



# Attachment 2

## Form of regulation

30 June 2017

2018–23 Water and Sewerage Price Proposal



Quality drinking water



Reliable supply



Affordable pricing



Customer service



Environmental sustainability

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# 1 Summary

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The form of regulation describes the framework that the regulator applies to determine and adjust the revenue that the regulated entity can earn and/or the prices it can charge over the course of a regulatory period. The form of regulation comprises the following key elements:

- the length of the regulatory period – lengthening the period between price investigations involves a trade-off between stronger incentives for cost efficiency, increased risk of material profits or losses and increased administrative costs
- the method of determining prudent and efficient costs (and therefore allowed revenues) – the building-block approach is commonly applied (alternatives include cost benchmarking)
- pass-through arrangements to share the risk of unexpected, uncontrollable events
- ancillary mechanisms – such as unders and overs accounts to deal with deviations between forecast and actual revenue collection, and side constraints to limit bill impacts
- the form of price control – the price cap, revenue cap or hybrid mechanism that controls the utility's prices for each year of the regulatory period.

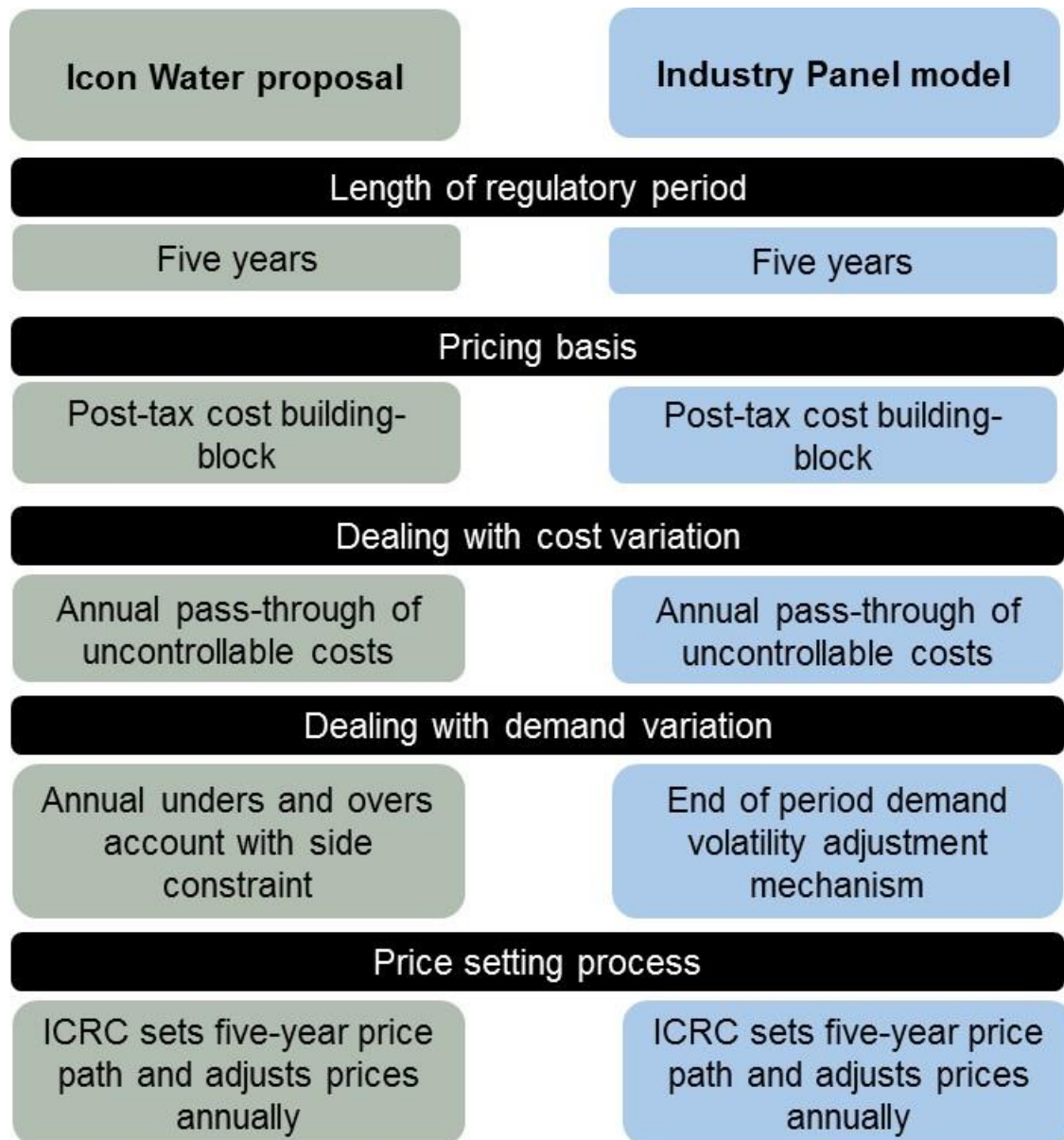
This attachment sets out Icon Water's proposed form of regulation for the 2018–23 regulatory period.

## **Box 1-1: Key points summary**

In summary, Icon Water proposes:

- using the post-tax building-block framework to determine maximum allowed revenues over the 2018–23 regulatory period
- a hybrid price and revenue cap form of price control over the 5-year regulatory period with individual price caps for water and sewerage services
- provision for negotiated contracts to avoid uneconomic bypass of Icon Water's primary water supply network, with prudent discounts recovered from the broader customer base
- an annual unders and overs mechanism for water and sewerage services
- an annual price reset process where the ICRC adjusts prices to account for revenue shortfalls/over collections in the previous year and any pass-through amounts, subject to an annual materiality threshold and pricing side constraint
- pass-through arrangements to deal with unexpected, uncontrollable events
- a contingent project arrangement for the Best for Region Sewage Treatment Plant.

Figure 1-1: Icon Water’s proposed form of regulation



## 2 Background and context

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### 2.1 Regulatory and policy context

There are a number of legislative requirements and local and national water policies that have direct implications for decisions on the form of regulation. This is reflected in the terms of reference for the 2018 price review which requires the Independent Competition and Regulatory Commission (ICRC) to consider:<sup>1</sup>

- the ICRC's legislative requirements under the *Independent Competition and Regulatory Commission Act 1997* (the ICRC Act) (see Box 2-1):
  - objectives in section 7
  - price direction objective in section 19L<sup>2</sup>
  - requirements in section 20(2)
- the policies of the ACT Government as they relate to the supply and use of water and sewerage services, including the *ACT Water Strategy 2014–44 Striking the Balance* (ACT Water Strategy)
- the 2004 National Water Initiative, Murray-Darling Basin Plan commitments and associated policies and agreements.

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<sup>1</sup> ACT Government, 1997: 1.

<sup>2</sup> On 1 July 2016, the ICRC Act was amended to incorporate an overarching objective specific to the making of a price direction, as set out in section 19L (see Box 2-1). This amendment was the ACT Government's response to the Grant Review's recommendation 'to insert an overarching objects clause into the Act which makes it clear that the primary objective of the regulatory framework is to promote the goal of economic efficiency, while safeguarding the financial viability of the regulated entity' (Grant, 2015: ix). The final report of the Grant Review is available at [apps.treasury.act.gov.au/water-and-sewerage-pricing-framework-review](https://apps.treasury.act.gov.au/water-and-sewerage-pricing-framework-review).



## Box 2-1: ICRC Act price direction provisions

### Section 7 Objectives

- a) to promote effective competition in the interests of consumers
- b) to facilitate an appropriate balance between efficiency and environmental and social considerations
- c) to ensure non-discriminatory access to monopoly and near-monopoly infrastructure.

### Section 19L Objective—pt 4

The objective of the commission, when making a price direction in a regulated industry, is to promote the efficient investment in, and efficient operation and use of regulated services for the long term interests of consumers in relation to the price, quality, safety, reliability and security of the service.

### Section 20 Directions about prices

- (2) In making a decision under subsection (1), the commission must have regard to—
- 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; and
  - b) standards of quality, reliability and safety of the regulated services; and
  - c) the need for greater efficiency in the provision of regulated services to reduce costs to consumers and taxpayers; and
  - d) an appropriate rate of return on any investment in the regulated industry; and
  - e) the cost of providing the regulated services; and
  - f) the principles of ecologically sustainable development mentioned in subsection (5);
  - g) the social impacts of the decision; and
  - h) considerations of demand management and least cost planning; and
  - 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; and
  - j) the effect on general price inflation over the medium term; and
  - k) any arrangements that a person providing regulated services has entered into for the exercise of its functions by some other person.

Source: ACT Government (1997).

The ACT Water Strategy, which sets out the ACT Government's overarching long-term water resources management policy, has a particular focus on encouraging water users to conserve and use water wisely.<sup>3</sup> The strategy also sets out the ACT Government's current water security objective, which is 1 year in 20 under temporary water restrictions.<sup>4</sup>

The 2004 National Water Initiative (NWI) and associated urban water price-setting principles commit the ACT Government to a number of best practice water pricing and institutional arrangements, a

<sup>3</sup> ACT Government, 2014: 37.

<sup>4</sup> This can be interpreted as the probability of being in water restrictions in any given year over any modelled period is no more than five per cent.

number of which are relevant to the form of regulation. These include commitments to full recovery of efficient costs to ensure business viability and pricing transparency (see Box 2-2).<sup>5</sup>

**Box 2-2: Extracts from the NWI and NWI Pricing Principles**

**NWI**

Water Storage and Delivery Pricing

65. In accordance with NCP commitments, the States and Territories agree to bring into effect pricing policies for water storage and delivery in rural and urban systems that facilitate efficient water use and trade in water entitlements, including through the use of:

- i) consumption based pricing;
- ii) full cost recovery for water services to ensure business viability and avoid monopoly rents, including recovery of environmental externalities, where feasible and practical; and
- iii) consistency in pricing policies across sectors and jurisdictions where entitlements are able to be traded.

**NWI Pricing Principles**

Principle 1: Cost recovery

9. Water businesses should be moving to recover efficient costs consistent with the National Water Initiative (NWI) definition of the upper revenue bound: 'to avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes or tax equivalent regimes, provision for the cost of asset consumption and cost of capital, the latter being calculated using a Weighted Average Cost of Capital (WACC)'.<sup>i</sup>

Notes:

<sup>i</sup> Application of this principle would be in the context of commitments to full cost recovery in accordance with paragraph 66 of the NWI.

Source: COAG (2004); NRMCC (2010).

## **2.2 Recent form of regulation applied to Icon Water**

### **2.2.1 2008–13 regulatory period**

In the 2008–13 regulatory period, Icon Water was subject to the following form of regulation:

- a 5-year regulatory period
- the cost building-block approach to determining allowed revenues
- a hybrid price and revenue cap form of control with individual price caps for water and sewerage services:
  - a price path set in advance based on a 5-year forecast of usage and customer numbers with no annual reforecasting
  - annual price adjustment process for changes in the consumer price index (CPI) and eligible pass-through events
  - water revenue shortfalls/over-recoveries outside a 3 per cent band to be recovered/repaid in the subsequent regulatory period

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<sup>5</sup> COAG, 2004: 1-39.

- provision for a mid-term review of water demand if observed water usage turns out be significantly different from forecast
- pass-through arrangements for service standard, regulatory and tax change events, subject to a materiality threshold
- a contingent project arrangement for certain water security projects.

### **2.2.2 2013–18 regulatory period**

Icon Water is currently subject to the following form of regulation under the Industry Panel's Substituted Price Direction:<sup>6</sup>

- a 5-year regulatory period
- the cost building-block approach to determining allowed revenues
- a hybrid price and revenue cap form of control with individual price caps for water and sewerage services:
  - a price path set in advance based on forecast usage and customer numbers with no annual reforecasting
  - annual price adjustment process for changes in the CPI and eligible pass-through events
  - a demand volatility adjustment mechanism for water volumetric revenue shortfalls/over-recoveries outside a six per cent band to be recovered/repaid in the subsequent regulatory period
- pass-through arrangements for Water Abstraction Charge (WAC), Utilities Network Facilities Tax (UNFT) and subvention payment events (with no materiality threshold), and service standard, regulatory and tax change events (subject to a materiality threshold).

