Final report

Tariff Structure Review 2016–17

Regulated water and sewerage services

Report 3 of 2017, March 2017

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The Commission’s objectives are set out in section 7 and 19L of the ICRC Act and section 3 of the *Utilities Act 2000*.

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Foreword

This report sets out the Commission’s current position on the future structure of tariffs for Icon Water’s regulated water and sewerage services. The report sets out the preferred direction of change and the principles that will be considered in making any change but does not specify any change at this stage. Any change to the structure of tariffs, should it be considered appropriate, will only occur following the Commission’s investigation into a price direction for regulated water and sewerage services provided by Icon Water for the next regulatory period, from 1 July 2018 to 30 June 2023.

The tariff structure refers to the relative importance of fixed supply and volumetrically based usage charges for water and sewerage services. The mix of charges can have important effects on the ability of Icon Water to recover its efficient costs as well as the incentives for customers to use water and sewerage infrastructure and the water resource itself efficiently.

The Commission has been reviewing the tariff structures for water and sewerage services in the ACT since late 2015. The review process has included the release of an issues paper (November 2015), technical reports on the responsiveness of the demand for water to price (February 2016) and marginal cost pricing (June 2016), and a draft report (September 2016). The Commission received submissions on these various papers, and this report takes account of key concerns that have been raised in developing a preferred course of action.

The analysis undertaken to date indicates that the existing water tariff structure can be improved for the benefit of the ACT community as a whole. This can be done by making some careful adjustments to the balance between fixed and usage charges. This interpretation takes account of the need to use water efficiently and to ensure efficient recovery of revenue to cover the efficient costs of Icon Water while meeting environmental and social objectives.

However, while the appropriate direction of change for the tariff structure seems clear, more consideration needs to be given to how best to address social impacts, particularly for some low-income households, and timing and transitional arrangements. This will be further considered during the separate review into the tariff for the next regulatory period, once all the relevant information on costs and demand is available to the Commission. It is not proposed to make any changes to the tariff structure before the start of the next regulatory period.

The timelines for and information on the release of reports and receipt of submissions for the Commission’s investigation into a price direction for regulated water and sewerage services for the next regulatory period are available on the Commission’s website.

Joe Dimasi

Senior Commissioner

31 March 2017

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Executive summary

The Commission has examined the current tariff structures for Icon Water’s water and sewerage services as it was required to do by the substituted price determination.[[1]](#footnote-2) In this final report the Commission sets out a number of principles that will guide any changes to the water services tariff in future price reviews. The Commission proposes leaving the sewerage services tariff unchanged and supports the introduction of a cost-reflective tariff for trade waste.

The Commission’s view is that while some change to the structure of the water tariff is desirable, this should be properly considered as part of future price determinations, including the investigation into a price determination for water and sewerage services to apply for the period 1 July 2018 to 30 June 2023. At that point the Commission will have all the relevant information on costs, supply and usage.

The findings in this report will provide guidance to the Commission in setting the structure of the water tariff.

#### Key features of the current water tariff structure

* The current ACT water tariff structure comprises an annual connection or supply charge and a two-tier usage charge with a lower price for the first 200 kilolitres (kL) of water used and a higher price for water used above that level.[[2]](#footnote-3) This is known as an inclining block tariff structure.
* The current supply charge is $101.48 per year.
* The current usage charges are $2.61 per kL for the first tier and $5.24 per kL for the second tier.
* The usage charges are not based on economic measures of cost but have the effect of providing an ‘essential’ amount of water at a relatively low price, with higher levels of consumption charged at relatively high prices to provide incentives to conserve water.
* With the current structure of the tariff, Icon Water recovers about 10 per cent of its water revenue from the supply charge and the remaining 90 per cent from usage charges.
* This structure compares with Icon Water’s cost structure, which comprises over 80 per cent fixed costs that do not vary with changes in water consumed. The infrastructure component of costs is around 50 per cent of total costs and these costs are sunk in the sense that they cannot be used for another purpose.

Figure ES1and Figure ES2 compare the residential tariff structure components for Icon Water with those of a number of urban utilities in other Australian jurisdictions. The supply charge in Figure ES1 is the Tier 1 charge and Icon Water’s supply charge is among the lowest.

Figure ES1 Residential water fixed supply charges by utility, 2016–17

Sources: [City West Water (2016](#_ENREF_6)); [Hunter Water (2016a](#_ENREF_15)); [Hunter Water (2016b](#_ENREF_16)); Icon Water (2016e); PowerWater (2016); Queensland Urban Utilities (2017a); Queensland Urban Utilities (2017b); [SA Water (2016](#_ENREF_34)); South East Water (2016); [Sydney Water (2016b](#_ENREF_37)); [Sydney Water (2016a](#_ENREF_36)); and [TasWater (2015](#_ENREF_38)).

Figure ES2 compares the water usage charges for these urban water utilities. Icon Water’s Tier 2 charge is the highest marginal usage charge among all the utilities shown.

Figure ES2 Residential water usage charges by utility, 2016–17

Sources: [City West Water (2016](#_ENREF_6)); [Hunter Water (2016a](#_ENREF_15)); [Hunter Water (2016b](#_ENREF_16)); Icon Water (2016e); PowerWater (2016); Queensland Urban Utilities (2017a); Queensland Urban Utilities (2017b); [SA Water (2016](#_ENREF_34)); South East Water (2016); [Sydney Water (2016b](#_ENREF_37)); [Sydney Water (2016a](#_ENREF_36)); and [TasWater (2015](#_ENREF_38)).

Icon Water’s inclining block tariff structure was in place during the Millennium Drought that affected southeast Australia from about 1997 to 2009. The shortage of water in this period led to the implementation of temporary water restrictions, permanent conservation measures and a relatively high usage charge for the higher tier. At the time, this structure was helpful in providing a price signal to consumers to conserve water while making some water available at a lower charge to meet essential needs.

As a longer term measure, Icon Water also embarked on a substantial investment program to augment Canberra’s water supply. The key projects were the enlargement of the Cotter Dam from four gigalitres (GL) to 76 GL and the construction of the Murrumbidgee to Googong Dam pipeline to transfer water directly from the Murrumbidgee River to the Googong Dam.

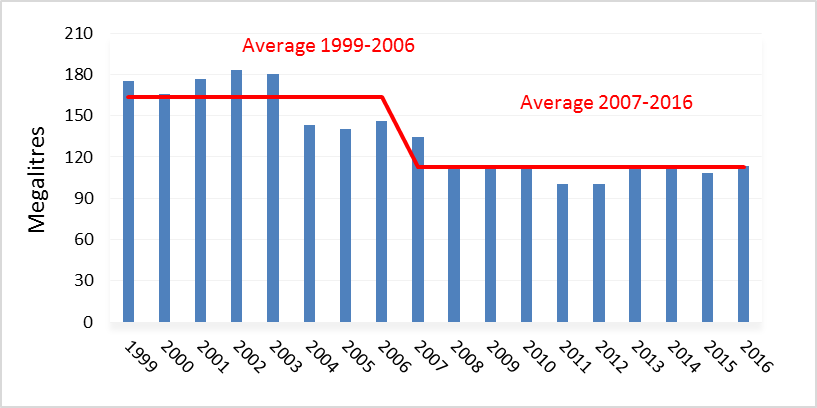
#### The ACT is now more water-secure

The ACT’s water supply and demand balance today is very different. The ACT’s water security is now much more positive, both currently and over the longer term.

The enlarged Cotter Dam increased the ACT’s combined dam storage capacity by more than a third, from 206 GL to 278 GL. The combined dam storage level in early March 2017 was 90.5 per cent.[[3]](#footnote-4)

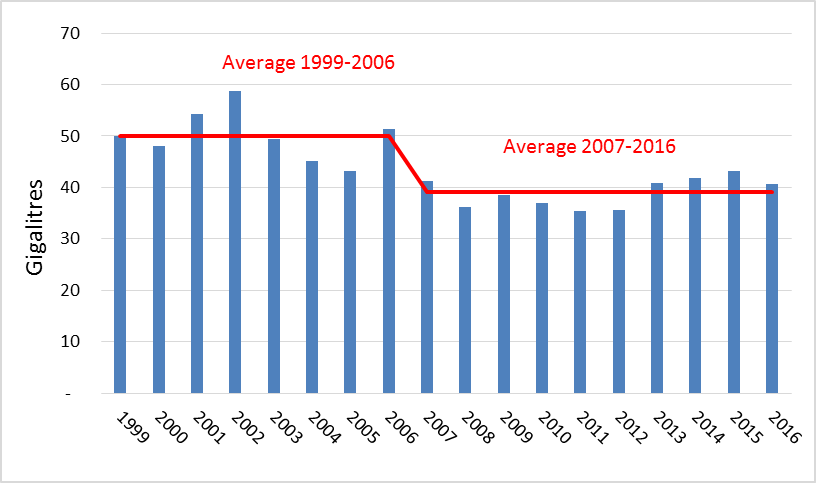
On the demand side, there has been little evidence of a bounce-back in per capita water consumption or aggregate demand levels since the lifting of temporary water restrictions in 2010. As shown in Figure ES3 and Figure ES4, recent levels of dam releases per capita and residential billed water consumption are well below the levels that prevailed in the early to mid-2000s.

Figure ES3 Icon Water dam releases per capita, 1999–2016



Sources: ABS (2014); ACT Government (2014c); and Icon Water dam release data.

Figure ES4 Icon Water residential billed water consumption, 1999–2016



Source: Icon Water billed water consumption series 1998–2016.

If current levels of per capita consumption are maintained and account is taken of population growth, projected dam inflows and available capacity, then, based on modelling results, further augmentation of water supply infrastructure is not likely to be needed for about 40 years.

#### Environmental objectives are a priority and are being met

Environmental objectives are specified in legislation; they are being met by Icon Water and are given priority, including during drought conditions.

Icon Water is subject to requirements to ensure the flows of water in ACT streams and rivers that are necessary to maintain aquatic ecosystems. Icon Water’s licence to take water requires it to ensure that environmental flows are given first priority. It is also noted that the downstream environmental benefits in the ACT of any water (over and above environmental flows) that flows from ACT dams are limited because there are no key environmental assets in the ACT that require specific environmental watering, although such flows may have broader environmental benefits beyond the ACT.

Further, largely due to its urban nature, the ACT only consumes a small proportion of the total amount of water that flows into its catchments. The net use[[4]](#footnote-5) has been at or below 20 GL per year since 2007−08, amounting to four per cent of total inflows or eight per cent of the balance after environmental flows. This is also well below the ACT’s sustainable diversion limit under the Murray–Darling Basin Plan of 40.5 GL per year taken from watercourses.

As a result, tighter temporary water restrictions appear unlikely to be required to further restrict demand in the next regulatory period and probably for some time after that. The economic cost of using water in these circumstances is therefore lower than it was in the past. This is because a large part of the long-term value of the water resource itself derives from its contribution to postponing the need for further augmentation of the water supply system.

Given these circumstances, there is some scope to change the tariff structure without compromising environmental objectives. But, any change to the tariff structure needs to show that it can better address a number of objectives on a sustainable basis.

#### Public policies and regulatory objectives

Directions for change need to take account of public policies and regulatory objectives and principles.

The Commission has a number of regulatory objectives and matters it must consider as specified in the *Independent Competition and Regulatory Commission Act 1997* (the ICRC Act). These requirements cover economic, environmental and social considerations. In making a price direction, the Commission’s overall objective is to promote the various aspects of economic efficiency for the long-term interests of consumers. Economic efficiency encompasses efficient investment, efficient operation and efficient use of regulated services. However, economic efficiency considerations must be appropriately balanced with environmental and social considerations to ensure decisions are in the long-term interest of consumers.

There are also a number of government policies and national agreements that are relevant in considering changes to the tariff structure. Of particular relevance is the ACT Water Strategy 2014–44, which sets out the ACT Government’s overarching long-term water resources management policy. A key outcome specified in the strategy is to manage and promote the sustainable use of water. The strategy proposes investigating the use of scarcity pricing in promoting water use efficiency. There are also a number of other water conservation and planning requirements that relate to the management of water.

In addition, the ACT is a signatory to the Murray–Darling Basin Agreement, an intergovernmental agreement between Basin jurisdictions. In 2010, a set of National Water Initiative pricing principles was developed as the basis for setting water prices in all jurisdictions (see Appendix 2). The principles cover various aspects of economically efficient pricing, including application of two-part tariffs unless demonstrated to not be cost-effective.

#### Pricing principles

To help determine whether and how to change the tariff structures for water and sewerage services in the ACT, the Commission has developed key pricing principles that take account of both legislative and government policy objectives as well as generally accepted economic and regulatory governance principles.

The key price-setting principles that the Commission considers relevant for assessing tariff structures are summarised in Table ES1. These principles reflect the Commission’s interpretation of the legislative objectives, government policies and national agreements that prescribe and guide its decisions on water and sewerage prices.

The principles are also consistent with the approach that the Commission intends to apply in its investigation into the price direction for Icon Water for the period from 1 July 2018 to 30 June 2023.

Table ES1.1 Regulatory objectives and pricing principles for water and sewerage tariffs

|  |  |  |
| --- | --- | --- |
| Category | Aspect | Detail |
| **Objective** | **Overarching**  **Interpretation** | To promote 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.  The various aspects of economic efficiency are given emphasis, but with the ultimate objective being the long-term interests of consumers. Economic efficiency when properly defined encompasses environmental objectives. Consumer interests must take account of equity and other social impacts as required by the ICRC Act.  Economic efficiency considerations related to pricing are a starting point but need to be balanced with environmental and social considerations. |
| **Pricing 1 principle** | **Economic efficiency in use** | Tariff structures and prices should promote the economically efficient use of Icon Water’s water and sewerage services infrastructure, and should also encourage economically efficient use of the water resource itself.  An inappropriate tariff structure may also create incentives for uneconomic bypass where water supply is sourced from a higher cost alternative. |
| **2** | **Economic efficiency for investment and operation** | Tariff structures 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 revenue adequacy or ensuring financial viability.  Costs also need to be efficient, which is primarily addressed by auditing and incentive mechanisms. |
| **3** | **Environmental considerations** | Tariff structures, prices and complementary mechanisms should ensure that environmental objectives are effectively addressed. |
| **4** | **Community impact – gradual adjustment** | Any change to the structure of tariffs and prices that will have substantial customer impacts should be phased in over a transition period to allow reasonable time for customers to adjust to the change. |
| **5** | **Community impact – fair outcomes for low-income households** | Adverse impacts on households with low incomes need to be limited or moderated by phasing and other compensating mechanisms or limits on changes to the tariff structure. |
| **6** | **Regulatory governance –simplicity** | Tariff structures should be simple for customers to understand and straightforward for the utility to implement. |
| **7** | **Regulatory governance –transparency** | Tariff structures should be set using a transparent methodology and subject to public consultation and scrutiny. |

A challenge faced by the Commission, regulators more generally, is in setting priorities. There are multiple and potentially conflicting objectives but limited regulatory mechanisms that are under the Commission’s authority. The main policy instrument over which the Commission has control is prices, yet in setting prices it must have regard to a range of efficiency, environmental and social objectives. In addition, social objectives – including objectives related to fairness and other social impacts – are difficult to define clearly. Measures to address concerns about fairness and the impacts on low-income households are primarily exercised by other parts of government. This, then, inevitably implies that setting prices requires compromise and consultation with affected parties in arriving at conclusions that will effectively balance the various objectives.

In the Commission’s view, the principles set out in Table ES1 are consistent with how economic regulators in other jurisdictions consider and assess the various objectives. In balancing competing objectives, the Commission will consider economic efficiency aspects as a starting point, but will also give careful and transparent consideration of social and environmental impacts.

#### Assessment of the current water services tariff

*Efficient usage*

The first aspect of economic efficiency relates to setting a usage charge that reflects relevant marginal social costs, including the cost of using the water resource itself. This aspect of economic efficiency is known as allocative efficiency.

The usage component of the tariff is a per unit charge based on volumes used. Ideally, it needs to be defined to include all the costs that the community incurs when an additional unit of consumption of water occurs – that is, the relevant measure of marginal cost, known as ‘marginal social cost’. The use of an appropriate measure of marginal cost for setting a usage price is in the interests of the community since it should reflect the true cost to society as a whole of using an additional marginal amount of water. The measure of marginal social cost should include efficient operational costs, a component that reflects the value of the water itself, and any other externality-type costs not reflected in prices or other measures such as water restrictions. If the consumption of water reduces the availability of water to others, including other consumers in the future, the loss of the value of water should be included in the measure of marginal social cost.

The fixed component of the tariff is not related to usage and should contribute as much as possible to the recovery of fixed costs, but without creating incentives to incur additional fixed costs.

The short-run marginal social cost is the preferred measure to guide regulation in setting a usage price to encourage efficient use, provided it is defined to include all costs that society incurs as a result of using an additional unit of water, including the value of the water itself. However, it is difficult to establish an appropriate measure of short-run marginal social cost. In practice, most regulators prefer to use a measure of long-run marginal cost, which includes the additional infrastructure costs that are incurred in the future when additional water services are consumed today. The measure of long-run marginal cost may also include an estimate of the cost of the water resource itself.

The Commission calculated various estimates of short-run marginal cost and long-run marginal cost to compare with the usage prices in the current tariff structure. The estimates ranged from a low of $0.72 per kL to a high of $1.74 per kL. The two most common long-run measurement methods provided estimates of similar magnitude near the top of the range. However, the Commission acknowledges that these estimates are imperfect, as they do not include a value for the water resource itself that effectively reflects its value to the community. In addition, the value of the water resource could change significantly in times of drought, complicating the implementation of a measure of marginal cost that includes a current estimate of the value of water.

Icon Water’s current two-tier usage prices for water are calculated on a daily pro-rata basis and billing occurs quarterly. The charges are $2.61 per kL for the first 0.548 kL per day and $5.24 per kL thereafter. This means that the second-tier charge can occur for consumption over the year that is less than 200 kL. What is clear is that, irrespective of which measure is used, all the marginal cost estimates at this time appear to be well below these prices. This conclusion holds in the face of the sensitivity tests the Commission performed on the various measures of marginal cost.

Pricing according to marginal cost means that in times of drought the marginal charge would need to be high to reflect the scarcity value of water, but in times where security of supply is more assured the marginal charge should be lower since water is less scarce. Reflecting scarcity value in prices is an essential aspect of outcomes in competitive markets and in markets where economic regulation is justified. The current security of supply conditions are consistent with reducing the usage charges to reflect the availability of water, but this would need to be balanced with the flexibility to increase the marginal usage price if tight supply conditions emerge in the future.

There are likely to be inefficiencies when the marginal price exceeds a relevant measure of marginal cost. First, where the usage price exceeds the true measure of marginal social cost, customers will forgo the value of additional consumption that exceeds the relevant measure of costs. However, the Commission’s technical study showed that the responsiveness of the overall demand for water to price changes is very low,[[5]](#footnote-6) so this effect is likely to be relatively small in the aggregate but still important for customers who value additional water use in excess of its true cost. Second, and of potentially more importance, a high usage price is likely to create incentives for uneconomic bypass, where large users purchase water from an alternative source that is less costly to them but of higher cost than the true cost to the community. A tariff structure that better reflects the efficient costs of marginal supply can better ensure that this uneconomic bypass–related economic inefficiency does not occur.

It is also important to recognise that if pricing were set with regard to economic efficiency alone, there would be only a single usage charge. This is because there would be a single measure of marginal social cost that is not dependent on individual usage but rather related to overall usage.

However, a two-tier usage charge may be effective in meeting other objectives, such as providing an amount of water at a lower rate for essential consumption. The two-tier price structure has been justified on this basis. However, the Commission has to consider the benefits against the economic inefficiencies that such a structure can create.

*Efficient cost recovery*

Another key aspect of economic efficiency is ensuring that the costs of efficient supply are recovered over the longer term. If revenue is not sufficient to cover costs, this can discourage efficient investment and put the security of supply at risk.

Icon Water’s capital costs are about 50 per cent of its total revenue requirement, with operating expenditure, the water abstraction charge and the utilities network facilities tax making up most of the rest. In addition, most components of its operating expenditure are fixed, meaning that they do not vary with output (for example, corporate and other administration costs). The main variable costs are pumping and treatment costs and the volume-related water abstraction charges, which together constitute only around 16 per cent of Icon Water’s total revenue. In contrast, the current tariff structure is characterised by a relatively low supply charge and high reliance on usage charges.

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. As a result, in the face of declining demand, usage charges may need to increase significantly to ensure full cost recovery for Icon Water.

In addition, although the fixed supply charge and Tier 1 and Tier 2 usage charges can be set at levels that generate revenue that could recover Icon Water’s costs, estimates of the targeted revenue depend on forecasts of demand in order to set appropriate prices. Variability in demand means variability in revenues for Icon Water, and this increases the financial risk for Icon Water and its owner – the ACT Government on behalf of the ACT community. This is particularly the case when water restrictions are in place and there are separate policies and actions to discourage the use of water.

To some extent the problem can be addressed by regulatory mechanisms that allow price resets or the use of unders and overs accounts (i.e. accounts that track under- and over-recovery of revenue to provide a basis for subsequent price adjustment). However, guarantees that revenues will always fully recover actual costs lead to a risk that Icon Water will be less focused on cost efficiency. A move in the direction of some rebalancing of the tariff to ensure a larger fixed component would reduce revenue risk, but a guarantee of full cost recovery might reduce the incentive to ensure that costs are efficient.

There are also social and environmental considerations that limit the extent to which the components of the tariff should be rebalanced. As noted, economic efficiency considerations need to be considered against other objectives in order to set tariff structures and levels that are in the long-term interests of consumers.

