INQUIRY INTO REFORM OPTIONS FOR SA WATER'S DRINKING WATER AND SEWERAGE PRICES

Draft Inquiry Report

July 2014

REQUEST FOR SUBMISSIONS

The Essential Services Commission of SA (**the Commission**) invites written submissions from all members of the community on this paper. Written comments should be provided by **10 September 2014.** It is highly desirable for an electronic copy of the submission to accompany any written submission.

It is Commission's policy to make all submissions publicly available via its website (www.escosa.sa.gov.au), except where a submission either wholly or partly contains confidential or commercially sensitive information provided on a confidential basis and appropriate prior notice has been given.

The Commission may also exercise its discretion not to publish any submission based on length or content (for example, it contains material that is defamatory, offensive or in breach of any law).

Responses to this paper should be directed to:

Inquiry into Reform Options for SA Water's Drinking Water and Sewerage Prices - Draft Inquiry Report

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The Essential Services Commission of South Australia is the independent economic regulator of the electricity, gas, ports, rail and water industries in South Australia. The Commission's primary objective is the *protection of the long-term interests of South Australian consumers with respect to the price, quality and reliability of essential services*. For more information, please visit www.escosa.sa.gov.au.

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GLOSSARY OF TERMS

ASM	Australian Sub Meters
BOD	Biological Oxygen Demand
Commission	The Essential Services Commission of South Australia
COTA	Council On The Ageing South Australia
CSO	Community Service Obligation
DCSI	Department of Communities and Social Inclusion
DEWNR	Department of Environment, Water and Natural Resources
DPTI	Department for Planning, Transport and Infrastructure
DTF	Department of Treasury and Finance
ERA	Economic Regulation Authority, WA
ESC Vic	Essential Services Commission, Victoria
GL	Gigalitre = 1000 Megalitres
IPART	Independent Pricing and Regulatory Tribunal of NSW
K	Potassium
kL	Kilolitre = 1000 litres
LRMC	Long-Run Marginal Cost
ML	Megalitre = 1000 kilolitres
NPV	Net Present Value
NWI	National Water Initiative
RAB	Regulatory Asset Base
ROA	Rating On Abuttal (service availability charge)
SCCA	Shopping Centre Council of Australia
SRMC	Short-Run Marginal Cost
SS	Suspended Solids
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TP	Total Phosphorous
VLB	Volume and Load Based (trade waste customers)
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

The Essential Services Commission (**Commission**) is conducting an Inquiry into reform options for SA Water's drinking water and sewerage price structures and associated charging arrangements.

The Inquiry is being conducted pursuant to Terms of Reference issued by the Treasurer under Part 7 of the Essential Services Commission Act 2002 (**Essential Services Commission Act**). In conducting the Inquiry, the Commission has the primary objective of protecting the long-term interests of South Australian consumers with respect to the price, quality and reliability of water and sewerage services.

The Inquiry's final findings and recommendations will assist the Government in any consideration of policy options for pricing and related reform and allow and inform public debate on those important issues.

This draft Inquiry report presents an opportunity for all members of the community to provide views and information on *draft* findings and recommendations before the Inquiry is finalised in December 2014.

Scope and purpose

The scope of the Inquiry is wide. It deals with pricing structures for drinking water and sewerage services and also with associated charging arrangements, including the possibility of replacing the current system whereby landowners are SA Water's customers with one in which end users (the actual consumers of the service) are the customers; and the potential impacts should meters (and potentially smart meters) be provided to all water customers.

The Inquiry stems from the South Australian Government's *Water for Good* plan, which identified pricing reform as a key element in ensuring long-term water security and efficiency for South Australia.

The Terms of Reference require the Commission to inquire into reform options based on considerations of economic efficiency and water security and to provide information on the customer impacts that would arise were various reform options to be implemented by the Government.

Importantly, the Inquiry is to review efficient pricing *structures* and associated charging arrangements, not whether SA Water's costs are efficient, nor whether SA Water's revenue is appropriate. The Inquiry therefore assumes that SA Water will recover the same amount of revenue from its customers as it currently earns.

Thus, reform options that will achieve greater economic efficiency, while keeping SA Water's overall revenues unchanged, have been considered. The assessment of SA Water's costs is a separate matter, to be addressed by the Commission (through price determination processes) and the Government (through transitional Pricing Orders applicable to the price determination) under the *Water Industry Act 2012* (**Water Industry Act**).

The Commission emphasises that this Inquiry is cast in terms of economic efficiency and water security considerations. While issues of social and environmental policy are fundamentally important to overall policy decisions and directions in water and sewerage pricing and reform, debate on those matters is outside of the scope of this Inquiry.

SA Water supplies drinking water to about 1.6 million South Australians (95 per cent of the State's population). Determining and setting efficient prices will result in a more productive economy. Price provides the signal that guides consumers in their purchase and consumption decisions and SA Water in its production and investment decisions.

The level of water and sewerage prices will impact on customers to varying degrees and will be very important for industry uses such as agriculture, horticulture and livestock and other uses such as public open spaces and community sporting facilities.

Nevertheless, acknowledging the importance of factors other than economic efficiency, and in order to assist the broader debate, this draft Inquiry report presents detailed information on outcomes (including bill impacts) should more economically efficient arrangements be brought into effect.

Potential for reform

Water for Good noted that pricing structures and related charging arrangements, as they apply to SA Water, have developed over a long time and have not always had an economic efficiency focus.