The ICRC describes this form of regulation as 'a hybrid price and revenue cap' form of control that included elements of both a revenue cap and individual price caps for water and sewerage charges'.<sup>7</sup>

### **2.3 Reference point for 2018–23 regulatory period**

Clause 2a of the terms of reference for the 2018 price review requires the ICRC to:

consider continuing to use the current regulatory model, and, where identified, implement improvements to particular aspects of the methodology.<sup>8</sup>

In its issues paper for the 2018 price review, the ICRC indicated that:

This review will consider whether any improvements can be made to the current methodology that was specified by the Industry Panel, in accordance with specific matters set out in the terms of reference and taking into account relevant regulatory practice and supporting principles. Changes to the current methodology may be made where the Commission believes that changes are likely to entail substantially better outcomes for the ACT community as a whole.<sup>9</sup>

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<sup>6</sup> Industry Panel, 2015b: 1-17.

<sup>7</sup> ICRC, 2017b: 13.

<sup>8</sup> ACT Government, 2016a: 1.

<sup>9</sup> ICRC, 2017b: 2.

## 3 Framework and approach for 2018–23

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### 3.1 Introduction

In order to identify the preferred form of regulation to apply in the 2018–23 regulatory period, and in particular the form of price control and ancillary mechanisms, Icon Water has applied a framework against which to review the current form of regulation and assess potential improvements. The framework comprises an overarching economic efficiency objective and a set of principles, the application of which will help achieve the stated objective. The principles have been adapted from the approach applied by the ICRC to determine the form of price control for the 2008–13 regulatory period.<sup>10</sup> The framework is also consistent with the regulatory objectives and pricing principles set out in the ICRC’s issues paper for the 2018 price review.<sup>11</sup>

The objective is that set out in section 19L of the ICRC Act, which is to:

- promote the efficient investment in, and efficient operation and use of regulated services for the long term interests of consumers in relation to the price, quality, safety, reliability and security of the service.

This objective is based the National Electricity Objective contained in section 7 of the National Electricity Law.<sup>12</sup>

The seven principles, discussed in more detail below, are:

1. full recovery of the regulated business’s prudent and efficient costs, in a timely manner
2. incentivising the regulated business to reduce costs
3. allocation of risks between the regulated business and customers in an optimal manner
4. regulatory certainty for the regulated business
5. consistency with relevant ACT Government policies
6. management of community impacts
7. minimisation of regulatory costs for the regulator and regulated business.

In addition to the objective in section 19L, the framework is designed to be consistent with the ICRC’s other legislative price direction obligations, including the section 7 objectives and section 20(2) requirements, as well as the relevant matters raised in the terms of reference.

### 3.2 Principles

#### 3.2.1 Full cost recovery

Ensuring that the regulated business is able to fully recover the prudent and efficient costs of providing regulated services, as determined by the regulator, is a commitment under the NWI (see Box 2-2). Section 20(2)(e) of the ICRC Act also requires the ICRC to have regard to the cost of providing the regulated services.

In the ICRC’s issues paper, the second pricing principle, titled economic efficiency for investment and operation, states:

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<sup>10</sup> ICRC, 2007: 50-51.

<sup>11</sup> ICRC, 2017b: 1-54.

Regulated prices and supporting regulatory arrangements should facilitate the efficient recovery of the prudent and efficient costs of investment and operation. The finance recovery aspect of this principle is often described as ensuring revenue adequacy or financial viability.<sup>13</sup>

Full cost recovery plays a number of key roles. From the customer perspective, it provides a signal about the aggregate cost of providing them with the quantity of the service they wish to consume. It also ensures the ongoing financial viability of the regulated business and ensures there is no disincentive to invest in long-lived assets when they are needed. The ICRC notes that, if overall revenue is insufficient to finance the costs of operation and investment, 'efficient investment may not occur, which could have a major adverse impact on services'.<sup>14</sup> This would clearly be a poor outcome for the ACT community.

It is also important that the form of regulation provides the flexibility to allow prices, and therefore revenues, to track actual prudent and efficient costs in a timely manner. Costs and revenue may diverge over the course of a regulatory period because costs differ from forecasts or because demand differs from forecasts. While divergence due to management-controlled variation in cost is a central feature of incentive regulation, divergence due to uncontrollable variation in cost and demand is not. Persistent revenue shortfalls, due to actual sales being systematically lower than forecast, for example, are not only likely to undermine the investment incentives of the regulated business but also have implications for price stability, as they can result in a price shock in the subsequent regulatory period.

The form of regulation should ideally ensure that prices recover the total efficient cost of operation, as determined by the regulator at the time of the price review (plus adjustments for material variation in uncontrollable costs), in a timely fashion over the course of the regulatory period.

### **3.2.2 Incentives for cost reduction**

Section 20(2)(c) of the ICRC Act requires the ICRC to have regard to the need for greater efficiency in the provision of regulated services to reduce costs to consumers and taxpayers.

One of the central tenets of incentive regulation is that once maximum allowed revenues for regulated services are set – based on forecast prudent and efficient costs – the regulator does not adjust them within the regulatory period to reflect differences between the actual and forecast costs of providing the service.<sup>15</sup> If the actual costs are lower than forecast, the regulated business gets to keep the difference. If actual costs are higher than forecast, the business bears the loss. This arrangement provides a strong incentive for the business to reduce costs until the next determination.<sup>16</sup>

### **3.2.3 Risk allocation**

The need to set regulated prices in advance of a regulatory period that may be up to five years in length requires forecasts of both costs and demand. As a result regulated businesses and their customers are exposed to the risk of actual costs and demand varying from forecast.<sup>17</sup>

#### Cost risk

Cost risks are usually minimised by undertaking a thorough cost forecasting exercise in advance of the regulatory period that utilises the most current information and cost estimators. Pass-through

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<sup>13</sup> ICRC, 2017b: 9.

<sup>14</sup> ICRC, 2017b: 10.

<sup>15</sup> This only applies to controllable costs. Uncontrollable costs which are determined externally to the business, such as the Water Abstraction Charge, are usually adjusted by using pass-through arrangements.

<sup>16</sup> ESC, 2005: 147.

<sup>17</sup> 'Risk can be defined as a possible event that cannot be controlled by producers and consumers but for which it is possible to specify a probability distribution relating to the risky event' (QCA, 2013: 12).

arrangements are also commonly provided for (a fairly limited) set of unknown cost events that are outside of the control of the business. Under the incentive regulation approach, the remaining within-period cost risks are generally borne by the regulated business. Guthrie (2006) makes this point, suggesting that since incentive regulation does not reimburse actual costs, the business (and its shareholders) bears much more of the cost risk than customers.<sup>18</sup>

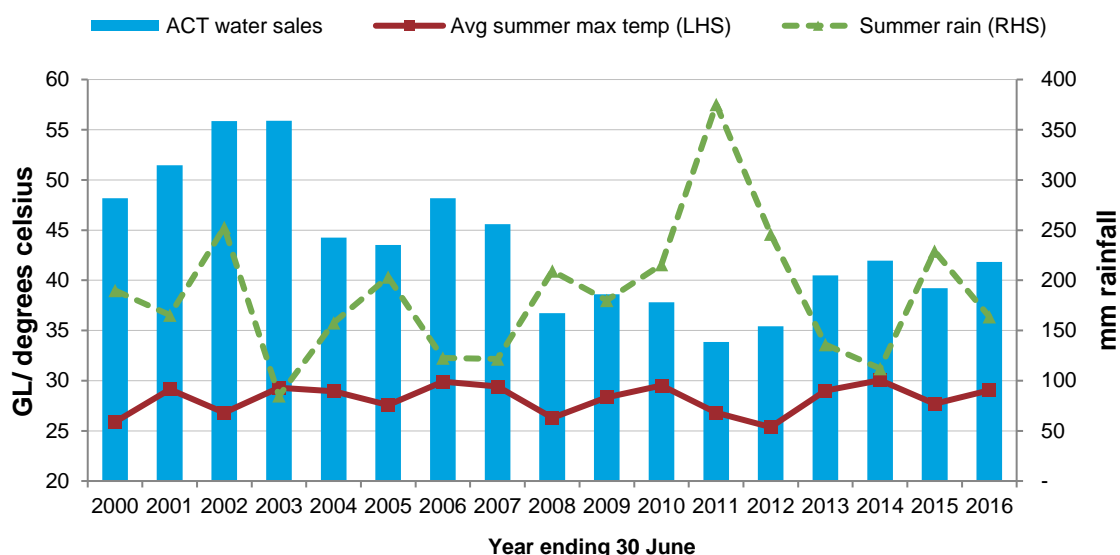
### Demand (volume) risk

On the demand side, Cowan (2004) notes:

Demand can change with the state of the world (for example the demand for energy depends on the ambient temperature), consumers' incomes, the prices of substitutes or complements, and with exogenous shifts in the number of customers.<sup>19</sup>

Demand for regulated services, particularly those that are strongly influenced by prevailing weather conditions, can be volatile, resulting in significant risk over the forecast period. Figure 3-1 shows the annual volatility in ACT water sales in years with cool and wet summers and those with warmer and drier summers. While demand risk can be reduced by using a robust forecasting approach, it cannot be entirely eliminated.

**Figure 3-1: ACT water sales, 2010–11 to 2015–16**



Source: Icon Water; Bureau of Meteorology.

Guthrie (2006) notes that:

Demand risk is a "real" risk, since it exists regardless of the regulatory settings. That is, it must be shared between investors and consumers, with the allocation determined by the regulator.<sup>20</sup>

The consequences of demand risk for the regulated business, where actual sales fall short of forecast, are exacerbated where business revenue is heavily reliant on usage charges, but costs do not vary

<sup>18</sup> Guthrie, 2006: 968.

<sup>19</sup> Cowan, 2004: 286.

<sup>20</sup> Guthrie, 2006: 938.

much with demand. Icon Water's demand risk is particularly high for these reasons. Because a large part of Icon Water's costs are fixed and do not vary much with the volume of water supplied, the lower revenue associated with lower water sales is not offset by lower costs.

The majority of Icon Water's water sales revenue is collected from variable charges, with only about 10 per cent collected from the fixed charge. The ICRC commented on this issue in the context of tariff reform, stating:

The lack of alignment between the fixed and variable components of the cost structure and the fixed and usage components of the revenue structure increases the risk that Icon Water will not realise revenues to recover its sunk and other fixed costs compared to a structure giving more weight to the annual fixed charge.<sup>21</sup>

Furthermore, the year-to-year climate variability primarily impacts on the more discretionary Tier 2 water sales, which, at double the unit price of the first tier, significantly increases revenue volatility.

As a result of these conditions, lower water sales lead to financial losses for Icon Water which compromise both full cost recovery and the financial performance of the business.

Economic efficiency requires the optimal allocation of risk between customers and the regulated business.<sup>22</sup> The question then is how best to allocate demand risk through the form of price control and ancillary mechanisms. At one end of the scale, under a strict price cap form of control with no provision for cost or demand adjustments, the business bears all the demand risk. At the other end, under a pure revenue cap, the customers bear all the risk.