*Rebalancing and other objectives*

Economic efficiency provides a strong rationale for rebalancing the components of the tariff so that fixed charges increase and usage charges decrease, but with the flexibility for the usage charges to increase if drought conditions develop. Going down this path would more closely align the water tariff structure with Icon Water’s costs as well as better recognise the scarcity value of water. In times of drought, water conservation measures and water restrictions will still be required along with price signals from the usage charges. There are also long-term government policies to conserve water that need to be recognised. These considerations suggest that it may not be appropriate to radically rebalance the components of the tariff so that it closely matches the cost structure of Icon Water. However, some change in this direction, even if small, is still likely to have economic efficiency benefits.

It is also important to recognise that there is another aspect of economic efficiency that does not depend on the responsiveness of overall demand to price – namely, the response of large users of water. Large users when faced with a high marginal usage charge may find it in their financial interest to bypass the supply of water from Icon Water, even though the average cost of this option is higher than the average cost of supply by Icon Water. This is because the usage charge may exceed the true measure of marginal cost. This is known as the risk of uneconomic bypass. It means that water would be supplied to both the remaining customer base and to the large user at a higher average cost than if Icon Water were the sole supplier. If uneconomic bypass occurs, it also means that the water bills for the remaining customer base would increase on average since there would be a smaller customer base to pay for the same large fixed costs for Icon Water.

However, there are additional objectives that must be considered and balanced when considering changes to the tariff structure. Given that environmental standards are being met by other mechanisms and actions, the main additional objective relates to social effects.

Social objectives can cover a wide range of matters, but the main issues that are relevant here generally relate to the community’s concerns about ‘fairness’ or ‘equitable outcomes’. The concept of ‘fairness’ is not well defined, but there are two types of fairness or equity concerns that are relevant in changing the tariff structure.

The first type relates to the impact on households and businesses that have made investments in water-saving measures. If usage charges decline, these customers would realise lower benefits from their investments. This effect is likely to be interpreted as unfair.

The second type relates to the impact on low-income households whose water usage is also low. There is not necessarily a high correlation between income and water usage, but adverse impacts on low-income households need to be effectively recognised in making changes to the tariff structure. This may mean that the extent of changes must be modest and phased in over a long timeframe. The scope for adjusting the fixed charge to take account of adverse impacts on low-income households should also be investigated, along with subsidy schemes targeted at low-income households. This may also mean that other arms of government need to be involved in developing and implementing measures to address potential impacts on low-income households.

The fairness or equity impacts of a higher fixed charge and a lower usage charge need to be recognised in deciding on the extent of any changes to the tariff structure and the timeframe over which changes are introduced.

#### Should a more efficient water tariff structure be introduced?

*Key features of an effective tariff structure*

An effective tariff structure should:

* provide incentives to use water efficiently depending on the supply conditions at the time;
* allow for the recovery of the efficient cost of providing water services;
* provide the flexibility to make adjustments if conditions change;
* balance economic, environmental and social objectives where there is potential conflict with economic efficiency objectives;
* be as simple as possible and result from a transparent process;
* have the overall objective of being in the long-term interests of consumers; and
* be as consistent as is reasonably possible with the policy directions and messages of other arms of government.

*Key considerations in improving the tariff structure*

The Commission has concluded that the current water services tariff structure could be improved to better meet economic efficiency objectives. This is because the usage component does not reflect the cost to the community (the marginal social cost) of additional consumption, and because the high reliance on the usage component relative to the fixed component does not facilitate the efficient recovery of revenue for Icon Water’s water services. The current high Tier 2 price is also creating a strong risk of uneconomic bypass where large users may have strong incentives to opt out of the supply of water services by Icon Water. If this risk materialised, water bills would have to increase for all the remaining customers of Icon Water.

The Commission recognises that adjustment of the fixed and variable charges should avoid adverse environmental impacts. However, the existing environmental policies and legislated requirements are designed to ensure that key environmental objectives are met. And the Commission will aim to ensure that the ability to meet these environmental objectives will not be compromised by any changes in the tariff structure. The Commission also recognises that ideally the usage component of the tariff should reflect the marginal value of the cost of supply, including any externality costs and the value of water.

However, rebalancing the components of the tariff would have different bill impacts for different types of customers, which may be considered by the community as unfair and unacceptable. This highlights the need to moderate changes to the tariff structure based on economic efficiency considerations or develop and implement other mechanisms to address social concerns.

The Commission recognises these concerns and therefore proposes that the current two-tier usage and supply charges be retained but that small steps to move away from the heavy reliance on usage charges be considered when undertaking price reviews, depending on the circumstances at the time. There is an economic efficiency rationale to take the opportunity, where possible, to change the mix of fixed and usage charges to better ensure efficient recovery of the substantial fixed costs of water supply infrastructure. However, any changes will be measured and gradual to ensure that economic, social and environmental objectives are appropriately balanced in the long-term interests of the community as a whole.

Tariff structures that may differ for different customers, such as large users, may be considered by the Commission as long as they are in the long-term interests of consumers. Other options that may be utilised to address impacts on low-income households, such as differentiating the fixed charge by customer characteristics, may be feasible but would require community engagement and involvement by government.

#### Sewerage services tariff structure

Icon Water’s current tariff structure for sewerage services comprises an annual supply charge for residential premises, and the same supply charge plus an annual charge per flushing fixture (in excess of two) for non-residential premises. Icon Water does not currently have a trade waste tariff.

The Commission’s final position, consistent with what was presented in the draft report, is that, particularly in the absence of a reliable measure of actual discharge volumes, it is unlikely that any potential economic efficiency benefits of introducing a sewage volume charge would outweigh the costs. The Commission therefore considers that the current tariff structure should be retained.

Consistent with cost-reflective pricing, the Commission has in the past noted that where Icon Water incurs material trade waste–related increased costs, those costs should be passed on to the relevant customers. The Commission welcomes Icon Water’s commitment to introducing a trade waste pricing regime in the forthcoming regulatory period.

#### The form of regulation – a revenue cap or a price cap

Regulators have various methods to control the prices charged by regulated utility service providers. The methods differ in the degree of direct control exercised over tariff structures and prices by the regulator. At one end of the spectrum, the regulator directly caps individual prices. At the other end, the utility takes control under a pure revenue cap. The form of price control that will apply to Icon Water during the next regulatory period will be determined as part of the broader price investigation process that is currently underway.

The Commission notes that there may be scope for Icon Water to be able to propose some water tariffs. For example, if a separate tariff for large commercial users were to be considered, it would be preferable if Icon Water consulted with its customers before proposing it to the Commission, as it is best placed to engage with customers on its tariffs.

However, the Commission emphasises that any such proposal would need to be in the long-term interests of consumers, would need to be consistent with the pricing principles set out in this report, and would ultimately need to be approved by the Commission.

#### Public consultation on the tariff review

The Commission received 20 submissions on the various reports and technical papers it has published for the tariff structure review to date.[[6]](#footnote-7) Three submissions were received from Icon Water, two from the ACT Civil and Administrative Tribunal, one from ClubsACT, one from the Federal Golf Club, one from the Canberra Business Chamber, one from the ACT Government and 11 from members of the ACT community. The Commission also held a public forum at which a number of people presented their views and commented on the Commission’s draft report. Submissions and presentations from the public forum are considered in the relevant chapters of this report and summarised in Appendix 1.

The main concerns expressed in the submissions relate to better addressing social and environmental issues when considering economic efficiency benefits.

#### Summary of proposals

In summary, the Commission proposes:

* to retain the existing water tariff structure with a fixed supply charge and a two-tier inclining block usage charge for the next regulatory period (1 July 2018 to 30 June 2023), but take the opportunity to rebalance the components to better reflect costs in future tariff determinations, while taking account of social and environmental objectives and relevant government policies;
* to consider separate tariffs for different types of customers, such as large users, as long as it can be shown that such a tariff is in the long-term interests of consumers;
* to make any changes to the tariff structure in a measured and gradual manner as part of future price determinations, including the current price investigation, when relevant costs, supply and usage information will be available (new tariffs, to the extent that any changes are decided, including changes to the tariff structure, would commence on 1 July 2018); and
* to use the pricing principles set out in this report as a guide in changing the tariff structure and setting any new tariffs.

# Introduction

1.1 Background

The current structure of Icon Water’s water and sewerage services tariffs has served the ACT community well over the past 15 or so years. Nonetheless, in recent years questions have been raised about whether improvements could be made to the way the tariffs are structured. In the 2013 price investigation process, for example, the Commission received a number of submissions from stakeholders on this matter.

In its 2013 determination, the Commission chose to maintain the existing tariff structures for water and sewerage services for the regulatory period commencing 1 July 2013 (the current regulatory period).[[7]](#footnote-8) Notwithstanding this decision, the Commission stated that it recognised the value in further reviewing alternative price structures and price-setting arrangements over the course of the current regulatory period.

This view was reflected as a future reset principle in the Price direction: Regulated water and sewerage services – 1 July 2013 to 30 June 2019.[[8]](#footnote-9) Clause 11(b) of the *Substituted price direction: Regulated water and sewerage services – 1 July 2013 to 30 June 2018* maintained this reset principle, requiring the Commission to undertake a review of Icon Water’s water and sewerage services tariff structures during the current regulatory period.[[9]](#footnote-10)

1.2 Current water tariff structure: two-part inclining block

The current ACT water tariff structure comprises an annual fixed supply charge of $101.48 and a two-tier usage charge, with the Tier 1 charge set at $2.61 per kilolitre (kL) for the first 200 kL of water use and the Tier 2 charge set at $5.24 per kL for consumption above 200 kL per year.[[10]](#footnote-11) This is known as a two-part inclining block tariff. Under this structure, Icon Water recovers about 10 per cent of its water revenue from the fixed supply charge and the remaining 90 per cent from usage charges.

Figure 1.1 and Figure 1.2 compare the residential tariff structure components for Icon Water with those of a number of urban utilities in other Australian jurisdictions. The supply charge in Figure ES1 is the Tier 1 charge and Icon Water’s supply charge is among the lowest.

Figure 1.1 Residential water fixed supply charges by utility, 2016–17

Sources: [City West Water (2016](#_ENREF_6)); [Hunter Water (2016a](#_ENREF_15)); [Hunter Water (2016b](#_ENREF_16)); Icon Water (2016e); PowerWater (2016); Queensland Urban Utilities (2017a); Queensland Urban Utilities (2017b); [SA Water (2016](#_ENREF_34)); South East Water (2016); [Sydney Water (2016b](#_ENREF_37)); [Sydney Water (2016a](#_ENREF_36)); and [TasWater (2015](#_ENREF_38))

Figure 1.2 Residential water usage charges by utility, 2016–17

Sources: [City West Water (2016](#_ENREF_6)); [Hunter Water (2016a](#_ENREF_15)); [Hunter Water (2016b](#_ENREF_16)); Icon Water (2016e); PowerWater (2016); Queensland Urban Utilities (2017a); Queensland Urban Utilities (2017b); [SA Water (2016](#_ENREF_34)); South East Water (2016); [Sydney Water (2016b](#_ENREF_37)); [Sydney Water (2016a](#_ENREF_36)); and [TasWater (2015](#_ENREF_38)).

The Millennium Drought affected southeast Australia from around 1997 to 2009. The shortage of water in that period led to the implementation of temporary severe water restrictions and permanent conservation measures and the application of a two-tier pricing structure.[[11]](#footnote-12) At the time, this inclining block structure was to some extent helpful in providing a price signal to customers to conserve water. The first tier was seen as making some water available at a lower charge to meet essential needs.

As a longer term measure, Icon Water also embarked on a substantial investment program to augment Canberra’s water supply. The key projects were the enlargement of the Cotter Dam from four gigalitres (GL) to 76 GL and the construction of the Murrumbidgee to Googong Dam pipeline to transfer water directly from the Murrumbidgee River to the Googong Dam.

1.3 Current water security situation

As a result of these measures and a return to higher inflows of water for several years, the ACT’s water supply and demand balance today is very different.

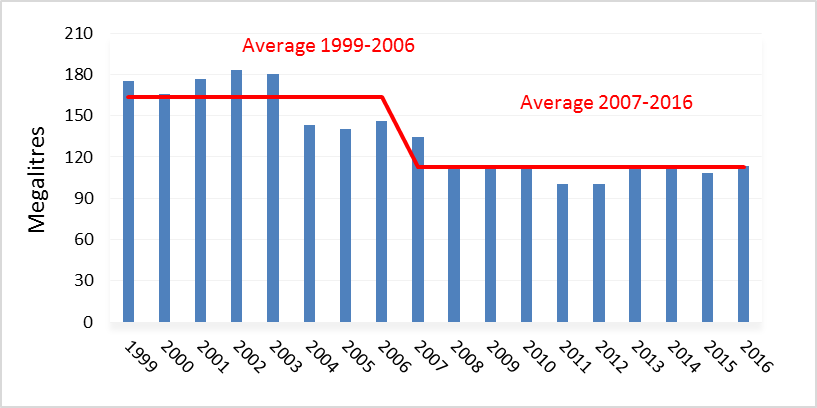
The enlarged Cotter Dam increased the ACT’s combined dam storage capacity by more than a third, from 206 GL to 278 GL. The combined dam storage level in early March 2017 was 90.5 per cent.[[12]](#footnote-13) Figure 1.3 shows the storage levels for each of the four ACT dams.

Figure 1.3 ACT dam storage levels, as at 13 March 2017

Source: Icon Water, https://www.iconwater.com.au/Water-and-Sewerage-System/Dams/Water-Storage-Levels.aspx.

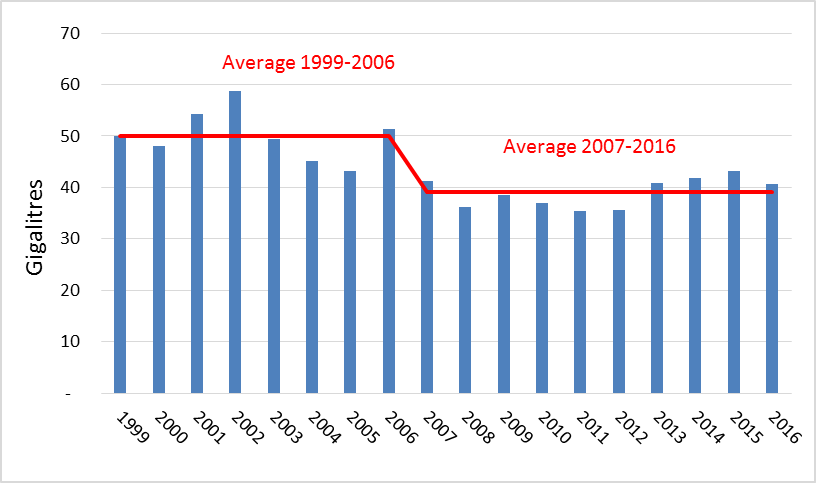
On the demand side, there has been little evidence of a bounce-back in per capita water consumption or aggregate billed water consumption levels since the lifting of temporary water restrictions in 2010. As shown in Figure 1.4 and Figure 1.5, recent levels for dam releases per capita and residential billed water consumption, respectively, are well below those prevailing in the early to mid-2000s.

Figure 1.4 Icon Water dam releases per capita, 1999–2016



Source: ABS (2014); ACT Government (2014c); and Icon Water dam release data.

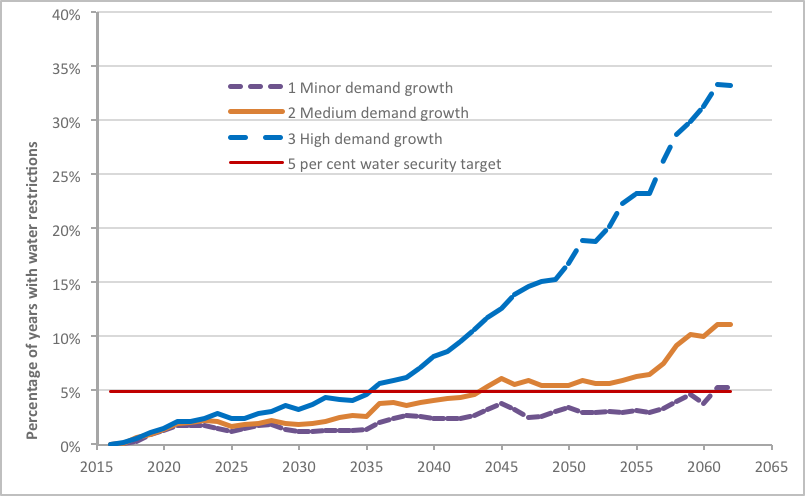
Figure 1.5 Icon Water residential billed water consumption, 1999–2016



Source: Icon Water billed water consumption series 1998–2016.

If current levels of per capita consumption are maintained and account is taken of population growth, projected dam inflows and available capacity, then, based on modelling results, further augmentation of water supply infrastructure is not likely to be needed for about 40 years (see Figure 1.6).

Figure 1.6 Demand and the probability of water restrictions



Source: [ICRC (2016b](#_ENREF_25)): 57.

1.4 The tariff review leading up to the final report

The Commission’s review of Icon Water’s water and sewerage services tariff structures commenced with the publication of an issues paper in November 2015.[[13]](#footnote-14) A technical paper on the elasticity of demand for water in the ACT was released in February 2016.[[14]](#footnote-15) A technical paper on marginal cost pricing in the ACT was released in June 2016.[[15]](#footnote-16) A draft report was released in September 2016.[[16]](#footnote-17)

### 1.4.1 Issues paper

The issues paper provided extensive background information and proposed a frame of reference to guide the Commission’s evaluation of Icon Water’s existing water and sewerage tariff structures and potential alternatives. The framework comprised an overarching economic regulatory objective and a set of pricing principles. In response to issues raised in submissions and further consideration by the Commission, the pricing principles have been developed further to make it clearer how economic, social and environmental objectives will be considered by the Commission.

### 1.4.2 Technical paper 1: Elasticity of water demand

The first technical paper gave an estimate of the price elasticity of demand for water in the ACT. This provided the information necessary to evaluate the merits of using price to manage demand rather than relying solely on quantity restrictions.

The price elasticity of demand is a measure of the responsiveness of demand to price. It is simply the percentage change in demand in response to a one per cent change in price.

The Commission found that the price elasticity of demand for residential water in the ACT, while not zero, is relatively small, with a point estimate of –0.14 across the 1999 to 2015 period.

Under the current ACT temporary water restrictions scheme, Stage 3 restrictions target a 35 per cent reduction in water use relative to permanent water conservation measures. Achieving this level of reduction in demand without using restrictions would require a 250 per cent increase in the average usage price. Applying the more elastic summer estimate of –0.19 implies a price increase in excess of 180 per cent to meet the reduction objective. Furthermore, prices of this magnitude are well outside the data used for this analysis, and therefore the demand response would be uncertain.

The Commission’s primary conclusion was that this finding militates against the use of price as the sole tool to manage water demand in the ACT. The finding that the residential price response was less elastic in the sub-period after the 2006 structural break than over the entire 1999 to 2015 period further supports this conclusion.

It is also the case that, with such a low price elasticity of demand, reductions in price would have relatively small impacts in terms of increasing water usage.

### 1.4.3 Technical paper 2: Marginal cost pricing

The second technical paper assessed the theory and practice of marginal cost pricing in a natural monopoly industry, and provided current estimates of the marginal cost of providing regulated water and sewerage services in the ACT.

The concept of marginal cost is important in determining an appropriate usage price because ideally it should measure the additional cost to society as a whole of using additional water infrastructure services and the water resource itself.

More specifically, the paper sought to answer two questions:

1. Is Icon Water’s current tariff structure providing suitable price signals to its customers about the efficient costs of water and sewerage services?
2. If not, what would a more efficient tariff structure look like?

All the marginal cost estimates for water supply calculated for the purposes of the paper, both short- and long-run, were well below even the current first-tier water charge of $2.61 per kL. The paper concluded that Icon Water’s current water tariff structure does not appear to be providing suitable price signals to customers about the efficient use of the service infrastructure and water resource.

As to the second question about what a more efficient water tariff structure would look like, the paper concluded that the pursuit of economic efficiency would support a move towards one usage price, set with reference to an appropriate measure of marginal cost. The paper noted that moving from the current inclining block structure and price levels towards a new, more efficient, single usage charge structure would require a rebalancing of the fixed charge and the usage charge, with a significant adjustment in the level of the fixed charge.

With regard to sewerage services, the paper noted that the fact that the current tariff is based entirely on fixed supply charges implies that it is incapable of providing suitable price signals to customers about the efficient costs of sewerage services in the ACT.

### 1.4.4 Draft report: Tariff Review 2016

The draft report considered the current tariff structure in light of the change in water security that has developed in recent years and the most likely long-term demand–supply forecasts. The tariff structure was assessed based on a number of pricing principles related to the Commission’s regulatory objectives.

The key conclusion was that the inclining block tariff served the ACT well throughout the drought years but is a relatively blunt tool to encourage water conservation. The tariff structure could be improved to provide better or more efficient outcomes for the community in the current and prospective more secure water circumstances. A move towards rebalancing the fixed and usage charges was suggested with a transition period of 10 years.[[17]](#footnote-18)

The Commission also noted that it would welcome Icon Water’s commitment to introducing a cost-based pricing regime for trade waste in the next regulatory period.[[18]](#footnote-19)

The Commission also indicated that it would remain open to the possibility of Icon Water proposing tariffs that might better meet the needs of its customers. However, such tariff proposals would need to be consistent with relevant pricing principles and would be subject to final approval by the Commission.

The Commission’s draft position in relation to the sewerage services tariff was that it should be retained in its current form given the absence of a reliable measure of actual discharge volumes.

### 1.4.5 Public consultation

The Commission received 20 submissions on the tariff review papers published to date, 10 of which responded to the draft report. Three submissions were received from Icon Water, two from the ACT Civil and Administrative Tribunal, one from Clubs ACT, one from the Federal Golf Club, one from the Canberra Business Chamber, one from the ACT Government and 11 from members of the ACT community.

