deferral could strain Icon Water's short-term financial viability if water sales were persistently lower than forecast over the remainder of the regulatory period.

Therefore, the Panel's draft decision was **not** to defer the recovery of any of the ECD or M2G capital costs and to use the traditional straight line depreciation approach (with indexation of the RAB) to recover the costs of the ECD and M2G over the economic lives of these assets. The Panel estimated that the use of the traditional straight line depreciation approach would result in approximately 23% of the net present value of the costs associated with the ECD and M2G being recovered in the first five years, compared to 35% under the ICRC's approach.

4.3.2 Responses to the draft decision

Icon Water and Mr Collins were the only parties to comment on the Panel's draft decision on how to treat the recovery of the costs associated with the water security projects.

4.3.2.1 Icon Water

In its response to the draft report, Icon Water supported the Panel's decision to apply an "orthodox building block method to capital expenditure on water security projects".⁷⁹

Icon Water expressed concerns about Cardno's analysis of the Tantangara Transfer Option and noted that, if the Panel decided to revisit its decision to defer some of the costs associated with the water security projects, then "considerably more analysis would be required to support the position adopted by Cardno".⁸⁰ Icon Water noted that, at the time the decision was made to proceed with the water security projects, it would "not have been prudent to rely solely on this option", because there was a "significant risk" that the agreements required to give effect to the option would not be implemented (ie, an Intergovernmental Agreement and a commercial agreement with Snowy Hydro).⁸¹

4.3.2.2 Mr Collins

In the public hearing held on 6 February 2015, Mr Collins disputed Icon Water's claim that, at the time the decision was made to proceed with the water security projects, there was a risk it would be unable to enter into the agreements required to give effect to the Tantangara Transfer Option. In doing so, Mr Collins directed the Panel's attention to a number of public statements that were made by Icon Water around the time of the decision that expressed a contrary view to that set out in its response to the draft report.

78 The service standard states that the current water supply system should meet unrestricted demand for the ACT and Queanbeyan 95% of the time until at least 2030. See, ACT Government, *ACT Water Strategy 2014-44: Striking the Balance*, August 2014, p.20.

79 Icon Water, *Response to Draft Report*, 23 January 2015, p.24.

80 *ibid.*

81 *ibid.*

Mr Collins concluded by stating the following:⁸²

"...I think there is substance to the argument from Cardno, which has looked at the evidence saying that if it was not needed, then that expenditure of half a billion dollars should not be put on current ratepayers. It is not something they need. It is basically a white elephant for the next 60 or 70 years, and if and when it is ever needed those people can pay for it."

4.3.3 Panel's assessment

In reaching its final decision on how the costs associated with the water security projects should be recovered, the Panel has considered the submissions of both Icon Water and Mr Collins. While the Panel has some sympathy for the view that a portion of the costs associated with the projects should be deferred to a future regulatory period on intergenerational equity grounds, the overriding constraint on the use of such a technique is that it should not threaten Icon Water's financial viability because to do so could adversely affect its ability to meet its service obligations.

In its draft report, the Panel indicated that, if there was a change between its draft and final decisions that resulted in Icon Water's financial viability improving, then it may revisit the decision not to defer any of the costs associated with these projects.

The Panel's decisions on the price path and true up have improved Icon Water's financial viability (as measured by the financeability ratios discussed in Chapter 10).

In that context, the Panel has revisited the question of whether some portion of the costs associated with the ECD and M2G could be deferred to a future regulatory period without adversely affecting Icon Water's financial viability.

The Panel's analysis indicates that, if water sales were persistently lower than forecast over the remainder of the regulatory period, a 30% deferral of the annual ECD and M2G capital costs, on top of the 6% deadband, could place significant strain on Icon Water's ability to meet its debt obligations in the last three years of the regulatory period. In particular, the funds from operations (FFO) to net debt ratio falls to well below the target minimum level in these years.

The Panel also tested a number of other smaller deferral options, including:

- a 20% deferral option, and
- a 10% deferral option.

While, under both of these options, Icon Water would likely remain financially viable, the FFO to net debt ratio would fall below the target minimum level for the remainder of the regulatory period if water sales were persistently lower than forecast.

A decision to defer recovery of 20% of the costs of the water security projects would reduce the typical customer bill by only 2.3% in the remainder of this regulatory period. More importantly, it would add approximately \$154 million⁸³ to the value of the RAB at the commencement of the next regulatory period. Depending on the conditions prevailing in financial markets in 2018, such an addition to the RAB could contribute to an undesirable significant price increase in the next period.

4.3.4 Panel's final decision on the treatment of the water security projects

For the reasons set out above, the Panel's final decision is **not** to defer the recovery of any of the ECD or M2G capital costs and to rely instead on the traditional straight line depreciation approach (with indexation of the RAB) to recover the costs of the ECD and M2G over the economic lives of these assets.

82 Transcript of Proceedings, *Review of the Independent Competition and Regulatory Commission's Price Direction for Water and Sewerage*, 6 February 2015, p.13.

83 This represents both the deferred capital cost plus the return on capital that would accumulate over the five-year period.

In reaching this decision, the Panel had particular regard to the impact that deferring the recovery of some of the ECD and M2G capital costs could have on Icon Water's short-term financial viability. The Panel was also cognisant of the fact that more than 50% of the costs of the water security projects was included in the RAB during the previous regulatory period⁸⁴ and used in deriving the water charges that applied over this period.

4.4 Forecast capital expenditure

Under the building block methodology, capital expenditure is recovered through the return on capital and depreciation building blocks. To counter the limited incentive that a regulated business may have to minimise expenditure under a cost-based regulatory framework, regulators generally allow capital expenditure to be incorporated in the RAB only if it would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering the service.

4.4.1 Summary of the Panel's draft decision

To assist with its review of capital expenditure in the draft report, the Panel asked Cardno to:

- undertake a strategic review of Icon Water's governance processes for capital expenditure decision-making and provide advice as to whether these processes are a) reasonable, and b) sufficient to manage the risks in delivering its capital program, and
- review Icon Water's forecast capital expenditure for the period 2013-14 to 2017-18 and recommend the level of forecast expenditure it considers to be prudent and efficient.

On the first of these matters, Cardno found that Icon Water had a "reasonable governance framework" in place and that the new governance processes were generally sufficient to manage the risks in delivering the capital program. However, Cardno also noted that Icon Water would face significant challenges in delivering its proposed expenditure in the last two years of the period.

On the second matter, Cardno recommended that the Panel:

- use Icon Water's September 2014 capital expenditure program rather than its April 2013 submission to the ICRC, because in its opinion it was the best available estimate of prudent and efficient capital expenditure for the regulatory period, and
- reduce the expenditure in the last two years of the regulatory period by \$10 million per annum, because of the perceived risk surrounding the successful delivery of the projects.

At the time of its draft decision, aside from Cardno's concerns, the Panel did not have other information that indicated that Icon Water would be unable to deliver its proposed capital expenditure program. Therefore, the Panel accepted the first of Cardno's recommendations but not the second. The resultant provision for capital expenditure in the draft report is set out in Table 4.5.

Table 4.5: Draft decision – Forecast capital expenditure (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Water	25.96	26.99	24.44	30.95	45.94
Sewerage	18.11	38.23	65.57	117.78	76.43
Total	44.07	65.22	90.02	148.73	122.38

In the first two years of the regulatory period, the Panel's draft decision was \$12 million (2013-14) to \$37.7 million (2014-15) lower than the ICRC's final provision for water and sewerage capital expenditure.

84 ICRC, *Draft Report, Regulated Water and Sewerage Services*, February 2013, p.29.

4.4.2 Responses to the draft decision

Icon Water was the only submitter to comment on the provision made for capital expenditure in the draft report. While Icon Water was broadly supportive of the Panel's approach, it expressed concerns about Cardno's observation that only a small proportion of its projects had been subject to the new governance processes. Icon Water noted that information provided to the Panel on 25 November 2014 indicated that, in 2013-14, 95% of projects had an approved technical report, and 98% had an approved business case.⁸⁵

Icon Water also informed the Panel that the September 2014 capital expenditure program had inadvertently excluded \$14.7 million that was spent on the water security projects during the course of 2013-14.⁸⁶ In its response to the Panel's follow-up questions on this expenditure, Icon Water advised that \$6 million of this expenditure had already been recovered through insurance payments related to the 2012 floods, and that only \$8.7 million needed to be included in the capital expenditure allowance for 2013-14.⁸⁷

4.4.3 Panel's assessment

The Panel's assessment of the matters raised by Icon Water about its governance processes and 2013-14 expenditure on the water security projects is set out below, along with its review of information arising since the draft report about the status of Icon Water's proposed capital expenditure program.

4.4.3.1 Governance processes

In September 2014, Icon Water provided Cardno with a spreadsheet that set out the number of proposed capital expenditure projects with an approved concept development statement, business case and/or technical report. The information in this spreadsheet suggested that the new governance processes had only been applied to a small proportion of projects.

In further correspondence in the week leading up to the release of the draft report, Icon Water informed the Panel that the September 2014 spreadsheet was only "partially completed due to time constraints". Icon Water provided an updated spreadsheet that set out the status of its governance processes.⁸⁸ Due to the timing of this submission, it was not possible for the Panel to incorporate the new information into its draft report.

The Panel has since reviewed the updated information and is satisfied that improvements have been made to Icon Water's capital expenditure governance processes since the last regulatory period.

However, while a reasonable proportion of capital expenditure program in the first three years of the regulatory period have an approved business case and/or technical report, a much smaller proportion of the program for the last two years of the regulatory period has been subject to these reviews. While this is not unexpected, it is something that the Panel has been cognisant of when considering the deliverability of the capital expenditure program. This issue is considered in section 4.4.3.3.

4.4.3.2 2013-14 expenditure on water security projects

In a submission made to the Panel in August 2014, Icon Water advised that it had spent \$14.7 million completing the ECD and M2G projects.⁸⁹ However, this amount was not included in the capital expenditure program that Icon Water provided to Cardno in September 2014 and, as a consequence, no provision was made for this expenditure in the Panel's draft decision.

85 Icon Water, *Response to the Draft Report*, 23 January 2015, pp.27-28.

86 *ibid*, p.27.

87 Icon Water, Email to the Panel dated 27 February 2015.

88 Icon Water, *Letter to the Panel entitled Cardno report and confidential information* dated 21 November 2014 and spreadsheet entitled 20141125-dta Item 6 ICRC.xlsx.

89 Icon Water, Spreadsheet entitled 20140917 actual opex_capx 201213_201314.xlsx.

A breakdown of the \$14.7 million that Icon Water spent on the water security projects in 2013-14 is provided in Table 4.6.

Table 4.6: Expenditure on water security projects 2013-14 (\$m, nominal)

Expenditure	2013-14
ECD (dams, weirs, valves, flow meters etc)	\$12.1
M2G (valves, flow meters, water mains, telemetry etc)	\$1.5
Googong Dam Spillway Rectification	\$0.5
Murrumbidgee to Cotter Transfer	\$0.42
CPS suction and discharge main upgrade	\$0.08
Cotter Dam Discovery Trail	\$0.1
Total	\$14.7
<i>less Insurance payments</i>	<i>\$6.0</i>
Total excluding insurance payments	\$8.7

Source: Icon Water, Spreadsheet entitled WSMP 13-14 Capex by Asset Category.xlsx.

In response to follow-up questions on this expenditure, Icon Water advised the Panel that the \$14.7 million was spent on the following:

- completing the commissioning of the electrical and mechanical elements of the ECD
- rehabilitating construction areas
- finalising operational access roads and riverbank works downstream of the stilling basin
- demobilising site sheds
- rectification works under the defect liability period, and
- production of technical documentation and manuals.

Icon Water also advised that, because \$6 million of this expenditure had already been recovered through insurance payments related to the 2012 floods, the net capital expenditure forecast in 2013-14 needed to be increased by only \$8.7 million.⁹⁰

On the basis of this further information, the Panel is satisfied that additional expenditure was incurred completing the water security projects in 2013-14 and should be included in Icon Water's capital expenditure forecast. The Panel has decided to include the \$8.7 million in the 2013-14 capital expenditure forecast for water.

Finally, \$0.1 million of the \$8.7 million was spent on the Cotter Dam Discovery Trail. In its draft decision, the Panel agreed with the ICRC that expenditure on the Cotter Dam Discovery Trail should be treated as if it was funded through a community service obligation. The Panel has maintained this approach in its final decision, and has included the \$0.1 million in the capital expenditure forecast, but made an offsetting adjustment to Icon Water's revenue requirement (see Chapter 8).

4.4.3.3 New information on the deliverability of the capital expenditure program

Since the release of the draft report, new information has been provided which prompted the Panel to reconsider its confidence in the ability of Icon Water to deliver all of the proposed capital expenditure projects in this regulatory period.

⁹⁰ Icon Water, Email to the Panel dated 27 February 2015.

This new information was provided by Icon Water to the ICRC as part of the first biennial recalibration following the release of the Panel’s draft report. It suggests that expenditure in the last two years of the regulatory period is likely to be much lower than envisaged in September 2014.⁹¹ Although this information has not been formally submitted to the Panel as part of this review, the Panel assessed it as relevant and decided to reconsider Cardno’s recommendation that \$10 million per annum be deducted from the capital expenditure forecast in the last two years to reflect the increased risk surrounding the deliverability of the program.

As outlined in section 4.4.1, the Panel’s draft decision did not incorporate Cardno’s recommended reduction of \$20 million. However, the information Icon Water provided to the ICRC as part of the biennial recalibration process in December 2014 has lowered the Panel’s confidence that the capital expenditure program will be delivered in full this regulatory period. Further support for this view can be found in the observations set out in section 4.4.3.1 about the limited extent to which projects in the last two years of the regulatory period have been subject to a more detailed evaluation.⁹²

Given the change in information, the Panel has now decided to implement Cardno’s recommendation and reduce the capital expenditure forecasts in 2016-17 and 2017-18 by \$10 million per annum.⁹³

4.4.4 Panel’s final decision on capital expenditure

The Panel’s final decision on the provision to be made for capital expenditure in this regulatory period is set out in Table 4.7.

Table 4.7: Final decision - Forecast capital expenditure (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Water	34.64	26.99	24.44	28.87	42.19
Sewerage	18.11	38.23	65.57	109.86	70.19
Total	52.75	65.22	90.02	138.73	112.38

In total, the Panel has approved a capital expenditure allowance of \$459 million (water: \$157 million and sewerage: \$302 million), which is \$11.3 million lower than the draft decision. The \$11.3 million reduction reflects the Panel’s decision to amend Icon Water’s September 2014 capital expenditure program to:

- include the \$8.7 million spent by Icon Water completing the water security projects in 2013-14, and
- deduct \$10 million per annum from the capital expenditure forecasts in 2016-17 and 2017-18.

To the extent that the prudent and efficient level of outturn capital expenditure differs from the Panel’s forecast, the Panel expects this to be dealt with through the *ex post* capital expenditure review that will be conducted as part of the next price direction.

91 Icon Water, *Statement of changes*, 1 December 2014, pp. 8-22 and spreadsheet entitled Template-completed-public.xlsm.

92 According to the spreadsheet provided by Icon Water:

- business cases have been developed for 32%-49% of the capital expenditure proposed for 2016-17 and 2017-18, while in 2013-14 and 2014-15 business cases have been developed for 77%-98% of the proposed expenditure, and
- technical reports have been developed for 48%-60% of the proposed expenditure in 2016-17 and 2017-18, while in 2013-14 and 2014-15 business cases have been developed for 81%-95% of the proposed expenditure.

See Icon Water, Spreadsheet entitled 20141125-dta Item 6 ICRC.xlsx.

93 The \$10 million has been allocated between water and sewerage based on the proportion of total capital expenditure that water and sewerage account for in these two years. This allocation resulted in the water capital expenditure forecasts being reduced by \$2.1 million in 2016-17 and by \$3.75 million in 2017-18, while the sewerage capital expenditure forecasts have been reduced by \$7.9 million in 2016-17 and \$6.25 million in 2017-18.

4.5 Depreciation

Under the building block methodology, the regulated business recovers its investment in the assets used in the provision of regulated services over the economic life of the assets through the depreciation allowance. Regulators usually determine the value of this building block having regard to:

- the value of the various asset classes that comprise the RAB
- the depreciation profile assumed for the recovery of capital (eg, straight line, front-end loaded or back-end loaded),⁹⁴ and
- the economic lives⁹⁵ of the assets used in the provision of services (referred to as the remaining economic life for existing assets and standard economic life for new assets).

4.5.1 Summary of the Panel's draft decision

Table 4.8 sets out the Panel's draft decision on the provision to be made for depreciation in this regulatory period, which was calculated using the straight-line depreciation method and, where possible, the economic lives of the assets used in the provision of services.⁹⁶

Table 4.8: Draft decision - Depreciation (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Water	24.52	25.86	27.14	28.49	30.09
Sewerage	16.64	18.06	20.19	23.52	27.26

In the first two years of the regulatory period, the Panel's draft decision was approximately \$10.5 million per annum *higher* than the ICRC's final decision on depreciation. This difference primarily reflected the Panel's decision to, where possible, calculate depreciation using the *economic* lives of the assets used in the provision of services, rather than a notional estimate of the remaining and standard lives of water and sewerage assets. It also reflected the correction of some small errors that were identified in the ICRC's modelling.

4.5.2 Responses to the draft decision

Icon Water was the only submitter to comment on the Panel's draft decision on depreciation. In short, Icon Water agreed with the Panel's approach to calculating depreciation⁹⁷ and provided the Panel with information on the economic lives of approximately 60 capital expenditure projects, which was not available to the Panel at the time its draft report was prepared.

94 These three alternative profiles result in the following:

- Straight line depreciation results in a constant proportion of the asset value being recovered over the economic life of the assets and tends to be used when the demand is expected to be constant over the economic life of the asset.
- Front-end loaded depreciation results in a greater proportion of the asset value being recovered in the early years of the economic life of the asset and tends to be used when demand is expected to fall over time.
- Back-end loaded depreciation results in a greater proportion of the asset value being recovered in the latter years of the asset life and tends to be used when the demand is expected to increase over time.

95 In certain circumstances, the economic life of the assets may differ from the technical life of the assets. For example, if an asset is to be bypassed, the economic life may be substantially shorter than the technical life.

96 While the Panel would have ideally calculated depreciation using the economic lives of all assets, it faced the following informational constraints:

- Information on the remaining economic lives of all the assets in existence as at 1 July 2013 was not readily available and would have taken some time to collate, so the Panel decided to use a weighted average accounting-based estimate of the remaining lives of these assets.
- Information on the standard economic lives of approximately 60 capital expenditure projects was missing from the information provided by Icon Water, so the Panel had to make some simplifying assumptions about the economic lives of these projects.

97 Icon Water, *Response to Draft Report*, 23 January 2015, p.28.

4.5.3 Panel's assessment

The only new matter that the Panel has had to consider when reaching its final decision on the provision to be made for depreciation in this regulatory period is whether to utilise the economic life information provided by Icon Water.

Having carefully reviewed this information, the Panel is satisfied that, with the exception of the assumed economic life of the \$0.1 million that was spent on the Cotter Dam discovery trail in 2013-14, the information provided by Icon Water represents the best estimate of the economic lives of these projects and should be used to calculate depreciation.

In relation to the Cotter Dam discovery trail,⁹⁸ Icon Water proposed an asset life of 148.1 years, which is based on the weighted average life of all the ECD assets that were constructed in 2013-14 (eg, dams and weirs, flow meters and valves). The concern that the Panel has with this notional estimate is that it does not reflect the economic life of the work that was actually done on the discovery trail, which the Panel understands primarily consisted of the installation of landscaping fixtures. Icon Water has previously advised the Panel that these types of fixtures have an economic life of 10 years. The Panel has therefore decided to assume a 10 year economic life for this work, rather than the 148.1 year life assumed by Icon Water.

The revised asset lives that the Panel has used in the final decision are set out in Table 4.9.

98 For regulatory purposes, this expenditure is treated as a notional community service obligation payment from the ACT Government to Icon Water.

Table 4.9: Final decision - Asset lives (years)

Asset		Asset Lives	
Remaining asset lives for existing assets as at 1 July 2013			
Water security projects	ECD	Dams and weirs	148.9
		Valves	29.7
		Pressure sensors, transmitters and meters	9.7
		Flow meters	19.7
		<i>Weighted average remaining life as at 1 July 2013</i>	147.2
	M2G	Cathodic protection	19.2
		Valves	29.2
		Flow meters	19.2
		Water mains	99.2
		Telemetry	9.2
		Pump Sets	24.2
	<i>Weighted average remaining life as at 1 July 2013</i>		56.5
Greenhouse gas abatement activities (treated as CSO) (set equal to the weighted average life of ECD and M2G) ⁹⁹		124.3	
Cotter Discovery Trail (treated as CSO)		10.0	
Water assets (excluding water security projects) (weighted average as at 1 July 2013)		51.4	
Sewerage (weighted average as at 1 July 2013)		41.3	
Standard asset lives for new assets to be commissioned in the regulatory period			
Water security projects	ECD	Dams and weirs	150
		Valves	30
		Pressure sensors, transmitters and meters	10
		Flow meters	20
	M2G	Cathodic protection	20
		Valves	30
		Flow meters	20
		Water mains	100
		Telemetry	10
		Pump Sets	25
Water (sample of assets)	Water mains and reticulation		80
	Treatment plant (electrical, mechanical and civil works)		30-60
	Pump station (mechanical)		40
	Reservoirs (roof and tank)		50-100
	Dams mechanical		60
Sewerage (sample of assets)	Sewer mains and reticulation		80
	Treatment plant		30-60
	Pump station		20-60
	Vent station		20
Corporate	Buildings		60
	SCADA		15
	Other		5

99 The greenhouse gas abatement activities were part of the expenditure Icon Water incurred when developing the water security projects. These activities included:

- the use of biodiesel during construction
- the implementation of a hydro generator for energy recovery in the M2G pipeline, and
- the procurement of Carbon Sink Forestry Offsets.

To set a price for customers approximately equal to what they would have been paid without the greenhouse gas abatement activities, the life of the greenhouse gas abatement assets were assumed to have the same weighted average life as the water security projects.

4.5.4 Panel's final decision on depreciation

Table 4.10 sets out the Panel's final decision on the provision to be made for depreciation in this regulatory period, which has been calculated using the straight line depreciation method and the asset lives set out in Table 4.9. The Panel's decision to use the asset lives in Table 4.9, rather than the notional asset lives used by the ICRC, reflects its view that depreciation should, to the extent possible, be calculated using the **economic** lives of the assets used in the provision of services, because it better reflects the cost of the asset over time and promotes:

- the efficient use of the assets by customers over time
- efficient planning and investment in the assets over time, and
- intergenerational equity, because customers in each generation only pay for those assets that are used in the provision of services to them.

Table 4.10: Final decision - Depreciation (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Water	24.63	26.12	27.45	28.77	30.30
Sewerage	16.64	19.13	20.23	23.42	26.94

Over the term of the regulatory period, the Panel's final decision on depreciation is approximately \$1.87 million (water: \$1.17 million and sewerage: \$0.69 million) *higher* than its draft decision. This difference reflects the effect of the Panel's decision to:

- revise the economic lives of the 60 capital expenditure projects, and
- amend the capital expenditure forecast (see section 4.4.4).

4.6 Indexation of the RAB

To ensure the **real** value of the RAB is maintained over time and not eroded by inflation, most Australian regulators make provision for inflation in the RAB by multiplying the value of the RAB in each year of the regulatory period by forecast inflation. The purpose of maintaining the **real** value of the RAB over time is to ensure that customers in each time period contribute to the recovery of investments from which they derive benefits in accordance with their share of those benefits.