While good historical reasons may have underpinned those arrangements – such as social policy or environmental considerations – *Water for Good* highlighted that there may be a strong case for reform. This was particularly so for drinking water and sewerage pricing, where *Water for Good* argued that more cost-reflective arrangements would be likely to deliver benefits for this State.

Through its work on this Inquiry, the Commission has confirmed that some benefits could be realised from reform, as suggested by *Water for Good*. The Commission has reviewed pricing structures and related charging arrangements and has found there are ways in which more economically efficient outcomes could be implemented over time.

The Commission estimates that implementation of reform of the current price structures and associated charging arrangements could in the longer term unlock overall economic benefits of between $30 million to $40 million per annum.

The largest element of that overall benefit, around $25 million per annum over time, would come through setting drinking water usage charges at more cost-reflective levels, resulting in those charges being much lower than is the case now (albeit with a consequence of material increases in supply charges).

Further economic benefits of approximately $2 million to $3 million per annum may also be available over time, were it to prove feasible to move to locational pricing arrangements, rather than the current statewide pricing scheme.

Economic benefits of around $5 million per annum, over time, could be achieved through tenants having a direct customer-retailer relationship with SA Water.

For some matters raised through the Terms of Reference, such as sewerage and trade waste pricing structures and the removal of rating on abuttal practices, while economic benefits from reform have been identified it has not been possible to fully quantify those benefits at this stage.

The overall net benefits have been determined having regard to the range of costs that may be incurred by various entities in implementing the reforms, such as costs incurred by SA Water in changing its billing system.

In relation to water security, the Inquiry's draft finding is that recent investment in assets such as the Adelaide Desalination Plant (**ADP**) has largely addressed such issues for much of the State for the foreseeable future.

Implementation issues

The Commission, while recognising the materiality of the economic benefits which have been identified (some $30 to $40 million per annum), would caution that these need to be considered in the context of the size of the overall South Australian economy, which has an annual Gross State Product of around $95 billion.

This is particularly the case as, during any transition to more economically efficient arrangements, there are, in the Commission's view, likely to be material short-term adverse financial impacts at the individual customer level, particularly for residential customers and those receiving concession payments. Removal of the cross-subsidy, while an economically efficient outcome, could have material short-term financial impacts for most South Australian households.

While these can be addressed through changes to the tax and transfers system, consideration of those matters is outside the scope of this Inquiry.

This highlights the challenge faced in moving to more economically efficient prices and the need to consider whether, when and how such reform might be implemented.

Using drinking water as an example, a movement towards more cost-reflective charges would involve the removal of cross-subsidies that have largely been borne by large water users (industrial users) to date.

The majority of the economic efficiency benefits would come from lowering usage charges to a more cost-reflective level. At the same time, the associated increase in fixed charges would create the greatest impact in terms of bill increases for most customers, particularly households and concession customers. There is a direct trade-off between promoting greater economic efficiency and limiting bill increases for customers.

If prices were to be adjusted immediately, for example, the overall average impact on residential customers would be bill increases in the order of $100 per annum (with even

more significant impacts on concession customers – in the order of $200 per annum) due to the increase in supply charges.

The magnitude of the financial impacts is driven largely by the extent to which usage charges are currently set above cost-reflective levels. Whereas around 85 per cent of SA Water's total drinking water costs are fixed (independent of the amount of water consumed), only 32 per cent of SA Water's drinking water revenue is derived from fixed charges; around 68 per cent comes from water usage charges. Put simply, usage charges are currently in part recovering fixed costs, and this distorts both consumption and investment decisions for drinking water.

Recognising both the long-term benefits of the proposals as well as these transitional concerns, the Commission has considered options for implementation that would ameliorate financial impacts and allow an orderly transition over time, avoiding or minimising price shocks.

The need for transition and ongoing efficiency

Noting the potential impacts of the Inquiry's draft findings and recommendations (explained in more detail below), the Commission has explored options for transition.

- Gradual transition to cost-reflective usage prices, which would smooth bill impacts over time but defer the achievement of full economic efficiency benefits.
- Implementation of some reforms ahead of others, e.g. removing property-based sewerage charges in the short term while leaving other aspects of the existing arrangement in place pending debate over alternative implementation models.
- Implementation of cost-reflective usage charges for all customers as soon as possible while allocating a higher proportion of fixed costs to large customers in order to keep fixed costs for small customers as low as possible (with the potential move to more cost-reflective fixed charges over time). This approach would allow cost-reflective usage charges to be introduced, while managing bill impacts for households (at the expense of businesses).
- Implementation of price reform within customer groups, rather than between customer groups. This would preserve the current cross-subsidies between customer groups, but may allow for more cost-reflective pricing within a particular group (e.g. large customers).

Additional actions which may facilitate more cost-reflective pricing include:

- Ensuring that concessions and exemptions are well targeted and provide adequate financial assistance to those who require it.
- Reviewing taxes and transfers more broadly, to ensure that the Government's budget requirements are recovered in an efficient manner consistent with its social policy objectives.

In putting forward these options, the Commission recognises that stakeholders may identify additional options in responding to this draft Inquiry report. Any such options will be further analysed in developing the Inquiry's final report.

It will also be important to ensure, on an ongoing basis, that SA Water's cost base is prudent and efficient. This can be achieved through the actions of the Commission in assessing SA Water's cost base and related regulatory inputs during price determination processes, and the actions of the Government in setting regulatory parameters through Water Industry Act transitional Pricing Orders, such as the value to be ascribed to SA Water's regulatory asset base.