The Commission also held a public forum at which a number of people presented their views and commented on the Commission’s draft report.

Submissions and presentations from the public forum are considered in the relevant chapters of this report and summarised in Appendix 1.

1.5 Status of the tariff structure review final report

The purpose of the review is to help determine whether the current tariff structures for water and sewerage services will continue to deliver the best outcome for the ACT community, or whether improvements can be made.

The analysis undertaken to date indicates that some adjustment to the existing water tariff structure to better reflect the costs incurred by Icon Water could benefit the ACT community as a whole. Any change should be done in a measured and gradual manner. This approach takes account of the need to use water efficiently, and to ensure efficient recovery of revenue to cover the efficient costs of Icon Water, while meeting environmental objectives and taking account of potential adverse social effects. However, while the direction of change seems clear, more consideration needs to be given to how best to address impacts on the budgets of low-income households.

The tariff structure can be considered separately from the amount of revenue that needs to be earned to ensure efficient cost recovery. However, the Commission believes that it is preferable to make any adjustments as part of the price investigation for water and sewerage services that has just begun. That allows the Commission to consider all the relevant information on costs and usage that will become available.

To sum up, this report sets out the Commission’s current position on the future structure of Icon Water’s regulated water and sewerage services tariffs. Any adjustment will be finalised as part of the Commission’s investigation into a price direction for regulated water and sewerage services for the next regulatory period, from 1 July 2018 to 30 June 2023.

1.6 Report structure

The rest of this report is structured as follows.

* Chapter 2 explains the relevant public policy and regulatory objectives.
* Chapter 3 explains the pricing principles used to develop a proposed direction to change the tariff structure.
* Chapter 4 discusses the current water services tariff structure.
* Chapter 5 discusses options for changing the water services tariff structure, the views expressed in submissions and the Commission’s preferred directions for change.
* Chapter 6 discusses the current sewerage services tariff structure and options for changing the tariff structure and introducing a cost-based tariff for trade waste.
* Chapter 7 discusses implementation and transition issues.
* Appendix 1 provides a summary of submissions received on the tariff review papers and draft report and of presentations at the public forum.
* Appendix 2 provides details of national considerations relevant to the tariff review.
* Appendix 3 provides a summary of water tariffs in other jurisdictions.
* Appendix 4 discusses the issue of using the short-run marginal cost or long-run marginal cost as the marginal usage charge.

# Public policy and regulatory objectives

2.1 Introduction

A determination in relation to the tariff structure or tariff levels for regulated services needs to ensure that relevant public policy and regulatory objectives are fully considered and reflected in decisions.

The issues paper explained the context for the tariff review and discussed the relevant public policy and regulatory objectives and requirements.[[19]](#footnote-20)

This chapter outlines the public policy and regulatory objectives that the Commission has focused on in preparing this report.

2.2 Legislative context

In carrying out its functions under the ICRC Act, the Commission has the following objectives set out in section 7:

1. to promote effective competition in the interests of consumers;
2. to facilitate an appropriate balance between efficiency and environmental and social considerations; and
3. to ensure non-discriminatory access to monopoly and near-monopoly infrastructure.

In making a price direction, the Commission has the following overarching objective set out in section 19L:

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.

In making a price direction, the Commission is also required to have regard to the provisions set out in section 20(2):

1. 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;
2. standards of quality, reliability and safety of the regulated services;
3. the need for greater efficiency in the provision of regulated services to reduce costs to consumers and taxpayers;
4. an appropriate rate of return on any investment in the regulated industry;
5. the cost of providing the regulated services;
6. the principles of ecologically sustainable development mentioned in subsection (5);
7. the social impacts of the decision;
8. considerations of demand management and least cost planning;
9. 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
10. the effect on general price inflation over the medium term; and any arrangements that a person providing regulated services has entered into for the exercise of its functions by some other person.

At a high level there are essentially three key considerations: economic efficiency, environmental effects and social impacts. As explained in Chapter 3, economic efficiency encompasses many of the other specific objectives, including financial considerations, monopoly power and certain environmental effects. There are likely to be trade-offs in balancing the various objectives and further objectives set by government policies. The Commission’s key considerations in balancing the objectives are discussed later in this report.

2.3 Government policy context

There are a number of government policies and national agreements that are relevant in considering reform of the tariff structure.

### 2.3.1 The ACT Water Strategy 2014−44

The ACT Water Strategy 2014−44: Striking the balance sets out the ACT Government’s overarching long-term water resources management policy. The strategy is intended to achieve three outcomes: (1) healthy catchments and waterbodies; (2) a sustainable water supply used efficiently; and (3) a community that values and enjoys clean, healthy catchments.[[20]](#footnote-21) The second outcome − a sustainable water supply used efficiently − is of primary interest for the tariff review. Strategy 5, directed to this outcome, is to manage and promote the sustainable use of water. Action 15 under this strategy is to encourage water users to conserve and use water wisely. The ACT water strategy also proposes investigating the use of scarcity pricing to promote efficient use of water.

To help achieve the outcome of a sustainable water supply, the ACT Government has a number of schemes in place, including permanent water conservation measures and a temporary water restrictions scheme that can be imposed in times of significant water shortage. The ACT has been under permanent water conservation measures since Stage 2 temporary restrictions were revoked on 31 October 2010.

The ACT Government’s overarching planning act, the Territory Plan, also places a number of water quality requirements on developers relating to the control of storm water and run-off.

These various water conservation actions are recognised in the directions for changing the tariff structure that are being considered by the Commission.

### 2.3.2 National agreements

The ACT is a signatory to the Murray–Darling Basin Agreement, an intergovernmental agreement between Basin jurisdictions. The agreement, among other things, sets a long-term cap – or upper limit – on surface water diversions. This allows the ACT to take out of the ACT watercourses (dams and rivers) a long-term average of 40.5 GL net per year for consumptive use. The net use[[21]](#footnote-22) in the ACT has fallen significantly in recent years to below or around 20 GL per year.

The 2004 National Water Initiative commits the ACT Government to a number of best practice water pricing and institutional arrangements for water infrastructure and water resources.

In 2010, a set of National Water Initiative pricing principles, agreed by all Australian governments and endorsed by the Natural Resource Management Ministerial Council, was developed as the basis for setting water prices in all jurisdictions (see Appendix 2). The price-setting principles cover various aspects of economically efficient prices, including application of two-part tariffs unless demonstrated to not be cost-effective.

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# Pricing principles

3.1 The need for pricing principles

To determine whether and how to change the tariff structures for water and sewerage services in the ACT, it is helpful to establish key pricing principles that take account of both legislative and government policy objectives, as well as generally accepted economic and regulatory governance principles. The principles provide the basis for the assessment framework that the Commission is using to develop its final recommendations for the tariff structures.

The principles are also consistent with the approach that the Commission intends to apply in its investigation in relation to the price direction for Icon Water for the next regulatory period.

The key price-setting principles that the Commission considers relevant to an assessment of tariff structures are summarised in Table 3.1. The principles reflect the Commission’s interpretation of the legislative objectives, government policies and national agreements that prescribe and guide its decisions on water and sewerage service prices.

The Commission presented proposed principles in the issues paper released in November 2015 that were broadly consistent with those shown in Table 3.1. The principles were amended in the draft report released in September 2016. Further changes were made to the principles in response to submissions expressing concerns about the need for more clarity in how the Commission would address and balance economic, environmental and social issues. The revised principles highlight how social and environmental concerns from any rebalancing of the tariffs would be addressed.

A problem the Commission and other regulators face is in setting priorities. There are multiple and sometimes potentially conflicting objectives and limited mechanisms for implementing regulatory objectives that are under the Commission’s authority. In this respect, it is noted that there is a long-established economic and public policy principle that if one wants to be effective in achieving multiple, potentially conflicting objectives there needs to be at least as many separate and well-designed mechanisms for implementing policies (i.e. instruments, tools or actions to implement specific policies) as there are objectives. Furthermore, a single policy mechanism needs to be assigned exclusively to each specific objective.

Table 3.1 Regulatory objectives and pricing principles for the water and sewerage services tariffs

|  |  |  |
| --- | --- | --- |
| Category | Aspect | Detail |
| **Objective** | **Overarching**  **Interpretation** | To promote 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.  The various aspects of economic efficiency are given emphasis, but with the ultimate objective being the long-term interests of consumers. Economic efficiency when properly defined encompasses environmental objectives. Consumer interests must take account of equity and other social impacts as required by the ICRC Act.  Economic efficiency considerations related to pricing are a starting point but need to be balanced with environmental and social considerations. |
| **Pricing 1 principle** | **Economic efficiency in use** | Tariff structures and prices should promote the economically efficient use of Icon Water’s water and sewerage services infrastructure, and should also encourage economically efficient use of the water resource itself.  An inappropriate tariff structure may also create incentives for uneconomic bypass where water supply is sourced from a higher cost alternative. |
| **2** | **Economic efficiency for investment and operation** | Tariff structures 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 revenue adequacy or ensuing financial viability.  Costs also need to be efficient, which is primarily addressed by auditing and incentive mechanisms to ensure costs are efficient. |
| **3** | **Environmental considerations** | Tariff structures, prices and complementary mechanisms should ensure that environmental objectives are effectively addressed. |
| **4** | **Community impact – gradual adjustment** | Any change to the structure of tariffs and prices that will have substantial customer impacts should be phased in over a transition period to allow reasonable time for customers to adjust to the change. |
| **5** | **Community impact – fair outcomes for low-income households** | Adverse impacts on households with low incomes need to be limited or moderated by phasing and other compensating mechanisms or limits on changes to the tariff structure. |
| **6** | **Regulatory governance – simplicity** | Tariff structures should be simple for customers to understand and straightforward for the utility to implement. |
| **7** | **Regulatory governance – transparency** | Tariff structures should be set using a transparent methodology and subject to public consultation and scrutiny. |

The main challenge that the Commission and other regulators face in relation to matching mechanisms for implementing policy with objectives is that social objectives, which the regulator must consider, tend to be fairly broad. Other arms of government have primary responsibility for achieving social goals such as protecting low-income households. Nevertheless, the Commission is required to and does have regard to the social and distributional impacts of its decisions. This inevitably requires some compromise and consultation with affected parties in arriving at conclusions that will effectively balance the various objectives.

The Commission’s view is that the principles set out in Table 3.1 are consistent with how economic regulators in similar jurisdictions consider and assess the various objectives. In balancing competing objectives, the Commission will consider economic efficiency aspects as a starting point, but then balance efficiency perspectives with a careful and transparent consideration of social and environmental impacts.

3.2 Explanation of the principles

As already noted, the Commission is required to set prices that address a number of potentially conflicting objectives. The recent inclusion of section 19L in the ICRC Act assists in clarifying objectives and priorities. It highlights the importance of all the main aspects of economic efficiency in the long-term interests of consumers. However, there is still a need for regulatory judgement in interpreting and balancing economic, social and environmental objectives.

The focus on economic efficiency is consistent with the starting point for economics in evaluating virtually all government policies and regulatory decisions. It is consistent with how decisions are made about economic regulation in other sectors and other jurisdictions. However, the approach of the Commission (and many other regulators) is to seek economic efficiency while also giving due consideration to social, environmental and other specific objectives.

Social objectives can cover a wide range of matters, but the main issues usually relate to the community’s concerns about ‘fairness’ or ‘equitable outcomes’ with respect to changes in policy or regulated prices. The concept of ‘fairness’ is not well defined, but the Commission sees two types of fairness or equity impacts that are relevant in changing the tariff structure. The first relates to the impact on households and businesses that have made investments in water-saving measures. If usage charges decline, these customers would realise lower benefits from their investments. This effect is likely to be interpreted as unfair. The second relates to adverse impacts on low-income households. The fairness or equity impacts of a higher fixed charge and lower usage charges need to be effectively recognised in deciding on the extent of any changes to the tariff structure and the timeframe over which changes are introduced.

To help ensure that the final outcome is well understood and broadly accepted by the community, the Commission endeavours to consult thoroughly and make its recommendations as simple as possible and the reasoning for those recommendations as transparent as possible. In this respect, two of the pricing principles relate to simplicity and transparency.

#### Pricing principle 1: Economic efficiency in use

*The overarching efficiency objective leads to the first proposed pricing principle that tariff structures and prices should promote the economically efficient use of Icon Water’s water and sewerage services infrastructure, and should also encourage economically efficient use of the water resource itself.*

This principle reflects the fundamental economic proposition that the community as a whole will benefit if the usage component of a tariff is based on the additional social costs that are incurred as a result of using an additional unit of water. The social costs in this case need to be defined to include the value of additional water use, including the impact if less water is available for future use.

In addition, the tariff structure and tariff levels may create a risk of 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. This effect means both inefficient use and higher cost of supply, which is an aspect of principle 2.

#### Pricing principle 2: Economic efficiency for investment and operation

*The second pricing principle is that tariff structures should facilitate the efficient recovery of the prudent and efficient costs of investment and operation.*

This principle is often described as ensuring revenue adequacy or financial viability. And, as it has an intertemporal dimension, it is an aspect of dynamic economic efficiency. It is typically accorded priority in economic regulation, given the consequences if efficient investment does not occur or the financial viability of the regulated entity is jeopardised.

The principle covers two aspects of economic efficiency. First, overall revenue needs to be sufficient to finance the costs of operation and investment. If this is not the case, efficient investment may not occur, which could have a major adverse impact on services.

Second, the cost of investment and operations needs to be efficient – that is, investment and operations should occur at the lowest cost possible to provide the defined desirable services. Other regulatory mechanisms (auditing and incentive arrangements to ensure costs are efficient) are the major means of addressing this objective; however, the structure of the tariff and, in particular, the extent to which revenues are guaranteed may affect this aspect of economic efficiency.

#### Pricing principle 3: Environmental considerations

*Tariff structures, prices and complementary mechanisms should ensure that environmental objectives are effectively addressed.*

Some environmental impacts can be reflected in prices, but typically environmental objectives are primarily addressed by specific legislated and government policy requirements. This includes giving priority to minimum environmental flows of water and various permanent and temporary water conservation measures or restrictions.

#### Pricing principle 4: Community impact – gradual adjustment

*Any change to the structure of tariffs and prices that will have substantial customer impacts should be phased in over a transition period to allow reasonable time for customers to adjust to the change.*

Customers prefer price stability in the overall bills they face. In addition, as tariff structure changes are likely to entail a rebalancing of charges, there is an equity or fairness issue for customers who have invested in water-saving technologies. An appropriate transition period for tariff structure changes can ease adjustment costs and enable customers who invested in water-saving technologies to realise more benefits from their investments.

#### Pricing principle 5: Community impact – fair outcomes for low-income households

*Adverse impacts on households with low incomes need to be limited or moderated by phasing and other compensating mechanisms or limits on changes to the tariff structure.*

Effectively addressing concerns about increases in water bills for households with low incomes is probably the most difficult issue in developing a set of pricing principles. It is difficult to identify the impacts on all households with low incomes and make a decision about the value of equity impacts. The Commission may also need to draw some of these implications to the attention of other arms of government that deal with the impacts on households with low incomes such as the Community Services Directorate.

The Commission will carefully consider the likely impact of any tariff structure changes on households with low incomes and suggest mechanisms to address or moderate any adverse impacts. Where such measures cannot be implemented in a reasonable period of time, the Commission will make a decision about an acceptable cap for price increases for low and moderate levels of water usage. However, it is noted that this is a broad measure for dealing with impacts on households with low incomes as some or many of these households may have large families with high water usage.

#### Pricing principle 6: Regulatory governance – simplicity

*Tariff structures should be simple for customers to understand and straightforward for the utility to implement*.

Most consumers of water are considered likely to prefer a tariff structure that is readily understood and that provides clear signals about the impact of consuming additional water. Readily understood tariff structures have the added benefit of being easier and cheaper for the utility to implement, which also contributes to economic efficiency.

#### Pricing principle 7: Regulatory governance – transparency

*Tariffs should be set using a transparent methodology and subject to public consultation and scrutiny.*

This principle relates to process and is an important aspect of achieving good governance with respect to regulatory actions. The community as a whole needs to have confidence in the regulatory arrangements, and this requires a generally good understanding across the community of how tariff structures and levels are determined.

# Assessment of the current water services tariff structure

4.1 Introduction

This chapter applies the pricing principles described in the previous chapter to identify any problems with Icon Water’s current water services tariff structure and potential directions for changing the tariff structure in the long-term interests of consumers in the ACT as a whole.

4.2 Two-part and inclining block tariff structures

A two-part tariff structure has a fixed supply component and a variable usage component that is based on the volume of water used. The two-part structure can be helpful in achieving two aspects of economic efficiency. The usage part can be set at a level that reflects the marginal social cost (the additional cost to society when additional water usage occurs) and the fixed part can be set to ensure that revenue is sufficient to finance the overall cost of supply. It is important to ensure that the fixed component does not affect usage, but the fixed component can differ by type of use (for example, business or household). It could also vary based on other characteristics of customers in order to raise revenue in a way that helps to minimise adverse impacts on low-income users. A two-part tariff can ensure that the efficient level of output is provided as well as ensure that fixed costs are recovered, as long as the fixed charge does not mean that some users opt out of the service.

An inclining block tariff has a fixed component and more than one usage component, with the usage components increasing as successively higher blocks of water are consumed. The Productivity Commissionhas noted that the first block tends to be set at or below the long-run marginal cost to provide an amount of essential water at low cost to assist low-income households, while subsequent blocks are set at or above the long-run marginal cost to provide incentives for water conservation.[[22]](#footnote-23) Sometimes, the price of each block reflects the range of estimates of long-run marginal cost.

In the past, many jurisdictions in Australia charged a fixed fee for water supply based on property values.[[23]](#footnote-24) However, as part of the National Competition Policy reforms in the 1990s, water pricing policies were adjusted in a number of Australian jurisdictions. Several jurisdictions adopted two-part tariffs with a fixed component and a single usage (volumetric-based) rate that often reflected long-run marginal cost, motivated by a perceived need to move towards consumption-based pricing and send price signals about the costs of future supply augmentation. Later, concerns about how to accommodate increased water scarcity while also addressing basic needs and fairness concerns led to the development of usage components with the increasing tier structure that characterises the inclining block tariff. In 2008, Sydney moved from an inclining block structure to a single volumetric rate. The requirement for non-metropolitan utilities in New South Wales to use inclining block structures was removed in 2011, and utilities in New South Wales are now encouraged to use a flat volumetric pricing structure. However, several other jurisdictions continue to have inclining block tariffs.

4.3 Current tariff structure: two-part inclining block

As explained in Chapter 1, the current ACT water tariff structure comprises an annual fixed supply charge and a two-tier usage charge. The per unit usage charge depends on the volume used, with a lower price for the first 200 kL of water used per annum and a higher water price, double that of the first-tier price, for water used above that level. This is known as a two-part inclining block tariff.

The current water tariff structure means that Icon Water is heavily reliant on usage charges to raise revenue to cover its costs. With the current tariff structure, Icon Water recovers about 10 per cent of its water revenue from the fixed charge and the remaining 90 per cent from usage charges. Comparisons with eight other urban water utilities show that Icon Water’s Tier 2 usage charge is the highest and its fixed charge is among the lowest (see Figure 4.1).

4.4 Efficient use

The first aspect of economic efficiency relates to setting a usage charge that reflects relevant marginal costs, including the cost of using the water resource itself. This aspect of economic efficiency is known as allocative efficiency.

The use of an appropriate measure of marginal cost for setting a usage price is in the interests of the community since it should reflect the true cost to society as a whole of using an additional marginal amount of water. The marginal costs should include efficient operational costs as well as a component that reflects the value of water and any other externality-type costs not reflected in prices or other measures such as water restrictions. This definition of marginal cost is known as ‘marginal social cost’.

The fixed component of the tariff is not related to usage and should contribute as much as possible to the recovery of fixed costs, but without creating incentives to incur additional fixed costs.

The usage component of the tariff ideally needs to be defined to include all the costs that the community incurs when an additional unit of consumption of water occurs – that is, the relevant measure of marginal social cost. Ideally these costs should reflect:

* the direct costs of supplying an additional unit of water (pumping and other operational costs);
* the costs on the environment from using more water if such costs are not already reflected in supply arrangements; and
* the cost of using the water resource itself – and if the consumption of water reduces the availability of water to others, including other consumers in the future, the loss of the value of water should be included in the measure of marginal cost.

First in the issues paper, and then in more detail in the technical paper on marginal cost pricing, the Commission demonstrated the link between pricing at marginal cost and economic efficiency in the use of water and water infrastructure services. The technical paper also gave current estimates of the marginal cost of providing regulated water services in the ACT, using a range of measurement methods. These included textbook marginal cost (TMC), average incremental cost (AIC) and marginal incremental cost (MIC). A summary of the short- and long-run marginal cost estimates is shown in Figure 4.1.

Figure 4.1 Marginal cost estimate for water, summary

Source: [ICRC (2016b](#_ENREF_25)): 60.

For the long-run methods, estimates ranged from a low of $0.72 per kL for the TMC method (which is the same as the short-run marginal cost estimate) to a high of $1.74 per kL using the MIC method. The two most common long-run measurement methods, AIC and MIC, provided estimates of similar magnitude. The measures included the abstraction charge, which is an allowance for the value of water.

Icon Water’s current two-tier usage prices for water are $2.61 per kL for the first 0.548 kL per day and $5.24 per kL thereafter. What is clear is that, irrespective of which measure is used, all the marginal cost estimates are well below even the Tier 1 price. This conclusion holds in the face of all the sensitivity tests the Commission performed on the various measures.