As a general principle, risk should be allocated to the party that is best able to manage it.<sup>23</sup> In relation to monopoly energy regulation, Frontier Economics (2006) notes:

This raises an issue when considering the party best placed to manage volume risk: the regulated firm or its consumers. Since energy volumes are primarily a function of exogenous factors such as population, income and weather, it could be argued that neither party is particularly well-placed to manage this risk.<sup>24</sup>

### **3.2.4 Regulatory certainty**

Section 19L of the ICRC Act requires the ICRC to promote economic efficiency over the long-term. As noted by QCA (2012), the regulation of public utilities can be viewed as a form of long-term contract between the monopoly service provider and its customers, overseen by an independent third party, the regulator:

This long term contract is, in effect, a governance mechanism that functions to protect and incentivise relationship-specific, sunk investment between these parties. Once the investment is sunk, its value to investors depends on receiving an appropriate rate of return on, and of, capital, and its value to customers depends on access to the service at a reasonable price and expected standard of service.<sup>25</sup>

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<sup>21</sup> ICRC, 2017a: 25-26.

<sup>22</sup> This would ideally take into account the risk preferences of both parties – that is whether they are risk-averse, risk-neutral or like risk.

<sup>23</sup> Frontier Economics, 2006: 12.

<sup>24</sup> Frontier Economics, 2006: 12.

<sup>25</sup> QCA, 2012: vi.

In its final report for the 2016 Tariff Review, the ICRC makes a similar point in regard to the common practice of economic regulators to prioritise revenue recovery:

This is because utilities have large sunk costs and regulators need to make a credible commitment that the regulatory arrangements will ensure the recovery of efficient sunk costs – otherwise, efficient investments will not be made in the first place.<sup>26</sup>

Critical to this contractual arrangement is regulatory certainty – or alternatively the risk arising from the discretion that is provided to the regulator. Ergas *et al.* (2001) state that:

Regulatory discretion can be defined as the power to take a decision when there is no pre-defined “right” answer or more precisely as the consequence of “an express grant of power conferred on officials where determination of the standards according to which power is to be exercised is left largely to them”.<sup>27</sup>

Regulatory certainty can be considered from two perspectives. The first is short-term and relates to within-period discretion. The second is long-term and concerns commitment to the terms of the regulatory contract between periods and accountability for long-term performance across multiple periods.

#### Short-term

The form of regulation applied during the regulatory period should be clear and predictable with decisions open to discretion kept to a minimum to limit uncertainty for the regulator, regulated business and customers. This can be achieved through a certain level of prescription in the price direction, such as the use of formulae or a specified method for price adjustments.

#### Long-term

Regulatory commitment over the long-term is also important, as noted by Cowan (2006):

Regulators, or the governments that appoint them, can face temptation caused by the fact that assets owned by utilities are typically both long-lived and sunk. Once an investment has been sunk it may be tempting for a regulator to renege on a prior promise to allow revenue to include the capital elements (i.e. the return on and return of capital). The regulated firm, anticipating this incentive, might be unwilling to invest up front and a hold-up problem is created.<sup>28</sup>

Regulatory commitment is especially relevant in the context of the long-term investment decisions that regulated businesses are required to make.

Accountability for the performance of the form of regulation over the long-term is also important. For example, a systematic pattern of under recovery of revenue across regulatory periods due to successive decisions on the form of regulation is likely to undermine faith in the regulatory contract and impact on investment incentives. Ergas *et al.* (2001) note that:

for most industries, the major asset has an asset life in excess of 8 times the standard regulatory period. As a result of this gap between asset lives and regulatory cycles,

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<sup>26</sup> ICRC, 2017a: 25.

<sup>27</sup> Ergas *et al.*, 2001: 7.

<sup>28</sup> Cowan, 2006: 253.



investors in these industries cannot secure a high degree of commitment, from regulatory authorities, about the manner in which the returns on long-lived assets will be determined.<sup>29</sup>

### 3.2.5 Consistency with ACT Government water conservation policies

The terms of reference requires the ICRC to consider the policies of the ACT Government as they relate to the supply and use of water and sewerage services. The ACT Government's water policies that relate to the promotion of water conservation and efficient use of water in the ACT and long-term water security are the most relevant policies for consideration when making decisions in relation to form of regulation. The ACT Water Strategy states:

Maintaining efforts to reduce demand (consumptive use per capita) over the longer term is another central focus.<sup>30</sup>

More recently, in its response to the ICRC's draft tariff review report, the ACT Government indicated that the interaction between regulatory arrangements, such as the water tariff structure, and water conservation and water security policies, should be taken into account:

The Government considers the proposed tariff structure may lead to outcomes that would conflict with key Government actions committed to within the [ACT Water] Strategy. In particular, while it is acknowledged the Territory has achieved water security at the current time, the application of the precautionary principle would suggest that sustainable consumption, in line with long term water security requires continued application of price discipline. The relaxing of price signals associated with responsible consumption would increase risks associated with achieving longer term water security.<sup>31</sup>

In its issues paper, the ICRC's third pricing principle, titled 'environmental considerations', states that:

Regulated prices and complementary mechanisms should ensure that environmental objectives are effectively addressed.<sup>32</sup>

In general, a revenue cap form of price control provides less incentive for a regulated business to increase sales compared to a price cap. This point was made by the ICRC in its issues paper.<sup>33</sup>

### 3.2.6 Community impacts

The overarching objective in section 19L of the ICRC Act requires the ICRC to take account of the 'long-term interests of consumers' when making a price direction. Section 20(2)(g) also specifically requires the ICRC to have regard to the social impact of its pricing decisions. The ICRC has indicated that it will apply two community impact principles in meeting its regulatory objectives in the review process: gradual adjustment for any customer impacts and fair outcomes for low-income households.<sup>34</sup>

Price stability is commonly cited as a desirable regulatory outcome for customers. In the case of a risk averse customer (one that prefers a fixed price to volatile prices with the same expected value), this

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<sup>29</sup> Ergas *et al.* 2001: 2.

<sup>30</sup> ACT Government, 2014: 4.

<sup>31</sup> ACT Government, 2016b: 6.

<sup>32</sup> ICRC, 2017b: 9.

<sup>33</sup> ICRC, 2017b: 14.

<sup>34</sup> ICRC, 2017b: 9.

would indicate that a strict price cap form of control would benefit the customer.<sup>35</sup> In contrast, pure revenue caps increase the likelihood of price instability. The Australian Energy Regulator (AER) notes that price instability can occur under all forms of control that include annual price adjustments, and that revenue caps can be designed to minimise price instability.<sup>36</sup>

### 3.2.7 Administrative costs

Section 20(2)(c) of the ICRC Act requires the ICRC to have regard to the need for greater efficiency in the provision of regulated services to reduce costs to consumers and taxpayers. This includes the administrative costs of regulating prices, which are ultimately borne by customers.

## 3.3 Recent regulatory performance

### 3.3.1 2008–13 regulatory period

A key principle that the ICRC adopted in deciding the form of regulation for the 2008–13 regulatory period was that it should set prices to ensure that Icon Water received sufficient revenue to cover its prudent and efficient costs of providing the regulated service.<sup>37</sup> To this end, the ICRC incorporated an end-of-period deadband mechanism in the price direction.<sup>38</sup> This mechanism permitted the return/recovery of the difference between actual and allowed water revenue above/ below a 3 per cent deadband. Observed water demand fell well short of forecast, and continued to do so even after a mid-term volume adjustment by the ICRC, as shown in Figure 3-2. In its main submission to the 2013 price review, Icon Water stated:

by the end of the current regulatory period, revenues from water tariffs will have fallen short of the Commission's forecasts by \$268 million (or 27 per cent) in present value terms (\$2012-13). Some \$238 million (\$2012-13) of this amount is eligible to be recovered in tariffs from 1 July 2013 under Clause 7 of the Commission's 2008 Price Direction.

The revenue pass-through amount equates to 24 per cent of the revenue allowance for the entire current regulatory period.<sup>39</sup>

In its final decision for the 2013–18 regulatory period, the ICRC disallowed recovery of the revenue shortfall permitted under the deadband mechanism.<sup>40</sup>

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<sup>35</sup> Cowan (2006) notes that a fixed price may not be warranted where there is a non-zero elasticity of demand stating that 'Consumers can benefit from price flexibility—for example, when consumer surplus is a valid welfare measure, expected consumer surplus is higher with a volatile price because the consumer takes advantage of price changes to adjust the quantity purchased. Aversion to income risk can, however, offset this effect (Cowan, 2006: 255).

<sup>36</sup> AER, 2014: 58.

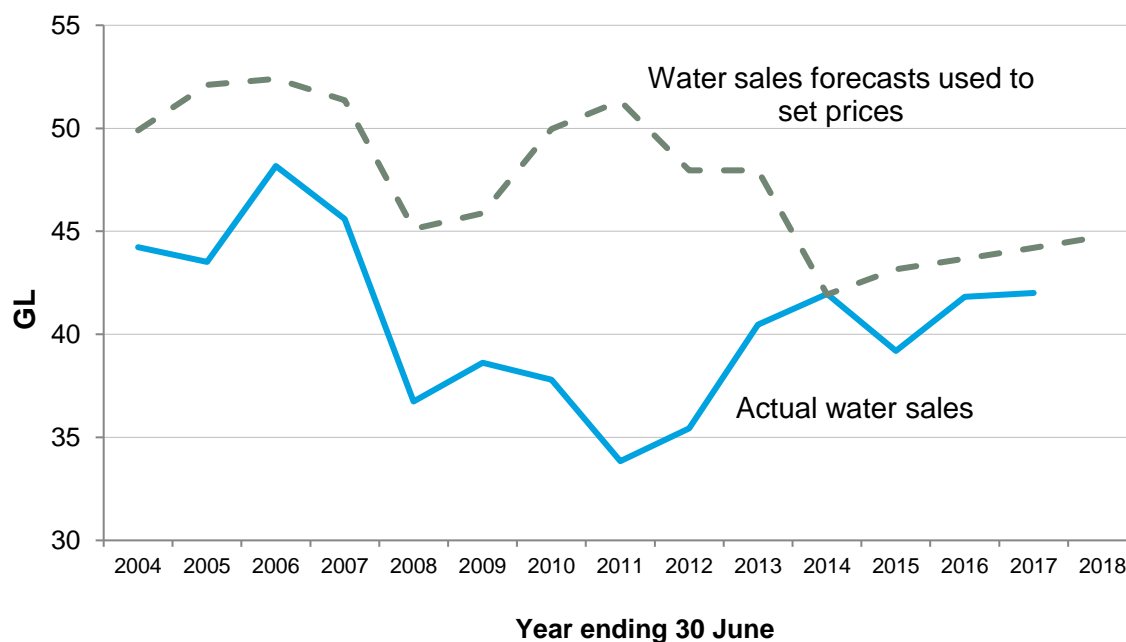
<sup>37</sup> ICRC, 2008: 5.

<sup>38</sup> ICRC, 2008: 167.

<sup>39</sup> ACTEW, 2012: vii-viii.

<sup>40</sup> ICRC, 2013: 122.

**Figure 3-2: Actual and forecast water sales**



Source: Industry Panel (2015a); ICRC (2008); ACTEW (2012); ACTEW (2007); ACTEW (2006).

Note: 2013–14 prices were effectively based on actual sales as part of the Industry Panel five-year price path for the period 2013–18 derived in 2015.

### 3.3.2 2013–18 regulatory period

In the 2013–18 regulatory period, the Industry Panel, in the substituted price direction, once again adopted a fairly rigid hybrid price and revenue cap approach. As discussed in [Attachment 4: Demand forecasts](#), the Industry Panel set water prices based on forecasts that were challenging.

As shown in Figure 3-2, the Industry Panel’s average forecast of 44.0 GL over the four years to 2017–18 is about 3 GL or seven per cent higher than the average observed sales to date. Should this trend continue over the final two years of the regulatory period, Icon Water is likely to lose about 5 per cent of its total allowed water sales revenue (the deadband on the demand volatility adjustment mechanism only permits losses greater than 6 per cent to be recovered next period).