Summary of draft findings and recommendations

The following key issues arise under the Terms of Reference.

Drinking water prices

There are currently two types of drinking water charge: a variable (usage) charge and a fixed (supply) charge.

For residential customers, the variable charge has three tiers, with prices increasing with consumption. Tier one is $2.32 per kilolitre (**kL**) (first 30kL per quarter); tier two is $3.32 per kL (30 to 130kL per quarter); and tier three is $3.59 per kL (above 130kL per quarter).

For non-residential customers, there is a single variable charge of $3.32 per kL.

There is a single supply charge, set at $282.80 per annum, which is generally applicable to all customers; however, some commercial customers pay a supply charge set at the greater of $282.80 and a charge based on the capital value of the property to which the service is provided.

In restructuring usage and supply charges, the greatest economic efficiency improvement can be achieved through cost-reflective usage charges, which impact on how water is used across different sectors of the economy. The focus has, therefore, been on reviewing options for setting usage charges that best promote economic efficiency. However, to be revenue-neutral for SA Water, any reduction in usage charges would need to be offset by an increase in fixed charges.

Usage charges

Cost-reflective usage charges align the interests of consumers with the broader public interest, as each customer faces a price that is equal to the costs to the community of supplying water.

The long-run marginal cost (**LRMC**) is the cost of supplying an additional unit of water, assuming all costs (including fixed infrastructure costs) can be changed. This Inquiry's draft finding is that an LRMC-based usage charge would increase economic efficiency by

encouraging consumption where the benefits of usage exceeded the cost of supply and discouraging usage where the costs of supply outweighed the benefits.

This position is consistent with *Water for Good*, which supported more cost-reflective water prices to encourage customers to use water more efficiently, and with the principles underpinning the current prices set by SA Water.

Adoption of a single usage charge for all customers based on the LRMC of supplying drinking water (with the consequential removal of the current three-tier usage charging system for residential customers) is therefore a draft recommendation of this Inquiry.

That said, as shown below, the actual value determined for LRMC should be updated and set at a lower value to reflect recent investment in major water infrastructure, such as the ADP.

Aligning the costs and revenues of consumption would also lead to better investment decisions by SA Water (in supplying water) and South Australian businesses (as consumers of water). When revenues from water are greater or less than the cost of supply, the incentives to invest in additional water infrastructure or in water use technology can be distorted.

The Inquiry has reached the draft finding that the value of the LRMC underpinning *current* usage charges is overstated, as it does not reflect recent developments in this State. The capacity to provide water has increased significantly following recent water security investments by the South Australian government, notably the ADP. The long-run cost of meeting additional demand is now much lower than was the case when estimates were last made.

The Commission engaged an independent expert to advise on a more appropriate value for current circumstances. The resulting estimate indicates that an appropriate LRMC-based usage charge for customers in greater Adelaide may be as low as $0.62 per kL (as compared with the tier two usage price – which has historically been set to reflect the LRMC – currently set at $3.32 per kL).

As anticipated, the relatively low estimated usage charge reflects the fact that water is now less scarce for SA Water than it used to be. While significantly lower than the current usage charges, it remains broadly consistent with the Government's lower-end historical estimates of LRMC prior to the most recent drought.

Setting an LRMC-based usage charge of $0.62 per kL would produce an estimated net benefit to the community of approximately $25 million per annum over the longer term. This is based on the value of additional water consumed as a result of lower usage charges, less the cost of producing that additional water. It also factors in the potential cost to the economy of increasing fixed charges to make up the revenue shortfall from lower usage charges. That cost may arise from any reductions in households' disposable income due to an increase in fixed water supply charges.

The Commission has also considered the merits of setting usage charges at the short-run marginal cost (**SRMC**), the cost of supplying an additional unit of water, assuming no change in fixed costs. The Inquiry's draft recommendation is that, while the costs of maintaining

SRMC-based pricing on an ongoing basis may outweigh the benefits, there should be flexibility to introduce SRMC-based usage charging at times when water becomes scarcer than it is now. The cost to the community of using non-price measures to reduce demand (e.g. water restrictions) is high and SRMC-based pricing is likely to be a lower-cost option for addressing a tightening of the supply-demand balance at certain times than relying on non-price means alone.

Supply charges

The water supply industry is capital-intensive and, therefore, as noted previously, most of SA Water's costs are fixed.

Supply charges are used to recover most of those fixed costs. Some other specific fixed costs, such as connection and disconnection costs, are recovered through direct charges.

Drinking water supply charges should be set to recover the prudent and efficient costs of maintaining and replacing connection and distribution infrastructure and ongoing account management costs, plus any bulk water supply, treatment and transmission costs not recovered by LRMC-based usage charges. These costs relate to ongoing customer supply requirements and therefore should be charged on an ongoing basis.

The Commission's draft finding is that the most cost-reflective approach to the establishment of supply charges would be to base them on capacity requirements (by meter size), rather than the current flat charge for most customers. This is because capacity is the primary driver of network costs.

As around 92 per cent of South Australian customers have the same sized water connection (20mm, which also reflects the meter size), in practice this would mean that most customers would continue pay a standard supply charge that was cost-reflective. Only those with a larger-sized connection (and meter), placing greater demands on the system, would pay more for the greater capacity. This approach is consistent with the Government's proposed policy position in *Water for Good*.