4.6.1 Summary of the Panel's draft decision

In the draft report, the Panel considered the merits of indexing and not indexing the RAB and concluded that indexation was preferable because:

- it provides for a more constant revenue requirement than the non-indexed approach used by the ICRC, and
- it is more consistent with the principle that consumers in each time period should contribute to the recovery of investments from which they derive benefits in accordance with their share of those benefits (the intergenerational equity principle).¹⁰⁰

The provision that the Panel decided to make for indexation in the draft report is set out in Table 4.11, which was calculated using an inflation rate forecast of 2.5% (the mid-point of the Reserve Bank of Australia's target inflation band).¹⁰¹

100 ICRC, *Final Report, Regulated Water and Sewerage Services*, June 2013, p.xvii.

101 This forecast is consistent with the inflation rate forecasts adopted by both the ICRC (in other parts of its model) and proposed by Icon Water in its SOFC.

Table 4.11: Draft decision - Indexation (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Water	34.57	35.48	36.37	37.29	38.47
Sewerage	16.64	17.35	18.63	20.88	23.24

4.6.2 Responses to the draft decision

Submissions on this aspect of the Panel's draft decision were received from Icon Water and Dr Dwyer.

4.6.2.1 Icon Water's response

Icon Water supported the Panel's draft decision to index the RAB.¹⁰²

4.6.2.2 Responses from other stakeholders

Dr Dwyer questioned the Panel's decision to index the RAB and, in doing so, noted the following:¹⁰³

"...it is difficult to understand how one can grant a nominal weighted average cost of capital of 7.2% when one is simultaneously allowing for indexation of the regulated asset base. ICRC was surely more logical in excluding indexation of the regulated asset base and setting a nominal rate of return."

4.6.3 Panel's assessment

The substance of Dr Dwyer's question about the Panel's draft decision to index the RAB goes to whether it may have double counted the effect of inflation by applying a nominal rate of return to an indexed RAB.

Under the standard indexed RAB approach, the amount of 'indexed cost' added to the RAB is deducted from the revenue required to be recovered from customers in that year. Under both the indexed RAB (standard approach adopted by the Panel) and the non-indexed RAB approach (adopted by the ICRC), tariffs recover the present value of the opening RAB.

In short, applying a nominal rate of return to an indexed RAB does not give rise to any form of double counting of inflation because, irrespective of whether a real or nominal rate of return is applied to an indexed or non-indexed RAB, Icon Water will recover the same amount of revenue in present value terms over the life of the assets. What will differ under the two approaches, however, is the profile of that revenue recovery. This difference can be seen in the simplified example set out in Box 4.3.

102 Icon Water, *Response to Draft Report*, 23 January 2015, p.28.

103 Dwyer, T., *Response to Draft Report*, 14 January 2015, p.6.

Box 4.3: Indexed vs non-indexed RAB

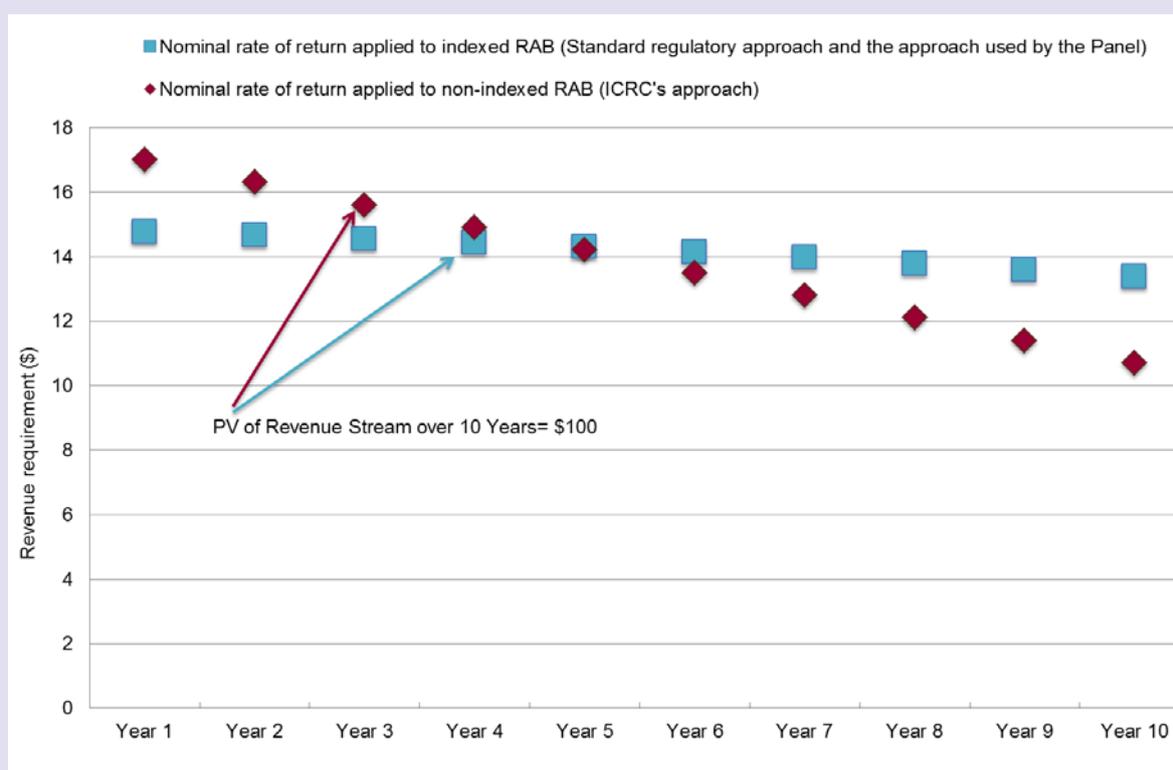
The table and figure below illustrate the difference between the way in which revenue would be recovered under the indexed and non-indexed RAB approaches if it is assumed that:

- the opening value of the RAB is \$100
- the economic life of the asset is 10 years, and
- the nominal WACC is 7% and the inflation rate is 2.5%.

Indexed vs non-indexed RAB – Recovery of revenue

Year		1	2	3	4	5	6	7	8	9	10
Nominal rate of return applied to indexed RAB (Standard regulatory approach and the approach used by the Panel)											
Remaining Life	(Yrs)	10	9	8	7	6	5	4	3	2	1
Opening RAB Value	(\$)	100.00	92.25	84.05	75.38	66.23	56.57	46.39	35.66	24.37	12.49
less Depreciation	(\$)	-10.00	-10.25	-10.51	-10.77	-11.04	-11.31	-11.60	-11.89	-12.18	-12.49
plus Inflationary Gain	(\$)	2.25	2.05	1.84	1.62	1.38	1.13	0.87	0.59	0.30	0.00
Closing RAB Value	(\$)	92.25	84.05	75.38	66.23	56.57	46.39	35.66	24.37	12.49	0.00
Allowed Return on Investment	(\$)	7.00	6.46	5.88	5.28	4.64	3.96	3.25	2.50	1.71	0.87
less Inflationary Gain	(\$)	-2.25	-2.05	-1.84	-1.62	-1.38	-1.13	-0.87	-0.59	-0.30	0.00
Return on Investment Recovered in Tariffs	(\$)	4.75	4.41	4.04	3.66	3.26	2.83	2.38	1.90	1.40	0.87
Building Blocks											
Return on Investment	(\$)	4.75	4.41	4.04	3.66	3.26	2.83	2.38	1.90	1.40	0.87
Depreciation	(\$)	10.00	10.25	10.51	10.77	11.04	11.31	11.60	11.89	12.18	12.49
Total Target Revenue	(\$)	14.75	14.66	14.55	14.43	14.29	14.14	13.97	13.79	13.59	13.36
NPV Target Revenue	(\$)	100.00									
Nominal rate of return applied to non-indexed RAB (ICRC's approach)											
Remaining Life	(Yrs)	10	9	8	7	6	5	4	3	2	1
Opening RAB Value	(\$)	100.00	90.00	80.00	70.00	60.00	50.00	40.00	30.00	20.00	10.00
less Depreciation	(\$)	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00
plus Inflationary Gain	(\$)										
Closing RAB Value	(\$)	90.00	80.00	70.00	60.00	50.00	40.00	30.00	20.00	10.00	0.00
Allowed Return on Investment	(\$)	7.00	6.30	5.60	4.90	4.20	3.50	2.80	2.10	1.40	0.70
less Inflationary Gain	(\$)										
Return on Investment Recovered in Tariffs	(\$)	7.00	6.30	5.60	4.90	4.20	3.50	2.80	2.10	1.40	0.70
Building Blocks											
Return on Investment	(\$)	7.00	6.30	5.60	4.90	4.20	3.50	2.80	2.10	1.40	0.70
Depreciation	(\$)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Total Target Revenue	(\$)	17.00	16.30	15.60	14.90	14.20	13.50	12.80	12.10	11.40	10.70
NPV Target Revenue	(\$)	100.00									

Indexed vs non-indexed RAB - Recovery of revenue



As the example in Box 4.3 highlights, applying a nominal rate of return to an indexed RAB results in a relatively constant revenue stream over the life of the assets. The non-indexed approach, on the other hand, results in a greater proportion of revenue being recovered from current users and less from future users. As such, the standard approach is more in keeping with the intergenerational equity principle than the non-indexed approach, which is why the Panel decided to index the RAB in its draft decision.

Nothing else has been raised in submissions to the draft report that would cause the Panel to reach an alternative view on the merits of indexing the RAB.

4.6.4 Panel's final decision on indexation

The Panel has decided to index the RAB because it is more consistent with the intergenerational equity principle than the non-indexed approach and is in keeping with standard regulatory practice. The Panel's final decision on the provision to be made for indexation in this regulatory period is set out in Table 4.12, which has been calculated assuming a 2.5% inflation rate (ie, the mid-point of the RBA's target inflation band).

Table 4.12: Final decision - Indexation (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Water	34.68	35.70	36.58	37.48	38.58
Sewerage	16.64	17.35	18.60	20.75	22.94

Over the length of the regulatory period, the Panel's final decision on indexation is approximately \$0.39 million higher than its draft decision. This difference reflects the effect of the changes made to both depreciation (see section 4.5) and capital expenditure forecasts (see section 4.4).

5 Rate of return and net tax liabilities

Box 5.1: Summary of the Panel's final decision

The Panel's final decision on the parameters to be used to calculate the rate of return (the nominal vanilla weighted average cost of capital (WACC)) and the net tax liabilities building block is set out in Table 5.1.

Table 5.1: Final decision – Rate of return and net tax liability parameter values (estimated as at 31 May 2013)

Parameter	Value	Approach to parameter estimation
Rate of return parameter values		
Risk free rate (R_f)	3.22%	40-day average of yields on 10-year Commonwealth Government Security (Bloomberg Series ID: GACGB10 Index)
Debt margin (DM)	3.13%	40-day average (approximated by 2-month average) credit spreads for 10-year BBB Australian corporate bonds (RBA Series ID: FNFCBBB10M)
Debt raising cost (DRC)	0.125%	Debt raising costs for the 10-year term-to-maturity assumption
Equity beta (β_e)	0.70	Based on empirical estimates and regulatory precedent
Market risk premium (MRP)	7.23%	40-day average of Bloomberg's daily implied MRPs
Gearing ($\frac{D}{V}$)	60%	Based on benchmark firm gearing ratio and regulatory precedent
Cost of debt	6.48%	$E(R_d) = R_f + DM + DRC$
Cost of equity	8.28%	Based on Sharpe-Lintner Capital Asset Pricing Model (CAPM) $E(R_e) = R_f + \beta_e \times (MRP)$
Nominal vanilla WACC	7.20%	$WACC = E(R_d) \times \frac{D}{V} + E(R_e) \times \frac{E}{V}$
Net tax liabilities parameter values		
Tax rate	30%	Current corporate tax rate
Value of imputation credits (Gamma)	0.5	Based on regulatory decisions made at the time of ICRC's final decision

In keeping with its draft decision, the Panel has estimated the rate of return using the benchmark efficient entity reference point, rather than a firm-specific approach. The Panel's final decision to use a nominal vanilla WACC of 7.2% to calculate the return on capital building block and a gamma value of 0.5 to calculate the net tax liabilities building block is also unchanged from the draft decision.

5.1 Introduction

Under the building block methodology, the rate of return is used to calculate the return on capital building block.^{104,105} The rate of return is typically calculated by regulators using the weighted average cost of capital (WACC) formulation, which may be measured on a pre-tax or post-tax basis.¹⁰⁶ If a post-tax formulation is used, then a separate building block must also be included in the service provider's revenue requirement to account for the tax liabilities, net of the value imputation credits.

104 The return on capital is calculated as the value of the regulatory asset base (RAB) multiplied by the rate of return.

105 In capital-intensive businesses like Icon Water's business, this allowance accounts for a large proportion of the service provider's total revenue requirement.

106 The WACC is the sum of the rates of return expected by equity and debt investors in the business, weighted by the proportions of equity and debt used to finance assets in the business.

The starting point for the Panel's assessment of the rate of return and net tax liabilities building block in its draft report was the ICRC's final decision, which used a firm-specific reference point to calculate the WACC (4.42%) and made no provision for net tax liabilities (see Appendix 4).¹⁰⁷ In reaching its draft decision, the Panel also had regard to Icon Water's SOFC, the issues raised by other stakeholders, the approach employed by other Australian regulators and the competitive neutrality principles.¹⁰⁸

Following the release of the draft report, the Panel received submissions from Icon Water and other stakeholders on its draft decision to adopt a benchmark efficient entity reference point and to use certain parameter values to calculate the WACC and the net tax liabilities building block. The ICRC also wrote to the Panel on the subject. The Panel has therefore considered whether any amendments to its draft decision are required.

This chapter presents the matters the Panel considered in reaching its final decision on the appropriate reference point to use when estimating the rate of return, and the parameter values to be used to calculate the WACC and net tax liabilities building block.

5.2 Reference point for estimating the rate of return

While there is no single theoretically correct reference point for estimating the rate of return, generally regulators aim to set a rate that reflects the opportunity cost of capital (ie, the rate of return investors would earn by investing in another asset of equivalent risk). This is consistent with the view that economic regulation should, as far as possible, seek to mimic what would occur in a workably competitive market and encourage the efficient allocation of society's resources.

5.2.1 Summary of the Panel's draft decision

In the draft report, the Panel used the benchmark efficient entity approach to calculate the rate of return, because the Panel saw it as being more consistent with the Act, regulatory precedent and the Council of Australian Government's (COAG) competitive neutrality principles than the firm-specific approach.

5.2.2 Responses to the draft decision

Submissions on this aspect of the Panel's draft decision were received from Icon Water and Dr Dwyer. The Panel also received correspondence from the ICRC. Further detail on the matters raised in submissions and in correspondence from the ICRC is provided below.

5.2.2.1 Icon Water

In its response to the draft report, Icon Water noted that it "supports and endorses the Panel's draft decision to apply a benchmark firm WACC".¹⁰⁹

5.2.2.2 Dr Dwyer

Dr Dwyer's response to the draft report contained the following observation about the use of the firm-specific approach:¹¹⁰

"...when one considers that ACTEW is meant to serve the people of Canberra as its ultimate owners, a firm specific approach does not seem wrong. Indeed, it would seem logical to apply a debt cost of capital to capital from external sources and to apply an equity cost of capital for actual cash injected by the ACT government. Any equity premium in the rate of return should only be applied to cash actually injected by the ACT government and not applied to the regulatory asset base..."

107 Further detail on the ICRC's final decision on the rate of return and net tax liabilities building block can be found in Chapter 10 of the draft report.

108 Further detail on each of these matters can be found in Chapter 10 of the draft report.

109 Icon Water, *Response to Draft Report*, 23 January 2015, p.28.

110 Dwyer, T., *Response to Draft Report*, 14 January 2015, p.4.

5.2.2.3 ICRC's correspondence

In a letter to the Panel dated 28 January 2015, the ICRC noted that a “substantive error and related misstatement” had been made in the draft report in relation to the application of the ACT's policy on competitive neutrality and the Panel's conclusion that the firm-specific approach conflicts with the competitive neutrality principles. Elaborating further on this issue, the ICRC stated:¹¹¹

“The draft report misrepresents the National Competition Policy when it asserts that the 1995 Agreement imposes a set of obligation in relation to ‘setting prices to earn a commercial rate of return’. This may be a popular characterisation of the policy but it is factually wrong - the best representation of the policy is to recognise that each government is free to determine its own agenda for the implementation of competitive neutrality principles.”

The ICRC added that the ACT Treasurer had confirmed in a 12 April 2013 submission to the original price direction investigation that the use of a firm-specific approach would be acceptable.

5.2.3 Panel's assessment

The Panel's assessment of the matters raised by Dr Dwyer and the ICRC are set out below.

5.2.3.1 Matters raised by Dr Dwyer

The first question posed by Dr Dwyer's submission is whether a firm-specific approach should be used in this case given the ultimate owners of Icon Water are the people of Canberra. The Panel considered this issue in some detail in the draft report and came to the view that the firm-specific approach was not as consistent with the requirements of the Act or the principles of economic efficiency as the benchmark efficient entity approach.¹¹² The Panel makes further observations on this matter below. No new matters have been raised by Dr Dwyer that would cause the Panel to reach an alternative view.

Dr Dwyer's second question was whether the cost of equity should only be applied to cash actually injected by the ACT Government. The Panel notes that such an approach would be inconsistent with standard regulatory practice and so has decided not to restrict the application of the cost of equity in the manner suggested by Dr Dwyer.

5.2.3.2 Matters raised in the ICRC's correspondence

While the ICRC is not a party to the review, the Panel has carefully considered the matters that were raised in its 28 January 2015 letter about:

- the relationship between the competitive neutrality principles in the COAG's Competition Principles Agreement (CPA) and the ACT Government's competitive neutrality policy, and
- the implications this may have for the choice between adopting a benchmark efficient entity or a firm-specific reference point when estimating the rate of return.

The Panel's understanding of the CPA and the ACT Government's policy is that, under the CPA, Commonwealth and State and Territory governments agreed to apply competitive neutrality principles, where appropriate, to all significant government-owned businesses. The overarching aim of competitive neutrality principles is to promote the efficient allocation of scarce resources by ensuring those resources are applied to their highest value use (ie, allocative efficiency). To this end, the CPA seeks to ensure government-owned businesses, like Icon Water, do not enjoy competitive advantages (or suffer competitive disadvantages) relative to their private sector counterparts simply by virtue of their public ownership. In markets where there are no private sector competitors, the CPA seeks to benefit consumers and taxpayers by removing cost and other advantages that could lead the business to make wasteful resource allocation decisions and result in distortions in input markets (ie, labour, capital and other inputs).

¹¹¹ ICRC, Letter to the Panel, 28 January 2015.

¹¹² See section 10.2 in Chapter 10 of the draft report.

Although the principles set out in the CPA do not, in themselves, have the force of law, the CPA is a COAG-level agreement whose outcomes have clear head of government support. The CPA is also backed by governance arrangements which were enshrined in legislation and established the National Competition Council (NCC) to oversee compliance with the CPA. The NCC may therefore be regarded as the authority on how the competitive neutrality principles should be interpreted and applied (see Box 5.2).

Box 5.2: Objective of the competitive neutrality policy and principles

The manner in which the NCC has previously interpreted the objective of the competitive neutrality policy and principles in clause 3 of the CPA is set out in the extracts below.

"The objective of competitive neutrality policy, as stated in subclause 3(1) of the CPA, is the elimination of resource allocation distortions arising out of the public ownership of entities engaged in significant business activities. Resource allocation distortions can arise where government businesses face different costs or disciplines than private sector businesses. These differences may provide government businesses with competitive advantages or disadvantages which influence their pricing and production decisions.

...For example, if a government business is not required to earn a return on the capital invested in the business or even cover operating costs, then it may be able to underprice the goods and services it produces. If this leads to the government business attracting custom from its more efficient competitors, then the community's scarce resources are not being used as well as they might be. The underpricing may also encourage 'overuse' of the good or service, encouraging the business to invest in new plant and equipment that it would otherwise have not required.

The way in which government businesses use inputs to produce goods and services can also affect resource allocation. Government businesses which operate inefficient production processes will use more resources... than necessary to produce a given level of output. This reduces the availability of resources to other businesses, and increases their cost to all users. Inefficient production processes also increase costs of production, undermining the government business's financial performance.

Competitive neutrality helps overcome potential pricing and production problems by encouraging competition in the provision of services traditionally provided by governments... Specific action to address underpricing or overpricing helps ensure that the community's scarce resources are used in the most valuable way.

Even where there is no actual or potential competition, the adoption of competitive neutrality principles can encourage greater efficiency in resource allocation."¹¹³

"In general terms, implementation of competitive neutrality involves:

- adoption of a corporatisation model for significant government business activities;
- payment of all relevant Commonwealth and State direct and indirect taxes or tax equivalents;
- payment of fees (or commercial interest rates), directed towards offsetting the reduced risk provided by explicit or implicit government guarantees on commercial or public loans;
- **attainment of commercial rates of profit (to ensure government businesses face a return on capital requirement equivalent to private businesses);**
- compliance with those regulations to which private sector competitors are normally subject, for example, regulations relating to the environment and planning and approvals processes; and
- pricing of goods and services provided in contestable and potentially contestable markets to take account of all direct costs attributable to the activity, including the competitive neutrality-imposed costs."¹¹⁴ [emphasis added]

113 NCC, *Competitive Neutrality Reform: issues in implementing clause 3 of the Competition Principles Agreement*, January 1997, p.5.

114 NCC, *Second Tranche Assessment of Governments' Progress with Implementing National Competition Policy and Related Reforms*, Volume 1, 30 June 1999, pp.49-50.

While the CPA states that jurisdictions are free to determine their own agenda for the implementation of the competitive neutrality principles,¹¹⁵ the ACT Government's current policy¹¹⁶ is consistent with the objectives and principles of the CPA and the NCC's interpretation of these requirements.

The current ACT Government policy states that Territory-Owned Corporations will be subject to the following principles of competitive neutrality as appropriate:¹¹⁷

- (a) setting commercial target rates of return, capital structures and dividend payments
- (b) full payment of Territory taxes and Commonwealth income and sales tax equivalents
- (c) loan or debt guarantee fees where they are in receipt of concessional interest rates that reflect their government ownership rather than their commercial status
- (d) the same business regulation as their private sector counterparts
- (e) explicit funding for community service obligations, and
- (f) independent performance monitoring.

Further, the application of the principles set out in (a)-(f) is **not** contingent on the Territory-Owned Corporation being subject to competition. The policy instead implicitly recognises that any advantage conferred on a publicly-owned enterprise can result in the distortion of resources in both input markets and output markets, which can operate to the detriment of the broader community as highlighted in the example cited by the NCC in Box 5.2.

The next issue considered by the Panel is the ICRC's claim that the draft report misrepresented the obligations imposed by the CPA and the best representation of the policy is that each government is free to determine its own agenda.

The Panel agrees with the ICRC that jurisdictions have some discretion under the CPA. However, it is clear from the preceding discussion that, notwithstanding the views expressed in the ACT Treasurer's 12 April 2013 submission, the ACT Government's policy embodies the same objective and principles as the CPA, including the principle of setting commercial target rates of return and capital structures. The Panel's observation in the draft report that the benchmark efficient entity approach is more consistent with the competitive neutrality principles in the CPA than the firm-specific approach and will promote a greater degree of allocative efficiency, applies equally to the ACT Government's policy. Accordingly, and consistent with standard regulatory practice, the Panel has decided to maintain its draft decision to use the benchmark efficient entity approach to estimate the rate of return.