Therefore, similar to the 2008–13 experience, a combination of inflexible pricing arrangements and water sales forecasts falling well short of actual sales again, will result in Icon Water not recovering the efficient costs of providing regulated water and sewerage services. This form of regulation has resulted in significant revenue shortfalls for Icon Water over two consecutive regulatory periods which confirms that change is needed, especially in relation to the form of control applied to standard water and sewerage services charges.<sup>41</sup>

A further implication of the mismatch between forecast and actual revenue, and the inability to make any price (or demand forecast) adjustments during the 2013–18 regulatory period, is that the adoption of a more robust forecasting model, with more realistic water volume forecasts, all other things remaining equal, puts upwards pressure on water prices from 1 July 2018. In its issues paper, the ICRC stated that if ‘demand for the next regulatory period remains at levels similar to what has eventuated in recent years, it may be difficult to avoid a material increase in prices over the next regulatory period’.<sup>42</sup>

<sup>41</sup> Icon Water supports retaining the current form of control for miscellaneous fees and charges, as discussed in section 4.5.2.

<sup>42</sup> ICRC, 2017b: 19.

In effect, by setting prices too low in the current regulatory period, there is a substantial price impact to be managed at the start of the next period.

### 3.3.3 Assessment against principles

Table 3-1 provides a summary assessment of the performance of the Industry Panel’s form of regulation against the principles described above.

**Table 3-1: Industry Panel form of regulation, assessment against principles**

Principles		Industry Panel form of regulation
<b>Full cost recovery</b>	✘	Full cost recovery will not be achieved as result of inflexible pricing arrangements.
	✘	Requirement to manage end-of-period water price impact due to the need to reset water volumes forecasts to get revenues and costs back into alignment.
<b>Cost reduction incentives</b>	✔	Icon Water bears the risk of variation in controllable costs within the regulatory period, providing incentives for cost reduction.
<b>Risk allocation</b>	✔	All controllable cost risk borne by Icon Water under standard incentive regulation arrangements. Uncontrollable cost risk shared, with materiality thresholds applying to pass-through arrangements.
	✘	Demand risk skewed, with Icon Water bearing variation of up to \$60 million before any sharing.
<b>Regulatory certainty</b>	✔	Limited within-period discretion.
<b>Consistency with ACT Government policies</b>	✘	The form of control makes revenue dependent on sales and therefore provides an incentive to promote water sales, which is counter to demand management objectives in the ACT Water Strategy.
<b>Community impacts</b>	✔	Limited price variability within-period.
<b>Administrative costs<sup>43</sup></b>	✘	Potential for substantial between-periods price shock.
	✔	Relatively low administrative costs within-period.

Source: Icon Water analysis.

To avoid repeating the pattern of poor regulatory outcomes to which Icon Water has been subject over the last decade in the 2018–23 regulatory period, some improvements to the Industry Panel’s form of price control and ancillary mechanisms are warranted. Icon Water’s proposals in this regard, assessed against the same framework, are presented in the remainder of this attachment.

<sup>43</sup> This comparison relates to the form of regulation adopted by the Industry Panel in 2015 and therefore excludes consideration of the 2013 ICRC decision and any consequential administrative costs.

## 4 Form of price control and ancillary mechanisms

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### 4.1 Introduction

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

- a price cap – a maximum price or both a minimum and maximum price for each regulated service, and/or
- a revenue cap – a maximum amount of revenue that may be earned providing regulated water and sewerage services.<sup>44</sup>

Section 20A(3) allows a price direction to include a formula for calculating or method for ascertaining the prices or amounts determined under the price or revenue cap.

In summary, consistent with section 20A of the ICRC Act, Icon Water proposes the following form of control and ancillary mechanisms for the 2018–23 regulatory period:

- a hybrid price and revenue cap over the 5-year regulatory period with separate annual price and revenue caps for water and sewerage services
- provision for negotiated contracts to avoid uneconomic bypass of Icon Water's primary water supply network with prudent discounts recovered from the broader customer base
- a separate annual unders and overs mechanism for water and sewerage services
- an annual price reset process where the ICRC adjusts prices to account for the change in the CPI, revenue shortfalls/over collections in the previous year and any pass-through amounts, subject to an annual materiality threshold and a maximum price change side constraint.

Under Icon Water's proposal, the price direction would:

- specify prices for 2018-19 and allowable revenue for the subsequent four years
- specify a method for calculating annual price resets, taking account of actual CPI, prudent discounts, unders and overs adjustments and pass-through amounts, subject to relevant materiality thresholds and side constraints.

Each of these elements is described in more detail below. Following this, Icon Water's proposal is assessed against the objective and principles established in section 3.

### 4.2 Hybrid price and revenue cap

Icon Water proposes that, in the price direction, the ICRC:

- sets out the maximum allowed revenue for the provision of water and sewerage services for each year of the regulatory period, using the post-tax building block method (see section 6.2) and smoothed as required<sup>45</sup>
- determines forecast demand for each year of the 5-year period, including water and sewerage installations and water sales volumes by tier

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<sup>44</sup> ACT Government, 1997: 29.

<sup>45</sup> The revenue cap applies to the net revenue requirement and therefore excludes revenue from miscellaneous charges, Commonwealth Government subvention payments and bulk water sales to Queanbeyan.

- sets out the maximum prices for water (supply charge and Tier 1 and tier volumetric prices) and sewerage (supply and fixture charges) services for the first year of the regulatory period and a method for ascertaining prices for each of the remaining four years (see section 4.5).

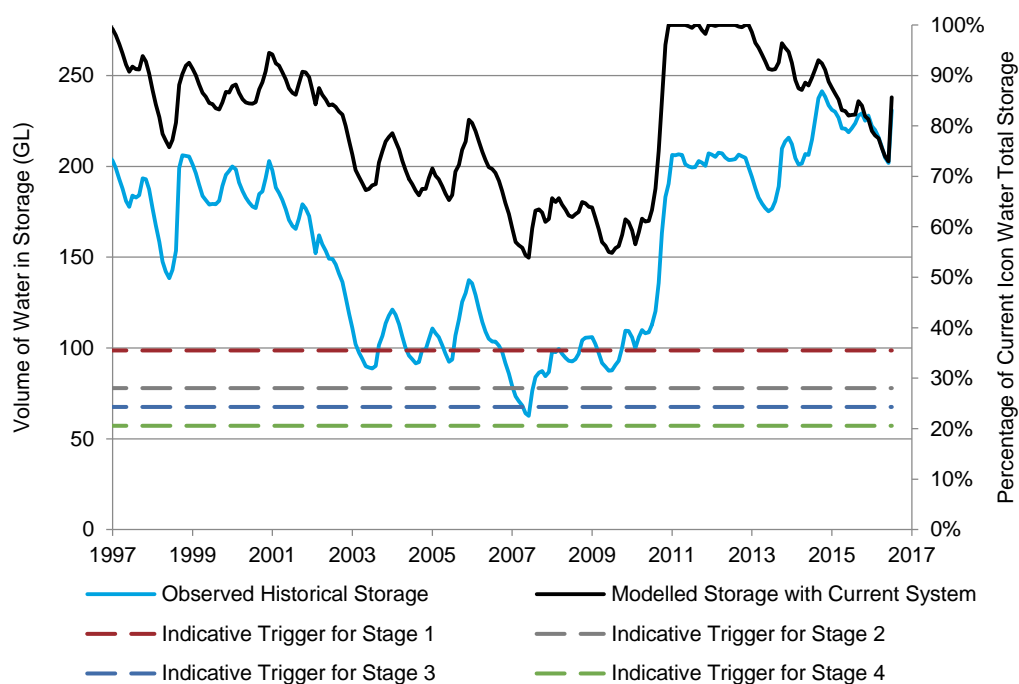
### 4.3 Negotiated contract arrangements

#### 4.3.1 Introduction

Icon Water has undertaken significant investment and augmentation of the ACT’s water supply over the last decade. As a result of these investments, and in particular the enlarged Cotter Dam, combined ACT water storage capacity has increased by more than a third from 206 to 278 GL. Following above average rainfall during the winter and spring of 2016, Canberra’s expanded water storages are at about 85 per cent.

Water supply in the ACT is now very secure. Icon Water supply and demand balance modelling shows that, if the Millennium Drought happened again now, water storage levels would not fall below 50 per cent and, based on current trigger levels, temporary water restrictions would not be imposed (see Figure 4-1).

**Figure 4-1: ACT water security – scenario modelling results for water storage**



Source: Icon Water (2016).

Given the current water security situation, supply side risk is likely to be low over the next regulatory period, with Icon Water in a good position to supply the water volumes demanded by its customers. There is also a close relationship between water security and the long-run marginal cost of water, as demonstrated by the ICRC in its technical paper on marginal cost pricing in the ACT. The further out the next water supply augmentation, the lower the long-run marginal cost of Icon Water providing an additional kilolitre (kL) of water.

In contrast, the current Tier 2 price at \$5.38 per kL is very high, well above the ICRC’s estimated marginal cost of \$1.74 per kL and the standalone cost of some alternative water systems.<sup>46</sup> This

<sup>46</sup> ICRC, 2016c: xv.

provides an incentive for large customers with access to an alternative water source to consider building and operating their own water supply system, resulting in inefficient or uneconomic bypass of Icon Water's primary network.

#### **4.3.2 Uneconomic bypass**

Following Broadman and Kalt (1989), a customer bypasses a regulated utility when it stops purchasing a good (or service in this case) from the utility and instead:

1. buys it from another utility in another service area (horizontal competition)
2. buys it from a party upstream from the utility (vertical competition)
3. produces the service itself (vertical integration), or
4. buys a service or product that is a close substitute.

In this case, it is items 3 and 4 that are most relevant. The high Tier 2 price encourages customers to invest in their own alternative non-potable water supply systems, which for irrigation purposes, is a close substitute for potable water.

The benefits and costs of utility bypass can be considered within the standard social welfare framework; benefits accrue to bypassers as consumer surplus gains, while losses can include a price increase for remaining customers, and construction costs for the bypasser. Bypass is inefficient (or uneconomic) where it results in social costs in excess of social benefits.

Uneconomic bypass of a monopoly utility service arises where the utility's tariff structure and price levels are not cost-reflective. Icon Water's current two-tier volumetric prices for water are \$2.68 per kL for the first 0.548 kL per day and \$5.38 per kL thereafter. The ICRC's technical paper on marginal cost pricing in the ACT estimated Icon Water's short- and long-run marginal cost of providing an additional kL of water at \$0.72 and \$1.74 per kL, respectively – well below current prices in both tiers.<sup>47</sup>

Customers have an incentive to adopt an alternative water supply where the levelised cost is lower than Icon Water's Tier 2 price of \$5.38 per kL. Where the levelised cost of these bypass projects is greater than \$1.74 per kL (on a long-run marginal cost basis), the projects will increase overall water supply costs to remaining customers. The benefit to the large user from reducing its own water expenditure will be more than offset by the cost to users remaining on the primary network from whom the premium above marginal cost that had been paid by the large user must now be recovered. In this situation, social benefits are outweighed by social costs and the end result is 'wastefully duplicative physical investments'.<sup>48</sup>

When faced with this situation, the economically efficient response from a utility would be to offer a 'prudent discount' on the standard customer contract price to the customer to prevent them from bypassing the network. This discount will make all customers better off, as long as the discounted price is between a lower bound of the avoidable cost of not supplying this customer and an upper bound of the standalone cost of the customer building and operating its alternative supply.

#### **4.3.3 Current regulatory arrangements**

##### Energy sector

Regulatory arrangements that provide for prudent discounts to deal with uneconomic bypass are relatively common in electricity and gas network service provision in Australia.

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<sup>47</sup> ICRC, 2016c: xvi.

<sup>48</sup> Broadman and Kalt, 1989: 185.