However, the Commission acknowledges that these estimates are imperfect, as they do not include a value for the water resource itself that effectively reflects its value to the community. In addition, the value of the water resource could change significantly in times of drought, complicating the implementation of a measure of marginal cost that includes a current estimate of the value of water.

In times of drought the marginal charge needs to be high to reflect the scarcity value of water, but in times where security of supply is assured the marginal charge should be lower since water is less scarce. Reflecting scarcity value in prices is an essential aspect of outcomes in competitive markets and in markets where economic regulation is justified.

It is also worth noting that the temporary water restrictions that applied in the period of the Millennium Drought primarily targeted outdoor water use by households, whereas greater use of pricing in drought conditions would extend conservation incentives to a broader range of uses.

If the components of the water tariff were to be rebalanced on economic efficiency grounds, the current security of supply conditions may allow some lower usage charges that reflect the availability of water, but, in turn, usage charges may need to increase if tight supply conditions emerge in the future. Given the behavioural changes that have occurred, the empirical evidence for the low responsiveness of demand to price and the community’s revealed preferences for conserving water, aggregate demand is not expected to increase materially even if marginal usage prices declined materially. In short, this largely reflects the likely response from most households. However, there may be some increase in demand from water-dependent businesses and non-residential consumers, reflecting the additional value they can benefit from if prices are lower. For example, the activities and scale of some businesses may be restricted by a high marginal usage price, and a lower marginal usage price would allow those businesses to improve their operations.

More importantly, a very high usage price is likely to create incentives for uneconomic bypass, where large users purchase water from an alternative source that is less costly to them but of higher cost than the true cost to the community. A tariff structure that better reflects the efficient costs of marginal supply can ensure that this bypass–related economic inefficiency does not occur.

The two-tier structure has been justified based on the argument that the lower tier ensures that essential water requirements are available at a reasonable price and the higher tier deters consumption. This approach appears to only deal with the social objectives to a limited extent, related to demand for ‘essential water’ for certain households, and is not economically efficient in the way it affects consumption or contributes to efficient revenue recovery. The main problems with respect to the inclining block tariff structure are that neither tier charge reflects relevant marginal costs and there is too much reliance on usage charges for revenue recovery. This latter aspect is considered in more detail in the next section. The social objectives are discussed later in this chapter.

4.5 Efficient cost recovery

Another key aim of economic efficiency is to help ensure that the costs of efficient supply are recovered over the longer term. If revenue is not sufficient to cover the costs of efficient supply, this can discourage efficient investment and put the security of supply at risk. This aspect of economic efficiency, referred to as revenue adequacy or financial viability or dynamic efficiency, is typically given considerable priority by economic regulators of utilities across many sectors and jurisdictions. 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. ‘Sunk costs’ refers to investments that cannot be used for another purpose.

Icon Water’s capital costs are about 50 per cent of its total revenue requirement, with operating expenditure, the water abstraction charge and the utilities network facilities tax making up most of the rest. The capital costs generally relate to the recovery of sunk capital assets over their expected economic lives. Although there can be some variation in these costs within a regulatory period, given their ‘sunk’ nature they are treated as fixed costs that need to be recovered irrespective of how much water is supplied.

In addition, most components of operating expenditure are fixed costs that do not vary with output – for example, corporate and other administration costs. The main variable costs are pumping and treatment costs and the volume-related water abstraction charges, which together constitute only around 16 per cent of Icon Water’s total revenue. This indicates that at least 80 per cent of Icon Water’s costs are fixed costs.

In contrast, the current tariff structure is characterised by a relatively low fixed charge and high reliance on usage charges. Fixed charges comprise only 16 per cent of the current water bill for a customer using 200 kL per year, with usage charges accounting for the remaining 84 per cent. Icon Water notes that:

Over the past 13 years, there has been a significant shift away from fixed charges towards usage charges. The top tier usage price has increased by roughly 400 per cent over that period, while the fixed supply charge has decreased.[[24]](#footnote-25)

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.

Although the fixed charge and Tier 1 and Tier 2 usage charges can be set at levels that generate revenue that could recover Icon Water’s costs, estimates of the targeted revenue depend on forecasts of demand, which in turn, are used to set appropriate prices. Variability in demand means variability in revenues for Icon Water, and this increases the financial risk for Icon Water and its owner – the ACT Government on behalf of the ACT community.

In times of drought where severe water restrictions are in place, and in the absence of substantial price increases, there may be a substantial under-recovery of costs. Furthermore, government policy entails a continued focus on water conservation, which places considerable financial pressure on Icon Water given its high dependence on usage charges. If demand declines further, the average water charge will in any case need to increase to ensure revenues are adequate to cover efficient costs.

A further problem is that the proportion of sales at the Tier 2 price will decline over time if per capita consumption declines. This was confirmed in modelling the Commission undertook for the issues paper.[[25]](#footnote-26) Although growth of overall demand may ease the problem of cost recovery, overall demand has remained low for some time despite population growth, and if the existing tariff structure and water conservation measures continue to reduce the demand for water, or constrain it near current levels, average water bills are likely to increase.

As Icon Water is owned by the ACT Government, it is effectively assured that it will continue to operate. However, any shortfall in recovering capital costs would need to be reflected in a higher contribution from the government budget, in turn impacting on taxes or government services with overall adverse impacts on community welfare.

To some extent the problem can be addressed by regulatory mechanisms that allow price resets or the use of unders and overs accounts (i.e. accounts that track under- and over-recovery of revenue to provide a basis for subsequent price adjustments), but guarantees that revenues will always fully recover actual costs lead to a risk that Icon Water will be less focused on cost efficiency. This suggests that a move in the direction of rebalancing the tariff to ensure a larger fixed component will reduce revenue risk, but that a guarantee of full cost recovery may be too extreme a position to help ensure costs are efficient. There are also social and environmental considerations that limit the extent to which the tariff should be rebalanced to give more weight to fixed charges.

It is the Commission’s conclusion that for the objective of improving economic efficiency and for the recovery of efficient costs, a rebalancing of charges entailing some greater reliance on the fixed charge and a lower reliance on the usage charge is in principle desirable. This is in the long-term interests of consumers because the financial viability of Icon Water is a critical consideration if efficient investment is to be effectively financed. However, the findings with respect to this and other aspects of economic efficiency need to be balanced with other objectives and their supporting principles. The other objectives are discussed in the following sections.

4.6 Environmental considerations

The ACT is in a positive water security situation, both currently and over the long term. Environmental objectives are specified in legislation and are being met by Icon Water.

Icon Water is subject to strict requirements to ensure the flows of water in ACT streams and rivers that are necessary to maintain aquatic ecosystems. Icon Water’s licence to take water requires it to ensure that specified environmental flows are met.[[26]](#footnote-27) It is also noted that the downstream environmental benefits in the ACT of any water (over and above environmental flows) that flows from ACT dams are limited because there are no key environmental assets in the ACT that require specific environmental watering, although such flows may have benefits elsewhere.

Further, reflecting its urban nature, the ACT only consumes a small proportion of the total amount of water that flows into its catchments. The net use has been at or below 20 GL per year since 2007–08, which is four per cent of total inflows or eight per cent of the balance after environmental flows. This is also well below the ACT’s sustainable diversion limit under the Murray–Darling Basin Plan of 40.5 GL per year.

As a result, tighter temporary water restrictions appear unlikely to be required to further restrict demand in the next regulatory period, and possibly for some time after that. The economic value of an additional kilolitre of water left in ACT dams is low in these circumstances. This is because the value of the water resource itself derives primarily from its scarcity, which depends on the extent to which one person’s use of water effectively limits the water used by other people. When there is a substantial supply relative to demand, the value of the water resource itself is relatively low.

Given these circumstances, there is some scope to improve the tariff structure without compromising environmental objectives. In addition, the tariff structure can be made to better address a number of objectives on a sustainable basis, including greater flexibility in contributing to conservation objectives.

4.7 Community impact – gradual adjustment

Households and businesses that invested in water-saving technologies and other initiatives are likely to consider a substantial rebalancing of the tariff structure that entails lower usage prices as ‘unfair’, given the government’s water strategy and the investments they made in good faith. This cost would need to be balanced against likely efficiency benefits and would be ameliorated by adoption of a long transition period should the tariff structure be changed.

A long transition period can make it easier for people and businesses to adjust to the changes. However, there can still be equity or fairness issues for low-income households in relation to the end point that is reached. This second aspect of fairness is considered in the following section.

4.8 Community impact – fair outcomes for low-income households

The current tariff structure compromises economic efficiency but is not well targeted in addressing fairness concerns for low-income households.

Icon Water has provided evidence that large numbers of low-income consumers, particularly larger households, use more water than is available at the lower Tier 1 price. In its submission to the tariff review, Icon Water assessed the level of water use of customers receiving the ACT Government’s utilities concession.[[27]](#footnote-28) Icon Water found that around 40 per cent of these customers use more than 200 kL per year and pay the Tier 2 water usage price and that there are just as many concessional customers using more than 200 kL per year as there are using less than 150 kL per year.

Importantly, addressing the concerns about adverse impacts for low-income households may ideally need additional policy responses. Phasing of changes was proposed in the draft report to help address these concerns, but additional policy mechanisms may be needed.

4.9 Simplicity

Tariff structures should be simple for customers to understand and straightforward for the utility to implement. The current inclining block tariff structure has been in place for a long time and should be well understood by customers. However, the two-tier structure makes it difficult to determine likely revenues since water sales need to be forecast not only at the aggregate level but also at the block sales level. As shown in Figure 4.2, the proportion of Tier 1 sales has varied significantly since the introduction of the two-step structure in 2008–09. Moving to a single usage charge would remove this element of revenue uncertainty.

Figure 4.2 Icon Water Tier 1 proportion of total water sales, 2008–09 to 2014–15

Source: Icon Water billed water consumption data.

4.10 Transparency

Considerations relating to transparency largely depend on the extent to which regulatory decisions are supported by transparent information and a well-understood rationale and there is good opportunity for stakeholders to present their views. The current inclining block tariff structure was introduced using a transparent methodology and subject to public scrutiny. The Commission will continue to apply this principle along with the other pricing principles in developing a final tariff structure decision.

4.11 Summary assessment

Table 4.1 shows the summary assessment of the current water tariff structure against the pricing principles. The main finding is that the tariff structure can be improved to better meet key aspects of economic efficiency.

The tariff structure also appears to have mixed results on reducing costs for low-income households since a significant proportion of low-income households consume more than the 200 kL per year figure at which the higher Tier 2 charge applies. Although a significant proportion of low-income households consume smaller amounts of water, the structure is still considered to have adverse equity effects on low-income households that are large users of water, and there are better policy mechanisms to help households in need of financial assistance, although these may require the involvement of other parts of government.

It is also noted that key environmental objectives are being met under the current regulatory arrangements.

The key conclusion is that the inclining block tariff, which served the ACT well during the drought years as a mechanism to encourage water conservation, can be improved to provide better outcomes for the community in the current water-secure circumstances. However, although the direction of change is clear, the exact nature and extent of change require balancing of the various objectives, as discussed in more detail in Chapter 5.

Table 4.1 Summary of the current tariff structure

|  |  |  |
| --- | --- | --- |
| Principles | Assessment | Comment |
| 1 Economic efficiency in use | 🗶 | Not efficient; usage components do not reflect relevant costs.  A two-tier rather than a single usage price is always inefficient when customers prefer different usage levels.  There is also a strong risk of uneconomic bypass. |
| 2 Economic efficiency for investment and operation | 🗶 | Not efficient; there is significant revenue risk from over-reliance on usage charges.  The efficient level of costs is primarily addressed with separate auditing mechanisms. |
| 3 Environmental considerations | ✓ | Priority environmental objectives are addressed with separate restrictions. |
| 4 Community impact – gradual adjustment | Not applicable unless there is change | If the tariff structure were rebalanced to lower usage charges, there would be less benefit for investments in water-saving technologies. |
| 5 Community impact – fair outcomes for low income households | **🗶** | The tariff structure is not well targeted on low-income households. |
| 6 Regulatory governance –simplicity | **✓** | The structure has been in place for many years and understood, but it is not simple to implement. |
| 7 Regulatory governance –transparency | **✓** | The structure was originally set through a transparent and public process. |

4.12 Submissions and Commission’s consideration

This section focuses on problems with the current water tariff structure that were identified in submissions and the Commission’s consideration of those problems. Chapter 5 discusses directions for change, including concerns raised in submissions that focused on specific aspects of the changes.

### 4.12.1 Submissions

Submissions that supported retention of the existing water tariff structure noted the following key concerns related to the rebalancing of fixed and variable charges presented in the draft report:

* Price signals that would be inconsistent with water conservation and other environmental objectives if lower usage charges were introduced.
* Adverse impacts on low-income households if fixed charges increased and Tier 1 charges decreased.
* Lack of fairness for those who invested in water-saving initiatives if lower usage charges were introduced.

Submissions that supported a change in the water tariff structure that would mean higher fixed charges and lower usage charges noted the following problems with the current water tariff structure:

* Price signals that do not reflect efficient costs and do not provide an efficient signal for the use of the water resource itself.
* The high usage charge and the incentives it provides for uneconomic bypass for large users.
* Inequities for larger households that are faced with high second-tier usage prices.

More specific concerns are noted in the discussion in the next section.

### 4.12.2 Commission’s consideration

#### Environmental issues

The Commission recognises that some members of the ACT community strongly support water conservation and the role played by the current inclining block tariff in reducing discretionary water use. This is particularly the case with the second-tier charge for usage in excess of 200 kL per year.

In its customer survey on tariff structure changes, in response to the question about removing the 200 kL step, Icon Water found that more than half of customers who provided reasons in support of retaining the step cited water conservation.[[28]](#footnote-29) In addition, Icon Water reported that a tariff option with a single usage charge set at $2.60 per kL (the current Tier 1 charge is $2.61) was considered unsuitable by more than half of the respondents.

However, as noted, tighter temporary water restrictions appear unlikely to be required to further restrict demand in the next regulatory period and possibly for some time after that. This reflects the substantial recent investments in water security, the current levels of water in Icon Water’s expanded storages, and the relatively low levels of per capita and aggregate demand after the Millennium Drought. This suggests there is some scope to lower or at least cap increases in the Tier 2 charge.

The combined dam storage level in early March 2017 was 90.5 per cent, as shown in Figure 1.3.[[29]](#footnote-30) On the demand side, as noted in Chapter 1, there has been little evidence of a bounce-back in per capita or aggregate water consumption levels since the lifting of temporary water restrictions in 2010.

This is corroborated by the results of the water demand and supply modelling undertaken for the technical paper on water demand forecasting, using Icon Water’s supply and demand model. This model is used to calculate the probability of temporary restrictions each year from the present day until 2062.[[30]](#footnote-31)

On the supply side, the model uses current dam levels and projected dam inflows, adjusted for the expected impact of climate change on rainfall and evaporation. On the demand side, growth in water demand under various population growth and per capita demand assumptions is modelled.

Using this model, the timing of the next water supply augmentation (or demand reduction intervention) can be gauged from the point at which the probability of being in temporary water restrictions rises above the five per cent ACT Government water security target.

Under the minor demand growth scenario, augmentation of the ACT’s water supply is not likely to be needed for another 40 years.[[31]](#footnote-32) Under the medium demand growth scenario, augmentation is only required in about 30 years. Under the high demand growth scenario, which can be considered an upper bound, augmentation is required in about 20 years.[[32]](#footnote-33)

The minor demand growth scenario is used as the optimal investment scenario for marginal cost calculation purposes as there has not been even minor aggregate demand growth in recent years.

The Commission’s view is that the scarcity value of water in ACT dams should be recognised but is better addressed by adjusting the marginal cost upwards (and therefore the usage price) when water is scarce, rather than relying on an inclining block arrangement that assigns a high price irrespective of dam levels.

A key point here is that, in the long term, the value of an additional kilolitre of water left in ACT dams derives primarily from its contribution to postponing further augmentation of the water supply system. However, in times of drought when the scarcity of water increases substantially, the value of can water exceed the value of postponing further augmentation (since the augmentation would not necessarily take account of the degree of scarcity in some drought conditions). So in times of drought the value of postponing augmentation is dominated by the scarcity value of water, and from an economic efficiency perspective the marginal usage price should increase to reflect the drought conditions. In contrast, in times when there are substantial inflows of water relative to demand, the saving from postponing augmentation is low in present value terms because the availability of water itself pushes out the augmentation date, and the marginal usage price should be reduced to reflect the ample availability of water.

In any case, given the current and most likely long-term prospective conditions, from an environmental perspective there is limited local or downstream environmental benefit to be gained from leaving an extra kilolitre of water in ACT dams rather than consuming it, for two reasons.

First, Icon Water is subject to strict requirements to ensure the flows of water in ACT streams and rivers that are necessary to maintain aquatic ecosystems.[[33]](#footnote-34) Icon Water’s licence to take water requires it to ensure that environmental flows are met.[[34]](#footnote-35)

Second, the downstream environmental benefits in the ACT of any water (over and above environmental flows) that flows from ACT dams are limited because there are no key environmental assets in the ACT that require specific environmental watering. Nevertheless, there may be additional benefits that are captured further downstream in New South Wales, although these are not matters the Commission as the ACT regulator can take into account.

From a broader perspective, it is also worth noting that, largely due to its urban nature, the ACT only consumes a small proportion of the total amount of water that flows into its catchments. The long-term average water inflow up to 2003 was about 492 GL per year, with around 244 GL per year legislated for environmental flows. Of the balance of 248 GL per year, gross extractions for consumptive use have averaged about 50 GL per year in recent years, with about 30 GL returned to the river system as treated effluent. The net use has been at or below 20 GL per year since 2007–08, which is four per cent of total inflows or eight per cent of the balance after environmental flows. This is also well below the ACT’s sustainable diversion limit under the Basin Plan of 40.5 GL per year taken from watercourses.

In his submission, Mr Ross Knee contended that Icon Water would be restrained by section 7 of the *Territory-owned Corporations Act 1990* (which requires Icon Water, in relation to activities that affect the environment, to operate in accordance with the objective of ecologically sustainable development) from contemplating a price reduction that may increase demand.[[35]](#footnote-36) However, given the low level of overall water use in the ACT and the fact that Icon Water is subject to environmental flow requirements, it is difficult to see how such an action would conflict with the sustainability requirements in the Act. As noted elsewhere in this report, environmental objectives are being met under the current legislative arrangements and the Commission will not change the tariff structure in a way that compromises the ability of Icon Water and the ACT community to meet the government’s environmental objectives.

#### Impacts on low-income households

The equity argument, associated with providing households with sufficient water at a lower cost to meet their essential health and hygiene needs, is usually premised on an assumption that low-income customers are low water users.

[Grafton and Ward (2010](#_ENREF_13)) cite empirical studies that show that the level of water consumption increases as household size increases. [Saunders et al. (1977](#_ENREF_35)) also comment on this issue, in the developing country context, noting that:

There are many influences on water consumption other than income, a reliable correlation between water consumption and household per capita income being particularly difficult to establish.[[36]](#footnote-37)

In its second submission, Icon Water assessed the 2013–14 level of water use of an identifiable group of disadvantaged water customers, those receiving the ACT Government’s utilities concession. Icon Water found that:

1. around 40 per cent of Utilities Concession customers use more than 200 kL and pay the Tier 2 water usage price; and,
2. there are just as many Utilities Concession customers using more than 200 kL per year as there are using less than 150 kL per year.[[37]](#footnote-38)

These results imply that an inclining block structure may have the unintended consequence that large and poor households, who may have little discretion in their water consumption, may pay a higher price for water than small, high-income households. In this vein, Icon Water submitted:

A change in tariff structure that reduces bills for small users, but increases bills for customers using more than 200 kL per year may adversely affect more Utilities Concession customers than it benefits.[[38]](#footnote-39)

Finally, as noted in the issues paper, the broader difficulty with inclining block tariffs is that in order to improve economic efficiency, the usage charge should equal the opportunity cost of water (the true social cost to the community), and this means a single marginal price for water. If two customers are paying for water at different marginal prices due to different levels of consumption, one of the two prices cannot be efficient. As such, inclining block tariffs are often criticised for being inefficient.

On a separate note, ClubsACT submitted that clubs should be provided with the same discount on water tariffs as applies to ACT churches and schools, or a community service obligation to assist in reducing water bills.[[39]](#footnote-40) Both proposals require ACT taxpayers to fund Icon Water to subsidise a particular customer class. Such decisions made on behalf of the ACT community are, quite rightly, the responsibility of the ACT Government.

#### Fairness in relation to water-saving investments

In response to government policies relating to conservation of water and the high cost of using water at the Tier 2 price, many consumers have made investments, in good faith, in water-saving technologies and other initiatives. A rebalancing of the tariff so there is a higher fixed charge and lower volumetric charges would reduce the benefits in water-saving costs for those who made such investments. This concern was raised by Ms Sarah Hulbert and is likely to reflect the concerns of many people in the ACT community.[[40]](#footnote-41)

The adverse impact on those who made substantial investments in water-saving technologies can be ameliorated by limiting the extent to which the rebalancing of the components of the tariff is undertaken and the timeframe for implementing any change. In addition, the costs of rebalancing the tariff need to be weighed against the efficiency benefits from implementing better cost-reflective signals and improving the efficiency of recovering revenue to fund efficient costs.

All of these factors will be taken into account by the Commission in its review of water and sewerage services prices for the next regulatory period.

#### Inefficient price signals

The Commission considers that the economic analysis that has been undertaken provides a strong basis for concluding that the current tariff structure could be changed to achieve more economically efficient outcomes, in relation to both price signals for marginal usage and realisation of revenues to recover efficient costs.

Several submissions supported the Commission’s draft position on the inefficient price signals that arise from the current tariff structure.