5.2.4 Panel's final decision on the reference point

The Panel's final decision is to use the benchmark efficient entity reference point to calculate the rate of return, because it is:

- **Consistent with the requirements of the Act** - In the Panel's view, the benchmark efficient entity approach is more consistent with section 20(2) of the Act (in particular section 20(2)(i))¹¹⁸ than the firm-specific approach because using efficient financing costs allows the regulated service provider to attract the necessary investment capital to maintain a reliable service while minimising the costs to consumers.¹¹⁹

115 COAG, *Competition Principles Agreement*, 11 April 1995 (as amended to 13 April 2007), Clause 3b.

116 ACT Department of Treasury, *Competitive Neutrality in the ACT*, October 2010.

117 *ibid*, pp.13-14.

118 This section of the Act requires the Panel to have regard to "the borrowing, capital and cash flow requirements of people providing regulated services and the need to renew or increase relevant assets in the regulated industry".

119 By contrast, under a firm specific approach, actual financing costs may be higher or lower than the efficient cost. If they are lower, it could result in prices that are insufficient to meet the borrowing, capital and cash flow requirements of the regulated business in the long term, and/or discourage the business from making efficient investment. If they are higher than efficient costs, then the business could earn excess profits and has an incentive to over-invest.

- **Consistent with the approach used by the majority of Australian regulators** – When applying the building block methodology, most regulators aim to provide the service provider with a return on capital that reflects the efficient financing costs of a benchmark efficient entity and the risks involved in delivering the regulated services.
- **Consistent with the competitive neutrality principles and the allocative efficiency principle** – To be consistent with competitive neutrality principles set out in the CPA and the ACT Government’s competitive neutrality policy and the allocative efficiency principle, more generally, the rate of return applied to regulated service providers should reflect the opportunity cost of capital. This rate of return will be the same irrespective of that business’ ownership and, in the Panel’s view, can best be approximated using the benchmark efficient entity approach.

5.3 Estimation of the WACC

Under the benchmark efficient entity approach, the WACC is calculated as the sum of the cost of debt and the cost of equity that would be faced by a benchmark entity, weighted by the proportions of debt and equity financing that a benchmark efficient entity would exhibit. Further detail on the formulae and parameters used to estimate the cost of debt, cost of equity and the WACC can be found in Box 5.3.

Box 5.3: WACC formula

The nominal vanilla WACC can be calculated using the following formula:

$$\text{WACC} = E(R_d) \times \frac{D}{V} + E(R_e) \times \frac{E}{V}$$

Where:

$E(R_d)$ is the expected cost of debt and is calculated as follows:

$$E(R_d) = R_f + DM + DRC$$

Where:

R_f is the risk-free rate, which represents the return an investor would expect from a risk-free investment over a specified period of time. This rate cannot be observed directly, but can be approximated by the yield to maturity on government bonds.

DM is the debt margin, which represents the margin above the risk-free rate required by debt holders for a borrower’s credit, liquidity and maturity risks.

DRC is an allowance for the efficient costs of raising debt, which includes underwriting fees, legal fees, company credit rating fees and other costs incurred in raising debt finance.

$E(R_e)$ is the expected cost of equity and is usually estimated by regulators using the Sharpe-Lintner Capital Asset Pricing Model:

$$E(R_e) = R_f + \beta_e \times (E(R_m) - R_f) \text{ or } E(R_e) = R_f + \beta_e \times (MRP)$$

Where:

R_f is the risk-free rate

β_e is the equity beta, which measures the extent to which the returns of a stock vary in line with the overall returns of the market. It therefore represents the systematic or market-related risk of a security that cannot be avoided by holding it as part of a diversified portfolio.

MRP ($E(R_m) - R_f$) is the market risk premium, which is calculated as the difference between the expected return on a market portfolio and the risk-free rate.

$\frac{D}{V}$

and $\frac{E}{V}$ are the proportions of debt and equity in the benchmark entity’s capital structure, respectively.

Under the benchmark approach, a benchmark gearing ratio is used rather than the actual financial structure of the entity. This approach provides the business with an incentive to adopt efficient capital structures, and ensures that customers do not bear the costs associated with a sub-optimal capital structure.

5.3.1 Summary of the Panel's draft decision

Table 5.2 sets out the Panel's draft decision on the values to be attributed to all the parameters used in the estimation of the cost of debt, cost of equity and the WACC, all of which were estimated as at 31 May 2013 (ie, the time at which ICRC made its final decision).

Table 5.2: Draft decision - WACC parameter values (estimated as at 31 May 2013)

Parameter	Panel's draft decision	Approach to parameter estimation
Risk-free rate	3.22%	40-day average of the yields on the 10-year Commonwealth Government Security using data from Bloomberg (Series ID: GACGB10 Index)
Debt margin	3.13%	40-day average (approximated by 2-month average) of the credit spreads for the 10-year BBB Australian corporate bonds (RBA Series: FNFCBBB10M)
Debt raising cost	0.125%	Debt raising costs for the 10-year term-to-maturity assumption
Equity beta	0.70	Point estimate for the equity beta
Market risk premium	7.23%	40-day average of Bloomberg's daily implied MRPs
Gearing	60%	Point estimate for the gearing ratio
Cost of debt	6.48%	Risk-free rate + Debt margin + Debt raising cost
Cost of equity	8.28%	Based on Capital Asset Pricing Model (CAPM)
Nominal vanilla WACC	7.20%	WACC = Cost of debt x 60% + Cost of equity x 40%

The Panel's draft decision was to adopt a nominal vanilla WACC of 7.20%, which is 2.78% higher than the ICRC's final decision for 2013-14 and 2014-15 (4.42%) and 1.75% lower than Icon Water's SOFC proposal (8.95%).

5.3.2 Responses to the draft decision

Icon Water was the only party to comment on the WACC parameter values. While it considered the Panel's draft decision an "improvement on the ICRC price direction", it questioned:

- the Panel's decision to adopt a 0.7 equity beta, and
- the data and method the Panel used to estimate the risk-free rate.¹²⁰

Table 5.3 sets out Icon Water's final position on what parameter values should be adopted and its proposed WACC, which is 0.58% higher than the Panel's draft decision (7.78% vs 7.20%) and 1.17% lower than its SOFC proposal (7.78% vs 8.95%). The updated parameter values are shown in the highlighted rows.

¹²⁰ Icon Water, *Response to Draft Report*, 23 January 2015, pp.18-21.

Table 5.3: Icon Water’s proposed WACC

Parameter	Value
Risk-free rate	3.22%
Debt margin	3.13%
Debt raising cost	0.125%
Equity beta	0.90
Market risk premium	7.23%
Gearing	60%
Cost of debt	6.48%
Cost of equity	9.73%
Nominal vanilla WACC	7.78%

Source: Icon Water, *Response to follow-up questions*, 26 February 2015, p.4.

Further detail on the questions that Icon Water raised about the equity beta and risk-free rate is provided below.

5.3.2.1 Equity beta

Icon Water submitted that the equity beta adopted by the Panel (0.7) was “underestimated” and that a value of 0.9 should be adopted. Icon Water provided a letter from SFG Consulting to support its claim.

The SFG letter largely reiterates advice that it provided to Icon Water in 2012, which is that water utilities tend to have asymmetric exposure to the market and exhibit higher equity betas during market downturns and lower equity betas during market upturns.¹²¹ In SFG’s view, this asymmetry should be taken into account when estimating equity betas for water utilities by using an equity beta estimate that is “at least as high as the down market beta estimate”.¹²² The empirical analysis presented in SFG’s letter suggests that in an ‘up’ market, equity beta estimates range from 0.39 to 0.62 while in a ‘down’ market they range from 0.67 to 0.88. Drawing on this analysis, SFG concluded that, if consideration was only given to the implications of asymmetric exposure to the market, an appropriate beta estimate should be 0.8.¹²³

Although SFG recommends an equity beta of 0.8, Icon Water has proposed a value of 0.9. When the Panel asked a follow-up question about this difference, Icon Water noted that, unlike SFG’s 2012 advice, which took into account asymmetric exposure to market conditions, the imprecision of beta estimates and limitations of the Sharpe-Lintner CAPM, SFG’s letter focused only on the asymmetric exposure issue. Icon Water said that the contentions relating to the imprecision of beta estimates and limitations of the Sharpe-Lintner CAPM still stand, which is why it proposed an equity beta of 0.9.¹²⁴

121 In its report to Icon, SFG defined an ‘up’ market as a period of positive excess market returns and a ‘down’ market as a period of negative excess market returns.

122 SFG, Letter to Icon Water, 20 January 2015, p.3.

123 *ibid.*

124 Icon Water, *Response to follow-up questions*, 26 February 2015, p.32.

In its response to the Panel's follow-up questions, Icon Water claimed that IPART had relied on similar advice from SFG when deciding what equity beta to apply to the Sydney Desalination Plant.¹²⁵ Icon Water also noted that water utilities might exhibit the asymmetry observed by SFG because:¹²⁶

- water businesses are capital intensive with fixed assets that cannot be allocated to alternative uses or downsized in response to an adverse shock, which means that:
 - if demand falls, the business' cash flows will be negatively impacted, whereas
 - if demand increases, the positive impact on the business' cash flows will not be as great because the assets have a finite capacity
- capital intensive businesses are more exposed to changes in the cost of capital than other businesses and can do little at an operational level to mitigate this impact, and
- water businesses are likely to be exposed to risk premiums other than beta risk, such as the value premium identified by Fama and French for energy network businesses.

5.3.2.2 Risk-free rate

In its submission to the Panel's draft report, Icon Water noted its preference to rely on the annualised 10-year Commonwealth Government Security yield published by the RBA, and questioned whether the risk free-rate used in the Panel's draft decision has been annualised.¹²⁷ Although Icon Water questioned the methodology and data used in the draft report, it did not propose any change to the value of the risk-free rate (see Table 5.3).¹²⁸

5.3.3 Panel's assessment

5.3.3.1 Equity beta

The Panel has considered the arguments made by both Icon Water and SFG about the equity beta, and has the following concerns with Icon Water's proposal to adopt an equity beta of 0.9:

- the proposal by SFG to base the equity beta on the upper bound of the 'down' market beta range has not been explicitly endorsed by any other regulators and has been challenged by Professor Kevin Davis¹²⁹
- neither SFG nor Icon Water explained adequately why water utilities would exhibit a greater degree of sensitivity to conditions in a 'down' market than an 'up' market, and
- the adoption of an equity beta of 0.9 would constitute a significant departure from regulatory precedent for water and sewerage businesses in Australia.

These concerns are discussed, in turn, below.

Absence of clear regulatory precedent for the SFG approach

The first concern that the Panel has with Icon Water's proposal to rely on SFG's advice is that the approach advocated by SFG has not been explicitly endorsed by any other regulator.

125 *ibid*, p.30.

126 *ibid*, p.29.

127 *ibid*, p.19.

128 *ibid*, p.4.

129 Davis, K., *Cost of capital parameters for Sydney Desalination Plant: By SFG Consulting – An initial review for IPART*, 18 August 2011.

While Icon Water contended that IPART relied on SFG's approach in its Sydney Desalination Plant determination, IPART established a range for the equity beta of 0.6 to 0.8 having regard to a range of information sources, which included:¹³⁰

- the empirical analysis carried out by SFG on the equity betas exhibited by water utility businesses in the US and the UK, which produced estimates of the equity betas assuming both constant and asymmetric exposures to market returns¹³¹
- a peer review of SFG's analysis, which was conducted by Professor Kevin Davis
- IPART's own research, and
- information provided by the asset owner.

While SFG's analysis was an input into IPART's decision making, IPART also considered the peer review conducted by Professor Davis, which challenged SFG's conclusion that investors would change their expectations about the required rate of return depending on market conditions and advised against using the down market beta. A description of the advice IPART received from Professor Davis on this issue is set out below:¹³²

"In his review of SFG's advice, Professor Davis put the view that for a 5-year determination period, it was more appropriate to use a methodology that considered the beta over all periods - including those where the market outperformed the risk free rate as well as those when the risk free rate outperformed the market. Professor Davis noted that investors would be unlikely to use a "down-market beta" as it is not representative of expected returns."

Further, Professor Davis noted that where there is no information available to predict market conditions, the probability of having 'up' and 'down' markets over the next month is equal, which implies investors would use an average beta, not an 'up' or 'down' market beta, when forming their expectations on whether to invest in a stock with asymmetric exposure to market risk.¹³³

Professor Davis added that, without a well-specified asset pricing model that explains how and why asymmetric betas might arise, it is unclear how asymmetric betas would lead investors to demand some premium for investing in a stock with different exposures. Professor Davis concluded by stating that he was **not** convinced that the analysis justified SFG's conclusion "that a choice of beta from within the range of plausible estimates should be biased toward the upper end of that range".¹³⁴

Given the contradictory advice that IPART had before it, the range of different empirical estimates developed by SFG and the absence of any clear endorsement by IPART for the use of the 'down' market beta approach, it is not clear to the Panel that IPART relied on the same method proposed by SFG in this matter, as Icon Water has contended.

130 This point was noted by IPART in its final decision for Sydney Water Corporation, when it decided to maintain the 0.6 to 0.8 range.

"We consider that this is the most appropriate range, given the information provided by Sydney Water and their consultants and from our consultants and our own research."

See IPART, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater drainage and other services*, June 2012, p. 209.

131 In its advice to IPART, SFG estimated OLS regression-based equity betas using stock returns of international water utility businesses. It corrected for estimation bias that may present in the regression-based equity betas, and suggested that IPART could take 0.7 if accounting for stocks' asymmetric exposure to market returns, or 0.8 if accounting for the asymmetric exposure and ensuring internal consistency of cost of debt and cost of equity (ie, the required return to equity holders is at least equal to the required return to debtholders in the same firm). SFG's equity beta of 0.7 is marginally above the average of the down-market beta of 0.69 given by the mean of individual firm estimates, and the down-market beta of 0.61 given by the estimates from equally weighted index of water businesses. It showed that this estimate lies within the 90% confidence interval for the individual firm beta estimates assuming constant market risk exposure, which is 0.39 to 0.75, and noted that adopting a beta lower than 0.65 would imply there was no consideration given to the asymmetric exposure.

132 IPART, *Review of water prices for Sydney Desalination Plant Pty Ltd*, December 2011, p. 90.

133 Davis, K., *Cost of capital parameters for Sydney Desalination Plant: By SFG Consulting - An initial review for IPART*, 18 August 2011, pp.2-3.

134 *ibid*, p.3.

Even if it was established that IPART relied on the same approach, this would not alleviate the concerns the Panel has with employing SFG's approach, because the Panel agrees with a number of the points made by Professor Davis.

Capital intensive firms and asymmetric exposure to market conditions

The second concern the Panel has with Icon Water's proposal to rely on SFG's empirical analysis is that neither Icon Water nor SFG has explained why water utilities would exhibit a greater degree of sensitivity to conditions in 'down' markets than 'up' markets.

In its response to the Panel's follow-up questions, Icon Water suggested that water utility businesses might exhibit this asymmetry because they are capital intensive businesses and could therefore be more exposed to:¹³⁵

- downturns in demand than upturns in demand - Icon Water has suggested that, because fixed assets cannot be allocated to alternative uses or downsized if there is a negative demand shock, water utilities will be more exposed to downturns in demand, while if there is a positive demand shock, the upside will be capped because capacity is finite, and
- changes in capital costs - Icon Water has suggested that there is little that can be done at an operational level to mitigate this impact.

On the first point, the Panel notes that, while capital intensive firms tend to be more sensitive to shocks in demand than other firms, it does not follow that their returns will be more exposed to downturns in demand than upturns. Of course capacity is finite and is generally fixed in the short-term, but this applies equally to downturns and upturns.¹³⁶ A capital intensive firm that is slow to adjust to negative systematic demand shocks, because of delays in adjusting their operating leverage, should be equally slow in adjusting their capacity to positive systematic shocks due to delays in, for example, building new capacity. It is unclear therefore why a capital intensive firm would exhibit an asymmetric sensitivity to systematic demand shocks.

On the second point, the Panel agrees with Icon Water that a capital intensive firm cannot quickly reduce its operating leverage to reduce its exposure to changes in capital costs. What is important in this context is whether the ability to make changes to operating leverage differs in 'down' and 'up' markets. If it can be shown empirically that there is an asymmetric relationship between the earnings before interest and taxes (EBIT) and demand in 'up' and 'down' markets (ie, EBIT is less sensitive to net sales in an 'up' market and more sensitive in a 'down' market), then it is possible that the equity beta may be higher in a 'down' market than an 'up' market (assuming financial leverage stays constant). However, the Panel is not aware of any evidence to suggest this is the case.

In the absence of any clear reason as to why water utilities might exhibit the asymmetry referred to by SFG, the Panel questions the weight that can be placed on the 'down' market empirical analysis presented by SFG.

Regulatory consistency

The final concern that the Panel has with Icon Water's proposal to adopt an equity beta of 0.9 is that such a decision would constitute a significant departure from other regulatory decisions. This point can be clearly seen in Table 5.4, which sets out the equity beta values adopted in water and sewerage regulatory decisions over the last five years. As this table reveals, of the 14 decisions that were made by regulators over this period, 12 adopted an equity beta in the range of 0.55 to 0.70.

While there may be times where it is appropriate to depart from regulatory precedent, the Panel is not satisfied there is a reason to do so here, particularly given the concerns raised in the preceding sections and the Panel's own empirical analysis, which supports the adoption of an equity beta of 0.7.¹³⁷

¹³⁵ Icon Water, *Response to follow-up questions*, 26 February 2015, p.29.

¹³⁶ The only exception to this is if the distribution of productive capacity is skewed to the left.

¹³⁷ See Appendix 9 of the draft report for an overview of the empirical analysis that was undertaken to estimate the equity beta.

Table 5.4: Regulatory decisions on equity beta over the last five years

Regulator	Regulated entity	Decision date	Equity beta
IPART	Essential Energy's Water and Sewerage Services	June 2014	0.60 – 0.80 (mid-point used)
ACCC	State Water Corporation	June 2014	0.70
ESC	Greater Metropolitan Water Businesses	June 2013	0.65
ESC	Regional Urban Water Businesses	June 2013	0.65
ESC	Rural Water Businesses	June 2013	0.65 for Southern Rural Water; and 0.70 for GMW and LMW
IPART	Hunter Water Corporation	June 2013	0.60 – 0.80 (mid-point used)
IPART	Gosford City Council and Wyong Council	May 2013	0.60 – 0.80 (mid-point used)
ESCOSA	SA Water	May 2013	0.80
QCA	Seqwater Irrigation Price Review	April 2013	0.55
ERA	Water Corporation	March 2013	0.65
ERA	Water Boards	March 2013	0.65
IPART	Sydney Water Corporation	June 2012	0.60 – 0.80 (upper bound used)
QCA	SunWater Irrigation Price Review	May 2012	0.55
QCA	Gladstone Area Water Board	June 2010	0.65

Sources: IPART, Essential Energy's water and sewerage services in Broken Hill: Review of prices from 1 July 2014 to 30 June 2018, June 2014; ACCC, ACCC Final decision on State Water pricing application: 2014-15 – 2016-17, June 2014; ESC, Price review 2013: Greater metropolitan water business final decision, June 2013; ESC, Price review: Regional urban water business final decision, June 2013; ESC, Price review 2013: Rural water businesses final decision, June 2013; IPART, Hunter Water Corporation's water, sewerage, stormwater drainage and other services: Review of prices from 1 July 2013 to 30 June 2017, June 2013. IPART, Gosford City Council and Wyong Shire Council: Prices for water, sewerage and stormwater drainage services from 1 July 2013 to 30 June 2017; ESCOSA, SA Water's water and sewerage revenues 2013-14 – 2015-16: Final Determination Statement of Reasons, May 2013; QCA, Final report Seqwater irrigation price review 2013-17 Volume 1, April 2013; ERA, Inquiry into the efficient costs and tariffs of the Water Corporation, Aqwest and the Busselton Water Board: Revised final report, March 2013; IPART, Review of prices for Sydney Water Corporation's water, sewerage, stormwater drainage and other services: From 1 July 2012 to 30 June 2016, June 2012; QCA, SunWater irrigation price review: 2012-17 Volume 1, May 2012; QCA, Gladstone Area Water Board: Investigation of pricing practices, June 2010.

Conclusion on equity beta

After considering the concerns outlined above and the Panel's own empirical analysis, the Panel has decided to maintain its draft decision to adopt an equity beta of 0.7.

5.3.3.2 Risk-free rate

While Icon Water has not contended for any change to be made to the risk-free rate, it has raised the following questions about the data and method used to estimate the risk-free rate:

1. Should the risk-free rate be estimated using information published by the Reserve Bank of Australia (RBA) (Icon Water's preference) or Bloomberg (used by the Panel in the draft report)?
2. Was the risk-free rate that the Panel adopted in the draft report annualised?

In relation to the first question, the Panel remains of the view that the Bloomberg data should be used to estimate the risk-free rate because:

- the data is readily available and, unlike the RBA data, does not require complex interpolations to be carried out across different 10-year bond series, and
- the Panel has also implied MRPs estimated by Bloomberg to calculate the cost of equity (a key input to which is an estimate of the risk-free rate), so use of the Bloomberg data to estimate the risk-free rate will ensure these parameters are measured consistently.

In relation to the second question, the Panel confirms that the risk-free rate in the draft report was calculated using **annualised** 10-year Commonwealth Government Security yields.¹³⁸

As the responses to these questions indicate, the Panel has decided not to make any changes to either the data or the method used in the draft report to estimate the risk-free rate.

5.3.4 Panel's final decision on the WACC

The Panel's final decision on the value of each of the parameters used in the calculation of the cost of debt, the cost of equity and the WACC is set out in Table 5.5. As the final row of this table highlights, the Panel has decided to use a WACC of **7.20%** to calculate the return on capital building block, which is consistent with its draft decision.

Table 5.5: Final decision - WACC parameter values (estimated as at 31 May 2013)

Parameter	Value	Basis for decision
Risk free rate (R_f)	3.22%	40-day average of yields on 10-year Commonwealth Government Security (Bloomberg Series ID: GACGB10 Index)
Debt margin (DM)	3.13%	40-day average (approximated by 2-month average) credit spreads for 10-year BBB Australian corporate bonds (RBA Series ID: FNFCBBB10M)
Debt raising cost (DRC)	0.125%	Debt raising costs for the 10-year term-to-maturity assumption
Equity beta (β_e)	0.70	Based on empirical estimates and regulatory precedent
Market risk premium (MRP)	7.23%	40-day average of Bloomberg's daily implied MRPs
Gearing ($\frac{D}{V}$)	60%	Based on benchmark firm gearing ratio and regulatory precedent
Cost of debt ($E(R_d)$)	6.48%	$E(R_d) = R_f + DM + DRC$
Cost of equity ($E(R_e)$)	8.28%	Based on Sharpe-Lintner Capital Asset Pricing Model (CAPM) $E(R_e) = R_f + \beta_e \times (MRP)$
Nominal vanilla WACC	7.20%	$WACC = E(R_d) \times \frac{D}{V} + E(R_e) \times \frac{E}{V}$

In confirming its draft decision on WACC parameter values, the Panel has made the following constituent decisions:¹³⁹

- **Cost of debt** - The Panel has decided to estimate the cost of debt by using:
 - a 10-year term to maturity to measure the risk-free rate and debt margin: the decision to adopt a 10-year term to maturity is consistent with the decisions made by most jurisdictional regulators around the time of the ICRC's final decision and reflects the Panel's view that the term-to-maturity should, to the extent possible, approximate the life of the assets being financed

¹³⁸ The Panel has also confirmed with Bloomberg that this series is annualised.