As noted above, this Inquiry, with its focus on pricing structures, assumes SA Water has a fixed revenue requirement. Therefore, if usage charges were to decrease to reflect current best estimates of LRMC, supply charges would need to increase above current levels – to a material degree. The reduced revenue from lower usage charges would need to be offset by increased revenue from supply charges; i.e. supply charges would increase for many customers, regardless of the basis on which these charges were set.

Customer impacts

Moving to more economically efficient usage and supply charges would lead to an unwinding of cross-subsidies that are currently built into drinking water prices.

SA Water's existing prices lead to a cross-subsidy from business customers to residential customers. Total revenue from the sale of drinking water to residential customers is currently around $528 million per annum, around $93m per annum lower than the revenue

that would result from cost-reflective prices. Conversely, non-residential customers are currently paying $93 million more than cost-reflective charges.

Should this unwinding of cross-subsidies be implemented (which could occur over time, albeit with a resulting annual potential efficiency loss to the State), one matter which should be considered as a part of that process is support to vulnerable customers – both in a transitional (short-term subsidy) and an ongoing (concessions regime) sense.

Currently, around 20 per cent of all water customers receive a concession and around 5,000 are exempted (at least in part) from paying water charges. Well-targeted subsidies and concessions are a critical step in ensuring that the economic benefits of the proposed reforms can be realised, while ensuring that those customers most in need of financial assistance can receive it.

While the design of any subsidy or concession scheme is a matter for government, it is recommended that payments be made as a fixed amount, rather than incorporated into water usage charges, to avoid distorting the price signal benefits of cost-reflective usage pricing.

Regional pricing of drinking water

The Inquiry's draft recommendation is that consideration be given to changing the current statewide usage charging arrangements, under which customers of the same type are charged the same price, irrespective of location.

There are differences in the LRMC of supply in different parts of the State, depending on the local supply source and transportation costs. Setting regional LRMC-based usage charges would optimise water usage in each region and could lead to a small net benefit to the community of around $2 million to $3 million per annum over the longer term. There are, however, unlikely to be any significant benefits in moving away from statewide pricing of supply charges in the immediate term.

In order to determine regional supply charges, the existing asset values would need to be apportioned to each region. It is unlikely that such an exercise would deliver efficient supply charges to each region, given that past investment decisions have been made under statewide pricing arrangements and may have been different if regional pricing existed.

Notwithstanding the draft finding on statewide pricing for supply charges, should the Government wish to implement such an arrangement it should do so on a line-in-the-sand basis. To ensure that customers received cost-reflective pricing based on all *future* investments, a common supply charge should be set at a point in time (based on a statewide charge) and then supply charges should diverge across regions over time, as assets were added or removed in the future.

Sewerage prices

The cost to SA Water of providing sewerage services is largely fixed and is independent of the volume of sewage produced.

There is no significant benefit in charging volumetric sewerage prices and the cost of installing sewerage meters to facilitate accurate volumetric charging is likely to be much greater than any associated benefit.

The Inquiry has therefore made the draft recommendation that fixed sewerage charges should continue and that volumetric charging should not be introduced.

However, a further draft recommendation is that the method for calculating those charges be changed from a property value basis to one based on the capacity requirements of each sewerage customer (in particular, the number and size of sewerage connections).

It is the capacity requirement of each sewerage customer that is the major cost driver for SA Water. Capacity-based charging is therefore a more cost-reflective way of setting sewerage prices than the current approach based on property values.

However, SA Water is unable to accurately link customers to sewerage connection sizes at present. SA Water would need to address that information gap were this draft recommendation to be implemented.

For the same reasons as are outlined above in relation to drinking water supply charges, a further draft recommendation of this Inquiry is that while sewerage charges could continue to be set on a statewide basis, consideration could be given to allowing them to diverge across regions over time, as assets were added or removed.

Trade waste charges

SA Water charges its largest industrial sewerage (or "trade waste") customers according to the type of pollutant and the volume discharged into the sewerage network. These trade waste customers have their sewage volumes metered and the type of pollutants discharged into the sewerage system is monitored through an audit system.

The current regime is broadly based on cost-reflective principles (using LRMC estimates) and, on that basis, it is a draft recommendation of this Inquiry that this charging framework should continue.

However, it would be appropriate to review the level at which the LRMC has been set, in order to base prices on best current estimates. Information received during the Inquiry indicates that current volume and load-based trade waste charges are under-recovering the total costs imposed by trade waste customers and are currently being cross-subsidised by other sewerage customers.

Regional LRMC estimates for trade waste would also provide economic efficiency benefits. Current charges are based on the LRMC estimates for the Bolivar treatment plant and applied to all treatment plants within the State, regardless of location or size. The LRMC of those other treatment plants are likely to differ from the Bolivar LRMC, due to differences in the nature of sewage received and the capacity at each plant. Regional LRMC-based trade waste charges would be more cost-reflective than the current statewide charges and could, therefore, drive efficient usage of trade waste services.

Until such time as the regional LRMCs are determined, however, using the current Bolivar LRMC to set trade waste charges is considered appropriate.

Billing end users rather than landowners and related charging arrangements

Under current legislation, SA Water bills landowners for water and sewerage services.

In South Australia, 28 per cent of properties are tenanted, and tenants do not have a direct contractual relationship with SA Water. This creates a number of inefficiencies.

First, landlords and property managers are required to act as intermediaries between SA Water and tenants, and they incur administrative costs in passing on water and sewerage charges. Economic benefits of around $5.0 million per annum over time could be achieved through tenants having a direct customer-retailer relationship with SA Water. Second, efficiencies of around $500,000 per annum could be achieved through reducing the number of disputes that currently occur between landlords and tenants over water and sewerage charges.