In its second submission, Icon Water highlighted the inefficient price signals from the current tariff, but argued that it would not be appropriate to move directly to fully cost-reflective tariffs within a five-year regulatory period.[[41]](#footnote-42) In its third submission, in response to the draft report, Icon Water reaffirmed its conclusion about the inefficiency of the price signal from the current water tariff and the need for rebalancing, but expressed concerns about the extent of rebalancing presented in the draft report.[[42]](#footnote-43)

In its submission to the draft report, the ACT Government noted the benefits that would accrue from improving the economic efficiency of the potable water tariff structure and confirmed that it was supportive of a measured shift to implement a more economically efficient water tariff structure.[[43]](#footnote-44) However, it highlighted a number of concerns it had for the environment and social impacts, particularly for low-income households, and submitted that the outcomes identified in the draft report would not achieve an appropriate balance between the need for increased economic efficiency and the potential adverse social and environmental impacts.[[44]](#footnote-45)

The Commission has considered these concerns and clarified the pricing principles. So that the various aspects of economic efficiency are given emphasis, but with the ultimate objective being the long-term interests of consumers. Further, while economic efficiency considerations related to pricing are a starting point, they need to be balanced with environmental and social considerations

In relation to social objectives and particularly the likely impact on households with low incomes, the Commission will suggest and where possible adopt mechanisms to address or moderate any adverse impacts, and where necessary make a decision about an acceptable cap for price increases for low and moderate levels of water usage. However, it is noted that limiting price increases for low water usage is a broad measure for dealing with impacts on households with low incomes as many low-income households may have large families and high water usage. An implication is that the current structure of the tariff may entail inequitable outcomes for low-income families who use more than the average amount of water.

#### Uneconomic bypass

An inefficient price signal may provide large users with a strong incentive to bypass the supply of water from Icon Water and use an alternative source that is cheaper to them. This issue is described in economics as uneconomic bypass because the user switches to a higher cost source of supply from the perspective of the community as a whole.

There are two potential problems with this:

* The first problem is that the average cost of supply from the alternative source may be higher than the average cost of supply from Icon Water, and therefore the diversion to the higher cost source entails an economic efficiency loss in terms of efficient use of water. This is because it would be of lower cost to the community as a whole if Icon Water, as the lowest cost supplier, retained its status as a single supplier.
* The second problem, which follows from the first, is that once bypass has occurred, Icon Water’s predominantly fixed costs would have to be recovered from a smaller customer base, so that on average bills for those customers would need to increase.

Icon Water highlighted the risk of uneconomic bypass in each of its three submissions.[[45]](#footnote-46) Icon Water submitted that if the ten largest customers no longer sourced water from Icon Water’s primary network, prices would need to increase by around 11 per cent to maintain cost recovery. Icon Water also noted that if large water users adopted alternative non-potable sources of water, those users are unlikely to fully manage or cover the costs of environmental impacts.[[46]](#footnote-47)

In contrast, the ACT Civil and Administrative Tribunal submitted that:

the pricing structure for water should encourage conservation and promote the development of bypass & water reuse systems based on the Tier 2 price. This strategy is more likely to develop a system that avoids excessive water restrictions and the resultant revenue problems during periods of drought.[[47]](#footnote-48)

However, the problem with encouraging bypass is that more than 80 per cent of Icon Water’s costs are fixed, and most of those are sunk. This sort of an effect does not arise in highly competitive markets where sunk costs are not a barrier to entry or exit, but it is not meaningful to assume away the sunk costs for a regulated business with substantial infrastructure. Given the need for large sunk investments to supply water, in this case, it is in the long-term interests of consumers for there to be a single entity supplying the water as this will help ensure the lowest cost source of supply for the whole community.

#### Balancing the objectives

The public consultation process and the submissions provided in response to the draft report highlighted the importance the community places on the need to take effective account of social and environmental objectives when balancing them with economic efficiency objectives.

As explained in Chapter 3, the Commission revised the pricing principles to better highlight how environmental and social objectives will be addressed and balanced with economic efficiency objectives when considering changes to the tariff structure. The Commission notes that the review of the tariff structure has provided useful information for establishing the direction of change that seems most likely to benefit ACT consumers as a whole, but that the extent of change and the transition period will need further consideration. The Commission’s preferred direction for change is discussed in the next chapter.

As explained elsewhere in this report, these issues will be considered as part of the Commission’s separate review of the water and sewerage service prices that will apply for the next regulatory period.

# Directions for improving the water services tariff structure

5.1 Introduction

Chapter 4 identified issues with the current water services and sewerage services tariff structure.

Application of the pricing principles indicated that changing the water tariff structure could improve its economic efficiency, but subject to balancing economic, social and environmental objectives in the long-term interests of consumers.

In contrast, there does not seem to be a strong economic rationale or significant community support for changing the sewerage services tariff structure, although there is a case for introducing a cost-based pricing regime for trade waste. These issues are discussed in Chapter 6.

Several submissions, including the submission of the ACT Government, raised concerns about the extent of rebalancing of the tariff components that was recommended in the Commission’s draft report and the need for more careful consideration of equity impacts in particular.

This chapter focuses on the Commission’s preferred approach for improving the water tariff structure and how the Commission proposes to take account of concerns raised in the submissions in developing and implementing its preferred approach. The Commission’s preferred option is presented first, followed by a response to how the preferred option addresses the key issues of concern raised in submissions.

The chapter also discusses the form of regulation and issues in adopting a price cap or a revenue cap, with reference to the pricing principles set out in Chapter 3.

5.2 The preferred direction for change

### 5.2.1 Key considerations in improving the tariff structure

The problems with the current water services tariff structure essentially relate to the loss of economic efficiency that arises because the usage components do not reflect the marginal social cost of additional consumption, and the inefficiency in raising revenue to cover efficient costs that arises from the high reliance on the usage component relative to the fixed supply component.

From an economic efficiency perspective, there are many options for setting the tariff structure, including differentiation of both the fixed and usage components for different types of customers. However, the key requirement, from an economic efficiency perspective, is to reflect the marginal costs associated with marginal usage of water while ensuring the combination of the tariff structure and the levels of its components generates sufficient revenue to recover efficient total costs. To achieve these objectives the Commission considers that in the current circumstances there is a case for some adjustment of the tariff structure so that there is less reliance on usage charges.

The Commission recognises that adjustment of the fixed and usage charges should avoid adverse environmental impacts. However, the existing environmental policies and legislated requirements are designed to ensure that key environmental objectives are met. And the Commission will take care that the ability to meet these environmental objectives will not be compromised by changes in the tariff structure. The Commission also recognises that ideally the usage component of the tariff should reflect the marginal value of the cost of supply, including any externality costs and the value of water.

However, such a change would have equity and social implications that imply different bill impacts for different types of customers, unless adjustments were made to one or both components of the tariff.

As explained in Chapter 3, ideally other government policies should be developed to address the equity and social impacts of utility prices. However, in practice such policies may not be well developed or well targeted to address changes in tariff structures and levels. This means that a compromise position needs to be developed and implemented, as explained below. In its investigation into the price levels that will apply in the next regulatory period, the Commission will also note the relevance of other government policies that may be better suited to addressing equity concerns.

### 5.2.2 The preferred tariff structure over the longer term

From an economic efficiency perspective, the tariff structure should comprise a fixed tariff and a single usage charge, with the usage charge set to reflect the additional costs to society that are incurred as additional water services and the water itself are used and the fixed charge set to ensure that overall costs are recovered. The fixed charge should not be related to usage, but it can differ by type of use (for example, business or household) or in other ways that help to minimise adverse impacts on low-income users. A two-part tariff can ensure that the efficient level of output is provided as well as ensure that fixed costs are recovered, as long as the fixed charge does not mean that some users opt out of the service.[[48]](#footnote-49) When the single usage price is based on an appropriate measure of marginal cost and the fixed component is set to help recover efficient costs, the risk of uneconomic bypass should also be avoided.

In addition, the Commission considers that ideally it is preferable to address equity concerns and access to essential water with other measures rather than an inclining block tariff with two or more usage components.

However, as noted, economic efficiency considerations need to be balanced with social and environmental objectives. Several submissions provided strong support for retention of a two-tier usage charge, particularly in relation to concerns about the impacts on low-income households if the existing structure was changed to raise fixed charges and reduce usage charges. Recognising these concerns and the difficulties in effectively addressing equity concerns with other measures, the Commission proposes to retain the existing inclining block structure with two usage tiers for the next regulatory period. However, the Commission proposes to take the opportunity to narrow the difference between the two usage prices and to reduce the reliance on usage charges and increase fixed charges in a gradual and measured way. Over time, more consideration can be given to moving towards a single usage charge, provided economic, environment and social objectives can be appropriately balanced.

The Commission considers that some rebalancing of the components in the existing tariff structure is needed, given the high reliance on usage charges. This is in an environment where there appears to be little growth in demand and where high usage charges have the potential to create a strong risk of uneconomic bypass by large users.

If large users were to bypass the purchase of water from Icon Water, the average bills for the rest of the customer base would have to increase materially to cover the predominantly fixed costs of Icon Water. It is also better if the structure of charges can readily accommodate variability in demand without prices having to be reset frequently.

### 5.2.3 Addressing fairness concerns

In addressing relevant fairness or equity concerns – that is, concerns about the fairness of changes for those who have made investments in water-saving technologies and for low-income consumers affected by tariff changes – the preferred direction for change entails two key features. As in the draft report, it is proposed that any changes to tariffs should be gradual and measured in order to avoid abrupt changes in bills purely associated with the tariff structure changes. A gradual transition would recognise the impact on households and businesses that had made investments in water-saving technologies and might receive lower benefits from those investments if the Tier 2 usage price were reduced.

However, a gradual transition by itself is not likely to be sufficient to limit adverse impacts on low-income households, if the end point entails materially higher charges for low-income households. This implies that restructuring of tariffs would need to be coupled with other policy measures such as rebates for low-income households to avoid or ameliorate adverse impacts.

Ideally, the relevant fairness or equity objective should be clearly defined and addressed. The options for this may need to also involve other arms of government as there is limited scope to use the tariff structure to address equity objectives.

One approach could be to allow discounts or a rebate system in relation to the fixed charge that would be available for low-income households. It is noted that Icon Water did in the past offer a substantial discount for customers classified as ‘Utilities Concession Customers’. These are customers holding pensioner, health care card or life support concessions. Icon Water provided a discount to these customers on behalf of the ACT Government. However, this scheme was discontinued in the 2016–17 Budget when the energy and utility concession and the water and sewerage rebate were combined into one concession from 1 July 2017. This change was motivated by a concern that many low-income households renting their accommodation did not receive the water and sewerage concession because the water and sewerage bill was not in their name.

However, there may be scope to amend the combined concession system to provide compensation for an increase in the fixed charges for water for low-income households. Discussions with other parts of government would be needed in the consideration of this or other options that could be pursued to address concerns about impacts on bills for low-income households.

Another approach might be to allow the fixed charge to vary with customer characteristics. Relevant customer characteristics could include business or household user, size of meter and property values.

As discussed in the issues paper, a number of utilities in other jurisdictions have different tariffs for residential and business customers. The Icon Water submission on the draft report noted that many of the large water utilities have supply charges based on meter size for non-residential customers.[[49]](#footnote-50) Appendix 3 in the draft report, which is re-presented in this report, confirms very high fixed supply charges by Sydney Water, TasWater and Hunter Water for large business connections.

Some large users may require proportionately more water transport and connection infrastructure than small users, which suggests that there is a partial cost-causation rationale for a higher fixed charge, but such a consideration would also need to take account of the risk of bypass. Consideration of the bypass risk needs to have regard to the total bill for large users, which should be less than the average stand-alone costs that large users may face if they can purchase from alternative sources. As a result, it would be necessary to have some flexibility in total charges for high water users to ensure they do not bypass the supply of water services provided by Icon Water.

If there is no scope for some variation in the fixed charge across usage groups and there is a strong community expectation to avoid material increases in water bills for low-income or low-demand water users, then only very modest changes in the direction of a more efficient structure are likely to be acceptable.

### 5.2.4 Short-run marginal cost or long-run marginal cost as the marginal usage charge

On the choice between setting the usage prices with reference to the short-run or long-run marginal cost, the Commission concluded in the draft report that, in principle, short-run marginal cost pricing is the efficient basis for pricing, but that, in practice, a long-run measure is preferred.[[50]](#footnote-51)

The short-run marginal cost is relevant provided it is defined comprehensively to include all of the costs incurred by society when additional consumption of water occurs. This includes operating costs, the costs of using the water itself and any externality costs (e.g. adverse environmental effects) that are linked to additional consumption. The short-run marginal cost concept is also, in effect, a form of scarcity pricing that requires a higher price in times of drought. However, it is difficult to implement and, as a result, the long-run marginal cost tends to be adopted in practice.

The long-run marginal cost provides a signal about the cost of future supply augmentation and avoids the potential high variability of using a measure of short-run marginal cost that recognises capacity supply constraints and the value of water.

Provided equity issues can be effectively addressed, the Commission considers that a tariff structure that is more cost-reflective will enhance community welfare as it would encourage consumers to use water in a way that better reflects the costs to society of using the water supply infrastructure and the water resource itself while providing better assurance of the efficient recovery of the cost of supply.

However, in order to balance concerns about the sharing of costs and the community’s preferences for a strong conservation signal, the starting point for a marginal usage price will most likely need to be considerably higher than the Commission’s estimates of long-run marginal costs. In addition, adjustment of the marginal usage price would need to be done gradually over a long timeframe in order to effectively balance economic, environmental and social objectives.

Appendix 4 provides a more detailed discussion of the choice of an appropriate measure of marginal cost to help set the marginal usage charge.

5.3 Submissions and Commission’s consideration

This section summarises the key points made in submissions about the proposed direction for change, followed by the Commission’s consideration.

### 5.3.1 Submissions

The submissions by Icon Water and the ACT Government included material that focused on specific aspects of the Commission’s preferred direction for reform. Most of the points made in other submissions were covered in Chapter 4 or are captured in the comments by Icon Water and the ACT Government. In relation to key features of the preferred change in the tariff structure, Icon Water:

* supported the promotion of the use of existing infrastructure where it is valued above marginal cost;[[51]](#footnote-52)
* supported working towards a single usage price that applies to all water use and is significantly lower than the current Tier 2 price;[[52]](#footnote-53)
* supported the implementation of some form of drought pricing in its initial response to the issues paper[[53]](#footnote-54) and in its second submission;[[54]](#footnote-55)
* highlighted the need for the tariff structure to discourage uneconomic bypass;[[55]](#footnote-56) and
* expressed concerns about the extent of rebalancing presented in the draft report and suggested some adjustments that would be considered fairer by the community:
  + introduction of separate residential and non-residential tariffs, with a higher supply charge for non-residential customers;
  + supply charges that vary according to customer characteristics such as meter size; and
  + setting the price above the marginal cost.[[56]](#footnote-57)

The ACT Government:

* expressed support for improving the economic efficiency of the tariff, entailing rebalancing of the fixed and variable components, but was concerned about addressing social and environmental impacts;[[57]](#footnote-58)
* preferred a continuation of the current tariff structure in the next regulatory period but supported a 10-year transition period;[[58]](#footnote-59)
* expressed concern that a single volumetric (usage) price would not provide pricing signals in relation to discretionary and non-discretionary use;[[59]](#footnote-60)
* submitted that it would be beneficial if the Commission, in its final report, demonstrated the consistency of its proposed tariff reforms with the requirements of the *Human Rights Act 2004*;[[60]](#footnote-61)
* submitted that if a single volumetric charge was adopted, a drought pricing regime would be required to support other demand management measures;[[61]](#footnote-62)
* did not support recovering all historical investment costs through fixed charges;[[62]](#footnote-63) and
* supported consideration of the merits of implementing a different charging structure for large users, potentially incorporating a higher fixed charge.[[63]](#footnote-64)

The ACT Civil and Administrative Tribunal (ACAT) supported a two-tier inclining block tariff structure to ensure access to an essential service at a reasonable price and encourage conservation of water through a second-tier price.[[64]](#footnote-65) ACAT did not support a major rebalancing of usage and supply charges, but observed that a modest staged increase in the supply charge may be appropriate, noting, however, the impact on frugal small users.[[65]](#footnote-66)

The Canberra Business Chamber also raised concerns that the proposed tariff structure would increase costs to smaller users but reduce the incentive for them to be more efficient in their use of water. However, it proposed that non-residential and residential tariffs be treated differently, with a medium supply charge and low usage charge for commercial users, a low supply charge and medium usage charge at the higher threshold for residential users, and flexible usage pricing when water is scarce.[[66]](#footnote-67)

ClubsACT submitted that clubs should receive a discount on water prices in recognition of their contribution to the community.[[67]](#footnote-68)

The Federal Golf Club supported a move towards a higher supply charge and lower usage charges.[[68]](#footnote-69)

Several submissions from the ACT community supported retention of the existing tariff structure, with some noting the potential adverse impacts on low-income households and incentives to conserve water if the changes set out in the draft report were implemented. Some submissions considered that the Tier 2 charge was too high. Dr Terry Dwyer supported a rebalancing of the tariff structure, with the fixed charge based on the value added to lands serviced plus a usage charge set at the short-run marginal cost.[[69]](#footnote-70) All of the submissions are summarised in Appendix 1.

### 5.3.2 Commission’s consideration

The Commission’s response to the main concerns about changing the water tariff to increase the fixed charge and lower the reliance on usage charges was presented in detail in Chapter 4.

In setting out its preferred direction for change, the Commission has noted the need to ensure any proposed change to the tariff structure has features that effectively address key social issues. This includes specific features to address adverse impacts on low-income households as well as a long transition period to help reduce adjustment costs.

Specific changes to tariffs are not proposed in this report. Any adjustments to the tariff structure will be made as part of the Commission’s investigation into the price direction that will apply for water services from 1 July 2018 to 30 June 2023, when relevant information about costs and demand is available.

In summary, the Commission’s preferred water services tariff structure for the next regulatory period, from 1 July 2018 to 30 June 2023, has the following features:

1. Retention of an inclining block tariff structure but with gradual change to reduced reliance on usage charges and higher reliance on the fixed charge calibrated to recover the efficient costs of water supply services provided by Icon Water.
2. Consideration of a separate tariff for different customer groups, such as large users, and variation of the fixed charge to limit adverse impacts on low-income households.
3. Retention of a relatively low Tier 1 usage charge to help contain costs for low-volume users of water.
4. Setting the marginal (Tier 2) usage charge at a mark-up to the long-run marginal cost to reflect the community’s strong preference for water conservation while also reducing the high reliance on usage charges for revenue-raising purposes.
5. Adjustment of the marginal (Tier 2) usage charge in times of drought to better reflect the scarcity value of water.
6. Adjustment of charges where necessary to ensure that large users do not opt out of the water supply services provided by Icon Water.
7. Gradual and measured transition in the tariff structure.
8. Application of the pricing principles set out in this report as a guide in changing the tariff structure and setting any new tariffs.

The Commission considers that this set of features represents the best mix to balance economic, social and environmental considerations in the long-term interests of consumers.

It should be clear, for example, that the features address most of the specific points of concern highlighted in the submissions.

However, it may not be clear how the proposed direction for change addresses the concern that there are not signals for discretionary and non-discretionary use. From an economic efficiency perspective, there is no meaningful distinction, for price signalling purposes, between discretionary and non-discretionary use because there is a single marginal cost–based price reflecting the impact on society of using an additional unit of water. If there is a concern about the impact on low-income households, that concern is best addressed with a separate well-targeted response. This could include variation in the fixed price for low-income households or a targeted rebate or subsidy system. The Commission also notes that many other products and services have an ‘essential’ consumption level but that market prices are not differentiated according to essential and non-essential use.

The issue of appropriate prices for discretionary and non-discretionary use is also related to the ACT Government’s suggestion that the Commission demonstrate that its decisions are compatible with the requirements of the *Human Rights Act 2004*. The ACT Government did not note any incompatibilities between the Commission’s proposed decisions and the Human Rights Act.

Under section 30 of the Human Rights Act, the ICRC Act must, in so far as it is possible to do so consistently with its purpose, be interpreted in a way that is compatible with human rights. Human rights are defined under section 5 of the Human Rights Act to mean civil, political, economic, social and cultural rights. The right to essential services, as a human right, is not specifically defined in the Human Rights Act or in the international human rights treaties. Article 11 of the International Covenant on Economic, Social and Cultural Rights does, however, set out a broader right to an adequate standard of living.

As noted in Chapter 2, one of the Commission’s objectives under section 7 of the ICRC Act is to facilitate an appropriate balance between economic efficiency and environmental and social considerations. This very balance is one of the primary focuses of the review. It is also important to note the Commission’s overarching objective to promote 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.

### 5.3.3 Summary assessment of preferred direction for change

A summary assessment against the pricing principles of the Commission’s preferred direction for a change in the tariff structure is presented in Table 5.1.