¹³⁹ Further detail on the Panel's reasoning can be found in Appendix 8 of its draft report.

- a 40-day averaging period ending on 31 May 2013 to estimate the risk-free rate and debt margin: the decision to adopt a short averaging period is also consistent with the approach taken by most jurisdictional regulators around the time of the ICRC's final decision and reflects the Panel's view that current market rates are the best predictor of future expected rates
- a BBB credit rating to estimate the debt margin: the decision to adopt a BBB credit rating is broadly in line with the credit ratings used by other jurisdictional regulators around the time of the ICRC's final decision, which ranged from BBB- to BBB+, and
- a 12.5 basis points allowance for debt raising costs: the Panel's decision in this case is in line with the allowance provided by other jurisdictional regulators for a 10-year term to maturity debt instrument.

Together, these decisions result in a risk-free rate estimate of 3.22%, a debt margin estimate of 3.13% and a cost of debt estimate of 6.48%.

- **Cost of equity** - The Panel has decided to estimate the cost of equity by using the Sharpe-Lintner CAPM, the risk-free rate estimate set out above (3.22%) and:
 - an MRP of 7.23%, which was estimated using the implied MRP methodology:¹⁴⁰ the Panel decided to use the implied MRP methodology because, in its view, it provides a more accurate estimate of the MRP than other methodologies and also ensures internal consistency in the measurement of the WACC, and
 - an equity beta of 0.7: the Panel's decision to adopt a 0.7 equity beta has been based on empirical analysis of the equity betas exhibited by water businesses and is also broadly in line with the equity betas adopted by the majority of jurisdictional regulators over the last five years.

Together, these decisions result in a cost of equity estimate of 8.28%.

- **Gearing ratio** - The Panel has decided to adopt a benchmark 60% gearing ratio, which is consistent with the gearing ratio adopted by other jurisdictional regulators at the time of the ICRC's final decision.

The Panel has tested the reasonableness of its final decision to adopt a 7.20% WACC by comparing it with the decisions made by other water utility regulators around the time of the ICRC's final decision. This comparison revealed that the Victorian Essential Services Commission (ESC), IPART and the Essential Services Commission of South Australia (ESCOSA) had adopted nominal vanilla WACC estimates of between 6.85% and 7.5%.¹⁴¹ The Panel is satisfied therefore that its decision is reasonable and in keeping with the decisions made by other regulators at the time of the ICRC's final decision.

5.4 Net tax liabilities

If a post-tax regulatory model is used, then a separate allowance for tax, net of the value of imputation credits, must be included in a service provider's revenue requirement. To calculate this allowance, a decision must be made about the value of dividend imputation credits (γ).¹⁴² While franked dividends are not generally paid by publicly-owned businesses like Icon Water, in order to maintain competitive neutrality¹⁴³ and ensure consistency with the benchmark efficient entity approach, an assumption must be made about the value of imputation credits for a hypothetical private investor in the business.

140 The implied MRP approach assumes that the current equity market is correctly priced, and reflects all available relevant information. It is calculated by solving for a required rate of return given the present value of the expected dividends and the current price of the market portfolio.

141 See Table 10.5 in Chapter 10 of the draft report.

142 A more detailed description of imputation credits can be found in Appendix 8 of the draft report.

143 In order to maintain competitive neutrality, a government owned business must be subject to the same tax and regulatory obligations as a private business.

5.4.1 Summary of the Panel's draft decision

In the ICRC's final decision, no provision was made for net tax liabilities in Icon Water's revenue requirement because the ICRC claimed that if a firm-specific approach is used to estimate the rate of return there is no need to model tax liabilities.¹⁴⁴ The Panel disagreed with this view in its draft decision and noted that, even if a firm-specific approach was used, provision would need to be made for net tax liabilities because Icon Water is required to make tax equivalent payments to the ACT Government.¹⁴⁵

To calculate the provision to be made for net tax liabilities in its draft decision, the Panel decided to adopt a gamma value of 0.5, which was higher than the 0.25 value proposed by Icon Water in its SOFC.¹⁴⁶

5.4.2 Responses to the draft decision

Icon Water was the only party to comment on the Panel's draft decision to adopt a 0.5 gamma value. Consistent with its SOFC, Icon Water claimed that a gamma value of 0.25 should be adopted because:¹⁴⁷

- it is consistent with a decision that was made by the Australian Competition Tribunal in 2011,¹⁴⁸ and
- a number of regulators that published their decisions around the same time as the ICRC's final decision also adopted a value of 0.25.

Icon Water also pointed out that, in the Australian Energy Regulator's (AER) recent draft decision for the NSW and ACT electricity businesses,¹⁴⁹ the AER had decided to adopt a gamma value of 0.4 rather than the 0.5 value it indicated it would use in its Better Regulation Rate of Return guideline.¹⁵⁰

5.4.3 Panel's assessment

In the draft report, the Panel acknowledged that several regulators had lowered their estimates of gamma to 0.25 following a decision by the Australian Competition Tribunal, but concluded that a 0.5 value should be adopted and noted this was consistent with:

- other regulatory decisions that were made around the time of the ICRC's final decision, which had adopted a gamma value of 0.5 (ie, decisions by the ESC, ESCOSA and the QCA - see Table 5.6), and
- the AER's observation in its 2013 Better Regulation Rate of Return guideline that the evidence before it supported a gamma value of 0.5.

144 That is, tax liabilities taking into account (or net of) dividend imputation credits.

145 ACT Auditor-General's Office, *Performance Audit Report - The Water and Sewerage Pricing Process*, April 2014, p.26.

146 Under the post-tax building block model, there is an inverse relationship between gamma and the tax liability of a regulated service provider. That is, a lower gamma results in a higher net tax liability (ie, because a lower level of imputation credits are available to offset the investors tax liability) and, by extension, a higher revenue requirement and prices. A higher gamma, on the other hand, results in a lower net tax liability, and, in turn, a lower revenue requirement and prices.

147 Icon Water, *Response to Draft Report*, 23 January 2015, p.21.

148 Australian Competition Tribunal 9, 2011, *Application by Energex Limited (Gamma) (No 5)*.

149 These draft decisions were released in November 2014.

150 Icon Water, *Response to Draft Report*, 23 January 2015, p.21.

Table 5.6: Gamma decisions in the period leading up to the ICRC's final decision

Regulator (State)	Regulated entity	Decision date	Gamma
ESC (VIC)	Greater Metropolitan Water Businesses	June 2013	0.50
ESC (VIC)	Regional Urban Water Businesses	June 2013	0.50
ESC (VIC)	Rural Water Businesses	June 2013	0.50
IPART (NSW)	Hunter Water Corporation	June 2013	0.25*
IPART (NSW)	Gosford City Council and Wyong Shire Council	May 2013	0.25*
ESCOSA (SA)	SA Water	May 2013	0.50
QCA (QLD)	Seqwater Irrigation Price Review	April 2013	0.50
ERA (WA)	Water Corporation	March 2013	0.25
ERA (WA)	Water Boards	March 2013	0.25

Sources: See Table 5.4.

Note: * IPART adopted a gamma of 0.25 in March 2012 and retained this value in subsequent decisions.

The only new matter that Icon Water has raised that was not considered by the Panel at the time of the draft report is the AER's recent decision to select a gamma value of 0.4 from a range of 0.3 to 0.5, rather than the 0.5 value that was advocated in its Better Regulation Rate of Return guideline.

The primary concern the Panel has with relying on this new information is that it would result in different observation periods being used to measure the WACC (mid-2013) and the gamma (late 2014). While one option may be to update the measurement period for the WACC to ensure consistency across the two, the Panel has concerns about doing that at this late stage of the process because interested parties would not have a chance to comment on the decision.

Even if the Panel thought it was appropriate to use a different observation period, it is clear from the AER's recent draft decision and from the following regulatory decisions published in the last year that, while the debate around what value to attribute to gamma is not settled, the weight of evidence suggests a gamma value closer to 0.5 than 0.25:

- In the Western Australian Economic Regulation Authority's (ERA) recent draft decision on ATCO Gas' access arrangement, the ERA considered the available evidence on gamma and concluded that a gamma value of 0.5 should be adopted, rather than a value in the 0.25-0.39 range it had adopted in its Rate of Return guideline.¹⁵¹
- The Queensland Competition Authority (QCA) has also recently considered the evidence on gamma as part of a broader review of its approach to estimating the WACC and concluded that a gamma value of 0.47 should be adopted. In its final decision, the QCA noted that research carried out in the wake of the Australian Competition Tribunal's decision has brought the 0.25 gamma value into question.¹⁵²
- Like the ERA and the QCA, ESCOSA has also recently considered the available evidence on gamma as part of its broader assessment of the rate of return to be applied to SA Water. In its draft report to the South Australian Treasurer, ESCOSA noted that recent "credible research" suggested gamma could be around 0.7, but it would not propose adopting such a value in the absence of further supporting studies and some level of consensus amongst regulators. ESCOSA proposed instead to use a gamma value of 0.5.¹⁵³

For the reasons set out above, the Panel has decided to maintain its draft decision.

151 ERA, *Draft Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution System*, October 2014, p.6.

152 QCA, *Final Decision - Cost of capital: market parameters*, August 2014, p.iv.

153 ESCOSA, *Draft Report to the Treasurer - SA Water Regulatory Rate of Return 2016-2020*, November 2014, p.40.

5.4.4 Panel's final decision on gamma

The Panel's final decision is to adopt a gamma value of 0.5.

The Panel's decision to adopt a 0.5 gamma value, rather than the 0.25 value proposed by Icon Water, reflects its view that:

- the same observation period should be used when determining the value of gamma as assumed when measuring the value of WACC, which is around the time the ICRC was making its final decision, and
- at the time the ICRC was making its final decision, a gamma value of 0.5 had greater regulatory precedent in the water and sewerage industry than a 0.25 value.

6 Forecast operating expenditure

Box 6.1: Summary of the Panel's final decision

The Panel's final decision on the provision to be made for water and sewerage related operating expenditure is set out in Tables 6.1 and 6.2 below.

Table 6.1: Final decision - Forecast operating expenditure water (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Controllable operating expenditure	62.75	66.15	66.91	67.95	70.33
Water Abstraction Charge	25.01	27.25	27.58	27.92	28.27
Utilities Network Facilities Tax	4.10	4.52	4.74	4.97	5.09
Total operating expenditure	91.87	97.92	99.23	100.84	103.69

Table 6.2: Final decision - Forecast operating expenditure sewerage (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Controllable operating expenditure	67.70	69.29	70.64	73.33	76.27
Utilities Network Facilities Tax	3.39	3.72	3.89	4.07	4.25
Total operating expenditure	71.09	73.01	74.53	77.40	80.52

The Panel has amended its draft decision on water related operating expenditure to:

- reflect the Panel's decision to adopt a lower water sales forecast from 2014-15 onward (see Chapter 7), which has resulted in a lower allowance for the Water Abstraction Charge (WAC), and
- correct a small error that was made when converting Icon Water's controllable operating expenditure from real \$2012-13 values to nominal values in 2015-16, 2016-17 and 2017-18.

These amendments have resulted in a \$2.22 million (around \$0.55-\$0.56 million per annum) reduction in the operating expenditure forecast between 2014-15 and 2017-18.

In the case of sewerage related operating expenditure, the Panel has decided to maintain its draft decision.

6.1 Introduction

The prudent and efficient costs of operating and maintaining the assets to be used in the provision of regulated services over the regulatory period must be estimated when determining a regulated business' revenue requirement under the building block methodology.

In Icon Water's case, the operating and maintenance costs incurred in the provision of regulated water and sewerage services include a range of controllable expenditure items, such as:

- the costs associated with operating and maintaining the bulk water storage and transfer system, water and sewerage treatment facilities and the water and sewerage pipelines
- meter reading and billing costs
- expenditure on customer service, and
- corporate overheads.

Two other operating costs that Icon Water is required to pay the ACT Government are:

- the Water Abstraction Charge (WAC), which is a '\$ per kL' charge levied on all water abstracted from ACT water sources,¹⁵⁴ and
- the Utilities Network Facilities Tax (UNFT), which is a '\$ per km of network length' charge payable by any entity that has network facilities in the ACT and is applied to Icon Water's water and sewerage networks.¹⁵⁵

The starting point for the Panel's assessment of the operating expenditure building block in the draft report was the ICRC's final decision for 2013-14 and 2014-15 (see Appendix 4).¹⁵⁶ Because the ICRC did not make a decision about expenditure beyond 2014-15, the Panel had to decide for itself the allowances for the subsequent years. In reaching its draft decision on this building block, the Panel also had regard to Icon Water's SOFC, expert advice provided by Cardno, and standard regulatory practice in this area.¹⁵⁷

Following the release of the draft report, the Panel received a submission from Icon Water on the provision made for operating expenditure in the draft decision. The Panel also received additional advice from Cardno on the water sales forecasts, which are relevant for the calculation of the WAC. The Panel has evaluated whether any amendments to its draft decision are required.

The specific matters the Panel considered in reaching its final decision are set out in this chapter.

6.2 Summary of the Panel's draft decision

In the draft report, the Panel affirmed the ICRC's final decision on the provision to be made for controllable expenditure in 2013-14 and 2014-15. For the last three years of the regulatory period, the Panel largely accepted the controllable expenditure forecasts proposed in Icon Water's SOFC, but made two small adjustments to ensure that:

- the effect of the carbon price on electricity and chemical costs was removed from the forecasts (approximately \$40,000 per annum) (given that the carbon tax has been repealed), and
- the Uriarra Village sewerage project was treated in the same manner as the ICRC decided to treat this project,¹⁵⁸ which involved adding the efficient costs of operating a package plant into Icon Water's forecast for sewerage services.¹⁵⁹

154 This charge is applied to recover the costs associated with a range of water planning and management activities across a number of ACT Government agencies and is intended to reflect the scarcity value of water and environmental costs. See http://www.environment.act.gov.au/_data/assets/pdf_file/0008/576062/ACT_Water_Abstraction_Charge.pdf.

155 A 'network facility' is defined as any part of the infrastructure of a utility network not fixed to land subject to either a lease, a licence granted by the Territory or any right prescribed by regulation. 'Utility networks' include networks for transmitting and distributing electricity, gas, sewerage, water and telecommunications.

156 Further detail on the ICRC's final decision on operating expenditure can be found in Chapter 11 of the draft report.

157 Further detail on each of these matters can be found in Chapter 11 of the draft report.

158 To treat this expenditure in the same manner as the ICRC, it was necessary to include the efficient costs of operating a package plant into the sewerage related operating expenditure. This was done by:

- adding back Icon Water's estimate of the on-going costs of operating the Uriarra Village sewerage project to its proposed allowance for sewerage related operating expenditure in the SOFC, and
- adjusting these costs downwards to reflect Cardno's estimate of the efficient costs of operating a package plant.

159 Icon Water had excluded the costs of operating the Uriarra Village sewerage plant from its proposed sewerage expenditure in the SOFC because it claimed it had the same effect on its net revenue requirement as the ICRC's decision to include the expenditure and to then make an offsetting adjustment when calculating the net revenue requirement. While the Panel accepted that Icon Water's proposed approach may be administratively simpler, it considered the ICRC's approach more transparent and therefore maintained this approach in the draft report.

In relation to the WAC and UNFT, the Panel decided to:

- calculate its own forecast of the amount Icon Water would have to pay the ACT Government for the WAC over the regulatory period, by multiplying the WAC rate by the dam releases implied by the Panel's draft decision on forecast water sales, and
- accept Icon Water's forecast of the amount it would have to pay the ACT Government for the UNFT over the regulatory period, which was consistent with the ICRC's final decision for 2013-14, but higher in 2014-15 to reflect the ACT Government's decision in the 2014-15 budget to increase the UNFT rate by 5%.

The Panel's draft decision on the provision to be made for operating expenditure in this regulatory period for both water and sewerage services is set out in the Tables 6.3 and 6.4.

Table 6.3: Draft decision – Forecast operating expenditure water (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Controllable operating expenditure	62.75	66.15	66.91	67.94	70.32
Water Abstraction Charge	25.01	27.81	28.16	28.53	28.90
Utilities Network Facilities Tax	4.10	4.52	4.74	4.97	5.09
Total operating expenditure	91.87	98.49	99.81	101.44	104.32

Table 6.4: Draft decision – Forecast operating expenditure sewerage (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Controllable operating expenditure	67.70	69.29	70.64	73.33	76.27
Utilities Network Facilities Tax	3.39	3.72	3.89	4.07	4.25
Total operating expenditure	71.09	73.01	74.53	77.40	80.52

6.3 Responses to the draft decision

The only party that commented on the provision made for operating expenditure in the draft report was Icon Water, who supported the Panel's draft decision.¹⁶⁰

6.4 Panel's assessment

While no new matters were raised on operating expenditure in the submissions to the draft report, or the public hearing, the Panel identified a small error in the draft report that was made when converting Icon Water's controllable operating expenditure forecast for water services from real \$2012-13 values to nominal values.¹⁶¹ This error had the effect of overstating the operating expenditure allowance by approximately \$22,000 in the last three years of the regulatory period (around \$7,000-\$8,000 per annum). The controllable operating expenditure allowance for water services provided for in the draft decision has been reduced by \$22,000 to unwind the effect of this error.

The Panel also decided to amend the provision made for the WAC between 2014-15 and 2017-18 to reflect the new advice provided by Cardno on water sales forecasts and the dam releases implied by this advice (see Chapter 7).

¹⁶⁰ Icon Water, *Response to Draft Report*, 23 January 2015, p.28.

¹⁶¹ This error was identified in the corrigendum to the draft report.

6.5 Panel's final decision on operating expenditure

The Panel's final decision on the provision for operating expenditure over the regulatory period is set out in Table 6.5 and Table 6.6. In total, the Panel has approved an operating expenditure allowance of:

- \$493.5 million for water (\$91.9-\$103.7 million per annum), and
- \$376.5 million for sewerage (\$71.1-\$80.5 million per annum).

Table 6.5: Final decision – Forecast operating expenditure water (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Controllable operating expenditure	62.75	66.15	66.91	67.95	70.33
Water Abstraction Charge	25.01	27.25	27.58	27.92	28.27
Utilities Network Facilities Tax	4.10	4.52	4.74	4.97	5.09
Total operating expenditure	91.87	97.92	99.23	100.84	103.69

Table 6.6: Final decision – Forecast operating expenditure sewerage (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Controllable operating expenditure	67.70	69.29	70.64	73.33	76.27
Utilities Network Facilities Tax	3.39	3.72	3.89	4.07	4.25
Total operating expenditure	71.09	73.01	74.53	77.40	80.52

The reasons underpinning the Panel's final decision on operating expenditure are set out below:

- The controllable operating expenditure forecasts adopted by the ICRC in 2013-14 and 2014-15, and the forecasts set out in Icon Water's SOFC for the remaining three years (adjusted to exclude carbon costs and to include the efficient costs of operating the Uriarra Village sewerage plant), represent the best available estimates of the prudent and efficient cost of providing water and sewerage services over the regulatory period. Further support for this view can be found in:
 - the base-step-trend approach that Icon Water used to derive this forecast is an accepted regulatory approach to estimating controllable costs, and
 - the conclusion that Cardno reached on Icon Water's forecasts, which is that they "should be adopted as prudent and efficient".¹⁶²
- The provision made for the WAC over the regulatory period should be consistent with the dam releases implied by Cardno's revised advice on water sales forecasts.
- The UNFT forecasts set out in Icon Water's SOFC represent the best available estimate of the amount it will have to pay the ACT Government in this regulatory period.

¹⁶² Cardno, *Independent review of ICRC price direction, Technical report*, November 2014, p.28.

The Panel has not had time in this review to consider in detail whether there is merit in implementing an incentive scheme(s) to encourage Icon Water to continuously seek out cost efficiencies¹⁶³ and improve service standards.¹⁶⁴ The Panel is aware that these types of schemes have worked effectively in other regulatory regimes and suggests the ICRC investigate the merits of implementing one or more of these incentive schemes in the next review (see Appendix 2).

163 Under the standard building block model, the regulated service provider has an incentive to provide the regulated services for less than the forecasts adopted by the regulator because it will retain the benefits of any underspend and incur the costs of any overspend within the regulatory period. Because any efficiency benefits must be passed onto customers at the commencement of the next regulatory period, a regulated service provider will have a greater incentive to pursue efficiencies in the early years of the regulatory period and a lower incentive in the later years of the regulatory period. To address this issue, regulators in some industries have implemented:

- an operating expenditure incentive scheme, and/or
- a capital expenditure incentive scheme.

164 To try and counter the incentive that regulated businesses may have to pursue cost efficiencies at the expense of service quality, regulators in some industries have implemented service-based incentive schemes. While the form of these schemes can differ, they are typically designed to encourage regulated service providers to either improve service performance where customers are willing to pay for those improvements, or ensure that service standards do not fall below a defined service level.

7 Forecast demand

Box 7.1: Summary of the Panel's final decision

The Panel's final decision about the demand parameters it used as a basis to set prices is presented in Table 7.1 below.

Table 7.1: Final decision - Demand forecasts

	Actual	Forecasts			
	2013-14	2014-15	2015-16	2016-17	2017-18
Water					
Tier 1 water sales (GL)	23.76	24.53	25.31	26.04	26.72
Tier 2 water sales (GL)	18.17	18.62	18.35	18.16	18.04
Total water sales (GL)	41.93	43.15	43.67	44.20	44.76
Dam releases (GL)	49.04	50.46	51.07	51.70	52.35
Water customer numbers	162,951	166,992	171,134	175,378	179,728
Sewerage					
Sewerage customer numbers	162,609	166,678	170,849	175,124	179,506
Billable fixtures (non-residential)	60,274	61,597	62,949	64,331	65,743

The Panel's final decision sets water sales forecasts 2.0% to 2.2% lower than its draft decision, reflecting refinements made to Cardno's forecasting model.

The Panel has maintained its draft decision for forecasts of water and sewerage customer numbers and billable fixture numbers.

7.1 Introduction

Deciding on the demand forecasts for the regulatory period is a critical part of the price determination process, as they have a large impact on the resulting price levels. For any given revenue requirement, a higher demand forecast will lead to lower prices, while a lower demand forecast will lead to higher prices. In general, regulated businesses will have incentives to favour lower demand forecasts in order to minimise their risk of under-recovery of their efficient costs. From an economic efficiency and societal perspective, it is important that the forecasts adopted are neither overly conservative (or customers will pay higher prices than necessary to recover the regulated business' efficient costs), nor overly optimistic (or the regulated business may earn insufficient revenue to cover its efficient costs).

Demand forecasts are also relevant to expenditure forecasts; for example, the volume of dam releases, which is used to determine the allowance to be made for the ACT Government's WAC, is directly related to the volume of water sales.¹⁶⁵

For regulatory purposes, demand models are usually developed to forecast water sales, which include predictive measures of population growth and/or customer numbers, customer behaviour, changes in technology and housing stock, and the weather/climate. Building block approaches to price regulation tend to focus on average demand over a regulatory period (or periods), rather than trying to forecast exact year-to-year outcomes.

The treatment of the uncertainty surrounding water sales forecasts was one of the more contentious issues in the ICRC's original price investigation. Water sales forecasts have also been the subject of careful consideration during the Panel's review.

¹⁶⁵ Demand forecasts also affect other components of a standard price determination process because they have a direct impact on capital expenditure estimates (particularly where the growth in demand is a major driver of system augmentation), and operating and maintenance expenditure (particularly for categories of expenditures that are volume-related, such as electricity for pumping and chemicals for treatment).