For example, both the National Electricity Rules (NER) and National Gas Rules (NGR) provide measures for network service providers to enter into prudent discount arrangements and to recover the prudent discount amount from other customers (see Box 4-1).

**Box 4-1: Prudent discount provisions in the NER and NGR**

Rule 6A.26 of the NER sets out arrangements for prudent discounts for transmission services.<sup>49</sup>

Rule 96 of the NGR permits the Australian Energy Regulator (AER) to approve a discount if necessary to respond to competition or maintain efficient use of the pipeline, as long as the provision of the discount is likely to lead to tariffs lower than they would otherwise have been.<sup>50</sup>

Source: AEMC (2016); AEMC (2017).

In Western Australia, clause 7.9 of the *Electricity Networks Access Code 2004* permits the electricity network service provider (Western Power Network) to make prudent discounts in its access arrangements. This provision is reflected in Western Power Network's current access arrangement which allows it to discriminate between users in its pricing of services to the extent that it is necessary to aid economic efficiency, including:

- entering into an agreement with a user to apply a discount to tariff to be paid by the user
- then recovering the amount of the discount from other users through tariffs.<sup>51</sup>

If a customer demonstrates that another supply option will provide a comparable service at a lower price than that offered by Western Power, and provides sufficient details to allow the annualised cost to be calculated, Western Power's discounted price offer will be set to reflect the higher of the cost of the other option or the incremental cost of service provision.

ACT water and sewerage sector

The current price direction that controls Icon Water's regulated water and sewerage service prices, the *Substituted Price Direction: Regulated Water and Sewerage Services, 1 July 2013 to 30 June 2018* (the price direction), sets the maximum regulated water and sewerage service prices that Icon Water can charge its customers. This permits Icon Water to offer customers a lower volumetric water price in order to discourage bypass, but does not provide for the recovery of any prudent discount amount from the broader customer base. This means that if Icon Water were to offer a prudent discount under current arrangements, it would forego revenue equivalent to the prudent discount amount.

The ICRC has recently finalised a review of tariff structures for Icon Water's regulated water and sewerage services. The final report for this review, published in March 2017, provides a set of pricing principles intended to guide the design of water tariff structures for the next regulatory period.

The final report notes that an inappropriate tariff structure may create incentives for uneconomic bypass where a large user is able to access a lower priced alternative source of supply, but one which is of higher cost than the efficient costs of the regulated natural monopoly.<sup>52</sup> In its summary of the current water tariff structure, the ICRC concludes that the current structure is inefficient and that 'there is also a strong risk of uneconomic bypass'.<sup>53</sup>

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<sup>49</sup> AEMC, 2016: 870.

<sup>50</sup> AEMC, 2017: 68.

<sup>51</sup> Western Australian Government, 2004: 5592.

<sup>52</sup> ICRC, 2017a: 18.

<sup>53</sup> ICRC, 2017a: 30.



#### 4.3.4 Uneconomic bypass impacts

Table 4-1 shows the revenue and future bill impacts arising from a hypothetical example involving the potential bypass of 500 megalitres (ML) of water. This shows that a discount of 16 per cent on the top tier price under a negotiated contract to keep the customer entails a prudent discount amount of \$422,000. This compares to the \$2,636,000 revenue loss consequent upon losing the bypass volume.

**Table 4-1: Hypothetical uneconomic bypass example revenue and bill impact**

	No prudent discount	Prudent discount
<b>Tier 2 price (\$/kL)</b>	5.38	4.50
<b>Annual water volume at stake (ML)</b>	500	500
<b>Annual revenue loss/ prudent discount amount (\$'000)</b>	2,636	422
<b>Future annual water charge impact (\$ per annum)</b>	21.10	3.40

Source: Icon Water analysis.

The future water charge impacts on customer bills, assuming the prudent discount (revenue loss) is funded by adjustments to the Tier 1 usage charge and thereby spread across all customers, show that customers are much better off under the negotiated outcome.

#### 4.3.5 Proposed negotiated contract arrangements for 2018–23

Icon Water is facing the real prospect of uneconomic bypass of its primary water supply network. A case study of a recent negotiated contract with a large commercial customer is provided to the ICRC on a commercial-in-confidence basis (see Appendix 1). Given the provisions of the current price direction, Icon Water has chosen to forego revenue by entering into this particular contract rather than risk losing a significant volume of water sales that would be to the detriment of all customers.

Icon Water is proposing that a formal mechanism to deal with future cases of uneconomic bypass be provided in the price direction for the 2018–23 regulatory period. The proposed mechanism would permit the following:

- Icon Water entering into a negotiated contract with a large customer that is demonstrably planning to bypass Icon Water’s primary water supply network
- agreeing pricing arrangements including:
  - a prudent discount sufficient to discourage bypass plans (verified by independent cost estimation), and
  - a more appropriate tariff structure such as a high fixed charge and single volumetric price
- the ability to recover the prudent discount amount from all Icon Water customers to ensure full cost recovery.

Icon Water has developed a framework to guide its decision-making around negotiated contract arrangements and prudent discounting. The purpose of the framework is to ensure that a discount on the maximum regulated water price is only contemplated in circumstances where failure to do so would demonstrably result in a welfare loss, and more specifically, higher prices for remaining customers. The framework is described in Appendix 1.

#### Revenue recovery and interaction with the unders and overs account

Icon Water’s proposed unders and overs account arrangement (see section 4.4) provides a means to deal with recovery of the prudent discount amount in the event of a negotiated contract being entered

into during the course of the regulatory period. The prudent discount amount would be captured in the variance between forecast and actual revenues without the need for any separate arrangements.

#### 4.4 Unders and overs account

Icon Water proposes separate annual unders and overs accounts for water and sewerage services revenue. The accounts would be used to adjust the maximum forecast revenue for the year for which prices are being set ( $year_t$ ) to account for estimated revenue variations from  $year_{t-1}$  and actual revenue variations from  $year_{t-2}$ , indexed by the weighted average cost of capital.

Icon Water proposes a 0.5 per cent (of the smoothed revenue requirement) annual threshold to confine annual price adjustments to only material unders and overs balances. Any amounts not recovered/ returned as a result of the materiality threshold would be rolled forward in the unders and overs account.<sup>54</sup> Any balances remaining at the end of the regulatory period would be carried forward to the subsequent period. A hypothetical water account example is provided in-confidence at Appendix 2, adapted from the unders and overs approach applied by the AER.<sup>55</sup>

The interaction between the unders and overs accounts and annual price adjustment process is discussed in section 4.5. The proposed arrangement negates the need for a separate annual pass-through process to adjust for under/ over collections of the WAC, UNFT and Commonwealth subvention payments as is the case under the current price direction. This is discussed in section 7.

#### 4.5 Annual price reset process

##### 4.5.1 Standard water and sewerage services charges

Icon Water proposes that the following annual price adjustment method be set out in the price direction to ascertain prices from the second year of the regulatory period.

###### Year 2 (2019–20)

The ICRC adjusts the water supply charge and makes no adjustment to the Tier 2 water price, in line with Icon Water's tariff proposal (see [Attachment 12: Tariff structure](#)). The ICRC adjusts the Tier 1 water price and sewerage supply and fixture charges for any X factor and the change in the CPI using the formula as set out in the current price direction (and provided below).<sup>56</sup>

###### Year 3 onwards (2020–21 to 2022–23)

In April/ May each year, Icon Water provides the ICRC with the water and sewerage unders and overs accounts, containing the latest available revenue data.

The ICRC adjusts the water supply charge and makes no adjustment to the Tier 2 water price, in line with Icon Water's tariff proposal.

The Tier 1 water price and sewerage supply and fixture charges are first adjusted for any X factor and changes in the CPI. A second adjustment takes place to account for any unders and overs amounts (which includes any pass-through amounts). Icon Water proposes that this calculation follow that currently applied by the ICRC when making a pass-through adjustment under the current price direction.<sup>57</sup>

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<sup>54</sup> This would also capture any amounts rolled forward due to the pricing side constraint in the annual pricing process (see section 4.5).

<sup>55</sup> AER, 2015: Appendix A.

<sup>56</sup> Industry Panel, 2015b: 5.

<sup>57</sup> ICRC, 2016b: 3-5.

To minimise price increases from year to year, each of the above three prices would be subject to a 3 per cent side constraint. This would limit the increase in the combined bill for any level of water user to a maximum of 5.5 per cent. The maximum impact on a 200 kL per annum water user would be about 4.5 per cent. Any revenue forgone in years in which the side constraint is binding would be recovered in future years via the unders and overs mechanism.

A hypothetical example of the annual adjustment process containing all the relevant calculations, including its interaction with the unders and overs mechanism, is provided at Appendix 2.

#### CPI adjustment formula

Icon Water proposes that the change in the CPI is calculated in accordance with the following formula:

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

where:

- *CPI* means the All Groups consumer price index (weighted average of eight capital cities) as published by the Australian Bureau of Statistics.

#### **4.5.2 Miscellaneous fees and charges**

##### Introduction

Icon Water currently provides a number of regulated miscellaneous water and sewerage services, including:

- special meter readings
- testing of water meters
- the provision of rate certificates
- tapping into water mains
- installation of fire hydrants
- disconnection
- installation and removal of stop valve locking cover
- meter relocation.

Following approval by the ICRC in the 2017–18 price reset process, miscellaneous charges have been separated from standard water and sewerage service charges and are now contained a separate price schedule.<sup>58</sup> The two charge schedules are now as follows:

- Standard water and sewerage services charges – this schedule contains the standard water and sewerage charges, the Class 1 through 6 land category charges (except for the metered hydrant standpipe water charge) and items 1 and 2 from the 2916–17 miscellaneous charges schedule.
- Miscellaneous fees and charges – this schedule contains the metered hydrant standpipe water charge and the remainder of the miscellaneous charges.

The 2017–18 miscellaneous fees and charges schedule is available for download on Icon Water's website.<sup>59</sup>

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<sup>58</sup> ICRC, 2017c: 1.

<sup>59</sup> See [iconwater.com.au](http://iconwater.com.au).

### Form of control

Icon Water proposes no change in the current form of control for miscellaneous fees and charges, which is set out in clause 7 of the current price direction.<sup>60</sup> The price to be charged for each miscellaneous service should be increased in line with the change in the CPI in each year of the regulatory period, including 2018–19, as per the formula below:

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

where:

- $P_t$  is the price to be charged for the relevant miscellaneous service in year  $t$
- $P_{t-1}$  is the price charged for the relevant miscellaneous service in the previous year.

### New miscellaneous services

Section 7 of the current price direction allows Icon Water to apply to the ICRC to introduce a new miscellaneous service during the regulatory period. The following information is required to be submitted along with the application:

- a description of the new miscellaneous service
- the reasons for the introduction of the new miscellaneous service
- the terms and conditions which will apply to the provision of the new miscellaneous service
- the direct efficient costs of providing the new miscellaneous service
- a forecast of the annual volume of sales of the new miscellaneous service
- the proposed price for the new miscellaneous service for the first year it is to be in place.

Icon Water proposes that this provision be retained for the 2018–23 regulatory period, but to provide additional flexibility, extended to allow for the removal or change to an existing miscellaneous service.

### **Capital contribution charges**

In March 2017, Icon Water submitted a proposal to the ICRC to introduce a Water and Sewerage Capital Contribution scheme as an industry code under Part 4 of the *Utilities Act 2000*. The draft code is currently under consideration by the ICRC.<sup>61</sup> The proposed scheme for brownfield development areas in the ACT will help fund infrastructure upgrades through the levying of capital contribution charges on developers. In its submission to the annual price adjustment process for 2017–18, Icon Water proposed that the capital contribution scheme be treated as a new miscellaneous service under the current price direction, and that charges that would apply under the proposed scheme be treated as miscellaneous charges. In its 2017–18 decision, the ICRC indicated that it will consider Icon Water's application in due course as part of its determination of the proposed water and sewerage capital contribution code.<sup>62</sup>

The annual review of capital contribution charges would differ from the CPI adjustment that applies to the current set of miscellaneous fees and charges. The proposed annual capital contribution charge adjustment process is set out in the information paper accompanying the draft Water and Sewerage Capital Contributions Code.<sup>63</sup> The charge is based on a financial model that relies on 20-year forecasts of ACT population growth and capital expenditure (capex) required to augment the water and sewerage network to service this growth. Icon Water is proposing that the model is updated annually to reflect

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<sup>60</sup> Industry Panel, 2015b: 6.