Third, there will be a greater likelihood that leaks within a property will be repaired more quickly if a tenant receives a bill directly from SA Water, as leaks are often highlighted through high bills. Reduced leakage, and the provision of more direct pricing signals to tenants, is expected to lead to optimal consumption and deferred network augmentation.

Tenants would also gain access to the full suite of consumer protection measures under the *Water Retail Code*. They would therefore have:

- rights to regular bills containing detailed consumption and payment information;
- access to flexible payment plans and bill-smoothing arrangements; and
- access to SA Water's financial hardship program.

Tenants would also be eligible to access SA Water's dispute resolution process, which includes mechanisms for having bills reviewed, meters tested and adjustments made to bills for previously over- or under-charged amounts.

This proposed reform would have implications for other legislative arrangements and policies of SA Water. In particular:

- The Water Industry Act currently gives SA Water the right to secure debts through a charge against land and the right to sell land to pursue a debt. This right should be repealed and debt recovery by SA Water should be managed through general laws, consistent with the electricity and gas industries.
- The Water Industry Act also gives SA Water the ability to issue a full drinking water supply and sewerage charge to an owner of land that abuts an SA Water water or sewerage main. This should cease, as customers should only be charged for services which they use. This is consistent with other utility industries, and the principle that

people should pay for the costs of the decisions they make. If people choose not to connect to a service, they should not have to pay for it.

Metering

The Inquiry Terms of Reference require examination of the net benefits of installing metering to premises that are currently not metered and the net benefits of installing smart water meters.

The Inquiry has made the draft finding that the costs of requiring all properties to be metered outweigh the benefits. This draft finding has been formed through a review of the options of installing meters to new and existing premises or to new premises only, and examining various timeframes for rolling out additional meters.

Under each option, there is no economic case for mandated meters. The estimated cost of requiring all properties to be metered, net of any benefits, is between $7.6 million and $74.4 million in net present value terms (over 25 years). The Inquiry's draft recommendation is that the current arrangements continue to apply, whereby individual metering is optional.

The Inquiry has also made the draft finding that the costs of installing smart water meters are likely to exceed the benefits under a similar range of scenarios. The estimated cost of requiring all properties to have smart meters exceeds the benefits by between $48 million and $170.5 million in net present value terms (again, over 25 years).

Water planning and management charges

There are various external impacts associated with water use, including impacts on the environment of withdrawing water from natural sources. Including the cost of those external impacts in water prices increases economic efficiency as it ensures that prices reflect all costs to the community of water use, not just those directly incurred in supplying it.

SA Water currently recovers through its drinking water charges amounts relating to water planning and management, which is a positive step in factoring environmental costs into prices. There would be value in an independent and public review of the prudent and efficient level of those water planning and management costs charged to SA Water. This would ensure that such costs were subjected to the same analytical rigour as other components of the costs underlying the prices paid by customers.

Impacts and transition

Key questions for all members of the community in considering this Inquiry's draft findings and recommendations are that, recognising the importance of capturing economic efficiencies for the long-term benefit of the State, what level of reform is needed, what reform pathways are optimal, and over what time period should reforms be implemented?

Detailed analysis of the impacts to customers of the draft recommendations has been undertaken to assist consideration of those issues. That analysis has taken identifiable and

quantifiable benefits and costs into consideration, using information drawn from SA Water's database.

The Commission is keen to receive views on alternative approaches in this area. Those views will be considered and incorporated as appropriate through the process of finalising the Inquiry.

The analysis undertaken to date shows that, while there are overall economic benefits, moving to economically efficient water and sewerage prices would lead to the unwinding of significant cross-subsidies that have benefitted most households at the expense of other customers, mainly large water users (industrial users).

The result would be that around 75 per cent of customers would receive annual bill increases of $50 or more, with the remaining 25 per cent seeing no material change or a reduction in bills.

This serves to highlight that, while reforms of the type reviewed in this Inquiry would advance customers' welfare in the long run, there is a need for careful consideration of possible transition pathways to implementation of these reforms. The Commission has identified several transition options and considerations which could be used to ensure that the economic benefits of reform were captured as soon as possible, while at the same time ameliorating short-term customer impacts.

This necessarily implies that *some* economic benefits would be forgone (in the order of $30 million to $40 million for each year that reform was deferred) and that there would be *some* financial impacts on customers and SA Water.

Next steps

The Commission will be consulting widely on the findings of this draft Inquiry report. It invites all members of the community to provide written submissions. Details on how submissions may be provided are on the inside front cover of this report.

Written submissions should be provided by 10 September 2014 and will be published on the Commission's website (www.escosa.sa.gov.au).

Public forums and meetings with interested parties will be held during the consultation period to provide further opportunities for comment. The proposed dates and locations for these will be provided on the Commission's website.

The Commission will consider all relevant submissions in preparing the final Inquiry report to be provided to the Treasurer and Minister for Water and the River Murray by 31 December 2014.

1. INTRODUCTION

1.1 Purpose of this Inquiry

The Essential Services Commission of South Australia (**Commission**) is inquiring into options for pricing reform for the drinking water and sewerage services provided by SA Water. The Inquiry has been referred to the Commission by the Treasurer pursuant to Part 7 of the *Essential Services Commission Act 2002* (**ESC Act**). [1]

As with all functions under the ESC Act, the Commission is undertaking this Inquiry in a manner consistent with its primary statutory objective, ***the protection of the long-term interests of South Australian consumers with respect to the price, quality and reliability of essential services***.