In its final decision, the ICRC rejected Icon Water’s proposal that demand uncertainty be handled by forecasting water sales on an annual basis, using a model developed by Professors Breusch and Ward. Instead, the ICRC adopted “conservative” water sales forecasts of 38 GL for each of the first two years of the regulatory period, with water sales forecasts for the remaining years determined as part of the biennial recalibration process.

The Panel’s draft decision adopted multi-year forecasts for the regulatory period developed by its independent expert Cardno, using a purpose-built model.

In finalising its decision for water demand forecasts from 2014-15 to 2017-18,¹⁶⁶ the Panel considered Icon Water’s submission to the Panel’s draft report, and written responses to follow-up questions posed by the Panel following the public hearing.¹⁶⁷ The Panel also asked Cardno to review the matters raised by Icon Water.

This chapter presents the specific matters that the Panel considered in finalising its decision on water sales forecasts and dam releases.

This chapter also presents the Panel’s final decision on forecasts of customer numbers and the number of billable fixtures.

7.2 Forecast water sales

Forecast water sales are used to calculate the volumetric charge to be paid by water customers. This is an inclining block charge, with two consumption tiers:

- tier 1, which is defined as consumption up to 0.548 kL on average per day of the billing period (equivalent to 200 kL per annum), and
- tier 2, which is defined as consumption in excess of 0.548 kL on average per day of the billing period (greater than 200 kL per annum).

In recent years, the imposition (and subsequent lifting) of water restrictions during severe drought conditions has increased the uncertainty of projecting water demand given that it is still not known how much consumption patterns have been changed permanently as a result of the drought. As observed by Frontier Economics in its review of demand forecasts as part of the ESC’s water price review of 2013:¹⁶⁸

“the actual degree to which bounceback will occur and the period of time over which it may occur are subject to considerable uncertainty.”

7.2.1 Summary of the Panel’s draft decision

The Panel’s draft decision was to adopt the multi-year water sales forecasts developed by Cardno as set out in Table 7.2.

Table 7.2: Draft decision - water sales forecasts (GL)

	Actual	Forecasts			
	2013-14	2014-15	2015-16	2016-17	2017-18
Tier 1 water sales	23.76	24.07	24.99	25.85	26.66
Tier 2 water sales	18.17	19.97	19.61	19.32	19.10
Total water sales	41.93	44.04	44.59	45.17	45.76

166 Because it is already part way through this regulatory period, actual demand data is available for the first year of this period (2013-14), so the Panel adopted this data for the first year of the regulatory period.

167 Letter from Industry Panel to Icon Water dated 19 February 2015, available on the Panel’s website.

168 Frontier Economics, *Metropolitan water and sewerage demand review 2013, A report prepared for the Essential Services Commission*, March 2013, p.20.

The main features of Cardno’s forecasting model are summarised in Box 7.2 (with more detail provided in the Panel’s draft report and in Cardno’s own report, which is available on the Panel’s website).¹⁶⁹

The adoption of forecasts for the entire regulatory period represented a departure from both:

- the ICRC’s final decision, which had forecasts for the first two years only, and
- Icon Water’s original proposal (which it reaffirmed in its SOFC), which was that water sales forecasts should be determined annually.

In keeping with common regulatory practice, the Panel considered that multi-year forecasts were appropriate, given the importance of the forecasts in the price determination process and the desirability of ensuring a reasonable measure of price certainty and stability through the regulatory period.

Box 7.2: Main steps of Cardno’s water sales forecasting methodology for draft decision

The forecasting methodology used by Cardno for the purposes of the Panel’s draft decision comprised the following eight main steps:

- 1 Calculate consumption per property**, by four main customer types (freestanding houses, units, government/commercial, and ‘all other’ properties), based on actual consumption data for the period 2001-02 to 2013/14.
- 2 Apply the weather and restrictions data** Icon Water used in applying the Breusch-Ward model to attempt to explain changes in per property consumption and total volumes by customer type.
- 3 Analyse detailed meter-reading data** (4.5 million records from 2006 to 2014) to look for changes and differences in consumption patterns for existing and new freestanding residential housing and units. This analysis revealed that newer houses and units consume less water than older housing stock.
- 4 Adjust the predicted per property consumption to account for changes in the housing stock**, particularly the likely impacts of new, more ‘water efficient’ housing.
- 5 Estimate the growth in the customer base**, by analysing historic trends in customer growth and taking account of ABS population forecasts. For the purpose of forecasting changes in customer numbers, Cardno adopted historic growth rates for different types of dwellings, with the number of customers in residential houses and residential units assumed to increase at their five-year historic average annual growth rate.
- 6 Assess the accuracy of population forecasts**, by comparing population projections made by the ABS and the ACT Government to actual observed population at various time horizons.
- 7 Analyse weather variance distribution** (sensitivity analysis), by examining the variance in the annual averages of the weather data collated for the Breusch-Ward model.
- 8 Analyse the data to determine the split between tier 1 and tier 2 consumption, using a method based on the actual spilt of consumption as observed by Icon Water.**

7.2.2 Responses to the draft decision

Icon Water was the only submitter to comment on water sales forecasts. It questioned the Panel’s draft decision on water sales in its submission in response to the draft report, and provided more information to support its alternative approach in its written response to the Panel’s follow-up questions. Icon Water contended that the water sales forecasts adopted by the Panel “are above the expected level of demand, based on Icon Water’s statistical analysis”.¹⁷⁰

¹⁶⁹ Cardno, *Independent review of ICRC price direction, Technical report*, November 2014.

¹⁷⁰ Icon Water, *Response to Draft Report*, 23 January 2015, p.7.

Icon Water's main arguments can be summarised as follows:

- **The Breusch-Ward model is appropriate for forecasting water sales over the regulatory period:** Icon Water argued that criticisms about the absence of explicit assumptions in the Breusch-Ward model in relation to population and customer numbers were overstated, given that the effects of population growth have been:¹⁷¹

"offset by those of other factors, such as price increases and efficiency savings due to the infiltration of more efficient appliances, moves to more drought-resistant gardens and behavioural change".

Icon Water's preferred approach assumes that the net effects of other factors, including population and efficiency savings, are zero in the medium term, leaving weather and water restrictions as the most significant drivers of water sales.¹⁷²

Icon Water also restated its preference for demand forecasts to be updated on an annual basis.¹⁷³

- **The Panel's forecasts are inconsistent with the ACT Government's water strategy** (which includes initiatives to reduce per capita use and overall consumption of water): Icon Water argued that the increases in water sales projected by the Panel in its draft decision:¹⁷⁴

"appear to be inconsistent with the ACT Government demand management strategy, *ACT Water Strategy 2014-44*, which states that, 'Innovative ways of using water more efficiently, and demand reduction initiatives that reduce per capita use and overall consumption, will continue to be pursued' [emphasis added]".

In contrast to the Panel's forecasts, Icon Water's forecasts reportedly assume that per capita consumption will steadily decline over the regulatory period. In support of this assumption, Icon Water has noted that:¹⁷⁵

"[i]n the last two years, changes in per capita consumption appear to have returned to the long-term trend of gradual decline."

- **The Panel's forecasts do not pass a reasonableness test based on actual 2013-14 sales:** Icon Water noted that the Panel's forecast for 2014-15 represented an increase of 5% on actual water sales in 2013-14. It contended that such a strong rise could not be justified on the basis of a return to average weather conditions following a wetter-than-average or cooler-than-average weather year (which would be consistent with lower-than-average water sales). Icon Water cited data suggesting that rainfall in 2013-14 was almost identical to the long-term average, and mean daily maximum temperature was above the long-term average. Icon Water concluded that:¹⁷⁶

"[b]ased on this reasonable test, it appears that the level of the forecasts in all years is relatively high".

- **The Panel's forecasts are based on arbitrary assumptions about the effects of water restrictions and future trends** that are not supported by historical observations or evidence, and there is no evidence of any objective model selection process or statistical assessment of alternative variable specifications. Icon Water's concerns included: the way that the impact of the various stages of water restrictions was treated in Cardno's model; assumptions about water efficiency savings in established dwellings; the use of the 'water aware' variable in the model to account for other factors; and basing the model on *a priori* preferences without statistical analysis to support choosing that specification over alternative specifications.

171 *ibid.* p.11.

172 On pages 23-24 of its 26 February 2015 written response to the Panel's follow-up questions, Icon Water provided a breakdown of the projected impacts of demographic changes, urban consolidation, new appliances and fixtures, and water use practices (behaviour) on water consumption. Icon Water contended that the cumulative impact of these drivers was between -0.5% to +0.5% per annum.

173 Icon Water, *Response to follow-up questions*, 26 February 2015, p.11.

174 Icon Water, *Response to Draft Report*, 23 January 2015, p.14.

175 Icon Water, *Response to follow-up questions*, 26 February 2015, p.16.

176 Icon Water, *Response to Draft Report*, 23 January 2015, p.14

In its submission to the draft report, Icon Water proposed the adoption of the water sales forecasts for 2015-16 to 2017-18 set out in Table 7.3. In its response to the Panel's follow-up questions, Icon Water also proposed that an estimate of 39.55 GL be adopted for the current 2014-15 regulatory year (which represents a downward revision to the estimate it provided in its submission to the draft report¹⁷⁷). This revised estimate was derived from observed data for water sales and total releases from storage from the first half of 2014-15. Icon Water noted that:¹⁷⁸

"in terms of rainfall over the period 1 December to 22 January, 2014-15 is the fourth wettest year in the last 48 years".

Icon Water's alternative forecasts stabilise at around 42.5 GL for the remainder of the regulatory period.

Table 7.3: Icon Water's proposed water sales forecasts (GL)

	2014-15	2015-16	2016-17	2017-18
Tier 1 water sales	23.92	24.76	25.28	25.75
Tier 2 water sales	15.62	17.79	17.27	16.80
Total water sales	39.55	42.55	42.55	42.54

Source: Forecasts for 2015-16 to 2017-18 are from Icon Water, *Response to Draft Decision*, 23 January 2014, p.17. Forecast for 2014-15 is from Icon Water, *Response to follow-up questions*, 26 February 2015, p.15.

7.2.3 Panel's assessment

In making its draft decision about water sales forecasts for the entire regulatory period, the Panel did not consider Icon Water's Breusch-Ward model to be fit-for-purpose because it was designed only to provide demand forecasts on an *annual* basis. Instead, the Panel sought expert independent advice from Cardno, who developed a stand-alone model to forecast water sales in the ACT, drawing on a comprehensive dataset of around 4.5 million billing records in its analysis to quantify the effect of new water-efficient housing.

While relying on Cardno's expertise, the Panel questioned Cardno about the assumptions underpinning the model, the variables factored into the demand forecasts, and the data sources. The Panel's scrutiny of Cardno's model and its outputs was informed, in part, by the Panel's knowledge of other models used by water businesses and regulators in forecasting water demand within the context of a price determination process.¹⁷⁹

Ultimately, in its draft decision, the Panel adopted Cardno's model and water sales forecasts (as being preferable to Icon Water's proposed approach) on the basis that:

- Cardno's model approach is consistent with those utilised in other regulatory determinations
 - the model explicitly incorporates the key variables that are commonly used in demand models, such as customer numbers, the weather, and demographic changes
- the assumptions and inputs underpinning Cardno's model appear to be reasonable and robust
 - the model uses an evidence-based approach to account for changes in water efficiency (through a sophisticated analysis of changes to the housing stock in the ACT), and

177 In its 23 January 2015 response to the Panel's draft report, Icon Water provided an estimate of 40.58 GL for 2014-15, comprising 24.07 GL tier 1 and 16.50 GL tier 2.

178 *ibid*, p.23.

179 In particular, the Panel notes work undertaken by Frontier Economics who reviewed the various models used by Victorian water businesses to forecast water consumption as part of the Essential Services Commission's most recent water price determination in 2013, which was made within a similar context to the ACT in terms of the uncertainty around some of the key drivers of water demand. See Frontier Economics, *Metropolitan water and sewerage demand review 2013, A report prepared for the Essential Services Commission*, March 2013.

- the Panel was able to scrutinise the basis of the model and the use of the outputs in other cost components (such as in making forecasts of water dam releases, which are used to determine the allowance to be made for the WAC), thereby resulting in an internally consistent price direction.

In moving from its draft to final decision, the Panel considered whether there was any evidence provided in the submissions from Icon Water to cause it to change its view about water sales forecasts. In doing so, the Panel asked Cardno to review the matters raised by Icon Water and to undertake additional analysis. (This analysis is summarised in a report prepared by Cardno, which is available on the Panel’s website.¹⁸⁰)

Drawing on Cardno’s additional analysis, the Panel has carefully considered the various contentions made by Icon Water in relation to its water sales forecasts, and the Panel’s responses are presented in Table 7.4 below.

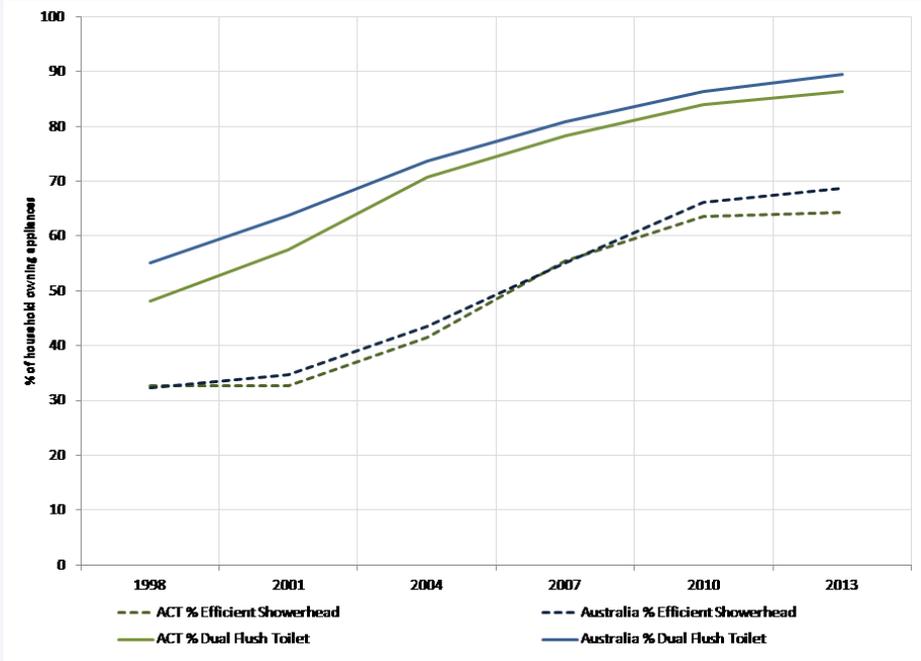
Table 7.4: The Panel’s responses to Icon Water’s contentions about water sales forecasts

Icon’s contention	Panel’s response
Breusch-Ward model is appropriate for forecasting water sales over the regulatory period	<ul style="list-style-type: none"> • While the Panel accepts that the Breusch-Ward model may be appropriate for forecasting water sales on a short-term basis – for which it was designed under Icon Water’s preferred form of control – the Panel does not regard it to be robust enough to provide multi-year forecasts over the regulatory period. • Unlike most other water demand forecasting models adopted by regulators in Australia, the Breusch-Ward model does not include explicit reference to population growth and/or customer numbers. Instead, the Breusch-Ward model effectively uses past average weather as its only explicit predictor, resulting in close to constant demand forecasts over the regulatory period. • In contrast, the Panel notes that the Cardno’s model is consistent with common regulatory practice (incorporating customer numbers, the weather, demographic changes and customer behaviour as explicit predictors) and is therefore more suitable than the Breusch-Ward model for generating demand forecasts on a multi-year basis over the regulatory period.
<p>The Panel’s forecasts are inconsistent with the ACT Government’s water strategy</p> <p>Icon Water’s forecasts assume per capita consumption will steadily decline over the regulatory period</p>	<ul style="list-style-type: none"> • The Panel does not consider its water sales forecasts – which suggest there will be modest increases in demand over the regulatory period – to be inconsistent with the ACT Government’s water strategy. • The Panel notes that the ACT Government’s latest water strategy covers a reasonably long timeframe (from 2014 until 2044) over which reductions in per capita consumption may be achieved, and does not assume that reductions will occur in every year. Non-restriction initiatives to reduce per capita water consumption (eg, greater use of recycled water) are likely to have long lead times. There is no evidence that significant inroads will be made within the current regulatory period, particularly since the Inner North Stormwater Reduction Network cited by Icon Water in the context of the displacement of potable water sales is still subject to a five-year trial to test the efficacy of supplying non-potable water.¹⁸¹ • The Panel notes that the ACT Government’s water strategy document also states that future population growth will “significantly increase water demand”.¹⁸² • In making its assumption that per capita consumption will steadily decline over the regulatory period, Icon Water appears to be contending that the use of water efficient appliances and fixtures will continue to exert the same dampening impact on water consumption as they have in the past. The Panel questions this assumption, given that there is evidence that market penetration of water-saving products such as showerheads and dual flush toilets is reaching its limits (see Figure 7.1 below), but notes that there is still uncertainty about the impact of more water efficient appliances on water demand.

180 Cardno, *Briefing Note – Response to Icon Water comments on Industry Panel Draft Report*, March 2015.

181 ACT Government, *Canberra Integrated Urban Waterways Project, Final Report*, February 2014, p.39.

182 ACT Government, *ACT Water Strategy 2014-44, Striking the Balance*, August 2014, p.21.

Icon's contention	Panel's response
	<p data-bbox="480 237 986 264">Figure 7.1: Market penetration of water-saving products</p>  <p data-bbox="480 1003 1262 1025"><i>Source: Australian Bureau of Statistics series 4602.0.55.003 – Environmental Issues Water Use and Conservation.</i></p> <ul data-bbox="480 1048 1406 1467" style="list-style-type: none"> • In the Panel's view, Icon Water has not presented a convincing argument why the recent trend of per capita increases and 'stabilisation' in the ACT following the lifting of water restrictions would revert to the long-term trend of per capita decline, other than to assume that what was true for the past 15 years (which covered a period of drought and restrictions) must continue to be true for the next five. Given that there is evidence of stable or rising per capita consumption trends in other cities¹⁸³ (albeit mixed), the stable per capita consumption assumed by other utilities in demand forecasting, and the evidence of saturation of water efficient appliances, the Panel is not inclined to accept Icon Water's contention that per capita consumption in the ACT will decline over the regulatory period. • The Panel notes that other demand forecast regulatory decisions have assumed rising per capita consumption as part of a 'post drought' rebound. However, despite the recent rise witnessed in the ACT,¹⁸⁴ there is equally no strong evidence per capita consumption will continue to rise. Therefore, the approximately stable per capita consumption generated by Cardno's model – which accounts only for the relatively certain changes in per capita consumption driven by observed housing construction patterns and consumption data – seems to be reasonable.

183 According to the National Water Commission Performance Report; 6 out of 11 of Australia's largest utilities experienced rises in per-property consumption in *both* 2012 and 2013, and 10 out of 11 had a rise in one of those two years. Indeed the only utility with recent falling per capita consumption is Water Corporation.

184 Icon Water's assertion that per capita consumption in the ACT has "returned to its long-term decline" in the past two years appears to be based on using its forecast model with average weather for 2013 and 2014, instead of using observed data and adjusting for a 'weather effect'. Using the latter approach shows a rising per capita consumption, even after weather effects are taken into account.

Icon's contention	Panel's response
<p>The Panel's forecasts do not pass a reasonableness test based on 2013-14 actual sales</p> <p>The Panel should base its 2014-15 forecast on actual data that is now available (and which reflects the wetter-than-average summer)</p>	<ul style="list-style-type: none"> The Panel's revised model predicts a 2.9% increase in water sales in 2014-15 compared to the 2013-14 actual. This is driven partly by the assumed long-term 'average' weather conditions, and partly by the growth in connected properties (around 2.5%, based on the trend in growth in water customer numbers over the past five years). The Panel does not consider a 2.9% annual increase to be unreasonable given that, since water restrictions were lifted in 2011-12, annual growth rates in total water sales were 14.2% in 2012-13 and 3.7% in 2013-14. (2012-13 was a year of 'average' evaporation,¹⁸⁵ while 2013-14 was a relatively cool year.) The Panel accepts that Cardno's model may over-forecast water sales for the current regulatory year based on the partial data that have become available. Cardno has based its projections on the basis of <i>average</i> climatic conditions, and so the 2014-15 forecast does not reflect the wet summer that has been experienced in Canberra this year. However, the Panel does not consider its likely over-forecast to be unreasonable, noting that there is a possibility that the 2015-16 projection by the model may <i>under-forecast</i> water sales if next summer turns out to be unusually dry (as it was in 2002-2007, 2009 and 2010). The model adopted by the Panel predicts demand on the basis of 'average' weather. While there may be a case for updating the model to include data that would improve knowledge of an 'average' year, the Panel's view is that this principle does not extend to including partial actual data within the current regulatory year, which merely reflects the specific weather conditions of that period. The Panel sees its role as setting water sales forecasts based on what a reasonable regulator would have set <i>before</i> knowing the particular climate conditions of the year. Regulatory demand models are not normally designed to forecast exact year-to-year outcomes; rather, they focus on the average demand over the whole regulatory period. Inevitably, by their very nature, forecasting models will over-predict water consumption in some years (when actual weather turns out to be cooler/wetter than 'average'), and under-forecast in others (when actual weather is drier/hotter). This is the nature of demand risk. (The purpose of the deadband mechanism adopted by the Panel in its final decision is to manage this risk and share it appropriately between Icon Water and customers.)
<p>The Panel's forecasts are based on arbitrary assumptions about the effects of water restrictions and future trends that are not supported by historical observations or evidence, and there is no evidence of any objective model selection process or statistical assessment of alternative variable specifications</p>	<ul style="list-style-type: none"> After considering the matters raised by Icon Water, Cardno agreed that the use of a simple integer restrictions variable in its annual regression model at the draft decision stage was too simplistic and increased model inaccuracy. In response to Icon Water's feedback, Cardno revised the weightings used in its model, which has improved the historical fit of the model from +/- 4.5% (draft report model) to +/- 3% (at the 80% confidence level). This has also resulted in a higher impact of permanent water conservation measures on future water sales, lowering the 'baseline' for future water sales forecasts. In terms of the 'water aware' variable, the Panel notes that Cardno tested a number of alternative increasing variables (eg, population, housing effect, account numbers), but the choice of the cumulative sum of the restrictions value was selected because it was: <ul style="list-style-type: none"> actually related in some way to restrictions, which is the variable driving behavioural change, and better able to explain the historical demand. It was therefore representative of a 'ratcheting' up of behavioural change and domestic infrastructure in response to increasing levels of restrictions. The Panel notes that the main reason why future values of 'water awareness' are inconsistent with the historical values is that Cardno explicitly accounted for some of the future water efficiency measured captured in 'water aware' separately - through the analysis of changes in the housing stock and changes in consumption patterns by housing type. If Cardno were to project 'water aware' going forward in addition to undertaking its housing analysis, there would be an element of 'double counting'.

As stated in Table 7.4, Cardno agreed with Icon Water's arguments that the use of a simple integer restrictions variable in its annual regression model at the draft decision stage was overly simplistic and resulted in increased model inaccuracy. On the basis of Icon Water's feedback, Cardno made adjustments to the coefficients used in its model to account for the impact of different stages of water restrictions. This has also resulted in a higher impact of permanent water conservation measures on future water sales, lowering the 'baseline' for future water sales forecasts. The Panel accepted this adjustment as being appropriate.

¹⁸⁵ All other things being equal, high levels of evaporation will boost water sales, while low evaporation is consistent with lower water demand.