<sup>61</sup> The draft code and associated explanatory documents are available on the ICRC website ([icrc.act.gov.au](http://icrc.act.gov.au)). The ICRC put out Icon Water's proposal for public comment on 30 March 2017, with submissions due by 12 May 2017.

<sup>62</sup> ICRC, 2017c: 6.

<sup>63</sup> Icon Water, 2017: 54.

updates to ACT Government projections and the associated capex plan. The revised model and associated charges (along with any proposed changes to precinct boundaries) would be submitted to the ICRC annually as part of the annual price reset process described in section 4.5.

### **Trade waste charges**

Following further customer engagement and development of an appropriate charging model, Icon Water is intending to introduce trade waste charging arrangements as a new miscellaneous service during the 2018–23 regulatory period, as discussed in [Attachment 12: Tariff structure](#). Icon Water intends to apply to the ICRC and provide the necessary information relating to the reasons for the introduction, the costs of providing the service, a forecast of sales volumes, the proposed prices to apply and any interactions with the sewerage revenue requirement. Icon Water proposes that any changes to the revenue requirement and implications for prices be dealt with as a pass-through utilising the proposed unders and overs account and annual price reset process.

## 5 Performance against principles

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### 5.1 Introduction

In its issues paper, the ICRC indicated that a hybrid price and revenue cap remains the appropriate form of control, but is open to making modifications where appropriate.<sup>64</sup> Consistent with this view, Icon Water is proposing a hybrid form of control, with a number of modifications to the Industry Panel's approach. In particular, Icon Water is proposing an annual revenue adjustment mechanism to ensure full recovery of forecast costs, but without compromising price stability. While the adoption of a more sensible demand forecasting approach for water volumes will assist in reducing demand risk, as long as the majority of revenue is collected from variable charges, as will be the case in the 2018–23 regulatory period, the year-to-year climatic risk remains. This point was noted by the ICRC in its issues paper:

In the absence of material rebalancing of the tariff components, there is likely to be a need for revenue adjustment mechanisms to take account of the impacts of forecasting errors.<sup>65</sup>

Icon Water believes that its proposed approach will better achieve the ICRC's regulatory objectives and therefore result in better outcomes for the ACT community. This is demonstrated below by assessing Icon Water's proposal compared to the current form of regulation against the framework described in section 3.

### 5.2 Full cost recovery

Icon Water's proposed annual price adjustment process, in conjunction with the unders and overs mechanism, will ensure that Icon Water fully recovers the prudent and efficient costs of providing regulated water and sewerage services in a timely fashion. This outcome will be achieved irrespective of fluctuations in water demand due to year-to-year climatic variability. In this respect Icon Water's proposal improves on the Industry Panel's approach which has not satisfied the full cost recovery principle.

The proposed arrangements will also minimise the chances of any systematic divergence between prices and costs over the course of the regulatory period. This will support efficient investment incentives and reduce the likelihood of price shocks between regulatory periods.

Icon Water's proposal will also ensure that, in circumstances where actual demand exceeds forecasts, there is no systematic recovery of revenue above efficient cost resulting in higher prices for customers than necessary. In its assessment of the optimal form of control to apply to ActewAGL Distribution in the regulatory control period commencing 1 July 2019, the AER notes:

We consider a control mechanism that results in higher bills for consumers than necessary is not consistent with the national electricity objective.<sup>66</sup>

The same logic can be applied to lower bills. As noted in section 3.1, the objective in section 19L of the ICRC Act is based on the national electricity objective.

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<sup>64</sup> ICRC, 2017b: 15.

<sup>65</sup> ICRC, 2017b: 21.

<sup>66</sup> AER, 2017: 41.

### 5.3 Cost reduction incentives

Icon Water's proposed form of price control provides the same cost-efficiency incentives as the Industry Panel approach. Icon Water would bear all of the risk of variation in controllable costs, since the proposal does not provide for within-period adjustments for variation in controllable costs. The ability to retain the difference between actual and forecast costs provides a strong incentive for Icon Water to seek further cost reductions.

The AER notes, in relation to revenue caps that apply unders and overs arrangements:

We also consider that under a revenue cap, distributors have an incentive to reduce their costs because their revenues are assured during the regulatory control period. These lower costs can be shared with customers in future regulatory control periods.<sup>67</sup>

In its issues paper and final report for the 2016 Tariff Review, the ICRC makes a link between the guarantee of revenue recovery through revenue caps or unders and overs arrangements, and a reduction in incentives to reduce costs.<sup>68</sup> It is important to recognise that the proposed unders and overs mechanism would have no adverse impact on incentives for cost efficiency. Incentives for cost reduction apply equally under a price cap, revenue cap or hybrid form of price control, as long as they do not provide for within-period adjustments to controllable costs. It is the delinking of revenues from costs (as distinct from demand) that creates the cost reduction incentive. This was noted by QCA (2014):

Most [network service providers] operate under a revenue-cap regime. The delinking of actual costs from prices creates an incentive for regulated firms to be cost efficient in order to earn higher profits.<sup>69</sup>

### 5.4 Risk allocation

Under Icon Water's proposed approach, as is standard under incentive regulation, Icon Water bears the within-period controllable cost risks. Icon Water's proposed opex efficiencies, discussed in [Attachment 7: Operating expenditure](#), will deliver substantial cost savings to customers during the 2018–23 regulatory period. Icon Water bears the risk of variation around this challenging forecast.

On the demand side, Icon Water has previously noted that it is not well placed to manage demand risk, for two reasons.<sup>70</sup> First, the number of customers receiving regulated water services is effectively outside of Icon Water's control, since it is determined by government and private property development. Second, Icon Water is effectively precluded from promoting increased water usage as a means of avoiding a potential revenue shortfall by the ACT Government's water conservation policies, including the ACT Water Strategy.

A third reason can be added, which is that Icon Water does not have the ability to adjust its tariff structures to respond to falling demand. The ICRC has indicated in its issues paper that in relation to the setting of the tariff structure and its component prices, the ICRC's 'position is that the existing model should remain in place'.<sup>71</sup>

Icon Water therefore proposes a reduction in the demand risk that it bears relative to the Industry Panel approach, by replacing the existing demand volatility adjustment mechanism with an unders and overs

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<sup>67</sup> AER, 2017: 40.

<sup>68</sup> ICRC, 2017b: 14; ICRC, 2017a: 26.

<sup>69</sup> QCA, 2014: 70.

<sup>70</sup> Icon Water, 2015: 9.

<sup>71</sup> ICRC, 2017a: 59.

mechanism. While customers would face demand risk in relation to price under this proposal, the risk of customers paying more or less than the efficient cost of service provision would be reduced.

In this regard, in relation to the regulation of electricity distribution network service providers (DNSPs), QCA (2001) noted:

The use of an unders and overs approach is supported by the limited ability of DNSPs to influence demand. The symmetrical adjustment for demand variations implicit within the unders and overs approach serves to mitigate volume risk to both customers and DNSPs.<sup>72</sup>

## 5.5 Regulatory certainty

Icon Water's proposed form of regulation will provide certainty over the 2018–23 regulatory period as it clearly prescribes the annual price adjustment process, which is largely formulaic.

## 5.6 Consistency with ACT Government policies

Icon Water's proposed form of regulation ensures consistency with the ACT Government's water conservation policies. The unders and overs accounts and annual price adjustment process ensures revenue recovery irrespective of demand. This means, in contrast to the Industry Panel's pricing arrangements where revenue is dependent on sales, there is no incentive for Icon Water to increase water sales.

## 5.7 Community impacts

Icon Water's proposed hybrid form of control would guard against large bill increases for all customers, with a more accurate matching of revenues and costs maximising the stability of customers' water bills over and between regulatory periods.

While pure price caps are more likely to deliver price stability within the regulatory period, they can lead to between period price shocks where costs and revenues get out of alignment. In contrast, more flexible forms of control such as revenue caps, or hybrid approaches that include unders and overs adjustments, mitigate against between period price shocks but can lead to within-period price instability.

Typically there is a 2-year lag between the year in which the under (over) recovery of revenue takes place ( $year_{t-2}$ ) and the year in which audited accounts are available to allow an accurate true-up adjustment ( $year_t$ ). In developing its unders and overs approach, the AER noted that this lag can cause price instability in circumstances where an under (over) recovery of revenue in one year is followed by an over (under) recovery in the following year. In mitigation, the AER chose to apply a rolling 3-year account which includes an additional true-up for the estimated under and over recovery of revenues for the year in between ( $year_{t-1}$ ) on the basis that:

The inclusion of this estimated year helps smooth year on year revenue and tariff adjustments because the effects of the estimated year  $t-1$  under or over recovery will have been largely accounted for when year  $t-1$  becomes year  $t-2$ .<sup>73</sup>

Icon Water's proposed hybrid approach has been designed to deliver both within and between period price stability. Within-period price variation would be limited not only by the 3-year rolling approach, but also by the application of a side constraint on annual price changes, with any revenue forgone in years in which the constraint is binding rolled forward in the unders and overs account. Moreover, the

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<sup>72</sup> QCA, 2001: 41.

<sup>73</sup> AER, 2017: 42.



interaction between the annual price adjustment process and unders and overs account will also ensure that revenues remain aligned with uncontrollable costs and forecast controllable costs across the regulatory period, thereby minimising between-period price shocks.

## **5.8 Administrative costs**

Icon Water's proposed form of regulation, and annual price adjustment process, in particular, is no more complex and will impose no additional costs compared to the current arrangements under the Industry Panel's approach.

The current arrangements require an annual adjustment for the change in the CPI and pass-through amounts for the WAC, UNFT and subvention payments. Icon Water's proposal incorporates the pass-throughs in the unders and overs accounts and adopts the same annual price adjustment methodology as is currently applied by the ICRC. This is demonstrated in the Microsoft Excel spreadsheet provided in Appendix 2. The only additional effort required would be the maintenance of the unders and overs accounts, which would be a low-cost exercise for Icon Water.

## **5.9 Summary**

Table 5-1 provides a summary of the performance of Icon Water's proposed form of regulation against the seven principles, in comparison to the Industry Panel's regulatory approach.

**Table 5-1: Proposed form of regulation for 2018–23, summary comparison against principles**

Principles	Icon Water proposal	Industry Panel
<b>Full cost recovery</b>	✓ Unders and overs account will ensure full cost recovery	✗ Full cost recovery dependent on accuracy of water sales forecasts
	✓ Limits potential for large between-period price shocks	✗ Potential for large price adjustments between periods
<b>Cost reduction incentives</b>	✓ Standard incentive regulation cost reduction incentives	✓ Standard incentive regulation cost reduction incentives
<b>Risk allocation</b>	✓ Cost risk borne by Icon Water under standard incentive regulation arrangements	✓ Cost risk borne by Icon Water under standard incentive regulation arrangements
	✓ Customers bear demand risk on price, but reduce risk of paying more than needed to cover efficient water and sewerage services	✗ Demand risk skewed towards Icon Water
<b>Regulatory certainty</b>	✓ More price flexibility but still limited within-period discretion	✓ Limited within-period discretion
<b>Consistency with ACT Government policies</b>	✓ No incentive to increase water sales as revenue assured	✗ The deadband approach provides an incentive to promote water sales
<b>Community impacts</b>	✓ Any volatility due to unders and overs limited by price side constraint	✓ Limited price variability within-period
	✓ Limited potential for large between-period price shocks	✗ Potential for substantial between periods price shock
<b>Administrative costs</b>	✓ May be some minor incremental costs to deal with unders and overs calculations	✓ Relatively low administrative costs within-period

Source: Icon Water analysis.