Through the Inquiry, the Commission has been asked to inquire into and report to the South Australian Government on options for pricing reform that might deliver improved economic efficiency and/or water security for this State.

The Terms of Reference for the Inquiry provide that:[2]

(a) The Commission is to inquire into options for pricing reform for drinking water and sewerage retail services provided by SA Water in South Australia.

(b) The Commission is to consider, in particular, the following matters:

i. approaches to drinking water supply charges for SA Water customers, including charges based on the number and size of meters, and transition arrangements for managing significant impacts on customers;

ii. alternative approaches to charging for drinking water and sewerage retail services which may improve economic efficiency and/or South Australia's water security, including analysis of the costs and benefits of such approaches for different customer classes, and in particular:

A. the likely impact of billing a consumer of such services (rather than the owner of land) and the associated elimination of rating on abuttal;

B. the likely impact of requiring the installation of individual meters for each customer;

C. the likely impact of requiring the installation of smart meters;

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[1] The *Essential Services Commission Act 2002* is available at: http://www.legislation.sa.gov.au/LZ/C/A/ESSENTIAL%20SERVICES%20COMMISSION%20ACT%202002/CURRENT/2002.14.UN.PDF.

[2] The full Terms of Reference for the Inquiry are available at: http://www.escosa.sa.gov.au/library/121207-InquiryDrinkingWater_SewerageRetailServicesPricing-NoticeOfReferral.pdf.

iii. the impact of statewide pricing requirements on SA Water for drinking water and sewerage retail services in terms of economic efficiency, South Australia's water security, and costs and benefits for different customer classes.

These are important matters arising in the context of the Government's 2009 *Water for Good* plan.[3] *Water for Good* canvassed a broad range of reform options aimed at improving South Australia's water supplies and security. Pricing reform was seen by the Government as an integral part of those reforms. This Inquiry is intended to provide advice to the Government on options for reform, the benefits of those options and information on how and when reforms could be implemented.

Three particular actions arising from *Water for Good* are identified in the Inquiry *Notice of Referral*:

- In consultation with SA Water customers, and over a period of five years, transition to water supply charges based on the number and size of the customers' meters while managing any unreasonable impacts for individual customers. (Action 72)
- Request the independent regulator, in the medium term, to examine price structures that may benefit economic efficiency and water security. (Action 73)
- Require the independent regulator to monitor and report on the effect of statewide pricing. (Action 76)

The Notice of Referral notes that the findings of this Inquiry "*will further inform the successful implementation of these actions*" and will also be considered in determining the need for or scope of any further Pricing Orders under the *Water Industry Act*.[4]

1.1 About SA Water

The Commission's Inquiry relates to SA Water only; it does not relate directly to other, smaller, providers of drinking water and sewerage services that operate in South Australia.[5]

SA Water is wholly owned by the South Australian Government and is established under the *South Australian Water Corporation Act 1994* (**South Australian Water Corporation Act**). It is a public corporation subject to the *Public Corporations Act 1993*.

SA Water provides drinking water and sewerage services to 1.56 million South Australians – about 95 per cent of the State's population. It provides these services to residential (household) and non-residential (commercial and industrial) customers. While 90 per cent of its customers are residential, they consume only about 65 per cent of the total drinking

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[3] *Water for Good* is available at: http://www.environment.sa.gov.au/about-us/our-plans

[4] Pricing Orders form part of the legislative and governance arrangements for the conduct of any price determination of SA Water's drinking water and sewerage prices, with the next determination due to take effect on 1 July 2016.

[5] There are 63 other licensed water and sewerage service providers in South Australia, the majority of which are operated by councils. A complete list of licensed operators is available at: http://www.escosa.sa.gov.au/water-overview/licensing/retail-licences.aspx.

water supplied. Most of the drinking water supplied by SA Water is sourced from surface water (48 per cent) and the River Murray (46 per cent).

SA Water's annual revenue from drinking water and sewerage services is around $1.1bn per annum (drinking water: $780m per annum, sewerage: $360m per annum). SA Water's net profit before tax was around $363m in 2012/13 and in that year it delivered a dividend to the South Australian Government of $236m.[6]

Since 1 July 2013, SA Water's revenues have been subject to regulation by the Commission. However, SA Water continues to be responsible for setting its own drinking water and sewerage prices, subject to compliance with the Commission's *Revenue Determination*.

1.2 Inquiry process

Part 7 of the ESC Act sets out a formal regime for the conduct of Inquiries by the Commission. An Inquiry under Part 7 may be into any matter referred by the Treasurer, or any matter relating to a regulated industry referred by a relevant industry Minister.

In December 2012, the Commission received from the Treasurer the *Notice of Reference* for this Inquiry. A Public Notice, published in *The Advertiser* on 7 November 2012, set out the Terms of Reference advising of:

- the purpose of the Inquiry;
- the period of the Inquiry;
- the period within which, and the form in which, members of the community could make submissions to the Inquiry; and
- the matters on which submissions should be made.

Under the Terms of Reference, the Commission is required to submit this Draft Report to the Treasurer and the Minister for Water and the River Murray by 4 July 2014.

The final Inquiry report is to be submitted to the Ministers by 31 December 2014. Under the terms of Part 7 of the ESC Act, that final report is to be tabled in Parliament and publicly released within 12 sitting days of its receipt by the Ministers or, if Parliament is not sitting, within 28 days of its receipt.