However, as detailed in the table, the Panel has not accepted any of the other contentions made by Icon Water.

The Panel remains confident that the Cardno’s model represents a robust and reasonable basis (and is preferable to the Breusch-Ward model) for forecasting water sales over the regulatory period, noting that:

- while dissatisfied with the forecasts generated by the model and with technical aspects of some of the coefficients used in the modelling, Icon Water has not contended the choice of the predictor variables used in Cardno’s model, nor that the *overarching* approach adopted by Cardno is misconceived
- Cardno’s assessment of the refinements it has made to its model is that the historical fit of the model (ie, the degree of accuracy of the model in predicting water sales in past years) improved from +/- 4.5% (draft decision version) to +/- 3% at the 80% confidence limit,¹⁸⁶ and
- in any case, the Panel has adopted a separate mechanism (in the form of the deadband) to safeguard against the risk that forecasts generated by Cardno’s model are materially different from actual water sales.

Accordingly, the Panel has decided to adopt the new water sales forecasts recommended by Cardno, which have been generated from Cardno’s refined model. These forecasts are presented in the next section.

7.2.4 Panel’s final decision on forecast water sales

The Panel has adopted actual 2013-14 data for the first year of the regulatory period, and has accepted the revised forecasts provided by Cardno for the last four years of the regulatory period. These are presented in Table 7.5, and are between 2.0% and 2.2% lower than its draft decision. As discussed above, this downward revision reflects the refinements made to Cardno’s forecasting model in the way that the impact of water restrictions on water sales is taken into account, in response to submissions from Icon Water.

The final row of this table also presents the dam release forecasts implied by the water sales forecasts, which the Panel has calculated using the same ratio of water releases to water sales adopted by the ICRC.¹⁸⁷

Table 7.5: Final decision - Water sales forecasts (GL)

	Actual	Forecasts			
	2013-14	2014-15	2015-16	2016-17	2017-18
Tier 1 water sales	23.76	24.53	25.31	26.04	26.72
Tier 2 water sales	18.17	18.62	18.35	18.16	18.04
Total water sales	41.93	43.15	43.67	44.20	44.76
Dam releases	49.04	50.46	51.07	51.70	52.35

186 In other words, Cardno is 80% certain that the forecast generated by its model should be within 3% of the actual consumption, for the assumed weather conditions and population.

187 Historically, water releases have been around 15% higher than water sales. The difference is made up of network losses (or leakage) and water sales to Queanbeyan City Council. See Attachment 2 to the *ICRC Price Direction: Pricing Model - Regulated Water and Sewerage Services*, June 2013 at <http://www.icrc.act.gov.au/water-and-sewerage/price-directions/>.

In summary, the main reasons for the Panel's adoption of these forecasts and approach to demand forecasting are:

- The use of multi-year forecasts across the regulatory period represents common regulatory practice. The Panel considers its approach to be preferable to setting forecasts on an annual or biennial basis, because it provides more certainty and price stability.
- The Panel considers Cardno's modelling approach to forecast water sales to be reasonable, on the basis that it:
 - is consistent with models typically accepted by Australian regulators to forecast water demand, particularly because it includes customer numbers, the weather, and demographic changes as explicit explanatory variables
 - uses an evidence-based approach to account for changes in water efficiency (through a sophisticated analysis of changes to the housing stock in the ACT)
 - makes reasonable assumptions about the extent of the 'bounceback' in per capita consumption, given the available evidence, and
 - has a reasonably good fit when used to predict actual historical data, leading to an acceptable level of expected error for predictions (with an 80% probability of being within 3% of the actual value).
- Recognising the inherent unpredictability about making water sales forecast, the Panel is adopting other mechanisms - a hybrid price and revenue cap, with a demand volatility adjustment mechanism - to account for any significant deviations between actual and forecast water sales because it considers this to be the preferable way of sharing the 'demand risk' between the water utility and water customers (see Chapter 3).

7.3 Forecast customer numbers and billable fixtures

Forecast water and sewerage customer numbers are used to determine the fixed annual service charges for water and sewerage respectively. Forecast billable fixture numbers are used to calculate the additional supply charge payable by non-residential customers for sewerage services.

7.3.1 Summary of the Panel's draft decision

In the Panel's draft decision, five-year historic growth rates were used to derive forecast customer numbers and billable fixture numbers. This was consistent with the approach adopted by the ICRC, although the Panel's growth rates were based on the most recent five-year period of actual data available (ie, 2008-09 to 2013-14):

- for water customer numbers, the Panel applied an annual growth rate of 2.48% to Icon Water's revised estimate of the number of water supply charges in 2013-14 (provided to the Panel in August 2014)
- for sewerage customer numbers, it applied an annual growth rate of 2.50% to Icon Water's revised estimate of the number of sewerage supply charges in 2013-14, and
- for billable fixtures numbers, it applied an annual growth rate of 2.20% to Icon Water's revised estimate of the number of billable fixtures in 2013-14.

7.3.2 Responses to the draft decision

In its submission to the Panel's draft report, Icon Water stated that it:¹⁸⁸

"supports the Panel's draft decision in relation to forecast supply and fixture charge quantities".

No other submissions were made about this matter.

¹⁸⁸ Icon Water, *Response to Draft Report*, 23 January 2015, p.29.

7.3.3 Panel's assessment

Given that no contentions were made against the Panel's draft decision, nor any new evidence presented, the Panel has reaffirmed its draft decision on customer numbers and billable fixtures.

7.3.4 Panel's final decision on customer numbers and billable fixtures

The Panel's final decision is to adopt the customer numbers and billable fixture numbers in Table 7.6 below.

Table 7.6: Final decision - Customer numbers and billable fixtures

	Actual	Forecasts			
	2013-14	2014-15	2015-16	2016-17	2017-18
Water customers	162,951	166,992	171,134	175,378	179,728
Sewerage customers	162,609	166,678	170,849	175,124	179,506
Billable fixtures	60,274	61,597	62,949	64,331	65,743

The reason underpinning this decision is that the forecasts are derived from updated historic growth rates. The Panel considers this to be a robust methodological approach and notes that it is broadly consistent with the approach adopted by the ICRC, and has been supported by Icon Water.

8 Net revenue requirement

Box 8.1: Summary of the Panel's final decision

The Panel's final decision on Icon Water's net revenue requirement is set out in Table 8.1 for water and Table 8.2 for sewerage services.

Table 8.1: Final decision - Water net revenue requirement (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Return on capital	65.19	67.12	68.77	70.46	72.54
Depreciation	24.63	26.12	27.45	28.77	30.30
Operating expenditure	62.75	66.15	66.91	67.95	70.33
Water Abstraction Charge	25.01	27.25	27.57	27.92	28.27
Utilities Network Facilities Tax	4.10	4.52	4.74	4.97	5.09
Net tax liabilities	0.35	0.45	0.81	1.20	1.40
Total revenue requirement	182.03	191.61	196.26	201.27	207.93
<i>Less other income and notional CSO payments</i>	<i>16.22</i>	<i>16.56</i>	<i>16.90</i>	<i>17.25</i>	<i>17.61</i>
Net revenue requirement	165.82	175.05	179.36	184.01	190.31

Table 8.2: Final decision - Sewerage net revenue requirement (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Return on capital	31.29	32.62	34.97	39.02	43.12
Depreciation	16.64	19.13	20.23	23.42	26.94
Operating expenditure	67.70	69.29	70.64	73.33	76.27
Utilities Network Facilities Tax	3.39	3.72	3.89	4.07	4.25
Net tax liabilities	1.19	1.30	1.60	1.22	0.82
Total revenue requirement	120.22	126.05	131.33	141.06	151.40
<i>Less other income and notional CSO payments</i>	<i>10.94</i>	<i>11.21</i>	<i>11.48</i>	<i>11.76</i>	<i>12.05</i>
Net revenue requirement	109.27	114.84	119.84	129.30	139.35

The Panel's final decision on Icon Water's **net revenue requirement** is approximately:

- \$0.54 million (0.06%) **higher** for water services than the draft decision, and
- \$0.17 million (0.03%) **lower** for sewerage services than the draft decision.

These differences reflect the Panel's decisions to:

- revise the provision that was made in the draft decision for capital expenditure, depreciation and operating expenditure (see Chapters 4 and 6), and
- treat the \$0.1 million that Icon Water has advised the Panel was spent on the Cotter Dam Discovery Trail in 2013-14 as if it was funded through a Community Service Obligation.

Given developments since its draft decision was made, the Panel's final decision no longer includes the 'true up' mechanism that was designed to adjust for over- or under-recovery of revenue as a result of adopting the ICRC's prices for 2013-14 and 2014-15.

8.1 Introduction

Under the methodology adopted by the Panel (which is the approach most widely used and accepted in Australia), the sum of the different 'building blocks' discussed in Chapters 4 to 6 represents the total revenue requirement of Icon Water over the regulatory period.

From this total revenue requirement, deductions are made for:

- income that Icon Water is expected to receive from other sources, and
- expenditure that Icon Water has incurred, or is expected to incur, carrying out works that should be treated as if funded through a community service obligation (CSO) over the regulatory period.

This results in the **net** revenue requirement, which is used to calculate the prices to be charged for water and sewerage services.

As discussed in previous chapters, the Panel has made minor revisions to some of the building block components since its draft decision. The sections below consolidate and summarise the impact of these revisions on Icon Water's net revenue requirement.

8.2 Summary of the Panel's draft decision

The Panel's draft decision on Icon Water's net revenue requirement is set out in Table 8.3 and Table 8.4. The final row of these tables also sets out the provision that the Panel made in the draft decision for the 'true up' adjustment, which was designed to take into account the value of any over- or under-recovery of the net revenue requirement by Icon Water in the first two years of the regulatory period.¹⁸⁹

Table 8.3: Draft decision – Water net revenue requirement (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Return on capital	64.99	66.71	68.37	70.10	72.32
Depreciation	24.52	25.86	27.14	28.49	30.09
Operating expenditure	62.75	66.15	66.91	67.94	70.32
Water Abstraction Charge	25.01	27.81	28.17	28.53	28.90
Utilities Network Facilities Tax	4.10	4.52	4.74	4.97	5.09
Net tax liabilities	0.30	0.91	0.97	1.02	0.83
Total revenue requirement	181.68	191.96	196.29	201.05	207.56
<i>Less other income and notional CSO payments</i>	<i>16.22</i>	<i>16.55</i>	<i>16.90</i>	<i>17.25</i>	<i>17.61</i>
Net revenue requirement	165.46	175.41	179.39	183.80	189.95
'True up' adjustment*	-2.59	-8.10	na	na	na

* A negative true up amount implies an over-recovery while a positive true up amount implies an under-recovery.

189 For a more detailed discussion of the 'true up' mechanism, see section 13.5 in Chapter 13 of the draft report.

Table 8.4: Draft decision – Sewerage net revenue requirement (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Return on capital	31.29	32.62	35.02	39.26	43.70
Depreciation	16.64	18.06	20.19	23.52	27.26
Operating expenditure	67.70	69.29	70.64	73.33	76.27
Utilities Network Facilities Tax	3.39	3.72	3.89	4.07	4.25
Net tax liabilities	1.19	1.46	1.60	1.18	0.70
Total revenue requirement	120.22	125.14	131.34	141.35	152.18
<i>Less other income and notional CSO payments</i>	<i>10.94</i>	<i>11.21</i>	<i>11.48</i>	<i>11.76</i>	<i>12.05</i>
Net revenue requirement	109.27	113.93	119.86	129.58	140.13
'True up' adjustment*	0.26	-0.76	na	na	na

* A negative true up amount implies an over-recovery while a positive true up amount implies an under-recovery.

8.3 Total revenue requirement

Table 8.5 and Table 8.6 set out the Panel's final decision on Icon Water's total revenue requirement for water and sewerage services, which has been calculated having regard to the decisions set out in Chapters 4 to 6 on the value of each of the building blocks.

Table 8.5: Final decision – Water total revenue requirement (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
Return on capital	65.19	67.12	68.77	70.46	72.54
Depreciation	24.63	26.12	27.45	28.77	30.30
Operating expenditure	62.75	66.15	66.91	67.95	70.33
Water Abstraction Charge	25.01	27.25	27.57	27.92	28.27
Utilities Network Facilities Tax	4.10	4.52	4.74	4.97	5.09
Net tax liabilities	0.35	0.45	0.81	1.20	1.40
Total revenue requirement	182.03	191.61	196.26	201.27	207.93

Table 8.6: Final decision – Sewerage total revenue requirement (\$m, nominal)

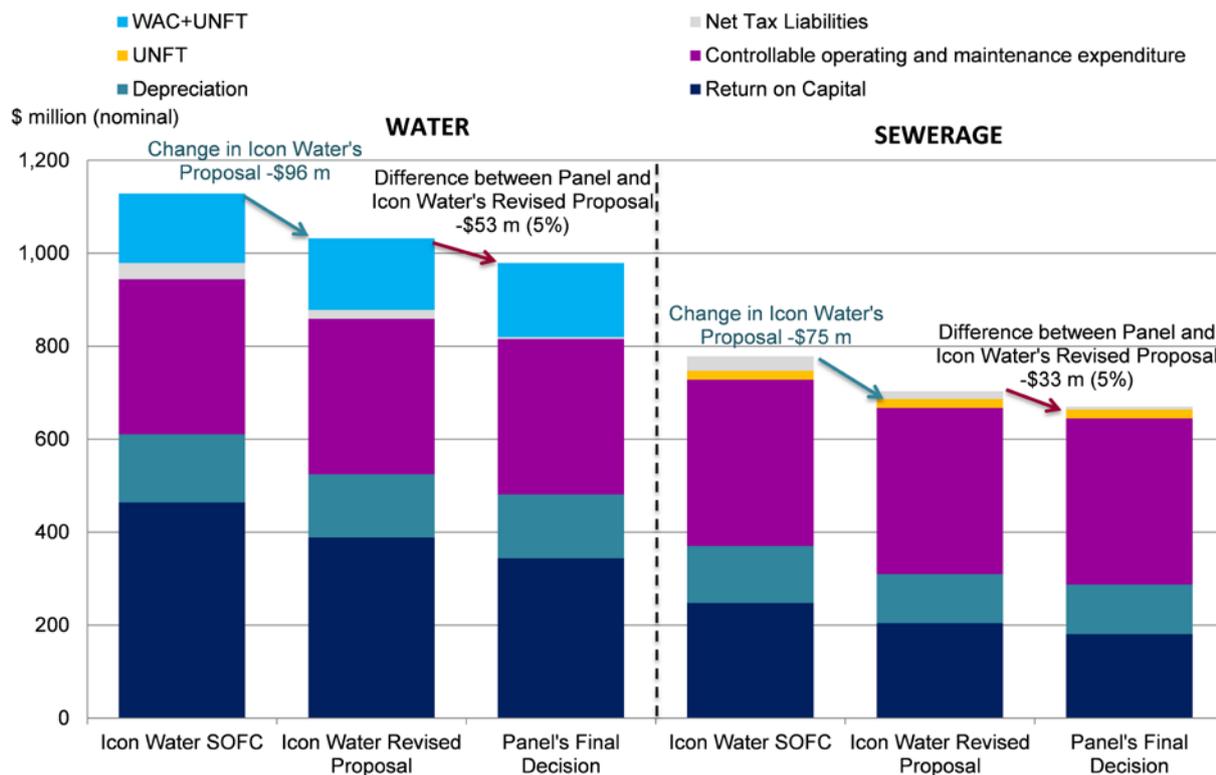
	2013-14	2014-15	2015-16	2016-17	2017-18
Return on capital	31.29	32.62	34.97	39.02	43.12
Depreciation	16.64	19.13	20.23	23.42	26.94
Operating expenditure	67.70	69.29	70.64	73.33	76.27
Utilities Network Facilities Tax	3.39	3.72	3.89	4.07	4.25
Net tax liabilities	1.19	1.30	1.60	1.22	0.82
Total revenue requirement	120.22	126.05	131.33	141.06	151.40

The net impact of the adjustments made by the Panel in its final decision on Icon Water's total revenue requirement is approximately:

- \$0.55 million (0.06%) **higher** for water services than the draft decision, and
- \$0.17 million (0.03%) **lower** for sewerage services than the draft decision.

Figure 8.1 compares the Panel's final decision on the total revenue requirement with Icon Water's proposal (distinguishing between Icon Water's original proposal in its July 2014 Statement of Facts and Contentions, and its revised proposal following its submission to the Panel's draft report and response to the Panel's follow-up questions).

Figure 8.1: Comparison of total revenue requirement (\$m, nominal)



As illustrated in Figure 8.1, the Panel's final decision on Icon Water's total revenue requirement for both water and sewerage services is around 5% lower than Icon Water's revised proposal. The Panel's final decision to adopt a rate of return on capital that is lower than that contended by Icon Water (see Chapter 5) is the major factor explaining this difference.

Further, Icon Water's revised proposal provides for a much lower total revenue requirement than was proposed in its SOFC (water: \$96 million lower, sewerage: \$75 million lower). This difference primarily reflects Icon Water's decision to propose a lower WACC than it proposed in its original SOFC (see Chapter 5).

8.4 Deductions for other sources of income and notional CSO payments

Icon Water derives revenue from a number of sources unrelated to its regulated water and sewerage services, which must be deducted from its total revenue requirement to determine the net revenue to be recovered from the charges for these services. These include:

- charges for bulk water provided to the Queanbeyan City Council
- special purpose (subvention) payments by the Commonwealth,¹⁹⁰ and
- miscellaneous charges and income from other sources.

In keeping with its draft decision, the Panel has adopted:

- the same estimates for these income sources that the ICRC did in its final decision for 2013-14 and 2014-15, and
- the same growth that the ICRC assumed for these income sources between 2013-14 and 2014-15 in the last three years of the regulatory period.

Icon Water undertakes a number of activities that can be better characterised as CSOs rather than activities related to the provision of regulated water and sewerage services, and so should not be recovered through water and sewerage charges. This includes expenditure on:

- the Cotter Dam Discovery Trail
- the greenhouse gas abatement activities associated with the water security projects, and
- the Uriarra Village sewerage services, over and above what would be recovered from local residents through the standard sewerage charge.

No submissions were made to the Panel in response to its draft decision on the treatment of such expenditures. Thus, as it did in the draft decision, the Panel's final decision has been to treat these expenditures in the same manner as the ICRC, namely as if they were funded by the ACT Government through a CSO.

The Panel adopted the same broad approach as the ICRC to calculate the value of these projects, except that it calculated the depreciation component using asset-specific economic lives.¹⁹¹ The only other minor modification made to the ICRC's calculations is to include an additional \$0.1 million of expenditure on the Cotter Dam Discovery Trail that was incurred by Icon Water in 2013-14 (as discussed in Chapter 4).

Table 8.7 sets out the Panel's final decision on the deductions to be made from Icon Water's total water and sewerage revenue requirement over the regulatory period.

190 These payments are made to reflect the cost disadvantage of operating in an inland location in the provision of water and wastewater service for the national capital.

191 The economic lives for these three projects were:

- 10 years for the Cotter Discovery Trail - this assumption was based on information that Icon Water provided on the assumed life for outdoor landscaping
- 30 years for the Uriarra Package Plant - this assumption was based on advice contained in Cardno's original report to the ICRC on the assumed life for a sewerage plant, and
- 125 years for the greenhouse gas abatement activities - this assumption was based on the weighted average economic life of the ECD and M2G projects.

Table 8.7: Final decision – Revenue deductions (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
	Water				
Income from other sources	14.45	14.82	15.19	15.57	15.96
Notional CSOs	1.76	1.74	1.71	1.69	1.66
Total deductions	16.22	16.56	16.90	17.25	17.61
	Sewerage				
Income from other sources	10.35	10.61	10.88	11.15	11.44
Notional CSO	0.59	0.60	0.60	0.61	0.62
Total deductions	10.94	11.21	11.48	11.76	12.05

8.5 Net revenue requirement

To calculate the net revenue requirement for water and sewerage services, the Panel deducted the amounts set out in Table 8.7 from the total revenue requirements in Table 8.5 and Table 8.6. These calculations are set out in Table 8.8.

Table 8.8: Final decision – Net revenue requirement (\$m, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
	Water				
Total revenue requirement	182.03	191.61	196.26	201.27	207.93
<i>Less other income and notional CSOs</i>	<i>16.22</i>	<i>16.56</i>	<i>16.90</i>	<i>17.25</i>	<i>17.61</i>
Net revenue requirement	165.82	175.05	179.36	184.01	190.31
	Sewerage				
Total revenue requirement	120.22	126.05	131.33	141.06	151.40
<i>Less other income and notional CSOs</i>	<i>10.94</i>	<i>11.21</i>	<i>11.48</i>	<i>11.76</i>	<i>12.05</i>
Net revenue requirement	109.27	114.84	119.84	129.30	139.35

As discussed in section 8.2, in making its draft decision, the Panel proposed the use of a ‘true up’ mechanism to adjust for any over- or under-recovery of revenue by Icon Water as a result of the Panel’s decision to adopt the ICRC’s prices for the first two years of the regulatory period. At that time, the Panel assessed it was probable that Icon Water would **over-recover** revenue on the basis of the prices set by the ICRC in 2013-14 and 2014-15 (in comparison to the prices that would have been set by the Panel for those years), and the expected demand for services in 2013-14 and 2014-15, and it was preferable to make an adjustment.

With demand in 2014-15 now forecast to be lower than what was expected at the time the draft decision was made (see Chapter 7), it is no longer clear that Icon Water will over- or under-recover revenue over the first two years of the regulatory period. Therefore, the Panel has decided not to make any provision for a true up in its final decision.

In reaching its final decision, the Panel has decided to focus on a smooth transition to the remaining three years of the regulatory period, and not to include a provision for ‘true up’ for 2013-14 and 2014-15.

9 Prices for water and sewerage services

Box 9.1: Summary of the Panel's final decision

The Panel's final decision about the price path for the maximum charges for water and sewerage services is set out in Table 9.1

Table 9.1: Final decision - Maximum water and sewerage charges and price path

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices set by the ICRC and paid by customers		Panel's final decision		
			Price path for the remaining years*		
Water					
Fixed (\$ pa)	100.00	102.56	$(1+\text{CPI}) \times (1-3.4\%)$	$(1+\text{CPI})$	$(1+\text{CPI})$
Tier 1 (0-200 kL pa) (\$/kL)	2.55	2.64	$(1+\text{CPI}) \times (1-3.4\%)$	$(1+\text{CPI})$	$(1+\text{CPI})$
Tier 2 (200+ kL pa) (\$/kL)	5.10	5.29	$(1+\text{CPI}) \times (1-3.4\%)$	$(1+\text{CPI})$	$(1+\text{CPI})$
Sewerage					
Supply charge (\$ pa)	492.02	505.41	$(1+\text{CPI}) \times (1+1.4\%)$	$(1+\text{CPI})$	$(1+\text{CPI})$
Fixtures charge - non-residential customers (\$ pa)	481.18	494.28	$(1+\text{CPI}) \times (1+1.4\%)$	$(1+\text{CPI})$	$(1+\text{CPI})$

* Note: The price path is also subject to the operation of the cost pass-through mechanism.

For water charges, the Panel's final decision is to adopt a price path for water that provides for higher maximum water tariffs than it determined at the draft decision stage. This chiefly reflects the adoption of lower water sales forecasts.

For sewerage services, the Panel's final decision is for a lower increase in charges in 2015-16 than determined in the draft decision. The Panel has maintained its draft decision for sewerage charges to rise in line with inflation (as measured by CPI) for the final two years of the regulatory period.