In conclusion, Icon Water’s proposed form of regulation is assessed to perform better than maintaining the Industry Panel’s regulatory approach in five out of the seven assessment principles. Icon Water’s proposed approach is more likely to achieve the section 19L objective and section 20(2) requirements of the ICRC Act, and ensure consistency with ACT Government policies, than continuing with the Industry Panel approach. The proposed form of regulation will result in substantially better outcomes for the ACT community than the current approach as it will support the ongoing financial viability of Icon Water, critical for the continued provision of efficient water and sewerage services, while managing community impacts.

## 6 Regulatory period and revenue approach

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### 6.1 Length of regulatory period

The terms of reference for the 2018 price review prescribes a 5-year regulatory period:

The price direction will be for the period of 1 July 2018 to 30 June 2023.<sup>74</sup>

Icon Water's view is that a 5-year period provides a sufficiently long period to incentivise the discovery of further cost efficiencies and at the same time reduces the administrative costs of more frequent price reviews.

### 6.2 Building-block framework

The ICRC Act does not set down whether the revenue building-block calculation should be based on a pre-tax or post-tax framework. The Industry Panel applied a post-tax revenue model (PTRM) in determining Icon Water's maximum allowed revenue for the 2013–18 regulatory period.<sup>75</sup>

Icon Water's preference is for the ICRC to continue to use the PTRM approach to determine Icon Water's maximum allowed revenue for the 2018–23 regulatory period.

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<sup>74</sup> ACT Government, 2016a: 1.

<sup>75</sup> See the Industry Panel's pricing model at: [apps.treasury.act.gov.au](https://apps.treasury.act.gov.au).

## **7 Pass-through and price variation trigger arrangements**

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### **7.1 Pass-through arrangements**

#### **7.1.1 Introduction**

Pass-through adjustments provide an efficient means of sharing risks that can't be managed by Icon Water relating to unforeseeable or unknown events that could have a major cost impact. Importantly, applications and adjustments for pass-through events should be made within the regulatory period to limit the potential for any major period-to-period bill impacts from material unforeseeable cost changes. This provision is consistent with the Industry Panel's approach.

The Industry Panel's substituted price direction provides for the following pass-through events within the regulatory period:

- WAC event
- UNFT event
- subvention payment event
- change in other taxes event
- service standard event
- regulatory obligations event
- Tantangara Transfer Payment event.

Icon Water proposes to retain these pass-through events for the 2018–23 regulatory period and add one more; a contingent project event.

#### **7.1.2 WAC, UNFT and subvention payment**

Icon Water proposes retaining the WAC, UNFT and subvention payment events. Should Icon Water's proposed form of control and ancillary mechanisms be adopted as set out in section 4, variations between forecast and actual WAC, UNFT and subvention payment amounts would be dealt with in the unders and overs account.

#### **7.1.3 Other taxes, service standard and regulatory obligations**

Icon Water proposes retaining the change in other taxes, service standard and regulatory obligations events as drafted in the current price direction, with the exception of the materiality threshold (discussed below).

#### **7.1.4 Contingent project arrangements**

##### Introduction

Contingent project arrangements provide a means to deal with significant projects that are subject to uncertainty at the time of the price review. Contingent project mechanisms have been widely adopted by regulators in Australia, particularly in relation to regulation of the electricity industry, as an approach to provide flexibility to both regulators and regulated businesses by balancing the risks of uncertain projects between businesses and customers at the time of a regulatory review.

There are circumstances where at the time of a regulatory review either:

- the cost of a project is known with some certainty, but its need is dependent on circumstances that are highly uncertain (known cost, uncertain need)
- an event is known to be likely to occur during a regulatory period, but its capital costs are highly uncertain (known need, uncertain cost).

For large projects in either of these circumstances, it is appropriate for a regulator to include a provision in the regulatory arrangements to allow for a price adjustment once uncertainty has been resolved so that unnecessary costs are not included in the initial revenue allowance.

A contingent project mechanism has the advantage of allowing the regulator to exclude uncertain (in either need or cost) projects from the revenue requirement, whilst also providing the regulated business with some certainty that, if the events occur or the costs become known, the prudent and efficient costs will be recovered. In effect the mechanism removes one element of regulatory uncertainty relating to these circumstances.

In the 2008 price direction, the ICRC provided for two contingent water security projects – a demonstration water purification plant and the Tantangara Transfer Project. The price direction included a pass-through mechanism that allowed for prices to be revisited during the regulatory period in the event either of the contingent projects proceeded.<sup>76</sup> The Tantangara Transfer Project did eventuate, and following a mid-term review adjustment by the ICRC, capital expenditure on this project was included in water prices from 1 July 2011.<sup>77</sup>

Icon Water proposes a new pass-through event for a contingent project in the 2018–23 regulatory period: the Best for Region (BFR) Sewage Treatment Plant.

#### The Best for Region Sewage Treatment Plant

In the 2018–23 regulatory period, Icon Water will consider the option of a joint undertaking with Queanbeyan-Palerang Regional Council (QPRC) to construct and operate a new sewage treatment plant. This option, referred to as the BFR option, involves the construction of a new sewage treatment plant (STP) at the existing QPRC sewage treatment plant location, Oaks Estate, within the ACT. The proposed plant will have a capacity of 90,000 equivalent population (EP), and will service both the Queanbeyan region and eastern ACT.

The BFR option addresses the need for both parties to meet environmental and technical regulations and cater for some capacity improvements. QPRC needs to invest in sewage treatment upgrades imminently due to age and capacity constraints. The Fyshwick Sewage Treatment Plant in the ACT, which is physically separate from the Queanbeyan network, is also approaching end of life.

While Icon Water does not face the immediate need to renew and augment its STP assets, Icon Water foresees that the joint venture with QPRC is an opportunity that can potentially result in the most efficient outcomes for Icon Water's customers. This is because:

- the capex allocated to Icon Water is expected to be less than the capex required to refurbish the Fyshwick facility due to scale economies arising from shared ownership of a larger 90,000 EP plant versus total ownership of a smaller 25,000 EP plant
- Icon Water customers will benefit from the expected sale of land from the decommissioned Fyshwick site.

The current business case for the project is only at a preliminary stage with initial costings at a very early stage of development.

A contingent project mechanism would allow Icon Water to pursue a better outcome for its customers should the benefit-cost analysis indicate there is such an opportunity as estimates firm up. Such an approach provides assurance to the ICRC that Icon Water is undertaking careful and appropriate planning to address potential ways of capturing efficiencies that are identified at the start of a regulatory review, and being transparent to ICRC about the likely costs and benefits.

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<sup>76</sup> ICRC, 2008: 163.

<sup>77</sup> ICRC, 2011: 1-2.

Under the proposed contingent arrangements, should the decision be taken to proceed with the BFR project, Icon Water would provide a submission to the ICRC setting out the full project details including:

- the business case for the project, including the forecast opex and capex requirements
- documentation and expert advice providing evidence of the prudence and efficiency of the forecast opex and capex
- any impacts on the opex and capex allowance and therefore prices determined by the ICRC in the 2018–23 price direction.

On receipt of the submission, Icon Water proposes that the ICRC would assess the prudence and efficiency of the proposed project costs and adjust prices, if required, to reflect the net prudent and efficient costs.

#### **7.1.5 Process**

Icon Water proposes that pass-through applications, for all events except for the BFR contingent event, be made as part of the annual price adjustment process each regulatory year with eligible pass-through amounts treated in the same manner as the unders and overs amount in the annual pricing adjustment calculation.

#### **7.1.6 Materiality**

The current price direction prescribes a materiality threshold for a change in other taxes, service standard, regulatory obligations and Tantangara Transfer payment events:

If a regulatory obligations event occurs on or after 30 June 2013, the change in costs (positive or negative) may be passed through to customers if the total annualised cost associated with the event exceeds \$2 million (\$2012-13) in the year for which the pass-through is sought.<sup>78</sup>

Should Icon Water's proposed form of control and ancillary mechanisms be adopted as set out in section 4, the proposed materiality threshold for the unders and overs account negates the need for a separate materiality provision for pass-through events. In its final decision, the Industry Panel stated:

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.<sup>79</sup>

Icon Water's view is that the materiality provision for the unders and overs account adequately deals with the Panel's concerns about the price variability implications of pass-through claims, while concerns about Icon Water's financial viability are addressed by any amounts not recovered in a given year being carried forward in the unders and overs account.

Icon Water does not expect any pass-through event (with the exception of the contingent project arrangement) to materially increase the administrative burden of the annual price reset process.

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<sup>78</sup> Industry Panel, 2015b: 9.

<sup>79</sup> Industry Panel, 2015a: 52.

### 7.1.7 Pass-throughs in final year of 2018–23 regulatory period

Clause 11(h) of the current price direction provides for the ICRC to allow any cost pass-through or costs associated with an unforeseen event that occurs in the final year of the 2013–18 regulatory period to be recovered in the regulatory period commencing on 1 July 2018. Icon Water supports retaining this provision in the price direction for the 2018–23 regulatory period.

## 7.2 Price variation trigger events

The current price direction provides a price variation trigger event mechanism to deal with the following unforeseen events:

- an act of terrorism
- a major natural disaster
- major damage to infrastructure
- a significant change in Icon Water’s financial or corporate structure
- an unforeseen or force majeure event.

The price direction defines a materiality threshold for this trigger event 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)’.<sup>80</sup>

Icon Water supports retaining this price direction variation trigger event in the 2018–23 price direction.

## 7.3 Demand volatility adjustment mechanism

Clause 11(e) of the current price direction requires the ICRC to make provision for a demand volatility adjustment in the next price determination if the net present value of water sales revenue earned over the period 1 July 2013 to 30 June 2018 differs by more than six per cent of the volumetric water sales revenue over the 2013–18 regulatory period. 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
- (ii) the net present value of the volumetric water sales revenue (i.e., the revenue to be recovered from Tier 1 and Tier 2 charges) allowed in the price direction, adjusted where necessary for any pass-through amounts approved by the ICRC in the period, plus or minus six per cent depending on whether there has been an over collection or an under collection of revenue.

Clause 11(e) also states that:

- the net present value (NPV) in (i) and (ii) above 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 NPV and to roll forward the demand volatility adjustment to the next regulatory period is 7.2 per cent (the nominal vanilla WACC).

Icon Water has undertaken a demand volatility adjustment analysis, using information up to 31 March 2017. Table 7-1 shows the Industry Panel’s forecast volumetric sales revenue, adjusted for actual inflation and approved pass-throughs, along with Icon Water’s sales revenue.<sup>81</sup>

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<sup>80</sup> Industry Panel, 2015b: 12.

<sup>81</sup> Actual for 2013–14 to 2015–16, estimated for 2016–17 and forecast for 2017–18.

**Table 7-1: Volumetric water sales revenue (\$ million nominal)**

Year	Industry Panel price direction	Industry Panel adjusted	Icon Water
2013–14	149.37	148.61	150.39
2014–15	157.35	158.44	142.14
2015–16	161.95	160.57	152.46
2016–17	166.91	162.01	155.00
2017–18	172.25	167.49	153.35

Source: Industry Panel (2015b), Icon Water analysis.

Table 7-2 shows that the estimated Icon Water volumetric water sales revenue in NPV terms over the current regulatory period is \$613.4 million, \$34.4 million or 5.3 per cent less than the Industry Panel's adjusted revenue of \$647.8 million. This indicates that, based on the above analysis and assumptions, the lower bound of the six per cent deadband is not likely to be triggered.