[6] SA Water, *2012/13 Annual Report*, Annual Financial Statements, pp.5 and 49; available at: http://www.sawater.com.au/NR/rdonlyres/B92D4546-E3BC-4343-98AC-FD83FDCDC32F/0/AnnualReport201213.pdf.

1.2.1 Engagement

The Commission is committed to open and transparent engagement with all stakeholders in undertaking its functions. Consistent with that commitment, the Commission is conducting this Inquiry in a manner that allows all members of the community to consider and provide views and information on the matters raised through the Terms of Reference.

There are two broad ways in which the Commission has sought, and will continue to seek, to engage with stakeholders.

The first is through a formal process of public papers. On 29 August 2013, the Commission released a series of Issues Papers.[7] In response, 26 submissions were received from the following parties:[8]

- Alano Water
- Australasian Sub Meters (**ASM**)
- Business SA
- Ceduna District Council (**Ceduna Council**)
- Cockburn Resident
- Community Housing Council of SA Inc. (**Community Housing Council**)
- Conservation Council SA (**Conservation Council**)
- Council on the Ageing SA (**COTA**)
- Department for Communities and Social Inclusion (**DCSI**)
- Department of Treasury and Finance (**DTF**)
- Department Planning, Transport and Infrastructure (**DPTI**)
- Hon. Sandra Kanck
- Itron
- John Croser
- Landlords Association of SA (**Landlords Association**)
- Primary Producers SA
- Property Council of Australia (**Property Council**)
- Real Estate Institute of SA (**REISA**)

[7] The Issues Papers are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx#stage-list=0.

[8] Copies of those submissions are available at: http://www.escosa.sa.gov.au/projects/projectdetails.aspx?p=69&id=189.

- Residential Tenancies Tribunal
- Richard Clark and Associates
- SA Water
- The South Australian Council of Social Service (**SACOSS**)
- Shopping Centre Council of Australia (**SCCA**)
- Strata Water Solutions
- Uniting Communities
- Woolworths Limited.

The Commission acknowledges the valuable input the submissions have provided in the preparation of this Draft Report and looks forward to the receipt of further submissions on the matters raised in it. Those submissions will be very important in informing the final Inquiry report.

The second is through ongoing consultation with stakeholders, including those identified by the Commission as having particular knowledge, expertise or insights in areas relevant to the subject matter of the Inquiry, as well as those who have identified themselves in those areas. The Commission would like to acknowledge the assistance of all stakeholders who have met with the Commission during this process. In particular, the Commission thanks SA Water for the significant amount of information it has provided to date.

As a part of the consultation process, following the public release of this Draft Report, the Commission will be holding public forums to encourage discussion and the provision of further information.

The Commission has considered all submissions received by it, and information provided to it, to date. In this document, where appropriate, the Commission mentions certain arguments and refers to specific submissions. This is aimed at helping stakeholders and interested parties understand the conclusions and positions it has reached. References have been made either by direct quotation or by acknowledging themes or arguments. Failure to reference an argument or submission does not mean it has not been taken into account as part of the Commission's deliberations.

The Commission has relied on information provided to it by stakeholders, including confidential information, in reaching its draft recommendations. While it has not published confidential information, where possible it has summarised the nature of that information in this Draft Report.

1.2.2 Structure of this Draft Report

This Draft Report is structured into key issues arising from the terms of reference. The Draft Report sets out all of the Commission's draft Inquiry findings and recommendations

(including options) and the reasons for them. The Commission has separately published consultant reports relied upon by the Commission.[9]

1.2.3 Making submissions

The Commission welcomes submissions from all members of the community on the findings, recommendations and options put forward in the Draft Report.

Written comments should be provided by 10 September 2014. This is to ensure the Commission has time to fully consider them before providing a final Inquiry report to the Treasurer and Minister for Water by 31 December 2014. It is highly desirable for an electronic copy to accompany any written submission.

It is the Commission's policy to make all submissions publicly available via its website (www.escosa.sa.gov.au), except where a submission either wholly or partly contains confidential or commercially sensitive information provided on a confidential basis and appropriate prior notice has been given.

The Commission may also exercise its discretion not to publish any submission based on length or content (for example, if it contains material that is defamatory, offensive or in breach of any law).

Responses to this paper should be directed to:

> ***Inquiry into Reform Options for SA Water's Drinking Water and Sewerage Prices - Draft Inquiry Report***
>
> *Essential Services Commission of South Australia*
> *GPO Box 2605*
> *Adelaide SA 5001*

As noted above, the Commission also intends to hold public forums and meet directly with members of the community during the consultation period, to understand their views.

1.2.4 Next steps

The Commission's timetable for the Inquiry is set out in Table 1.1. Public forums and meetings with interested parties will also be held during the consultation period to provide further opportunities for comment. The proposed dates and locations for the public forums are presented in Table 1.2.

[9] Refer to http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx.

Table 1.1: Inquiry timetable

TASK	DATE
Draft Report submitted to Treasurer and Minister for Water	4 July 2014
Publicly release draft Inquiry report	16 July 2014
Consultation on draft Inquiry report closes	10 September 2014
Final Inquiry Report submitted to Treasurer and Minister for Water	By 31 December 2014
Publicly release Final Inquiry Report	January 2015

Table 1.2: Proposed dates and locations of the Commission's Inquiry forums^

LOCATION	DATE
Port Augusta Cultural Centre	Tuesday 29 July
Naracoorte Town Hall	Thursday 31 July
Port Lincoln Civic Hall	Monday 4 August
CHATT Centre, Maitland	Wednesday 13 August
Flinders Street Baptist Church, Adelaide	Friday 15 August

^Subject to sufficient interest and expected attendance. Please contact the Commission to register interest.