Table 5.1 Summary assessment of proposed direction for changes to water tariff structure

|  |  |  |
| --- | --- | --- |
| Principles | Assessment | Comment |
| 1 Economic efficiency in use | ✓ | Improvement relative to current structure as the structure would better reflect relevant costs.  Flexibility of the usage component can be used to reflect the scarcity value of water and also avoid uneconomic bypass. |
| 2 Economic efficiency for investment and operation | ✓ | A rebalancing of the tariff to better reflect Icon Water’s cost structure will better ensure efficient revenue recovery.  The efficient level of costs is primarily addressed with separate auditing mechanisms, as is currently the case. |
| 3 Environmental considerations | ✓ | Priority environmental objectives will continue to be addressed with separate restrictions.  Pricing of usage above the marginal cost will reflect the community’s strong preference for water conservation. |
| 4 Community impact – gradual adjustment | **✓** | A long transition period should effectively address adverse impacts for those who have invested in water-saving technologies. |
| 5 Community impact – fair outcomes for low-income households | **✓** | Several mechanisms are proposed and will be investigated further to address equity concerns for low-income households. |
| 6 Regulatory governance – simplicity | **✓** | The proposed changes are simple to understand and implementation is manageable. |
| 7 Regulatory governance – transparency | **✓** | Changes are being developed through a transparent and public process. |

5.4 Form of regulation – a price cap or a revenue cap

The Commission has to determine whether a price cap or revenue cap is applied to regulate Icon Water’s market power. Under a price cap the regulator determines the structure of prices, while under a revenue cap the regulator sets the cap but greater opportunity is provided to the regulated business to be involved in determining the structure of prices. A key issue is the question of who bears the risk for demand forecasts. A price cap is based on forecast demand. If forecast demand turns out to be inaccurate, the overall revenue collected can be higher or lower for the regulated business. Under a pure revenue cap, the regulated business receives the revenue determined and prices can fluctuate depending on what happens to demand.

The current form of regulation can be considered as a hybrid of the two. The Commission determines the overall revenue cap and the structure of prices. If actual demand leads to revenue within a deadband, defined as six per cent of the allowed revenue (in net present value terms relating to the regulatory period), Icon Water bears any forecast risk, but beyond that any under-recovery of costs due to lower demand is passed on to users in the form of higher prices.

The draft report noted that there may be benefit in Icon Water having a greater role in proposing some tariffs as it is best placed to consult with its customer groups. In either case, the pricing arrangements would be subject to final approval by the Commission.[[70]](#footnote-71)

### 5.4.1 Submissions

In its response to the draft report, Icon Water noted the following in relation to a revenue cap control mechanism:

In the Draft Report, the ICRC has stated a preference for a revenue cap control mechanism, where Icon Water would set tariffs subject to principles and, potentially, constraints set by the ICRC.[[71]](#footnote-72) Icon Water remains keen to resolve the issue of form of regulation at the earliest possible stage, but notes that careful consideration will need to be given to this issue as part of the broader 2018 price review, taking account of a range of matters including ‘unders and overs’ mechanisms, constraints on annual price changes, annual compliance processes, the role of customer engagement, and demand forecasting arrangements.

The ACT Government interpreted the Commission’s position on a price cap or a revenue cap as relating to a form of lighter handed regulation and did not support a move to a revenue cap at this time.[[72]](#footnote-73)

### 5.4.2 Commission’s consideration

This issue will be considered further in the investigation of regulated water and sewerage prices for 2018–2023. For the purposes of this report, the Commission is proposing to retain the existing price cap approach. The Commission will consider proposals from Icon Water for new or alternative tariff structures. An example might be a separate tariff for large users. However, any proposal would need to be in the long-term interests of consumers and would continue to be subject to final approval by the Commission.

# Assessment of the current sewerage services tariff structure

6.1 Introduction

This chapter applies the pricing principles presented in Chapter 3 to identify problems with Icon Water’s current sewerage services tariff structure and potential directions for reform.

6.2 Current tariff structure: supply charges only

The current tariff structure for Icon Water’s regulated sewerage services comprises an annual fixed supply charge for residential premises and the same fixed supply charge plus an annual charge per flushing fixture (in excess of two) for non-residential premises. Icon Water does not currently have a trade waste tariff.

6.3 Efficient use

In the technical paper on marginal cost pricing , the Commission concluded that, since there is no usage charge, this in itself implies that the current sewerage services tariff structure, based entirely on supply charges, is incapable of providing suitable price signals to customers about the efficient costs of sewerage services in the ACT.[[73]](#footnote-74)

As explained earlier in relation to water, the Commission’s general view is that, in principle, the objective of economic efficiency is best served by setting prices with reference to a short-run rather than long-run marginal cost, although in practice the long-run marginal cost is typically adopted for a number of practical reasons. The primary concern here is with the marginal cost with respect to changes in the quantity or volume of services provided through the central sewerage network – that is, the central treatment plants and trunk sewer pipes, as opposed to the suburb-level collection network. Given that the capacity of Icon Water’s central sewerage network is sized to deal with rainfall events, there is currently no immediate need to augment capacity to accommodate expanding demand.

This means that a measure of short-run marginal cost is most relevant when considering a usage price for sewerage services. The short-run marginal cost of sewerage services in the ACT presented in the technical paper comprised:[[74]](#footnote-75)

* treatment cost − the cost of chemicals, electricity, fuel and freight to treat an additional kilolitre of sewage at the Lower Molonglo Water Quality Control Centre; and
* pumping cost − the electricity costs to pump an additional kilolitre of sewage through the sewerage network to the treatment plant.[[75]](#footnote-76)

Icon Water estimates the marginal treatment cost at $0.25 per kL, and the marginal pumping cost at $0.005 per kL, for a total short-run marginal cost of about $0.26 per kL.

In the technical paper, in line with pricing principle 1, the Commission indicated that a more efficient structure would entail a multi-part tariff that included a sewage volume charge set with reference to the marginal cost.

However, short-run marginal costs for the sewerage sector are less than seven per cent of total costs, reducing the importance of a usage-based price signal.[[76]](#footnote-77) There would also be additional administrative costs associated with designing and implementing a proxy measure for sewage discharge in the absence of metering. The additional administration costs would reduce the efficiency benefits from introducing a usage-based price component in the tariff.

6.4 Efficient cost recovery

If usage prices were adopted, Icon Water would also face additional revenue risk for its sewerage services business, reducing the scope for efficient cost recovery.

As the current tariff for sewerage services is based entirely on supply charges and Icon Water’s marginal costs are around seven per cent of its total costs of supplying sewerage services, the current tariff structure is considered to be effective in facilitating efficient cost recovery for sewerage services.

6.5 Environmental considerations

Icon Water is meeting its environmental objectives with actions that are not related to the tariff structure for sewerage services.

6.6 Community impact – fairness for water conservation investments

The water tariff structure has implications for those who made investments in water-saving initiatives, as discussed in Chapter 4. However, changes in the sewerage tariff structure would have no direct impact on the benefits from water-saving technologies.

6.7 Community impact – equity for low-income households

The Commission’s draft report explained that if a sewage volume usage charge was introduced at the short-run marginal cost of $0.26 per kL, the distributional impacts and change in price levels are likely to be relatively small. This reflects the dominance of fixed costs in the cost structure.

6.8 Simplicity

The current tariff structure has been in place for a long time and is simple and should be well understood by customers. It is also easy to implement.

6.9 Transparency

The current tariff was introduced using a transparent methodology and the determination process was subject to public scrutiny.

6.10 Summary assessment

Table 6.1 shows the summary assessment of the current sewerage services tariff structure against the pricing principles. The main point is that the tariff structure does not provide an efficient price signal in relation to usage. However, there is not a strong case for change given the cost structure of Icon Water and the additional administration costs that would be required if a usage charge was introduced.

Table 6.1 Summary assessment of current sewerage services tariff structure

|  |  |  |
| --- | --- | --- |
| Principles | Assessment | Comment |
| 1 Economic efficiency in use | 🗶 | No usage component. |
| 2 Economic efficiency for investment and operation | ✓ | Efficient cost recovery given the pre-dominance of fixed costs.  The efficient level of costs is primarily addressed with separate auditing mechanisms. |
| 3 Environmental considerations | ✓ | Priority environmental objectives are addressed with separate restrictions. |
| 4 Community impact – gradual adjustment | not applicable unless there is change | If the tariff structure were changed to introduce usage charges based on marginal cost, the adjustment costs and equity impacts would most likely be very small. |
| 5 Community impact – fair outcomes for low-income households | **✓** | The distributional impact of a change in the tariff structure to improve economic efficiency would be very small. |
| 6 Regulatory governance – simplicity | **✓** | Simple to understand and implement. |
| 7Regulatory governance – transparency | **✓** | Originally set through a transparent and public process. |

6.11 Submissions and Commission’s consideration

### 6.11.1 Submissions

Icon Water submitted that as the marginal cost of sewage discharge represents just seven per cent of the total amount that needs to be recovered in tariffs, which is mostly fixed or sunk expenditure, there would be limited economic efficiency benefits from introducing a sewage usage charge, but there may be significant impacts on individual customer bills.[[77]](#footnote-78)

Icon Water further stated that:

Any benefits from introducing volumetric sewerage services pricing would be significantly lower than benefits from other tariff structure reforms discussed in this submission. Icon Water’s view is that sewerage pricing reform in the period commencing in 2018 should focus on introducing a trade waste charging regime.[[78]](#footnote-79)

Icon Water also noted that during spells of dry weather, there may actually be cost savings from customer sewage discharge in some circumstances due to avoided flushing by Icon Water to clear sewerage pipes.[[79]](#footnote-80)

The ACT Government supported retention of the current sewerage tariff structure, given the absence of a reliable mechanism to measure sewage volumes.[[80]](#footnote-81)

The Federal Golf Club submitted that it did not support a sewage usage charge based on water usage:

We would not like to see a water proxy used for the sewerage charge – I think this would be unfair for large water users like ourselves.[[81]](#footnote-82)

Dr David Denham submitted that a usage price for sewerage services would need to consider how the flow would be measured and if it was easy it should be done. He also submitted that he would support a scheme involving sewage usage charges where large users pay more, but he would have to examine any proposal before making a proper assessment.[[82]](#footnote-83)

### 6.11.2 Commission’s consideration

In contrast to Icon Water’s one-part supply tariff, a number of utilities in other jurisdictions apply a two-part tariff for sewerage services – a supply charge and a usage-based rate.

The critical question is whether the economic efficiency benefits outweigh the costs of moving from the current tariff to one with a single usage charge set with reference to the marginal cost. Icon Water’s view is that the answer to this question is a clear no. The Commission agrees with this for several reasons.

The first concerns the practical difficulty associated with introducing usage-based pricing given that sewage is not metered and no information is available on the volume of sewage produced by any particular customer. In addition, there is currently no practical way to monitor the type or strength of sewage produced and therefore the cost associated with treatment.

Other utilities have sidestepped the metering issue by using water consumption as a proxy for discharge into the sewerage system. The premise is that there is a direct relationship between the amount of indoor water used and the volume of sewage that is discharged into the sewerage network. This approach therefore requires the application of a seasonal factor, to account for the seasonal pattern of outdoor water use. The complexities underlying this approach should not be underestimated, as a quick perusal of Melbourne’s City West Water pricing handbook will reveal.[[83]](#footnote-84)

The second reason is that adding a usage component requires a forecast of sewage discharge in order to calculate prices in advance of the regulatory year. If water is used as a proxy, any revenue uncertainty associated with water volumes would be extended to Icon Water’s sewerage services business.

The third reason is that, as noted by Icon Water, lower volumes entering the sewerage network do not necessarily translate into reduced costs for Icon Water. For example, low sewage volumes during a drought can result in difficulties in moving sewage through the network.

The Commission’s position is that, particularly in the absence of a reliable measure of actual discharge volumes, it is unlikely that any potential economic efficiency benefits of introducing a sewage usage charge will outweigh the costs. The Commission therefore considers that the current tariff structure should be retained.

6.12 Trade waste pricing

### 6.12.1 Background

In the ACT, non-domestic sewage, also known as trade waste, requires more effort to treat than standard residential sewage, and must be approved by Icon Water before discharge into the sewer. Icon Water notes that this category also includes discharges from sewage recycling plants, cooling towers, rainwater filters, garbage bin enclosures, pumped sewage and stormwater run-off directed to the sewer.

In contrast to many other water and sewerage utilities, Icon Water does not currently have a specific pricing regime for trade waste. In paragraph 66(iii) of the National Water Initiative, the states and territories agreed to the:

review and development of pricing policies for trade wastes that encourage the most cost effective methods of treating industrial wastes, whether at the source or at downstream plants, by 2006.[[84]](#footnote-85)

### 6.12.2 Submissions

ACAT submitted that:

The [sewerage charging] system should ensure large businesses are paying appropriately for quantity and toxicity of the waste discharged into the sewerage system.[[85]](#footnote-86)

In its submissions, Icon Water indicated that it is working towards introducing a trade waste charging regime in 2018 to signal the costs imposed on the sewerage network by non-domestic discharge and to align with the National Water Initiative principles.[[86]](#footnote-87)

### 6.12.3 Commission’s consideration

Consistent with cost-reflective pricing, the Commission has in the past noted that where Icon Water incurs material trade waste–related increased costs, these higher costs should be passed on to the relevant customers. The Commission welcomes Icon Water’s commitment to introducing a trade waste pricing regime in the forthcoming regulatory period.

The Commission supports the introduction of trade waste pricing to ensure that the actual costs imposed on the sewerage network are signalled to customers. The Commission will assess Icon Water’s trade waste pricing proposal on its merits, when presented in the lead-up to the next regulatory period.

# Next steps

7.1 Introduction

The Commission considers that changes can be made to the current water tariff structure that will improve economic efficiency and that are in the long-term interests of consumers in the ACT.

The Commission’s preferred direction for change was explained in Chapter 5, and in the Commission’s opinion ensures an appropriate balancing of economic efficiency, social and environmental objectives. As explained in Chapter 6, the Commission considers that changing the tariff structure for sewerage services is not in the long-term interests of consumers, but supports adoption of a pricing regime for trade waste that better reflects the cost of dealing with that waste.

This section discusses the next steps in the process.

7.2 Approach and timing

As explained in this report, the Commission has developed a preferred direction for change but considers that specific changes to the water tariff structure should be considered as part of the separate review of the tariffs for water and sewerage services that will apply from 1 July 2018 to 30 June 2023. The review will provide information on costs and prices needed to set an appropriate tariff structure and tariff levels.

Any change can be expected to occur over a long transition period. At this stage, it is expected that, if changes are made for the next regulatory period from 1 July 2018, they will be measured and gradual. Further, as noted, no change is proposed for the sewerage services tariff structure.

7.3 Responsibility for tariff structure and prices

A final point relates to the form of regulation and, in particular, the extent to which a tariff structure and its components would be set by the Commission so that prices are fixed for the regulatory period (subject to resets) or a revenue cap would apply that would provide more assurance of recovery of approved revenues.

The Commission’s position is that the existing model should remain in place.

The Commission notes that there may be scope for Icon Water to be able to propose some water tariffs. For example, if a separate tariff for large commercial users were to be considered, it would be preferable if Icon Water consulted with its customers before proposing a tariff to the Commission, as it is best placed to engage with customers on its tariffs.

However, the Commission emphasises that Icon Water will need to demonstrate that its preferred proposal is clearly the best means of addressing the pricing principles and, in particular, the objective of being in the long-term interests of consumers.

The final decision on this matter will be made as part of the price investigation process leading up to the start of the next regulatory period.

7.4 Timeline for the water and sewerage services price investigation

The next steps and their timing depend on the tasks and timing for the separate investigation into the prices for water and sewerage services to apply from 1 July 2018 to 30 June 2023.

The tasks and indicative timelines for the separate pricing investigation are set out in Table 7.1.

Table 7.1 Indicative timeline for the water and sewerage services price investigation for the period 1 July 2018 to 30 June 2023

|  |  |
| --- | --- |
| Task | Date |
| Release of issues paper | 31 March 2017 |
| Release of draft report | By 12 December 2017 |
| Public forum | February 2018 |
| Submissions on draft report close | March 2018 |
| Final report | By 1 May 2018 |

Appendix 1 Summary of submissions and presentations

Icon Water

Initial response to issues paper

Icon Water’s first submission, provided in response to the issues paper, made a number of key points.

#### National commitments

Icon Water suggested that the Commission should have regard to the National Water Initiative pricing principles and, in light of the Australian Government’s response to the Harper review of competition policy, should take into account any consensus among other jurisdictional regulators as to what constitutes best water pricing practice.

#### Form of price control

As the tariff review is being undertaken in advance of decisions on the form of price control to apply from 1 July 2018, Icon Water contended that the review should maintain an open stance on the question of whether the Commission or Icon Water will have responsibility for setting tariff structures.

#### Objectives and principles

Icon Water supported the proposed overarching economic regulatory objective and pricing principles set out in the issues paper, stating:

The use of a single, overarching objective will allow for more transparent and evidence-based analysis of alternative tariff structures and it is appropriate that the objective be defined in terms of the welfare of Icon Water customers over the long term.[[87]](#footnote-88)

Icon Water also noted the importance of the economic efficiency principles with respect to efficient use and cost recovery.[[88]](#footnote-89)

Icon Water also submitted that customer impact considerations are mainly restricted to decisions on the length of the transition period to avoid compromising the ultimate goal of a welfare-maximising tariff structure.

#### Uneconomic bypass

Icon Water submitted that one of the primary issues for the review is the role of tariff structures in discouraging uneconomic bypass:

Significant welfare losses would be avoided by reducing the Tier 2 price, at least for non-residential customers, in order to prevent uneconomic bypass of the primary water network and better utilise the water supply security in which Icon Water on behalf of customers has already invested.[[89]](#footnote-90)

#### Drought pricing

Icon Water submitted that it continues to support the implementation of a revenue-neutral drought pricing scheme that would involve changing water usage prices to account for expectations about demand when changes in water restrictions occur.

#### Trade waste

Icon Water submitted that its trade waste policy and charging regime, currently under development, will provide price signals about the cost of dealing with liquid trade waste to provide incentives for customers to undertake pre-treatment where this would reduce overall costs.

Submission on tariff structure

#### Price signals are not efficient

Icon Water’s second submission agreed with the finding of the Commission’s technical paper on marginal cost pricing that the current water tariff structure does not appear to be providing suitable price signals to customers about the efficient use of the service infrastructure and water resource. Icon Water submitted, however, that:

based on our analysis and customer engagement to date, we are of the view that it would not be appropriate to move directly to fully cost-reflective tariffs within a five-year regulatory period.[[90]](#footnote-91)

Icon Water submitted that it intended to discuss the following proposed direction for tariff reform with its customers in preparation for its response to the Commission’s draft report on the tariff review:

* Working towards a single usage price that applies to all water use and is significantly lower than the current Tier 2 price of $5.24 per kilolitre (kL).
* Introducing separate residential and non-residential tariffs, with a higher supply charge for non-residential customers.
* Introducing a charging regime for liquid trade waste.
* Introducing drought pricing arrangements.

Icon Water also reiterated its concern that the relatively high Tier 2 price leads to large customers considering investments in alternative supply arrangements that are considerably more expensive than Icon Water’s marginal cost of supply (uneconomic bypass).[[91]](#footnote-92)

In relation to customer impacts and usage levels, Icon Water assessed the level of water use of customers receiving the ACT Government’s utilities concession.[[92]](#footnote-93) Icon Water found that around 40 per cent of these customers use more than 200 kL and pay the Tier 2 water usage price and that there are just as many concessional customers using more than 200 kL per year as there are using less than 150 kL per year.

#### Sewerage services

Icon Water submitted that as the marginal cost of sewage discharge represents just seven per cent of the total amount that needs to be recovered in tariffs, which is mostly fixed or sunk expenditure, there would be limited economic efficiency benefits from introducing a sewage volume charge, but there may be significant impacts on individual customer bills.[[93]](#footnote-94)

#### Customer views

Icon Water’s submission provided initial results of customer views on potential tariff structure changes arising from its community engagement program, ‘Talking Icon Water’. The submission also provided responses to the questions posed by the Commission in the issues paper.

Submission in response to the draft report

#### Price signals are not efficient

In its third submission, Icon Water reaffirmed its view that the water tariff structure is no longer cost-reflective and does not present an accurate price signal to consumers about the costs of using water. Icon Water submitted that a rebalancing of the fixed and variable components of the water tariff would benefit the community as a whole. However, Icon Water expressed concern about the extent of rebalancing presented in the draft report.[[94]](#footnote-95)

#### Uneconomic bypass

Icon Water also highlighted its concern that the level of the current Tier 2 usage price provides incentives for uneconomic bypass by large customers. Icon Water submitted that unless the Tier 2 usage price is reduced and uneconomic bypass avoided, the overall level of prices would have to increase because it would need to recover its predominantly fixed costs across fewer customers and lower overall usage.[[95]](#footnote-96) It submitted that if the 10 largest customers no longer sourced water from Icon Water’s primary network, prices would need to increase by around 11 per cent to maintain cost recovery. Icon Water also noted that if large water users adopted alternative non-potable sources of water, those users are unlikely to fully manage or cover the costs of environmental impacts.[[96]](#footnote-97)

#### Extent of rebalancing needs to take account of equity issues

Icon Water questioned the extent of rebalancing in the draft report proposal, citing concerns raised in its community engagement program, particularly in relation to fairness. Icon Water advised that the majority of residential customers it had engaged with were opposed to rebalancing to the extent proposed in the draft report because of concerns over water security, environmental impacts, impacts on low-income households and fairness.

Icon Water noted that while some of these views are unfounded, its view was that concerns over fairness are a valid consideration in the tariff-setting process.[[97]](#footnote-98) The views that Icon Water considered to be unfounded related to water security (given the likely demand–supply long-term balance) and environmental impacts (given environmental flow requirements).