9.1 Introduction

Having established the target revenue in each year of the regulatory period (see Chapter 8), a price path is set to recover the net present value of the target revenue. In theory, many different price paths can be constructed to recover the same net present value of target revenue but, in setting the price path for water and sewerage services, the Panel was mindful of clause (e) of its terms of reference, which require "consideration of the provision of sufficient flexibility in price setting across the regulatory period to minimise the impact of significant price fluctuations".

Other matters taken into account by the Panel in setting the price path included:

- maintaining the current tariff structure, having determined at the draft decision stage that it was not pragmatic to review tariff structures due to time and resource constraints
- adopting the maximum prices determined by the ICRC in the original price direction for 2013-14 and 2014-15 since these have already been used to calculate customer bills for the first two years of the regulatory period, and the Panel did not want to change these retrospectively, and
- sound regulatory practice in providing price stability over the regulatory period.

This chapter sets out the Panel's final decision on the maximum water and sewerage charges and price path for the regulatory period, and its estimate of indicative maximum charges under its substituted price direction.

9.2 Water price path and indicative maximum charges

The tariff structure for water services consists of:

- a fixed supply charge, and
- a two-tier inclining block volumetric price, with tier 1 prices applying to consumption between 0 and 0.584 kL/day¹⁹² and tier 2 prices applying to consumption in excess of 0.548 kL/day.

Under the building block methodology adopted by the Panel, the maximum prices for water are determined by *dividing*:

- the present value of Icon Water's net revenue requirement for water services between 1 July 2015 and 30 June 2018 (see Table 8.1 in Chapter 8) *by*
- the expected demand for water services (water customer numbers and tier 1 and tier 2 water sales) over the period from 1 July 2015 to 30 June 2018 (see Table 7.1 in Chapter 7).

9.2.1 Summary of the Panel's draft decision

In its draft decision, the Panel adopted the maximum water charges determined by the ICRC in the original price direction for 2013-14 and 2014-15, with the price path for the remaining years of the regulatory period as set out in Table 9.2 below.

Table 9.2: Draft decision – Maximum water charges and price path

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices payable under original price direction		Price path for remaining years*		
Fixed (\$ pa)	100	102.56	$(1+\text{CPI})\times(1-7.5\%)$	$(1+\text{CPI})\times(1-2.4\%)$	$(1+\text{CPI})\times(1-2.4\%)$
Tier 1 (0-200 kL pa) (\$/kL)	2.55	2.64	$(1+\text{CPI})\times(1-7.5\%)$	$(1+\text{CPI})\times(1-2.4\%)$	$(1+\text{CPI})\times(1-2.4\%)$
Tier 2 (200+ kL pa) (\$/kL)	5.10	5.29	$(1+\text{CPI})\times(1-7.5\%)$	$(1+\text{CPI})\times(1-2.4\%)$	$(1+\text{CPI})\times(1-2.4\%)$

* Also subject to operation of cost pass-through mechanism.

In setting this price path, the Panel wanted to promote price (and bill) stability by avoiding the situation where prices fell significantly in 2015-16 followed by increases in subsequent years.

Assuming that the cost pass-through mechanism is not triggered and that inflation rate (as measured by CPI) is 2.5% per annum, this price path would have resulted in a 5.2% reduction in maximum water charges in 2015-16, with charges remaining constant in nominal terms in the remaining two years of the regulatory period.

9.2.2 Responses to the draft decision

The only submission received by the Panel in relation to the price path was from Icon Water, which argued that a constant real price path should be adopted.¹⁹³

9.2.3 Panel's assessment and final decision on water price path

As detailed in previous chapters, the Panel's final decision on the net revenue requirement and demand forecasts – which are used to calculate the charges for water – differ from its draft decision. The most material change is the downward revision to water sales forecasts (see Chapter 7), which has the effect of increasing the water tariffs needed to generate Icon Water's net revenue requirement.

192 Equivalent to 50 kL per quarter or 200 kL pa.

193 Icon Water, *Response to Draft Report*, 23 January 2015, p.24.

While the Panel's final decision still gives rise to a reduction in water prices, this reduction is a little lower than that determined at the draft report stage. To satisfy the requirement in the terms of reference to minimise the impact of significant price fluctuations, the Panel has decided to adopt a revised price path that:

- limits the size of the price (and hence customer bill) change in 2015-16, and
- better aligns forecast revenue with the target net revenue requirement in the final year of the regulatory period, thereby reducing the likelihood of any substantial change in bills in the first year of the next regulatory period.

In addition, in setting its price path, the Panel has maintained the existing tariff structure (ie, the balance between the fixed and volumetric charges). At the draft decision stage, the Panel determined that changes to tariff structures were outside the scope of its review because of the need to undertake extensive analysis and consultation on this issue. Furthermore, the Panel notes that the ICRC has committed to a forthcoming review of tariff structures.¹⁹⁴

Table 9.3 sets out the Panel's final decision on the price path for maximum water charges.

Table 9.3: Final decision - Maximum water charges and price path

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices set by the ICRC and paid by customers		Panel's final decision		
			Price path for the remaining years*		
Fixed (\$ pa)	100.00	102.56	(1+CPI)×(1-3.4%)	(1+CPI)	(1+CPI)
Tier 1 (0-200 kL pa) (\$/kL)	2.55	2.64	(1+CPI)×(1-3.4%)	(1+CPI)	(1+CPI)
Tier 2 (200+ kL pa) (\$/kL)	5.10	5.29	(1+CPI)×(1-3.4%)	(1+CPI)	(1+CPI)

* Note: The price path is also subject to the operation of the cost pass-through mechanism.

Table 9.4 sets out the **indicative** water charges payable under the Panel's substituted price direction, assuming CPI is 2.5% per annum, and the cost pass-through mechanism is not triggered (eg, by changes to the Water Abstraction Charge or Utilities Network Facilities Tax). In other words, the table indicates the *underlying* price impacts of the Panel's substituted price direction, but not the potential impacts of any pass-through events that may occur.

194 ICRC, *Final Report, Regulated Water and Sewerage Services*, June 2013, p.165.

Table 9.4: Final decision - Indicative maximum water charges (\$, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices set by the ICRC and paid by customers		Panel's final decision: Indicative estimates*		
Fixed (\$ pa)	100	102.56	101.58	104.12	106.73
Tier 1 (0-200 kL pa) (\$/kL)	2.55	2.64	2.61	2.68	2.75
Tier 2 (200+ kL pa) (\$/kL)	5.10	5.29	5.24	5.37	5.50
% Change on previous year					
Fixed (\$ pa)	0.2%	2.6%	-1.0%	2.5%	2.5%
Tier 1 (0-200 kL pa) (\$/kL)	4.9%	3.5%	-1.0%	2.5%	2.5%
Tier 2 (200+ kL pa) (\$/kL)	4.9%	3.7%	-1.0%	2.5%	2.5%

* Note: The actual water charges payable in the remaining three years could differ from the indicative charges in this table if actual inflation differs from forecast inflation and/or if the cost pass-through mechanism is triggered.

As this table shows, the effect of the Panel's substituted price direction is to reduce water charges by around 1.0% in 2015-16 (assuming the rate of inflation, as measured by the consumer price index, is 2.5%), with prices rising in line with the rate of inflation in the remaining two years of the regulatory period.

This results in slightly higher water charges than those estimated by the Panel in its draft decision, and chiefly reflects the downward revision that has been made to demand forecasts (which results in upward pressure on prices).

Neither Icon Water's SOFC nor its response to the Panel's draft report set out its proposed alternative water prices because it argued that these charges should be calculated on an annual basis using updated demand forecasts (and correcting for any under or over recovery from the previous year). However, the Panel requested that Icon Water provide the alternative price path implied by its proposed net revenue requirement and its contentions on demand forecasts. This is presented in Table 9.5.

Table 9.5: Icon Water's alternative indicative prices for water (\$, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices set by the ICRC and paid by customers		Icon Water's proposal: Indicative estimates*		
Fixed (\$ pa)	100	102.56	117.52	120.46	123.47
Tier 1 (0-200 kL pa) (\$/kL)	2.55	2.64	3.03	3.10	3.18
Tier 2 (200+ kL pa) (\$/kL)	5.10	5.29	6.06	6.21	6.37
% Change on previous year					
Fixed (\$ pa)	0.2%	2.6%	14.6%	2.5%	2.5%
Tier 1 (0-200 kL pa) (\$/kL)	4.9%	3.5%	14.6%	2.5%	2.5%
Tier 2 (200+ kL pa) (\$/kL)	4.9%	3.7%	14.6%	2.5%	2.5%

Source: Icon Water, *Response to follow-up questions*, 26 February 2015, p.5, incorporating revisions provided in an email to the Panel on 10 March 2015 to show the impact of its revised 2014-15 water sales forecast.

The indicative water charges under the Panel's final decision are approximately 14% lower than those implied by Icon Water's alternative price path. This reflects:

- the \$53 million difference between the Panel's final decision on the net revenue requirement for water services and Icon Water's proposal (\$948 million versus \$895 million – see Chapter 8), and
- the 1.1 GL to 3.6 GL difference between the Panel's final decision on water sales forecasts, and the forecasts provided by Icon Water (see Chapter 7).

9.3 Sewerage price path and indicative charges

The tariff structure for sewerage services consists of:

- a fixed supply charge, and
- a fixtures charge for non-residential customers, which is payable per flushing fixture in excess of two fixtures.

There is no volumetric charge for sewerage. Under the building block methodology adopted by the Panel, maximum sewerage charges are calculated by *dividing*:

- the present value of Icon Water's net revenue requirement for sewerage services between 1 July 2015 and 30 June 2018 (see Table 8.2 in Chapter 8) by
- forecast customer numbers for sewerage and numbers of billable fixtures over the period from 1 July 2015 to 30 June 2018 (see Table 7.1 in Chapter 7).

9.3.1 Panel's draft decision

In its draft decision, as for water charges, the Panel adopted the sewerage prices payable under the ICRC's original price direction for 2013-14 and 2014-15. The price path for the remaining years of the regulatory period was as set out in Table 9.6 below.

Table 9.6: Draft decision – Maximum sewerage charges and price path

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices payable under original price direction		Price path for remaining years*		
Supply charge (\$ pa)	492.02	505.41	$(1+\text{CPI}) \times (1+2.4\%)$	$(1+\text{CPI})$	$(1+\text{CPI})$
Fixtures charge – non-residential customers (\$ pa)	481.18	494.28	$(1+\text{CPI}) \times (1+2.4\%)$	$(1+\text{CPI})$	$(1+\text{CPI})$

*Note: Also subject to operation of cost pass-through mechanism.

In setting this price path, the Panel had regard to:

- the stability of combined water and sewerage bills for the remainder of the current regulatory period, and
- the potential impact on price changes going into the next regulatory period.

Assuming that the cost pass-through mechanism is not triggered and that inflation rate (as measured by CPI) is 2.5% per annum, this price path would have resulted in a 4.9% increase in maximum sewerage charges in 2015-16, with charges remaining constant in real terms (ie, rising in line with inflation, as measured by changes in CPI) in the remaining two years of the regulatory period.

9.3.2 Responses to the draft decision

No submissions were received by the Panel in relation to the price path for sewerage services.

9.3.3 Panel's assessment and final decision on sewerage price path

The Panel's final decision on the sewerage price path reflects adjustments made since the draft decision to the Panel's forecasts of the net revenue requirement for Icon Water's sewerage services.

Because downward revisions have been made to this net revenue requirement in the final decision, sewerage prices will now increase by 1.4%, after inflation, in 2015-16, compared to the 2.4% real increase proposed in the draft decision. For the final two years of the regulatory period, charges will rise in line with the rate of inflation.

The revised price path is presented in Table 9.7.

Table 9.7: Final decision - Maximum sewerage charges and price path

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices set by the ICRC and paid by customers		Panel's final decision Price path for the remaining years*		
Supply charge (\$ pa)	492.02	505.41	(1+CPI)×(1+1.4%)	(1+CPI)	(1+CPI)
Fixtures charge - non-residential customers (\$ pa)	481.18	494.28	(1+CPI)×(1+1.4%)	(1+CPI)	(1+CPI)

* Note: The price path is also subject to the operation of the cost pass-through mechanism.

Table 9.8 presents the Panel's indicative estimates of sewerage charges in the last three years of the regulatory period, which have been calculated assuming an inflation rate (as measured by CPI) of 2.5% per annum and that cost pass-through mechanisms are not triggered. The table shows that the Panel's indicative sewerage charges for 2015-16 are approximately 3.9% higher, after inflation, than the 2014-15 charges payable under the ICRC's original price direction.

Table 9.8: Final decision - Indicative maximum sewerage charges (\$, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices set by the ICRC and paid by customers		Panel's final decision: Indicative estimates*		
Supply charge (\$ pa)	492.02	505.41	525.05	538.17	551.63
Fixtures charge (\$ pa)	481.18	494.28	513.48	526.32	539.48
% Change on previous year					
Supply charge (\$ pa)	-18.1%	2.7%	3.9%	2.5%	2.5%
Fixtures charge (\$ pa)	-18.1%	2.7%	3.9%	2.5%	2.5%

* Note: The actual sewerage charges payable in the remaining three years could differ from the indicative charges in this table if actual inflation differs from forecast inflation and/or if the cost pass-through mechanism is triggered.

Icon Water provided the Panel with the alternative price path for sewerage prices as set out in Table 9.10.

Table 9.10: Icon Water’s alternative indicative prices for sewerage services (\$, nominal)

	2013-14	2014-15	2015-16	2016-17	2017-18
	Prices set by the ICRC and paid by customers		Icon Water’s proposal Indicative estimates*		
Supply charge (\$ pa)	492.02	505.41	578.77	593.24	608.07
Fixtures charge (\$ pa)	481.18	494.28	566.03	580.18	594.68
% Change on previous year					
Supply charge (\$ pa)	-18.1%	2.7%	14.5%	2.5%	2.5%
Fixtures charge (\$ pa)	-18.1%	2.7%	14.5%	2.5%	2.5%

Source: Icon Water, *Response to follow-up questions*, 26 February 2015, p.4.

The Panel’s indicative sewerage charges are 9% lower than those proposed by Icon Water. Given that Icon Water has accepted the Panel’s estimates for customer and billable fixtures numbers (see Chapter 7), this difference reflects the \$33 million difference between the Panel’s final decision on the net revenue requirement for sewerage services over the regulatory period and Icon Water’s proposal (\$646 million versus \$613 million – see Chapter 8).

10 Effect on customers, inflation and Icon Water's financial viability

Box 10.1: Summary of the Panel's assessment of the impact of prices

The Panel's assessment is that the water and sewerage charges set out in Chapter 9 are likely to have modest impacts on customers if it is assumed that there are no material changes in Icon Water's costs or government charges (eg, the Water Abstraction Charge and Utilities Network Facilities Tax) that would trigger a cost pass-through. In particular:

- **For residential customers**, while sewerage charges rise modestly, water charges remain virtually flat in real terms over the regulatory period. This will result in annual bills rising modestly (at close to the rate of inflation), and are unlikely to have a material impact on the bills faced by vulnerable consumers, or the number of customers seeking assistance from financial hardship programs. Assuming inflation of 2.5% per annum, for a typical residential customer using 200 kL of water per annum, the annual bill is expected to be approximately:
 - 6% **higher** in 2017-18 than the equivalent bill today (ie, in 2014-15), and
 - 2% **higher** in 2017-18 than the equivalent bill in 2012-13.
- **For non-residential customers**, the prices are expected to result in bill impacts that range from a 7% decrease to an 11% increase over the five-year period.

In addition, the Panel's assessment is that the prices are expected to have no material effect on general inflation, and are consistent with Icon Water remaining financially viable and being able to continue to operate, maintain, renew and develop the assets required to deliver its water and sewerage services.

Based on this assessment, the Panel is satisfied that the water and sewerage charges set out in Chapter 9 do not need to be modified to ameliorate undesirable impacts on customers, general inflation or Icon Water's financial viability.

10.1 Introduction

In finalising its substituted price direction, the Panel assessed the likely impact on:

- residential and non-residential customers (social impacts)¹⁹⁵
- general price inflation,¹⁹⁶ and
- Icon Water's financial viability.¹⁹⁷

This chapter provides details of the Panel's assessment of the likely impacts of its substituted price direction.

10.2 Effect on residential customers

To better understand the effect that the water and sewerage charges set out in Chapter 9 are likely to have on residential customers, the Panel examined:

- the change in annual water and sewerage bills that will occur as a result of its substituted price direction for varying levels of water consumption
- the likely impact on vulnerable customers

195 This is consistent with section 20(2)(g) of the Act, which requires the Panel to consider the social impacts of the decision.

196 This is consistent with section 20(2)(j) of the Act, which requires the Panel to consider the effect on general price inflation over the medium term.

197 This is consistent with section 20(2)(i) of the Act, which requires the Panel to consider the borrowing, capital and cash flow requirements of people providing regulated services and the need to renew or increase relevant assets in the regulated industry.

- the extent to which the annual water and sewerage bill payable by a typical residential customer in the ACT differs from that payable in other jurisdictions, and
- the relative change in water and sewerage charges in the ACT over the last 10 years compared with what has occurred in other jurisdictions.

10.2.1 Changes in water and sewerage bills

Table 10.1 sets out combined indicative water and sewerage bills for residential customers (with varying levels of water consumption) over the five-year regulatory period. The indicative bills for 2015-16, 2016-17 and 2017-18 assume inflation of 2.5% per annum and that there are no material changes in Icon Water's costs or government charges (eg, the WAC and UNFT) that would trigger the cost pass-through mechanism.

This table shows that, in 2017-18, the annual bill for a typical residential customer using 200 kL of water per annum is likely be around 6% higher than the equivalent bill today (ie, in 2014-15) and 2% higher than the equivalent bill in 2012-13 (the end of the previous regulatory period) (see shaded rows). The table also shows that households with low levels of water consumption (of less than 100 kL per annum) will have bills in 2017-18 that are *lower* than they were in 2012-13.

Table 10.1: Indicative impacts on residential water and sewerage bills (\$, nominal)

Annual water consumption (kL)	Annual bill						Change from current bill (2014-15 to 2017-18)	Change over regulatory period (2012-13 to 2017-18)
	2012-13	Prices set by the ICRC and paid by customers		Panel's final decision: indicative estimates*				
		2013-14	2014-15	2015-16	2016-17	2017-18		
50 kL	822	720	740	757	776	796	56	-26
% change		-12.0%	3.0%	2.3%	2.5%	2.5%	7.5%	-3.2%
100 kL	943	847	872	888	910	933	61	-10
% change		-10.0%	3.0%	1.8%	2.5%	2.5%	7.0%	-1.1%
150 kL	1,065	975	1,004	1,019	1,044	1,070	66	5
% change		-8.0%	3.0%	1.5%	2.5%	2.5%	6.6%	0.5%
200 kL	1,209	1,125	1,160	1,174	1,203	1,233	73	24
% change		-7.0%	3.0%	1.2%	2.5%	2.5%	6.3%	2.0%
250 kL	1,429	1,357	1,400	1,412	1,447	1,483	83	54
% change		-5.0%	3.0%	0.8%	2.5%	2.5%	5.9%	3.8%
300 kL	1,672	1,612	1,665	1,674	1,715	1,758	93	86
% change		-4.0%	3.0%	0.5%	2.5%	2.5%	5.6%	5.2%
400 kL	2,158	2,122	2,194	2,197	2,252	2,309	115	151
% change		-2.0%	3.0%	0.2%	2.5%	2.5%	5.2%	7.0%
500 kL	2,644	2,632	2,723	2,721	2,789	2,859	136	215
% change		0.0%	3.0%	-0.1%	2.5%	2.5%	5.0%	8.1%
750 kL	3,859	3,907	4,045	4,031	4,132	4,235	190	376
% change		1.0%	4.0%	-0.3%	2.5%	2.5%	4.7%	9.8%

*Note: Indicative bills assume inflation of 2.5% pa and no material changes in costs or government charges that would trigger the cost pass-through mechanism.

10.2.2 Impacts on vulnerable customers

In the light of the modest bill impacts discussed above, the Panel considers that vulnerable consumers will not be materially worse off than now as a result of the prices set out in Chapter 9. Nevertheless, the Panel recognises that difficulties in paying water and sewerage bills places considerable stress on some households, and notes that there are programs in place to assist households facing difficulties paying water and sewerage bills. For example:

- The ACT Government provides a rebate on water charges for eligible applicants.¹⁹⁸
- Icon Water's *Staying Connected* program includes provisions for flexible and affordable payment plans and stops recovery action while eligible customers are on the program.
- Hardship assistance is also available through application to the ACT Civil and Administrative Tribunal (ACAT) for those water and sewerage customers who have had their supply disconnected – or been given a notice or warning about disconnection – because of unpaid accounts. In 2013-14, ACAT received 81 applications for this assistance.

Because the bill impacts of its final decision are modest, the Panel does not expect its substituted price direction to contribute to greater numbers of customers seeking hardship assistance.

10.2.3 Comparison with bills payable in other jurisdictions

Table 10.2 compares the annual water and sewerage bill for a residential customer consuming 200 kL of water payable in the ACT (under the Panel's substituted price direction) and in other jurisdictions (under their current regulatory decisions). The Panel has estimated the bills for future years where the regulated price path allows reasonable estimates to be made.

While comparisons between jurisdictions should always be treated with caution,¹⁹⁹ this table suggests that water and sewerage bills in the ACT are not out of line with those payable in other jurisdictions.

Table 10.2: Major utility annual water and sewerage bills for 200 kL residential customer (\$, nominal)*

Utility	NWC	Panel estimates				
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
TasWater	943	994	1,047			
City West Water	963	1,165	1,067	1,091	1,119	1,147
Hunter Water	1,026	1,049	1,079	1,075	1,075	
Barwon Water	1,154	1,164	1,129	1,109	1,109	1,110
Sydney Water	1,116	1,130	1,153	1,120		
Icon Water (ICRC to 2014-15 and Panel's final decision from 2015-16)	1,209	1,125	1,160	1,174	1,203	1,233
Icon Water latest proposal	1,209	1,125	1,160	1,329	1,363	1,397
South East Water	1,021	1,279	1,195	1,225	1,256	1,287
WC (Perth)	1,120	1,249	1,228	n.a.	n.a.	n.a.
Yarra Valley Water	1,106	1,366	1,264	n.a.	n.a.	n.a.
Queensland Urban Utilities	1,218	1,267	1,353	n.a.	n.a.	n.a.
SA Water (Adelaide)	1,387	1,344	1,369	n.a.	n.a.	n.a.
Unitywater	1,407	1,338	1,421	n.a.	n.a.	n.a.
Gold Coast Water	1,544	1,616	1,697	n.a.	n.a.	n.a.

*Note: Ranked by current (ie, 2014-15) estimates.

Source: National Water Commission, utility websites.

198 Eligible applications are the primary holder of the following concession cards: Centrelink Pensioner Concession Card, Centrelink Low Income Health Care Card, Veteran's Affairs Pensioner Card, DVA Gold Card holders and asylum seekers.

199 This is because bill calculations rely on many assumptions about a range of diverse parameters, including consumption profiles, property values and the operation of pass-through mechanisms.