**Table 7-2: Estimated demand volatility adjustment value (\$2012–13)**

\$ million	As at 31 March 2017
11(e)(i) NPV water sales revenue	613.42
11(e)(ii) NPV adjusted Industry Panel revenue	647.82
Deadband value	38.87
Upper bound trigger	686.69
Lower bound trigger	608.95
<b>Estimated roll-forward 2018–23 period</b>	<b>0</b>

Source: Icon Water analysis.

Icon Water will provide an updated demand volatility adjustment analysis to the ICRC in advance of the price direction being finalised in 2018.



## 8 Incentive mechanisms

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### 8.1 Introduction

Section 20(2)(c) of the ICRC Act requires the ICRC, when making a decision, to have regard to the need for greater efficiency in the provision of regulated services to reduce costs to consumers and taxpayers.

In its final report, the Industry Panel suggested a number of actions for the ICRC's consideration including implementing expenditure and service incentive schemes in the next regulatory period.<sup>82</sup>

The terms of reference for the 2018 price review require the ICRC to consider whether there is potential for the implementation of incentive schemes for service levels, opex or capex for Icon Water in the future.<sup>83</sup>

The existing regulatory framework, which does not feature specific incentive mechanisms, already provides Icon Water with incentives to reduce operational expenditure below the regulatory forecast. However, Icon Water may have a greater incentive to achieve efficiency gains earlier in the regulatory period, because it benefits from cost reductions only for the remaining length of the regulatory period.

Efficiency and service standard incentive mechanisms are used by some regulators to enhance the incentive properties of the regulatory regime. Such mechanisms are aimed at providing a consistent incentive for regulated businesses to seek cost efficiencies throughout the regulatory period. Service standard mechanisms link service standards with prices or revenue and are aimed at encouraging an efficient level of service (see Box 8-1).

#### **Box 8-1: What is an incentive mechanism?**

An incentive mechanism conditions financial rewards or penalties upon some measure of a utility's performance.<sup>84</sup> Expenditure incentive mechanisms (such as for opex and capex) allow regulated utilities to retain gains from cost efficiencies for a defined period of time, regardless of when the cost efficiency is achieved. Service level incentive schemes counter the incentive that regulated businesses may have to pursue cost efficiencies at the expense of service quality. Incentive mechanisms have different names depending on whether they are targeted at opex, capex or service performance.

Icon Water has considered the three types of incentive mechanisms – for opex, capex and service levels.

### 8.2 Operating expenditure incentive scheme

Icon Water has considered the feasibility of applying an opex incentive scheme over the 2018–23 regulatory period similar to that required in the National Electricity Rules for electricity distribution businesses.

An opex incentive scheme is formulated to ensure a regulated utility is provided a continuous incentive to reduce operating costs. The mechanism works by effectively applying a lag, typically of five years, between changes in operating costs and corresponding changes in prices. This requires making adjustments to prices in one regulatory period for operating cost outcomes in the previous regulatory period. The benefits of any cost reductions are shared, with utilities earning profits for five years and

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<sup>82</sup> Industry Panel, 2015a: 129.

<sup>83</sup> ACT Government, 2016a: 1.

<sup>84</sup> Joskow and Schmalensee, 1986: 1.

consumers enjoying lower prices thereafter. The scheme is symmetrical, with cost increases shared in a similar fashion.

The ICRC considered incentive mechanisms during the 2008 price review, noting the following list of attributes that any future proposed efficiency mechanism would need to possess:<sup>85</sup>

- *transparency* – a transparent mechanism will be clearly understood by regulated businesses, regulators and external parties
- *simplicity and unobtrusiveness* – a simple and unobtrusive mechanism will reduce the regulatory burden on the businesses and the regulator
- *repeatability* – the mechanism must be well defined and applicable to future regulatory periods
- *symmetry* – the mechanism should be symmetrical; that is, it should contain both rewards for efficiency gains and penalties for efficiency losses.
- *accuracy* – the mechanism must be able to accurately reward or penalise the businesses for efficiency gains or losses; the incentives that it creates must be well understood
- *non-distortionary* – the mechanism should not have adverse impacts on the investment decisions of the businesses
- *equitability* – the mechanism should provide a fair sharing of efficiency gains between regulated businesses and customers
- *economic efficiency* – the mechanism should encourage efficient investment and promote the use of efficient production techniques.

In conclusion, the ICRC stated:

the Commission's working conclusion is that it does not propose to introduce a specific efficiency mechanism in the next regulatory period, including for the reason that existing arrangements appear to provide sufficient incentive for [Icon Water] to maintain and improve service standards and reduce costs.<sup>86</sup>

In its main submission to the 2013 price review, Icon Water did not support the introduction of an efficiency carryover mechanism primarily on the basis that it would be difficult to design a mechanism that meets the simplicity and unobtrusiveness criteria.

Icon Water shares the ICRC's view that the existing incentive-based regulatory arrangements provide a strong incentive for Icon Water to reduce costs. Icon Water's previous concerns about the potential administrative costs of such schemes remain valid.

Moreover, Icon Water's customers will potentially benefit more from cost reductions under Icon Water's proposal than under an efficiency sharing scheme. The operation of an efficiency sharing scheme requires a commitment to a revealed-cost approach to opex forecasting. Under this approach, Icon Water's prices for 2018–23 would be based on its current level of operating costs and Icon Water would profit from any cost reductions it achieves during the regulatory period. In contrast, under Icon Water's proposed approach, significant opex reductions would be passed through to customers as lower prices during the 2018–23 regulatory period, as discussed in [Attachment 7: Operating expenditure](#). Under an efficiency sharing scheme, customers would not start sharing in these benefits until after 2023.

In conclusion, Icon Water believes that our opex proposal will provide a better outcome for customers than would be achieved through the introduction of an opex incentive scheme in the 2018–23 regulatory period.

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<sup>85</sup> ICRC, 2007: 48.

<sup>86</sup> ICRC, 2007: 48.

### 8.3 Capital expenditure incentive scheme

A capex incentive scheme is usually formulated to ensure a regulated utility is rewarded for making efficiency improvements in its capex program. An improvement in efficiency could come from a reduction in expenditure to achieve an unchanged outcome, deferring capex from the current regulatory period to the next period, or spending more in the current regulatory period to achieve future capex efficiencies.

Under such a scheme, if a regulated utility underspends on its capex allowance during one regulatory period, it will retain the benefits of financing the forecast capex during the regulatory control period as a reward. According to the AER:

consumers will then benefit after the end of the period when the RAB is rolled forward to a lower amount than if the full amount of the capex allowance had been spent. This leads to lower regulated network prices into the future.<sup>87</sup>

In its review of Sydney Water's prices for the 2016–20 regulatory period, the NSW Independent Pricing and Regulatory Tribunal (IPART) did not support Sydney Water's proposal to introduce a capex incentive scheme. In its issues paper, IPART provided a number of reasons, including:<sup>88</sup>

- Yearly capex allowances are set relatively independently of each other, unlike opex which is to a larger degree, recurrent. There is less of an incentive to delay a capex efficiency gain from the end of one regulatory period to the beginning of the next regulatory period, compared to opex.
- It can be difficult to differentiate between a capex efficiency and a capex deferral, because capex is not recurrent like opex. It can also be difficult to distinguish whether a true efficiency saving has been obtained, or if the capex forecast was overstated.
- A capex incentive scheme which rewards efficiency savings could increase the incentive for the regulated entity to provide inflated capex forecasts.

In its draft report, IPART reaffirmed its position, stating:

Given the additional complexity associated with introducing an [incentive scheme] for capital expenditure, the additional risk of unintended consequences (ie, incentivising the business to over forecast and to inefficiently defer capital expenditure), and the limited opportunities for efficient trade-offs between operating and capital expenditure, we have decided not to introduce a capex [incentive scheme] at this time.<sup>89</sup>

In addition to IPART's concerns, Icon Water's view is that it would also be difficult to design a simple and unobtrusive capex incentive scheme that did not have a significant regulatory burden. As such, Icon Water does not support the introduction of a capex incentive scheme during the 2018–23 regulatory period.

Finally, Icon Water's rigorous asset management planning system, underpinned by best-practice governance arrangements, provides a sound basis for developing and implementing a prudent and efficient capex program which mitigates the need for a capex incentive scheme.

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<sup>87</sup> AER, 2013: 18.

<sup>88</sup> IPART, 2015: 89.

<sup>89</sup> IPART, 2016: 40.

## 8.4 Service incentive scheme

A service incentive scheme creates a link between service quality and revenues. The scheme uses a set of defined performance measures, with rewards and penalties applied at annual price resets based on actual performance on those measures relative to predetermined targets. To the extent that the financial rewards and penalties reflect customer willingness to pay (or accept), this provides the business with an incentive to make welfare-enhancing alterations to its price-service mix.

A driver for the introduction of service incentive schemes has been a concern that increased incentives for cost efficiency could lead to cost reductions being achieved at the expense of service standards. Where minimum standards are separately regulated, these schemes encourage regulated service providers to improve service performance above the regulated minimum where customers are willing to pay for these improvements. Where service levels are discretionary, these schemes may incentivise an improvement or deterioration in service, depending on how marginal costs and cost savings relate to the rewards and penalties under the scheme.

Service standard schemes are relatively common in the energy sector. Common measures of service include the frequency and duration of supply interruptions and telephone answering speed. In the ACT, ActewAGL Distribution is subject to a Service Target Performance Incentive Scheme for electricity distribution. Currently, there are no Australian regulated water businesses subject to such a scheme.

The purpose of service incentive schemes is to internalise social benefit-cost analysis within the business's financial objectives. An alternative approach is for the business to undertake benefit-cost analysis explicitly to support expenditure forecast proposals to the ICRC. This alternative is the approach taken by Icon Water in this submission. The service performance measures that would be the prime candidates for a service incentive scheme, namely the frequency of water supply interruptions and sewage overflows, have been subjected to benefit-cost analysis by Icon Water and included in this submission (see [Attachment 3: Service standards](#)). No service incentive scheme is therefore required to incentivise the conduct of this analysis. Icon Water does not support the introduction of a service standard incentive scheme during the 2018–23 regulatory period.

In addition, as described in [Attachment 3: Service standards](#), Icon Water has consistently met its service level targets over the current regulatory period, and intends to continue to do so over the next regulatory period.

## 8.5 Conclusion

Icon Water proposes that no incentive mechanisms for opex, capex and service levels be introduced during the 2018–23 regulatory period. Icon Water would be keen to contribute to any further work the ICRC may undertake to assess the merits of such schemes over the course of the regulatory period.

## **Appendix 1      Negotiated contract case study**

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This appendix contains a confidential negotiated contract case study.

## Appendix 2 Unders and overs example

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This appendix contains a confidential Excel example that demonstrates how the proposed annual unders and overs accounts interacts with the annual price adjustment process.

## Abbreviations and acronyms

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ACT	Australian Capital Territory
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
BFR	Best for Region
COAG	Council of Australian Governments
CPI	Consumer price index
DNSP	Distribution network service provider
EP	Equivalent population
GL	gigalitre (one thousand megalitres)
ICRC	Independent Competition and Regulatory Commission
IPART	Independent Pricing and Regulatory Tribunal
kL	kilolitre (one thousand litres)
ML	megalitre (one thousand kilolitres)
NCP	National Competition Policy
NER	National Electricity Rules
NGR	National Gas Rules
NPV	Net present value
NRMCC	Natural Resource Management Ministerial Council
NWI	National Water Initiative
PTRM	Post-tax revenue model
QCA	Queensland Competition Authority
QPRC	Queanbeyan-Palerang Regional Council
RAB	Regulatory asset base
STP	Sewage Treatment Plant
UNFT	Utilities Network Facilities Tax
WAC	Water abstraction charge
WACC	Weighted average cost of capital

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