Icon Water also noted that the Commission’s pricing principles in its draft assessment framework did not explicitly cover issues of fairness or affordability for the long-term goal for tariff structures.[[98]](#footnote-99)

#### Comparisons with other utilities

Icon Water showed that the current second-tier water usage price is the highest among major Australian water utilities with more than 100,000 customers and the fixed supply charge the second lowest. It also showed that the Commission’s preferred tariff structure presented in the draft report would reposition Icon Water at the other extreme, as the utility with water tariffs most weighted towards fixed charges.[[99]](#footnote-100)

It also noted that the majority of the largest water utilities in Australia have separate residential and commercial charges and many of these utilities have fixed supply charges based on meter size for non-residential customers.[[100]](#footnote-101) Icon Water also noted that its community consultation program confirmed that there was a preference for separate tariffs for residential and non-residential customers.[[101]](#footnote-102)

#### Alternative tariff structures

Icon Water suggested alternative tariff structures that it submitted would be considered fairer by the community, as follows: separate residential and non-residential fixed supply charges; supply charges that vary according to customer characteristics, such as meter size; and setting the usage price above marginal cost.[[102]](#footnote-103)

Icon Water also affirmed its agreement that a long transition period of up to 10 years should apply to any significant tariff structure reform.[[103]](#footnote-104)

#### Sewerage services and trade waste

Icon Water agreed with the Commission’s finding that pricing reform for sewerage services should focus on the introduction of a trade waste charging regime. This is because the current tariff structure is not reflective of the costs imposed by discharge of liquid trade waste, and movement from a fixed charge to a variable charge for sewerage is not viable given measurement problems.[[104]](#footnote-105)

#### Form of regulation and revenue cap

Icon Water discussed the Commission’s position in the draft report in relation to a revenue cap control mechanism, submitting that the Commission had a qualified, ‘stated preference’ for a revenue cap control mechanism and that this matter would need to be considered as part of the broader 2018 price review.[[105]](#footnote-106)

ACT Government

Submission in response to the draft report

#### Balancing economic, social and environmental objectives

The ACT Government expressed concern that the tariff reforms proposed in the draft report did not achieve an appropriate balance between the need for increased economic efficiency and the potential adverse social and environmental impacts that may result from the proposed reforms.[[106]](#footnote-107)

In summary, the government’s main concerns related to:

1. Significant cost increases for low-volume users and vulnerable ACT residents from the proposed changes to the water tariff.
2. The impact on implementation of ACT Government water policies, in particular those that promote ongoing water conservation and the efficient use of water.
3. The need for the Commission to clearly demonstrate that an appropriate balance has been achieved between its competing regulatory objectives.
4. Ensuring consistency between the decision-making frameworks for the tariff review and the upcoming water and sewerage price investigation.
5. An overriding focus on the economic efficiency objective without detailed commentary and analysis in relation to the environmental and social consequences of the proposed changes.
6. The stated preference for Icon Water to take responsibility for directly setting prices for water and sewerage services under a revenue cap administered by the Commission.[[107]](#footnote-108)

The government noted that the proposed changes were designed to improve the economic efficiency of the water tariff structure and was supportive of a measured approach to reform that balances the pursuit of economic efficiency with social and environmental considerations.

The government considered it would be appropriate, as part of the upcoming pricing investigation, to develop a paper outlining how the Commission intends to prioritise and balance the various regulatory objectives and matters it is required to consider.[[108]](#footnote-109)

#### Environmental impacts

The government considered that the proposed tariff reforms may impact on its commitments under the National Water Initiative and Murray–Darling Basin Plan and noted the draft report did not refer to the ACT’s main water policy framework set out in *ACT Water Strategy 2014–44: Striking the balance*.[[109]](#footnote-110)

The government noted that, under the Basin Plan, the ACT is required to adhere to a net sustainable diversion limit of 42.5 gigalitres per year and that current consumption is less than 50 per cent of this limit. However, it expressed the concern that the proposed pricing structure would increase the risk that it would not be able to meet the commitments of the Basin Plan.[[110]](#footnote-111)

#### Community impacts

The government expressed concern about the significant increase in water bills that would occur for most households in the ACT from the proposed tariff structure changes, and in particular the impact on households that are low-volume users of water.[[111]](#footnote-112)

The government also noted that the *Human Rights Act 2004* requires the Commission to make decisions that are compatible with human rights and that it would be beneficial for the Commission to demonstrate the consistency of its proposed reforms with the requirements of the Human Rights Act.

#### Transition period

The government supported a 10-year transitional period to implement a measured reduction in the volumetric (usage) tariffs and a gradual increase in the fixed charge.[[112]](#footnote-113)

#### Split between charges and commercial tariff

The government expressed concern about a move to a single volumetric charge, noting an alternative of using a drought pricing scheme.[[113]](#footnote-114)

The government submitted that all investment costs should not be recovered through a fixed charge, as high-volume users should make a proportionally greater contribution to recover the costs of investments since they benefit the most from these investments.[[114]](#footnote-115)

The government submitted that a different and higher fixed charge for large water users should be considered given the benefits they experience from higher water security.[[115]](#footnote-116)

#### Sewerage services

The government supported the proposal to maintain the current sewerage tariff structure, given the absence of a reliable mechanism to measure sewage volumes.[[116]](#footnote-117)

#### Form of regulation and revenue cap

The government expressed concern about the adoption of a revenue cap form of regulation at this stage, but noted its support for a gradual move to a lighter handed approach to regulation over the longer term.[[117]](#footnote-118)

ACT Civil and Administrative Tribunal

In its first submission, ACAT suggested that:

the pricing structure for water should encourage conservation and promote the development of bypass & water reuse systems based on the Tier 2 price. This strategy is more likely to develop a system that avoids excessive water restrictions and the resultant revenue problems during periods of drought.[[118]](#footnote-119)

More specifically, ACAT supported keeping the inclining block tariff for water, stating:

* The lower cost first tier price should be maintained at the current price level or lower. This lower tier provides access to an essential service at a reasonable price.
* The second tier should be uniform for all usage and not reduced for users of more substantial volume.[[119]](#footnote-120)

In relation to sewerage services, ACAT submitted that the charging system should ensure that large businesses are paying appropriately for the quantity and toxicity of the waste discharged into the sewerage system.

In its second submission, ACAT observed that the overarching objective in the new section 19L of the ICRC Act was similar to that in the National Energy Law and that ultimately ‘“the long term interests of consumers” are paramount’.[[120]](#footnote-121)

ACAT also reaffirmed the key points in its first submission and submitted that the Tier 1 price should be based on an annual allowance of 200 kL and not on a quarterly allowance of 50 kL, which is the practical effect of the current billing system.[[121]](#footnote-122)

ACAT also submitted that while it did not support a major transition from charges for consumption to fixed supply charges, a modest, staged increase in the supply charge may be appropriate, although it noted its concern about the impact on frugal small users.[[122]](#footnote-123)

ACAT also noted the contribution that the fixed sewerage supply fee makes to the cash flow of Icon Water.[[123]](#footnote-124)

Canberra Business Chamber

Canberra Business Chamber submitted that the current water tariff structure excessively penalises large commercial users when the intent is to provide an incentive for efficiencies by domestic water users.[[124]](#footnote-125) It noted this has resulted in large users moving to off-network supply options (e.g. recycling) to reduce their costs, leading to reduced demand for water and reduced income for Icon Water.

The Chamber noted that the proposed water tariff structure would increase costs to smaller users and reduce costs to larger users and reduce the incentive for smaller users to be more efficient.[[125]](#footnote-126) It proposed that non-residential and residential tariffs be treated separately with:

* a medium supply charge and low usage charge for commercial users and discounts for large users to ensure they remain significant users of Icon Water’s services;
* a low supply charge and two-tier usage charge, with a medium charge at the higher threshold for residential users; and
* more complex scarcity-based pricing measures adopted when water security increases costs in supply; for example, when water storages drop below a pre-determined threshold, a multiplier could be applied to tariffs.[[126]](#footnote-127)

ClubsACT

ClubsACT submitted that more than two-thirds of ACT clubs maintain some form of sport and recreation infrastructure and are facing increasing water costs:

Clubs have experienced increases in water charges over the past decade of over 400%. This dramatically exceeds any reasonable measure of real cost growth, and forces ACT Clubs to endure much higher costs than do their counterparts in other comparable jurisdictions.[[127]](#footnote-128)

In recognition of the ‘community benefit of clubs and the unreasonable costs they currently face in providing services for the ACT community’,ClubsACT submitted that clubs should be provided with:

* a tariff that provides a discount on water prices (such as that provided to ACT schools and churches); or
* a community service obligation mechanism to reduce water costs.[[128]](#footnote-129)

White Label Personal Clouds

White Label Personal Clouds noted the uneconomic bypass issue but recommended that tariffs be left as they are and that Icon Water introduce other methods to control demand and ensure economic efficiency, in particular through a separate community-based funding facility.[[129]](#footnote-130) The proposed funding facility is a community-based arrangement where community funds would replace the funding required by Icon Water.

Federal Golf Club

The Federal Golf Club submitted that it:

* supported a move towards a higher supply charge and lower usage charge for water;
* did not support a sewerage services usage charge using water use as a proxy as this would disadvantage large water users;
* did not support an inclining block tariff but would support a declining block arrangement; and
* supported consideration of a reduced water tariff for not-for-profit community organisations that provide health and social benefits.[[130]](#footnote-131)

ACT community

Mr Jason Rae supported an inclining block tariff and submitted that water charges should be higher than they currently are to encourage water conservation for environmental reasons:

I would have thought it made more sense to charge more in general and a lot more for excessive use.[[131]](#footnote-132)

Mr Ross Knee, in responding to the technical paper on the price elasticity of water demand in the ACT, submitted that:

* the analysis in the paper was flawed as it did not analyse the two tiers separately;
* the analysis should have been done over two periods, pre- and post-2010 when temporary water restrictions were lifted, rather than over the entire period 2003 to 2015;
* if scarcity pricing is used as a means to reduce water consumption this needs to be implemented before temporary water restrictions are applied and the price increase should only be applied to the second tier price; and
* price reductions to stimulate demand are not a realistic option as Icon Water is subject to environmental sustainability requirements under the *Territory-owned Corporations Act 1990*.[[132]](#footnote-133)

In his second submission, in response to the draft report, Mr Knee suggested that there is a conflict between the objectives of Icon Water under the Territory-owned Corporations Act – where both efficiency and social responsibility are specified as objectives for Icon Water – and the overarching economic efficiency objective specified in section 19L of the ICRC Act.[[133]](#footnote-134)

Mr Knee expressed concerns about the merits of setting a lower usage price given that the increase in consumption would not be consistent with sustainable use.[[134]](#footnote-135)

Mr Knee expressed support for drought pricing, but was concerned that the proposed structure did not reflect the ‘user pay’ principle and that a more light-handed approach to regulation would require further development work to be effective.[[135]](#footnote-136)

Mr Knee made a number of other suggestions to correct what he considered were errors or misinterpretations or to clarify certain issues.[[136]](#footnote-137)

Mr Ian Falconer submitted that the current tariff structure benefits the less well-off families and apartment owners while large users pay proportionally more, thus subsidising smaller users and householders. He further submitted that to now encourage greater use by large users would be counter-productive as Canberra has a fixed allocation of water through the Basin Plan that does not increase with rising population.[[137]](#footnote-138)

Ms Sarah Hulbert raised concerns that the proposed changes in the tariff structure in the draft report would have adverse impacts on low-income households; would mean a loss of control over water expenses; did not address the issue of fairness for those households that have invested in water-saving initiatives; and were biased towards high water use businesses and a predictable income stream for Icon Water.

Ms Susan Vidler raised concerns about the transparency of and deadlines for the public consultation process; the lack of accessible information for the general public; conflicts of interest for ministerial responsibilities; impacts of higher water bills on low-income households; and the scope for Icon Water to set the regulated water prices.

Dr David Denham supported the proposed overarching economic efficiency objective as a sound basis for developing a tariff structure, and agreed that the proposed pricing principles provided an effective basis for assessing current and alternative structures, but argued that social welfare cannot be maximised ‘because the fixed charge component is far too high and does not appropriately reward customers for conserving water’.[[138]](#footnote-139)

Dr Denham supported retaining the current inclining block water tariff, but with:

* a significant reduction in the supply charge; and
* a significantly reduced price for the first 40 kL of water consumed per quarter.[[139]](#footnote-140)

Dr Denham also submitted that a usage price for sewerage services would need to consider how the flow would be measured and if it was easy it should be done. He submitted that he would support a scheme involving sewage usage charges where large users pay more, but he would have to examine any proposal before making a proper assessment.[[140]](#footnote-141)

Dr Terry Dwyer supported a rebalancing of tariffs so that all utility charges are based on an ad valorem land value rate reflecting the value added to lands serviced plus a usage charge set at the short-run marginal cost.[[141]](#footnote-142)

Dr Kristine Klugman did not support an inclining block tariff and in particular the doubling of the water charge for water consumption over a very minimal level:

The effect will be to kill the gardens of Canberra, because people will not be able to pay this amount of extra surcharge.[[142]](#footnote-143)

Mr David Parkin expressed support for the continuation of a two-tier system but proposed that the Tier 2 usage charge be only slightly higher than the Tier 1 price and not double as it is now and that the fixed supply charge be increased. He also noted inequities in relation to use for larger households.[[143]](#footnote-144)

Public forum

The Commission held a public forum on the tariff structure review on 6 December 2016. Mr Joe Dimasi, Senior Commissioner, gave a presentation on the work undertaken by the Commission to date and its current thinking. A number of people also gave presentations and others contributed during a question and answer session. This section summarises the presentations that were made by members of the public at the public forum. A transcript of the proceedings is available on the Commission’s website.[[144]](#footnote-145)

Mr Gwyn Rees, Chief Executive Officer of Clubs ACT, explained that Clubs ACT represents several clubs responsible for several golf courses, bowling greens, cricket fields, football fields, a yacht club, a BMX track and other venues. He submitted that if the tariff structure was changed then clubs would not use more water given the water-saving investments they had made, the cost of using water and the fact that the water demand at venues is relatively stable. He also said there was a case for clubs to have a discount for water given they are maintaining community assets.

Mr Kevin Cox, representing ACT Water Rewards Co-operative, said that economic efficiency would not be achieved if reducing the price of water to large users was at the expense of increasing the price to households. He outlined a proposal for reducing the financial costs for Icon Water with a community-based funding scheme, which was also presented in the White Label Personal Clouds submission outlined above. Mr Cox also advocated putting Icon Water in charge of all the water in the ACT.

Mr Sutherland, from ACAT, noted that the tribunal was mostly concerned with the issue of hardship and protecting low-income consumers in Canberra in relation to their water and energy bills. He said that the ICRC’s role was to balance economic, social and environmental considerations and not give primacy to economic issues. He also noted that with quarterly billing some customers were paying Tier 2 prices when their annual consumption was less than the Tier 2 volume threshold. Mr Sutherland said that ACAT was strongly in favour of keeping the current tiers, noting the equity considerations for low-income households and low users of water. He also noted the need to consider water and sewerage services as a single entity in terms of cash flow and take account of the fact that the sewerage services tariff is a fixed supply charge only. Mr Sutherland also raised concerns about how tenants were charged and advocated allowing them to access the concession arrangements. He also noted the relevance of capacity charging for large users.

Dr Terry Dwyer advocated recovery of water and sewerage costs through land rates based on the economic value created by the associated services. He offered a number of historical examples and economic theories to support his propositions. He also noted the sensitivity of the land rating system to the existence of apartments, which would facilitate effective cost recovery through land rates. He also noted that the ACT is water-rich relative to its needs, explaining that 96 per cent of water that flows and falls into the ACT is sent on downstream.

Mr Ian Falconer, a board member of the Conservation Council of the ACT, supported retaining the current tariff structure and expressed concerns about conservation and equity if the proposed changes set out in the draft report were implemented.

Mr David Parkin highlighted the debt in Icon Water’s financial position and questioned the proposition that there is 40 years of water security. He also raised concerns about the financial impact on low users and questioned why a better job could not be done in relation to sewerage pricing.

Dr Chris Klugman raised concerns about the impact of the proposed changes on the poor and community service obligations for Icon Water to maintain the environment in Canberra.

Mr John Bromhead raised concerns that the quarterly billing cycle did not take account of the fact that annual use may be less than 200 kL.

Mr Gary Petherbridge, President of the Owner’s Corporation Network, suggested that the review should consider the charging arrangements for owners and people who live in apartments.

Mr Ray McGuiness from Bowls ACT noted the uncertainty relating to charges and difficulties for bowling clubs.

Mr Rees noted the cost pressures for bowls clubs in particular and proposed that approaches for charging clubs in other jurisdictions be considered.

1. National water initiative pricing principles

In 2010, a set of National Water Initiative pricing principles, agreed by all Australian governments and endorsed by the Natural Resource Management Ministerial Council, was developed as the basis for setting water prices in all jurisdictions. The 10 pricing principles for setting urban water tariffs are summarised in Box A2.1.

Box A2.1 National Water Initiative urban water price-setting principles

|  |
| --- |
| Principle 1: Cost recovery − full recovery of efficient costs should be sought through upper bound pricing.[[145]](#footnote-146)  Principle 2: Tariff structures − two-part tariffs (service availability and water usage charge) should be used unless demonstrated to not be cost-effective.  Principle 3: Cost-reflective tariffs − for economic efficiency reasons, the water usage charge should have regard to the long-run marginal cost of the supply of additional water (does not preclude inclining block charges where governments seek to promote efficient water use).  Principle 4: Setting the service availability charge − the charge should recover the difference between revenue collected from variable water charges and developer charges and total revenue requirement.  Principle 5: Pricing transparency − tariffs should be set using a transparent methodology and the process should be subject to public consultation and scrutiny.  **Principle 6: Over recovery of revenue** – where water usage charges lead to revenue recovery in excess of upper bound revenue requirements in respect of new investments, jurisdictions are to address the over-recovery.  Principle 7: Differential water charges − water charges should be differentiated by the cost of servicing different customers where the benefits of doing so outweigh the costs of identifying differences and the equity advantages of alternatives.  Principle 8: Setting developer charges − charges should reflect the investment in both new and existing assets required to serve a new development and have regard to the way in which ongoing water usage and service availability charges are set.  Principle 9: Capping developer charges − charges should not exceed the costs of serving new developments, including investment in both new and existing assets.  Principle 10: Revenue from developer charges − to avoid over-recovery, revenue from developer charges should be offset against the total revenue requirement either by excluding or deducting the contributed assets from the regulatory asset base or by offsetting the revenue recovered using other mechanisms. |

Source: [NRMMC (2010](#_ENREF_29)).

1. Water tariffs in other jurisdictions

Table A3.1 Water tariffs in other jurisdictions

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Supply charge** | **Tier 1 price ($/kL)** | **Tier 2 price** | **Tier 3 price** | **Step 1** | **Step 2** | **200 kL/a bill ($)** |
| **($/a)** | **($/kL)** | **($/kL)** | **(kL/a)** | **(kL/a)** |
| City West Water (Melb)(a) |  |  |  |  |  |  |  |
| – residential | 228 | 2.39 | 2.82 | 4.19 | 161 | 321 | 723 |
| – business | 332.08 | 2.66 |  |  |  |  | 865 |
| Hunter Water |  |  |  |  |  |  |  |
| – residential | 25.69 | 2.25 |  |  |  |  | 476 |
| – business(b) | 25.69 | 2.25 |  |  |  |  | 476 |
| – business(c) | 9,239.56 | 1.81–2.25(d) |  |  |  |  | 9,602–9,690 |
| Icon Water |  |  |  |  |  |  |  |
| – residential & business | 101.48 | 2.61(e) | 5.24 |  | 200 |  | 623 |
| NT PowerWater |  |  |  |  |  |  |  |
| – residential | 293.06(f) | 1.92 |  |  |  |  | 677 |
| – business | 10,549(g) | 1.92 |  |  |  |  | 20,254 |
| Queensland Urban Utilities |  |  |  |  |  |  |  |
| – residential(h) | 192.48 | 0.77 | 1.45 |  | 296 |  | 347 |
| – business(i) | 195 | 0.92 | 1.05 | 1.54 | 196 | 296 | 380 |
| SA Water |  |  |  |  |  |  |  |
| – residential | 286.4 | 2.27 | 3.24 | 3.51 | 120 | 520 | 818 |
| – business(j) | 286.4 | 3.24 |  |  |  |  | 934 |
| South East Water (Melb) |  |  |  |  |  |  |  |
| – residential | 120.8 | 2.61(k) | 3.17 | 3.78 | 161 | 321 | 665 |
| – business | 120.8 | 3.17 |  |  |  |  | 755 |
| Sydney Water |  |  |  |  |  |  |  |
| – residential | 90 | 2.00 |  |  |  |  | 490 |
| – business(l) | 90 | 2.00 |  |  |  |  | 490 |
| – business(m) | 80,955 | 2.00 |  |  |  |  | 81,355 |
| TasWater |  |  |  |  |  |  |  |
| – residential & business(n) | 329.48 | 1.00 |  |  |  |  | 529 |
| – residential & business(o) | 51,481 | 1.00 |  |  |  |  | 51,681 |

(a) Prices from 1 July 2016 to 31 December 2016.

(b) One 20 mm connection.

(c) One 350 mm connection.

(d) Depending on zone, quality and usage.

(e) Tier rates calculated on a daily pro-rata basis and billed each quarter, so that Tier 2 can apply when annual consumption is less than 200 kL per annum.

(f) A daily residential supply charge of $0.8029 for one connection up to 25 mm.

(g) A daily commercial supply charge of $28.9016 for one connection between 101 mm and 150 mm.

(h) Tier rates billed on a quarterly basis.

(i) Water supply charge for business customers is based on property value with a minimum charge of $71.60 per quarter.

(j) Tier rates billed on a quarterly basis.

(k) Tier rates calculated on a daily pro-rata basis.

(l) 20 mm connection.

(m) One 600 mm connection.

(n) 20 mm connection.

(o) One 250 mm connection.

Note: This table only contains a sample of the water supply charges by connection size for Sydney Water and TasWater. For the full lists, see [www.sydneywater.com.au/SW/accounts-billing/understanding-your-bill/our-prices/index.htm](file:///C:\Users\Nicholas\AppData\Roaming\Microsoft\Word\www.sydneywater.com.au\SW\accounts-billing\understanding-your-bill\our-prices\index.htm) and www.taswater.com.au/Your-Account/Water-and-Sewerage-Charges.