Table 10.3: Indicative impacts on non-residential water and sewerage bills (\$, nominal)

Annual water consumption (kL)	Number of billable fixtures	Annual bill						Change from current bill (2014-15 to 2017-18)	Change over regulatory period (2012-13 to 2017-18)
		2012-13	Prices set by the ICRC and paid by customers		Panel's final decision indicative estimates*				
			2013-14	2014-15	2015-16	2016-17	2017-18		
1,000 kL	10	10,949	9,994	10,311	10,476	10,738	11,006	7%	1%
	50	34,445	29,241	30,082	31,015	31,791	32,586	8%	-5%
	100	63,816	53,300	54,796	56,690	58,107	59,559	9%	-7%
2,000 kL	10	15,809	15,094	15,601	15,716	16,109	16,511	6%	4%
	50	39,305	34,341	35,372	36,255	37,161	38,090	8%	-3%
	100	68,676	58,400	60,086	61,929	63,477	65,064	8%	-5%
5,000 kL	10	30,389	30,394	31,471	31,434	32,220	33,026	5%	9%
	50	53,885	49,641	51,242	51,974	53,273	54,605	7%	1%
	100	83,256	73,700	75,956	77,648	79,589	81,579	7%	-2%
10,000 kL	10	54,689	55,894	57,921	57,632	59,073	60,550	5%	11%
	50	78,185	75,141	77,692	78,172	80,126	82,129	6%	5%
	100	107,556	99,200	102,406	103,846	106,442	109,103	7%	1%

* Note: Indicative bills assume inflation of 2.5% pa and no material changes in costs or government charges that would trigger the cost pass-through mechanism.

As this table shows, prices for non-residential customers are expected to rise modestly over the five years to 30 June 2018.

Bills for customers with large numbers of billable fixtures will rise at the highest rate over the remaining three years of the regulatory period.

Across the various consumption bands, the bill impacts range from 7% decreases to 11% increases over the five years of the regulatory period, compared to bills in 2012-13.

10.4 Effect on inflation

To assess the effect the water and sewerage charges in Chapter 9 are likely to have on general price inflation, the Panel employed the approach IPART uses for similar assessments.²⁰⁰ This involved *multiplying*:

- the contribution that water and sewerage costs in the ACT make to the consumer price index (all groups, eight capital cities), *by*
- the annual average change in the water and sewerage bill for a customer consuming 200 kL per annum, measured in real terms.

²⁰⁰ IPART, *Final Report, Review of prices for Sydney Water Corporation's water, sewerage, stormwater drainage and other services*, June 2012, p.186.

Currently, water and sewerage costs in Canberra, contribute 0.02% towards the consumer price index (all groups, 8 capital cities).²⁰¹ Under the Panel's final decision, the indicative annual average increase of a water and sewerage bill for a customer consuming 200 kL per annum is approximately -2% (in real terms). Therefore, the approximate annual impact on general price inflation is a reduction in inflation of 0.0005% points.²⁰²

10.5 Effect on Icon Water's financial viability

The building block methodology adopted by the Panel is designed to enable a regulated business to recover its efficient costs. Nevertheless, the resulting prices (in conjunction with other measures) may adversely affect the business' financial capacity and viability in the short-term.

Robust financial health of utility businesses is generally considered to be in the best interests of customers. If a service provider is not financially viable, it may not be able to guarantee services to customers. Poor financial health may also lead to under-investment in assets and/or their maintenance, which could in turn lead to higher lifetime expenditure on assets (and consequently higher prices) and poorer quality services.

Therefore, the Panel explicitly tested how its substituted price direction is likely to affect Icon Water's financial position. To do this, the Panel used projected cash flows to calculate a selection of financial ratios over the regulatory period, and considered Icon Water's overall debt capacity. The financial ratios the Panel selected are similar to those used by the ESC and IPART in considering financial viability, and are based on measures used by Moody's in assessing the credit rating of regulated utilities. They are:

- Funds from operations (FFO) interest cover ratio, which provides an indication of Icon Water's ability to make interest payments.
- Net debt gearing ratio, which measures the proportion of Icon Water's overall regulatory capital structure that is made up by debt, and provides an indication of its ability to repay its debt (or increase borrowings in the short term if required).
- FFO to net debt ratio, which provides an indication of whether Icon Water's debt servicing ability is improving, remaining stable or declining.
- Retained cash flow to capital expenditure ratio, which provides an indication of Icon Water's ability to finance a prudent portion of capital expenditure after paying dividends.

Table 10.4 sets out the target levels of the financial ratios used by ESC, IPART and OFWAT (UK) to assess financial viability, as well as those that NERA recently recommended that the ESC use as target levels based on Ba and Baa credit ratings.

201 Australian Bureau of Statistics, Consumer Price Index 16th Series Weighting Pattern (cat. no. 6471.0).

202 $0.02\% \times -2\% = -0.0005\%$ (all values rounded to one significant figure).

Table 10.4: Target levels of financial ratios

	ESC ²⁰³	IPART ²⁰⁴	OFWAT ²⁰⁵	NERA ²⁰⁶	
Target credit rating	Not Stated	Baa2		Ba	Baa
FFO interest cover	>1.5	1.7 - 2.5	3	1.8 - 2.5	2.5 - 4.0
Net debt gearing ratio	<70%	60% to 91%	<65%	70% to 85%	55% to 70%
FFO to net debt	>10%	6% to 10%	0.13	6% to 10%	10% to 15%
Retained cash flow to capital expenditure	>0.35	Not Stated	Not Used	0.5 to 1.0	1 to 1.5

The Panel has decided to adopt the target levels NERA recommended for a “Ba” rated business²⁰⁷ (see shaded cells in Table 10.4) as a reference for assessing Icon Water’s financial viability, noting that:

- the ratios are listed in order of importance, and
- only the ‘bottom’ of the range for each metric is relevant for assessing financial viability.

The results of the Panel’s analysis of the effect that the water and sewerage charges set out in Chapter 9 will have on Icon Water’s modelled financial ratios are set out in Table 10.5.²⁰⁸

Table 10.5: Icon Water modelled financial ratios

	Target	2013-14	2014-15	2015-16	2016-17	2017-18
FFO interest cover	>1.8	2.15	2.25	2.20	2.18	2.15
Net debt gearing ratio	<85%	56%	56%	58%	62%	58%
FFO to net debt	>6%	6.3%	6.8%	6.4%	5.9%	6.2%
Retained cash flow to capital expenditure	>0.5	0.8	0.7	0.5	0.4	0.5

As this table shows, Icon Water satisfies the ‘FFO interest cover’ and ‘net debt to RAB’ ratios for the entire regulatory period. However, Icon Water fails to satisfy the target minimum ratios for ‘FFO to net debt’ and ‘retained cash flow to capital expenditure’ in 2016-17.

This outcome is not uncommon. The ESC specifically states that it does not expect a utility to achieve all the financial ratio benchmarks in every year. Moreover, the financial ratios are not given equal weight by Moody’s or utility regulators. For example:

- Moody’s weights ‘FFO interest cover’ and ‘net debt to RAB’ as three times more significant than the other ratios.²⁰⁹
- IPART weights ‘FFO interest cover’ and ‘net debt to RAB’ as more significant than the other ratios.²¹⁰

203 ESC, *Assessing The Financial Viability of Victorian Water Businesses, Summary of views and proposed new indicator*, June 2014.

204 IPART, *Financeability tests in price regulation, Research - Final Decision*, December 2013.

205 OFWAT, *Financeability and Financing the Asset Base: A Discussion Paper*, March 2011. The metrics for a combined water and wastewater business are shown.

206 NERA, *Assessing the Financeability of Regulated Water Service Providers, A report for the Essential Services Commission*, 30 October 2013.

207 *ibid.*

208 The Panel also modelled financeability at the lower bound of the deadband (ie, the revenue cap threshold). This analysis informed the Panel’s decision on the size of the deadband (as discussed in section 3.3.3.2 in Chapter 3).

209 *ibid.*, p.12.

210 IPART, *Financeability tests in price regulation, Research - Final Decision*, December 2013, p.11.

- The ESC considers the 'FFO interest cover' ratio to be the primary indicator of financial viability.
- OFWAT does not use 'retained cash flow to capital expenditure' as an indicator. The target level adopted by the ESC for this indicator is much lower than the level expected for an investment grade credit rating.

Having regard to Icon Water's overall financial performance, the relative weight put on the measures by other regulators and financial institutions, and Icon Water's debt headroom, the Panel is satisfied that the charges set out in Chapter 9 are consistent with Icon Water remaining financially viable and being able to continue to operate, maintain, renew and develop the assets required to deliver services.

Appendices

Appendix 1 Compliance with section 20(2) and the terms of reference

As noted in Chapter 2, this final report takes as its basis the Panel's draft decision and should be read in conjunction with the draft report. The Panel's compliance with Section 20(2) of the Act and the terms of reference should therefore be read across both the draft and final reports. The table below sets out where, and how, in its final and draft reports, the Panel has taken into account the matters set out in Section 20(2) of the Act and in the terms of reference.

Table A1.1: Compliance with Section 20(2) and the terms of reference

Section 20(2)	Final report chapter(s)	Draft report chapter(s)	How the Panel has taken the matter into account
(a) the protection of consumers from abuses of monopoly power in terms of prices, pricing policies (including policies relating to the level or structure of prices for services) and standard of regulated services		7	Consideration of the appropriate method to be used to determine prices, use of the building block methodology and similar principles to other regulators, which in broad terms are designed to mimic the price and service outcomes expected in a workably competitive market.
	4 and 6	9 and 10	Consideration of the efficient costs of service provision, including assessment of: <ul style="list-style-type: none"> the prudence and efficiency of capital expenditure in the previous regulatory period the reasonableness and sufficiency of capital expenditure governance in this regulatory period, and the prudence and efficiency of forecast capital and operating expenditure in this regulatory period. Informed by independent expert advice.
	5	11	Consideration of the appropriate approach for setting the rate of return on capital.
	8	13	Consideration of the appropriate level of net revenue to be recovered through water and sewerage charges.
	10	15	Consideration of customer bill impact analysis.
(b) standards of quality, reliability and safety of the regulated services	4 and 6	9 and 11	Assessment of the prudence and efficiency of forecast capital and operating expenditure in this regulatory period, given current service obligations. Informed by independent expert advice.
(c) the need for greater efficiency in the provision of regulated services to reduce costs to consumers and taxpayers	3	6 and 7	Consideration of the appropriate method to be used to determine prices, including the potential for incentive schemes to be used in conjunction with the building block methodology in the future. Consideration of the appropriate form of price control, length of regulatory period and other risk allocation measures from the perspective of providing Icon Water with an incentive to seek out efficiencies.

Section 20(2)	Final report chapter(s)	Draft report chapter(s)	How the Panel has taken the matter into account
	4 and 6	9 and 11	<p>Consideration of the efficient costs of service provision, including assessment of:</p> <ul style="list-style-type: none"> the prudence and efficiency of capital expenditure in the previous regulatory period the reasonableness and sufficiency of capital expenditure governance in this regulatory period, and the prudence and efficiency of forecast capital and operating expenditure in this regulatory period. <p>Informed by independent expert advice.</p>
(d) an appropriate rate of return on any investment in the regulated industry	5	10	<p>Consideration of the appropriate approach for setting the return on capital, taking into account the requirements of the Act, the approach most commonly used by Australian regulators in applying the building block method (ie the benchmark entity approach), competitive neutrality principles and the conditions prevailing in financial markets at the time of the original price determination.</p>
(e) the cost of providing the regulated services	4,5 and 6	9, 10 and 11	<p>Consideration of regulatory best practice with respect to determining the building block methodology inputs.</p> <p>Consideration of regulatory treatment of CSOs identified by the ICRC.</p>
(f) the principles of ecologically sustainable development mentioned in subsection (5) of section 20(2)	4 and 6	9 and 11	<p>Consideration of environmental costs in capital and operating expenditure building blocks. Informed by independent expert advice.</p>
(g) the social impacts of the decision	4	8	<p>Consideration of the intergenerational equity issues posed by the water security projects.</p>
	10	15	<p>Consideration of customer bill impact analysis.</p>
(h) considerations of demand management and least cost planning	7	9	<p>Consideration of forecast water demand over the regulatory period and capital planning processes. Informed by independent expert advice.</p>
(i) the borrowing, capital and cash flow requirements of people providing regulated services and the need to renew or increase relevant assets in the regulated industry	3, 4 and 10	6, 8 and 15	<p>Consideration of the impact on Icon Water's short-term financial viability – ie, assessment of whether Icon Water will be able to maintain an investment grade BBB rating, during the regulatory period in the context of determining the level of the deadband, the treatment of the water security projects and the impact of water and sewerage charges.</p>
(j) the effect on general price inflation over the medium term	10	15	<p>Consideration of the estimated impact of water and sewerage prices on general inflation.</p>
(k) any arrangements that a person providing regulated services has entered into for the exercise of its functions by some other person	6	11	<p>Consideration of the cessation of the Utilities Management Agreement and the subsequent impact on efficient operating costs. Informed by independent expert advice.</p>

Terms of reference	Final report chapter(s)	Draft report chapter(s)	How the Panel has taken the matter into account
(a) policies of the ACT Government as they relate to water security and the use of water	7	4	Consideration of the ACT Water Strategy (Released August 2014) – for example, in relation to demand forecasts (in final report).
	4	8	Consideration of the costs of achieving the mandated level of water security in this regulatory period when assessing how the costs of the water security projects should be recovered.
(b) national water initiatives, policies and agreements		4	Consideration of the 2010 NWI pricing principles, which aim to ensure that pricing is used primarily to achieve economically efficient water use and water service provision, and to ensure the financial viability of water service providers.
(c) the impact of a price on carbon on the provision of water and sewerage services in the ACT	6	11	Consideration of how carbon costs are currently accounted for in Icon Water's expenditure forecasts and whether any downward adjustment is required following the abolition of the carbon price.
(d) the ability of the pricing path to match revenue recovery requirements to the consumer benefits accrued from the water security program	4	8	Consideration of the manner in which the costs of the water security projects should be recovered (including consideration of indexation or non-indexation of the RAB).
(e) all potential regulatory models, including consideration of the provision of sufficient flexibility in price setting across the regulatory period to minimise the impact of significant price fluctuations	3	6 and 7	Consideration of form of regulation issues, including measures to deal with risk and uncertainty over the regulatory period, and the appropriate method to be used to determine prices.
	3 and 9	14	Consideration of the need to minimise price fluctuations within and between regulatory periods when setting water and sewerage charges.
(f) the legislative requirements outlined in section 20 of the Act	See table above		
(g) any other matters considered relevant	None identified		

Appendix 2 Suggested actions for the ICRC's consideration

During the course of undertaking its review, the Panel has identified the following actions for the ICRC to consider to further improve and refine the regulatory framework that applies to water and sewerage services:²¹¹

- implementing an operating and capital expenditure incentive scheme in the next regulatory period, and also considering whether a service-level incentive scheme should be introduced (as discussed in section 6.5 of this final report)²¹²
- requiring Icon Water to submit an annual report on the previous financial year's performance on building block and other parameters relevant to regulatory decisions. For example:
 - the actual operating and capital expenditure it incurred in the previous financial year, and an explanation for any major deviation from the expenditure allowances approved in the price direction
 - the revenue received from the provision of water and sewerage services in the previous financial year and revenue received from other sources
 - actual water sales, water and sewerage customer numbers, fixture numbers, dam releases and sewerage volumes in the previous financial year, and
- investigating alternative approaches to measuring inflation (as discussed in section 3.4.3 of this final report).

211 These actions are in addition to the review of tariff structures during the current regulatory period, which has been included as a reset principle in the substituted price direction (see section 3.6 of this final report).

212 See also Appendix 4 of the Panel's draft report.

Appendix 3 List of written submissions

This appendix lists the written submissions that have been received by the Panel during its review. Copies of all submissions are available from the Panel's website: The website also includes attendee lists and transcripts for all the hearings held by the Panel.

<http://apps.treasury.act.gov.au/industrypanel>

Submissions made in response to the Panel's Approach Paper (released on 30 June 2014)

- ACT Civil and Administrative Tribunal
- Icon Water (submitted under the name of 'ACTEW Corporation')
- Executive Committee UP999
- Mr S Crawford
- Ratepayers' Association of the ACT Inc.

Submissions made following the Panel's Directions Hearing (held on 25 July 2014)

- Icon Water (submitted under the name of 'ACTEW Corporation') - Statement of Facts and Contentions
- Mr K Cox
- Mr S Crawford
- Executive Committee UP999
- Dr T Dwyer
- Ms J Forestier

Submissions made in response to the Panel's draft report (released on 2 December 2014)

- Icon Water - Response to draft report
- Icon Water - Response to follow-up questions²¹³
- Mr S Crawford
- Dr T Dwyer

213 At the public hearing held on 6 February 2015, the Panel and other participants posed some questions to Icon Water about various aspects of its written submission to the Panel's draft report, and Icon Water provided written responses to these questions on 26 February 2015.

Appendix 4 Summary of the Panel's draft decision

As discussed in Chapter 2, in presenting the Panel's final decision, this final report takes as its basis the Panel's draft decision. As such, this final report should be read in conjunction with the draft report. To assist readers of the final report, the key components of the Panel's draft decision are summarised in Tables A4.1 and A4.2 below.

These provide a comparison of the Panel's draft decision with:

- the ICRC's final decision (ie, the original price direction), and
- Icon Water's stated position at the time of its July 2014 Statement of Facts and Contentions.

Table A4.1: Panel's draft report – Comparison of regulatory period, form of control and other risk allocation measures

	Panel's draft decision	Original price direction (ICRC's final decision)	Icon Water's SOFC proposal
Length of regulatory period	Five years (1 July 2013 to 30 June 2018) with no biennial recalibrations.	Six years (1 July 2013 to 30 June 2019) with two biennial recalibrations during the period.	Five years (1 July 2013 to 30 June 2018) with no biennial recalibrations.
Form of control	Hybrid price and revenue cap, with individual price caps for water and sewerage charges and a demand volatility adjustment mechanism to account for deviations between actual and forecast volumetric water sales revenue in excess of a 7% deadband over the full five-year regulatory period (2013-14 to 2017-18).	Individual price caps, with maximum prices for water and sewerage.	Revenue cap with an 'unders and overs' mechanism to ensure that any under- (or over-) recovery in a particular year can be recovered from (or passed back to) customers.
Measures to deal with demand risks	If this mechanism is triggered, then the ICRC will be required through a reset principle to include any under- or over-recovery of revenue (measured in NPV terms) in the calculation of Icon Water's revenue requirement for water for the next regulatory period.	Biennial recalibrations of water sales and customer numbers. Conservative water sales estimate used in setting the tier 1 and tier 2 prices for the volumetric water charges.	'Adaptive approach' to estimating prices, which involves updating the volumetric and supply charges each year to reflect updated water sales forecasts (estimated using the Breusch-Ward model) and the latest customer and fixture numbers.
Measures to deal with expenditure risks	CPI escalation mechanism. <i>Ex post</i> capex review. Annual cost pass-through mechanism to deal with changes in Commonwealth subvention payments, changes in the amount Icon Water is required to pay the ACT Government for the Water Abstraction Charge (WAC), Utilities Network Facilities Tax (UNFT), changes in taxes, changes in service standards, changes in regulation and the Iantangara Transfer Payment event. The materiality threshold for this mechanism will be \$0 for WAC, UNFT and subvention payments, and \$2 million (\$2012-13) per event for all other cost pass-through categories.	Biennial recalibrations of expenditure. CPI escalation mechanism in intervening years. Cost pass-through mechanism in intervening years to deal with changes in subvention payments and the WAC and UNFT.	CPI escalation mechanism. Cost pass-through mechanism to deal with changes in taxes, contingent capital expenditure projects, changes in subvention payments, changes in service standards and changes in regulation. A materiality threshold of \$1 million (\$2012-13) for cost pass-through events, with the exception of subvention payments and the WAC and UNFT, where no materiality threshold applies.
Measures to deal with unforeseen events	Price variation trigger event mechanism to deal with the following unforeseen events if they satisfy the materiality threshold: an act of terrorism; a major natural disaster; major damage to infrastructure; a significant change in Icon Water's financial or corporate structure; and a force majeure event. The materiality threshold will be defined as 'an event that severely restricts Icon Water's ability to provide services' and imposes a total annualised cost on Icon Water for the remainder of the regulatory period of more than \$12 million (\$2012-13).	A price variation trigger event mechanism, which allows the ICRC to initiate a variation to the price direction if there is an act of terrorism, major natural disaster, major damage to infrastructure, a significant change in Icon Water's financial or corporate structure, an unforeseen or force majeure event.	Cost pass-through mechanism to deal with a major natural disaster. A materiality threshold of \$1 million (\$2012-13) for this type of event.

Table A4.2: Panel's draft report – Comparison of methodological approaches

	Panel's draft decision	Original price direction (ICRC's final decision)	Icon Water's SOFC proposal
Value of the Regulated Asset Base (RAB)	Opening value (1 July 2013)	Water: \$1.37 billion Sewerage: \$0.66 billion (\$4.2 million lower than the ICRC)	Water: \$1.35 billion Sewerage: \$0.66 billion (Icon Water's estimates are lower than the Panel's because it excluded CSO expenditure from the RAB)
	Forecast capital expenditure	Water: \$154 million (nominal full 5-year period) (15% lower than the ICRC for the first two years) Sewerage: \$316 million (nominal full 5-year period) (42% lower than the ICRC for the first two years). Based on Icon Water's most recent expenditure program.	Water: \$171 million (nominal 5 years) Sewerage: \$325 million (nominal 5 years)
Depreciation	Straight line depreciation using accounting and engineering weighted average asset lives for existing assets and asset specific lives for new assets and the water security assets.	Straight line depreciation using notional weighted average asset lives for existing assets and for all new assets.	Straight line depreciation using accounting and engineering based weighted average asset lives for existing assets and new assets.
Indexation	Provision made for indexation (2.5% inflation forecast).	No provision made for indexation.	Provision made for indexation (2.5% inflation).
Rate of return	Method	Firm-specific approach with cost of equity set below firm-specific range as a transitional measure.	Benchmark efficient entity approach.
	Rate	Nominal WACC: 4.42%	Post-tax nominal WACC: 8.95% (higher equity beta and risk free rate than the Panel)
Net tax liabilities	Provision made for net tax liabilities calculated assuming a 0.5 gamma value (value of imputation credits).	No provision made for net tax liabilities.	Provision made for net tax liabilities calculated assuming a 0.25 gamma value (note a lower gamma value leads to a higher allowance).
Forecast operating expenditure (incl. Water Abstraction Charge (WAC) and Utilities Network Facilities Tax (UNFT))	Water: \$496 million (nominal full 5-year period) (4% higher than the ICRC for the first two years due to higher WAC allowance to reflect higher water sales forecast) Sewerage: \$377 million (nominal full 5-year period)	Water: \$183 million (nominal first 2 years only) Sewerage: \$144 million (nominal first 2 years only)	Water: \$484 million (nominal 5 years) Sewerage: \$374 million (nominal 5 years) (Icon Water's estimates are lower than the Panel's because it has adopted a lower water sales forecast and excluded CSO expenditure from sewerage expenditure)
Forecast demand	Water sales: 42-46 GL pa based on advice from Cardno Customer numbers growth: 2.48%-2.5% pa Billable fixtures growth: 2.2% pa	Water sales: 38 GL pa for the first 2 years only Customer numbers growth: 2.17%-2.32% pa Billable fixtures growth: 2.49% pa	Water sales: 42-42.5 GL pa based on Breusch Ward model Customer numbers growth: 2.63%-2.66% pa Billable fixtures growth: 1.5% pa

Appendix 5 References

Notes:

- For completeness, this list includes references that were used in the Panel's draft report.
- For the purposes of the references, citations relating to ACTEW/Icon Water are listed according to name under which the relevant documents were submitted. (In practice, this generally means that they are attributed to 'ACTEW' before 30 October 2014, and 'Icon Water' thereafter.)

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