Source: [City West Water (2016](#_ENREF_6)); [Hunter Water (2016a](#_ENREF_15)); [Hunter Water (2016b](#_ENREF_16)); Icon Water (2016e); PowerWater (2016); Queensland Urban Utilities (2017a); Queensland Urban Utilities (2017b); [SA Water (2016](#_ENREF_34)); South East Water (2016); [Sydney Water (2016b](#_ENREF_37)); [Sydney Water (2016a](#_ENREF_36)); and [TasWater (2015](#_ENREF_38)).

1. Short-run marginal cost or long-run marginal cost as the marginal usage charge

This appendix discusses the issue of whether the short-run marginal cost or long-run marginal cost should be used as the marginal usage charge in a two-part tariff.

The Commission concluded in the draft report that, in principle, short-run marginal cost pricing is the efficient basis for pricing but that, in practice, a long-run measure is preferred.[[146]](#footnote-147)

The application of economic efficiency principles provides strong support for the use of a comprehensive measure of short-run marginal cost as the optimal cost concept for setting usage prices, to the extent that it measures the additional cost to society triggered by the relevant incremental decision or action. Fixed costs are not included in such marginal costs and are not sensitive to the marginal output decision. They need to be financed if the firm is to stay in operation in the long term, but in terms of overall community welfare they are not relevant to defining the optimal level of usage at a point in time.

However, the short-run marginal cost concept is often misunderstood and interpreted narrowly. The components of a comprehensive measure of short-run marginal cost were explained in Chapter 4. They include a component that reflects the value of water which depends on the supply and demand situation and any external costs imposed by additional consumption not reflected in prices. The comprehensive definition of marginal cost is known as ‘marginal social cost’ to reflect that it takes account of all of the costs imposed on society from additional usage of a service or product.

When a resource such as water is sufficiently abundant that everyone who uses it can do so without impacting on another person’s ability to use the water they value, then its implicit and market price would be zero. However, once individual consumption reduces the scope for consumption by others, the resource will have a value. In cases where there is an effective market for water, a market price will be set that reflects the value of water; however, in other cases an administered price can be determined consistent with an approximate market clearing price representing the value of water. The value of water should be based on the opportunity cost of using the water, which means it reflects the value of not providing it to the marginal user when water is scarce. The short-run concept should also not be interpreted as ignoring the intertemporal value of water, as the short-run marginal cost should be comprehensively defined to reflect the expected discounted value of future costs caused by using water today.

Thus, ideally, the usage component of a two-part tariff should reflect the cost imposed both currently and in the future from using water today. When there is a substantial supply of water, this scarcity cost is likely to be very low, but it will increase materially in times of drought. The tariff structure and arrangements for changing the tariff structure should allow for some flexibility in changing the usage charge over different regulatory periods.

The approach of adjusting the usage charge to reflect the scarcity value of water has often been described as scarcity pricing or drought or dynamic pricing. It is a more efficient way to use price to manage demand during times of water scarcity. Scarcity pricing, or more precisely administered scarcity pricing (as opposed to market-based pricing), involves a water utility adjusting the water usage price in inverse proportion to a measure of water scarcity, such as dam levels, in accordance with regulatory arrangements. In effect, scarcity pricing involves pricing at the short-run marginal cost of the resource. The National Water Commission defined scarcity pricing as follows:

A scarcity-based pricing approach is one that seeks to set urban water prices to reflect the scarcity value expected during the relevant period such that available supply would be rationed on the basis of the willingness to pay its scarcity value (rather than through water use restrictions).[[147]](#footnote-148)

In addition to sending signals about the value of the water resource itself, scarcity pricing has the added benefit of sending a signal that the next supply augmentation may cause a sharp increase in price. Scarcity pricing can be implemented in a way that avoids frequent increases by being based on an average over several years of data.

Grafton and Ward (2010), using data relating to Sydney, showed that water usage pricing that does not reflect scarcity values generates large welfare losses in excess of the annual average household water bill. They attributed these losses to water restrictions and premature supply augmentation. They argued that these losses ‘could be avoided if dynamically efficient usage pricing were to be adopted by price regulators or water utilities in response to variability in water availability’.[[148]](#footnote-149)

The Commission considers that it is reasonable to conclude that, in times of drought, the usage charge should be increased in conjunction with the use of water restrictions to effectively manage environmental flows.

There also needs to be flexibility to increase or decrease the marginal usage charge but in a way that avoids abrupt changes and complements other policy mechanisms, in particular permanent water conservation measures and temporary restrictions. In this respect it is noted that, due to the low price responsiveness of demand for ACT residential water consumption, any drought pricing arrangements would likely need to be applied in conjunction with quantitative restrictions in order to meet the required reduction in demand.

However, it is difficult to establish a market value for water (or implement administrative arrangements that achieve the same result) and include it in a measure of the cost of usage. So in setting water usage charges with a marginal cost component, regulators in Australia have tended to use long-run marginal costs rather than short-run marginal costs.[[149]](#footnote-150)

The main rationale for using the long-run marginal cost as the charge for the water usage component has been to provide a signal about the cost of future supply augmentation and to avoid the potential high variability of using a measure of short-run marginal cost that recognises capacity supply constraints and the value of water. The use of a component to reflect the marginal cost of future supply augmentation expressed in the dollars of today recognises that the use of water over the near to medium term reduces the availability of water in the future.

The Commission sees merit in using a long-run measure as a starting point for the marginal usage price for several reasons. First, it is difficult to establish an appropriate comprehensive measure of the short-run marginal cost. Second, there may be considerable variation in the short-run marginal cost which would require some smoothing in any case to avoid frequent changes in the tariff structure. Third, the gap between the current tariff structure and one based on marginal cost pricing is substantial, and likely to require a long transition period. In these circumstances, aiming to transition the usage price to be based on a long-run marginal cost estimate is a more realistic goal.

Provided equity issues can be effectively addressed, the Commission considers that a tariff structure that is more cost-reflective will enhance community welfare as it would encourage consumers to use water in a way that better reflects the costs to society of using the water supply infrastructure and the water resource itself while providing better assurance of the efficient recovery of the cost of supply.

However, in order to balance concerns about the sharing of costs and the community’s preferences for a strong conservation signal, the starting point for a marginal usage price will most likely need to be considerably higher than the Commission’s estimates of long-run marginal costs. In addition, as noted, adjustment of the marginal usage price would need to be done gradually over a long timeframe in order to effectively balance economic, environmental and social objectives.

Abbreviations and acronyms

|  |  |
| --- | --- |
| ACT | Australian Capital Territory |
| ACAT | ACT Civil and Administrative Tribunal |
| AIC | average incremental cost |
| Commission | Independent Competition and Regulatory Commission |
| GL | gigalitre (one thousand megalitres) |
| ICRC | Independent Competition and Regulatory Commission |
| ICRC Act | Independent Competition and Regulatory Commission Act 1997 (ACT) |
| kL | kilolitre (one thousand litres) |
| MIC | marginal incremental cost |
| mm | millimetre |
| TMC | ‘textbook’ marginal cost |

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1. Industry Panel, 2015. [↑](#footnote-ref-2)
2. Charges are calculated on a daily pro-rata basis and billing occurs quarterly, so the second-tier price can apply for consumption that is less than the annual amount of 200 kL. [↑](#footnote-ref-3)
3. As at 6 March 2017. [↑](#footnote-ref-4)
4. A net use means gross water extractions minus water returned to the river system after use. [↑](#footnote-ref-5)
5. ICRC 2016b. [↑](#footnote-ref-6)
6. The Commission released an issues paper in November 2015. This was followed by a technical paper on the elasticity of demand for water in the ACT published in February 2016, a technical paper on marginal cost pricing in the ACT released in June 2016, and a draft report released in September 2016. [↑](#footnote-ref-7)
7. ICRC, 2013a: 165. [↑](#footnote-ref-8)
8. ICRC, 2013b: 13. [↑](#footnote-ref-9)
9. Industry Panel, 2015: 12. [↑](#footnote-ref-10)
10. Charges are calculated on a daily pro-rata basis and billing occurs quarterly, so the second-tier price can apply for consumption that is less than the annual amount of 200 kL. [↑](#footnote-ref-11)
11. From 1998–99 to 2003–04, a two-part inclining block structure applied to the price of water, with first-tier consumption initially set at 300 kL per annum in 1998–99, and reduced to 175 kL per annum in   
    2003–04. In 2004–05, the Commission introduced a new three-tier inclining block price structure with two steps, the first at 100 kL per annum and the second at 300 kL per annum with a reduced fixed charge. The fixed charge was $75 per annum, the first-tier charge was $0.50 per kL, the second-tier charge was $1.00 per kL and the third-tier charge was $1.35 per kL. In 2008−09, the Commission moved to a one-step inclining block structure with the step at 200 kL per annum and the second-tier price continuing to be set at twice that of the first (ICRC, 2015a: 47). [↑](#footnote-ref-12)
12. As at 6 March 2017; <https://www.iconwater.com.au/Water-and-Sewerage-System/Dams/Cotter-Dam.aspx>. [↑](#footnote-ref-13)
13. ICRC, 2015a. Available for download from: http://www.icrc.act.gov.au/wp-content/uploads/2015/11/Report-7-of-2015-Issues-Paper-Tariff-Review-2016-November-2015.pdf. [↑](#footnote-ref-14)
14. ICRC, 2016a. Available for download from: http://www.icrc.act.gov.au/wp-content/uploads/2015/11/TariffRev\_Elasticity\_paperv8.pdf. [↑](#footnote-ref-15)
15. ICRC, 2016b. Available for download from: http://www.icrc.act.gov.au/wp-content/uploads/2016/06/Report-4-of-2016-June-2016.pdf. [↑](#footnote-ref-16)
16. ICRC, 2016c. Available for download from: http://www.icrc.act.gov.au/wp-content/uploads/2016/06/TariffRev\_DraftReport\_v10.pdf. [↑](#footnote-ref-17)
17. ICRC, 2016c: xiv. [↑](#footnote-ref-18)
18. ICRC, 2016c: xxi. [↑](#footnote-ref-19)
19. ICRC, 2015a: 1–90. [↑](#footnote-ref-20)
20. ACT Government, 2014a: 2. [↑](#footnote-ref-21)
21. A net cap means gross water extractions minus water returned to the river system after use. [↑](#footnote-ref-22)
22. Productivity Commission, 2011: 156. [↑](#footnote-ref-23)
23. See Productivity Commission, 2011: 30–31, 156, for material on the history and development of two-part and inclining block tariff structures. [↑](#footnote-ref-24)
24. Icon Water, 2016c: 5. [↑](#footnote-ref-25)
25. ICRC, 2015a: 32. [↑](#footnote-ref-26)
26. ACT 2016. [↑](#footnote-ref-27)
27. Icon Water, 2016c: 10. [↑](#footnote-ref-28)
28. Icon Water, 2016c: 12. [↑](#footnote-ref-29)
29. As at 6 March 2017; <https://www.iconwater.com.au/Water-and-Sewerage-System/Dams/Cotter-Dam.aspx>. [↑](#footnote-ref-30)
30. ICRC 2015b. [↑](#footnote-ref-31)
31. The minor demand growth scenario, which assumes a medium series population growth with 50 per cent of the incremental population contributing to aggregate demand growth, may well be conservatively high given the recent downward trend in per capita consumption. In this regard, Icon Water recently noted:

    We know that Canberra values its water greatly and still use it very wisely following the decade of uncertainty for the region. Our community managed to significantly reduce its water usage over that period and we’ve seen very little bounce back since that time. This is a great indication that even as our population increases, we remain steady in our consumption figures as a community. (Icon Water, 2016a: 1) [↑](#footnote-ref-32)
32. The high demand growth scenario assumes a high series population growth with 100 per cent of the incremental population contributing to aggregate demand growth. [↑](#footnote-ref-33)
33. ACT, 2016. [↑](#footnote-ref-34)
34. It also worth noting that a portion of the water abstraction charge reflects the costs relating to environmental flow, including the effect of storing water in dams on downstream flows (ACT Government, 2014b: 2). [↑](#footnote-ref-35)
35. Knee, 2016b: 1. [↑](#footnote-ref-36)
36. Saunders, Warford and Mann, 1977: 18. [↑](#footnote-ref-37)
37. Icon Water, 2016c: 10. [↑](#footnote-ref-38)
38. Icon Water, 2016c: 10. [↑](#footnote-ref-39)
39. Clubs ACT, 2016. [↑](#footnote-ref-40)
40. Hulbert, 2016: 1. [↑](#footnote-ref-41)
41. Icon Water, 2016c: 1. [↑](#footnote-ref-42)
42. Icon Water, 2016d: 3. [↑](#footnote-ref-43)
43. ACT Government, 2016: 7. [↑](#footnote-ref-44)
44. ACT Government, 2016: 1, 7. [↑](#footnote-ref-45)
45. Icon Water, 2016 b, c, d. [↑](#footnote-ref-46)
46. Icon Water, 2016 d: 8. [↑](#footnote-ref-47)
47. Icon Water, 2016 b: 2. [↑](#footnote-ref-48)
48. For completeness, in the draft report the Commission also considered the relevance of ‘Ramsey pricing’, which effectively entails setting differentiated prices marked up over marginal cost, where the mark-ups reflect the responsiveness of demand to prices based on different customer characteristics, are higher where responsiveness to price is relatively low and are calibrated to raise an allowed amount of revenue. However, the Commission concluded that such a mechanism is not warranted given the limited information on the responsiveness of demand to price changes (the price elasticity of demand) and the likely adverse equity impact on consumers purchasing the same product. (ICRC 2016c: 34–6.) [↑](#footnote-ref-49)
49. Icon Water, 2016d: 6. [↑](#footnote-ref-50)
50. ICRC, 2016c: 21. [↑](#footnote-ref-51)
51. Icon Water, 2016b: 2. [↑](#footnote-ref-52)
52. Icon Water, 2016c: 3. [↑](#footnote-ref-53)
53. Icon Water, 2016b, 3. [↑](#footnote-ref-54)
54. Icon Water, 2016c: 17. [↑](#footnote-ref-55)
55. Icon Water, 2016b, c, d. [↑](#footnote-ref-56)
56. Icon Water, 2016d: 3. [↑](#footnote-ref-57)
57. ACT Government, 2016: 7, 9. [↑](#footnote-ref-58)
58. ACT Government, 2016: 7, 9. [↑](#footnote-ref-59)
59. ACT Government, 2016: 9. [↑](#footnote-ref-60)
60. ACT Government, 2016: 9. [↑](#footnote-ref-61)
61. ACT Government, 2016: 9. [↑](#footnote-ref-62)
62. ACT Government, 2016: 9. [↑](#footnote-ref-63)
63. ACT Government, 2016: 10. [↑](#footnote-ref-64)
64. ACAT, 2016a: 1–2. [↑](#footnote-ref-65)
65. ACAT, 2016b: 2. [↑](#footnote-ref-66)
66. Canberra Business Chamber, 2016: 1–3. [↑](#footnote-ref-67)
67. ClubsACT, 2016: 6. [↑](#footnote-ref-68)
68. Federal Golf Club, 2017: 1. [↑](#footnote-ref-69)
69. Dwyer, 2016: 1. [↑](#footnote-ref-70)
70. ICRC, 2016c: xxii. [↑](#footnote-ref-71)
71. Icon Water, 2016d: 10. [↑](#footnote-ref-72)
72. ACT Government, 2016: 10. [↑](#footnote-ref-73)
73. ICRC, 2016b. [↑](#footnote-ref-74)
74. ICRC, 2016b. [↑](#footnote-ref-75)
75. This is an average cost across the network, with some areas not requiring any pumping. [↑](#footnote-ref-76)
76. Icon Water, 2016c: 9. [↑](#footnote-ref-77)
77. Icon Water, 2016c: 9. [↑](#footnote-ref-78)
78. Icon Water, 2016c: 20. [↑](#footnote-ref-79)
79. Icon Water, 2016c: 9. [↑](#footnote-ref-80)
80. ACT Government, 2016: 4. [↑](#footnote-ref-81)
81. Federal Golf Club, 2016: 1. [↑](#footnote-ref-82)
82. Denham, 2016: 3. [↑](#footnote-ref-83)
83. City West Water, 2016: 5–9. Available for download at http://www.citywestwater.com.au/business/charges\_explained.aspx. [↑](#footnote-ref-84)
84. COAG, 2004: 14. [↑](#footnote-ref-85)
85. ACAT, 2016a: 2. [↑](#footnote-ref-86)
86. Icon Water, 2016c: 20. [↑](#footnote-ref-87)
87. Icon Water, 2016b: 2. [↑](#footnote-ref-88)
88. Icon Water, 2016b: 2. [↑](#footnote-ref-89)
89. Icon Water, 2016b: 2. [↑](#footnote-ref-90)
90. Icon Water, 2016c: 3. [↑](#footnote-ref-91)
91. Icon Water, 2016c: 9. [↑](#footnote-ref-92)
92. Icon Water, 2016c: 10. [↑](#footnote-ref-93)
93. Icon Water, 2016c: 9. [↑](#footnote-ref-94)
94. Icon Water, 2016d: 3. [↑](#footnote-ref-95)
95. Icon Water, 2016d: 3, 6-7. [↑](#footnote-ref-96)
96. Icon Water, 2016d: 8. [↑](#footnote-ref-97)
97. Icon Water, 2016d: 3, 7–9. [↑](#footnote-ref-98)
98. Icon Water, 2016d: 5. [↑](#footnote-ref-99)
99. Icon Water, 2016d: 5. [↑](#footnote-ref-100)
100. Icon Water, 2016d: 6. [↑](#footnote-ref-101)
101. Icon Water, 2016d: 7. [↑](#footnote-ref-102)
102. Icon Water, 2016d: 3. [↑](#footnote-ref-103)
103. Icon Water, 2016d: 3. [↑](#footnote-ref-104)
104. Icon Water, 2016d: 3. [↑](#footnote-ref-105)
105. Icon Water, 2016d: 10. [↑](#footnote-ref-106)
106. ACT Government 2016: 3. [↑](#footnote-ref-107)
107. ACT Government 2016: 3–4. [↑](#footnote-ref-108)
108. ACT Government, 2016: 5. [↑](#footnote-ref-109)
109. ACT Government, 2016: 6. [↑](#footnote-ref-110)
110. ACT Government, 2016: 6-7. [↑](#footnote-ref-111)
111. ACT Government, 2016: 7. [↑](#footnote-ref-112)
112. ACT Government, 2016: 9. [↑](#footnote-ref-113)
113. ACT Government, 2016: 9. [↑](#footnote-ref-114)
114. ACT Government, 2016: 10. [↑](#footnote-ref-115)
115. ACT Government, 2016: 10. [↑](#footnote-ref-116)
116. ACT Government, 2016: 4. [↑](#footnote-ref-117)
117. ACT Government, 2016: 11. [↑](#footnote-ref-118)
118. ACAT, 2016a: 1. [↑](#footnote-ref-119)
119. ACAT, 2016a: 1–2. [↑](#footnote-ref-120)
120. ACAT, 2016b: 2. [↑](#footnote-ref-121)
121. ACAT, 2016b: 2. [↑](#footnote-ref-122)
122. ACAT, 2016b: 2. [↑](#footnote-ref-123)
123. ACAT, 2016b: 2. [↑](#footnote-ref-124)
124. Canberra Business Chamber, 2016: 1. [↑](#footnote-ref-125)
125. Canberra Business Chamber, 2016: 2. [↑](#footnote-ref-126)
126. Canberra Business Chamber, 2016: 2–3. [↑](#footnote-ref-127)
127. ClubsACT, 2016: 3. [↑](#footnote-ref-128)
128. ClubsACT, 2016: 6. [↑](#footnote-ref-129)
129. White Label Personal Clouds, 2016a: 1, 2016b: 1. [↑](#footnote-ref-130)
130. Federal Golf Club, 2016: 1. [↑](#footnote-ref-131)
131. Rae, 2016: 1. [↑](#footnote-ref-132)
132. Knee, 2016a: 1–2. [↑](#footnote-ref-133)
133. Knee, 2016b: 1. [↑](#footnote-ref-134)
134. Knee, 2016b: 1. [↑](#footnote-ref-135)
135. Knee, 2016b: 2–3. [↑](#footnote-ref-136)
136. Knee, 2016b: 2. [↑](#footnote-ref-137)
137. Falconer, 2016: 1. [↑](#footnote-ref-138)
138. Denham, 2016: 1. [↑](#footnote-ref-139)
139. Denham, 2016: 2. [↑](#footnote-ref-140)
140. Denham, 2016: 3. [↑](#footnote-ref-141)
141. Dwyer, 2016: 1. [↑](#footnote-ref-142)
142. Klugman, 2016: 1. [↑](#footnote-ref-143)
143. Parkin, 2016: 1–3. [↑](#footnote-ref-144)
144. http://www.icrc.act.gov.au/water-and-sewerage/tariff-review-2016. [↑](#footnote-ref-145)
145. The National Water Initiative defines upper bound pricing as ‘the level at which, 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’ (COAG, 2004: 30). [↑](#footnote-ref-146)
146. ICRC, 2016c: 21. [↑](#footnote-ref-147)
147. NWC, 2011: 5. [↑](#footnote-ref-148)
148. Grafton and Ward, 2010: 1. [↑](#footnote-ref-149)
149. The long-run marginal cost in relation to the supply of water is the measure of marginal cost when capacity can be varied incrementally. It can be calculated as the marginal capacity cost divided by the increase in capacity (which is really average incremental cost) or the incremental increase in capital to satisfy an incremental increase in demand. The long-run marginal cost represents the efficient price when capital is adjusted to its optimal level at a point in time that corresponds to the price that clears the market. At that point, the long-run marginal cost equals the short-run marginal cost. [↑](#footnote-ref-150)