2. PRINCIPLES OF WATER AND SEWERAGE PRICING

Before outlining the water and sewerage pricing principles underlying the recommendations made in this report, it is helpful to consider the context of this Inquiry.

The subject matter of this Inquiry – water and sewerage service pricing – is a matter of central importance to the lives of South Australians and the South Australian economy. The South Australian Government's 2009 *Water for Good* plan stated that:[10]

> *Water is vital for the preservation of both quality of life and the environment for all South Australians. It also underpins growth in population and the economy – these are critical to the State's future prosperity.*
>
> Water for Good *is a plan that ensures there will always be enough water in South Australia. Most importantly, it will enable us to diversify our supplies and reduce our reliance on the River Murray and other rain-dependent water sources.*

Since the publication of *Water for Good*, there has been much reform and change in the South Australian water sector. For example, the Adelaide Desalination Plant has commenced operations and the *Water Industry Act*, which resulted in the Commission becoming the economic regulator of the water and sewerage retail sectors, has come into effect.

These actions have gone a long way to delivering on some of the fundamental concerns that prompted *Water for Good*. In particular, the operation of the Adelaide Desalination Plant and associated infrastructure works has provided sufficient additional capacity to ensure water security for much of the State for the foreseeable future.

Within a short timeframe, one of the key concerns of *Water for Good*, the availability and security of water supply, has been addressed: water is no longer a scarce resource for many South Australians.

This represents a fundamental shift in this State. However, *Water for Good* anticipated the significance of this change and the need to build on it for the future. In particular, it identified the role that a reformed pricing regime would have in providing clearer and better signals to users about how and when they should consume water – thereby consolidating the efficiency and security gains of the desalination plant: [11]

> *Water and wastewater prices should reflect the full cost of producing and supplying those products and services (including environmental externalities where feasible and practical) so that customers are encouraged to use water and wastewater services efficiently.*

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[10] Government of South Australia, *Water for Good: A plan to ensure our water future to 2050*, *June 2009*; available at: http://www.environment.sa.gov.au/about-us/our-plans.

[11] Government of South Australia, *Water for Good: A plan to ensure our water future to 2050*, *June 2009.*

As is clear from the Terms of Reference and from *Water for Good*, one of the Government's objectives is to understand the ways in which SA Water's prices could be set on a more economically efficient basis.

Cost-reflective prices send the proper signals to customers on how much water to use and when. Implicit in the Government's acknowledgment of the importance of cost-reflective pricing is a recognition that the current pricing arrangements, which have been developed and implemented in an incremental manner over a long period of time, are unlikely to be fully efficient or cost-reflective.

The Commission recognises that there are reasons other than economic efficiency that have led to the current pricing arrangements. Those other reasons, which include social policy considerations, as well as environmental and equity concerns, are not directly within scope of the Inquiry in terms of reaching findings and conclusions. The Commission has been asked to review current arrangements and make findings and recommendations for areas of change or reform that would improve economic efficiency and water security.

However, it must be noted that more economically efficient pricing arrangements will not necessarily include a reduction in water and sewerage bills for all consumers. While the Commission aims to promote the lowest sustainable prices, some of the benefits discussed in this Report relate to value to consumers other than reduced prices. For example, there will be non-pricing benefits, such as reduced leakage, and enhanced customer protection measures. There may also be reductions in other costs outside of those in customers' bills – for example, the administrative costs incurred by landlords in passing through water and sewerage charges to tenants. Ultimately, a move to cost-reflective prices will encourage consumers to use SA Water's services more efficiently, which will provide an overall net benefit.

Therefore, it is important that the Commission specifies at the outset the particular focus it has been asked to bring to this Inquiry; the matters it can – and cannot – consider in making its findings and recommendations; and the matters it needs to highlight as issues of impact and transition should its recommendations be given effect.

The Commission's recommendations are based on maximising the net benefits to the South Australian community as a whole. For individual stakeholders, the costs and benefits of moving away from current arrangements may differ. For example, SA Water may bear short-term implementation costs in respect of some Inquiry recommendations; however, even taking those costs into account, there remains a net benefit to the community.

This chapter summarises the economic principles underlying the Commission's recommendations for water and sewerage pricing reform options and identifies specific sources of benefits to individual customers and the broader South Australian economy. It provides practical explanations of economic terms used in this report, such as *economic efficiency* and *efficient prices*.

2.1 Importance of prices

In a market-based economy such as Australia's, price provides the signal that guides consumers in their purchase decisions and suppliers in their production and investment decisions.[12] Using the available pricing information, the customer determines the extent to which the benefits of consuming drinking water equals or exceeds the cost, and then purchases and consumes accordingly.

As previously mentioned, SA Water supplies drinking water to 1.56 million South Australians (95 per cent of the State's population) and so achieving efficient drinking water prices can potentially deliver significant benefits to users and the South Australian economy.

Water is an essential service and an important input into a range of industry production processes. As a result, determining and setting the *efficient price* is important in achieving a productive economy. An efficient price is one which is equal to the opportunity costs of supply for the relevant good or service, which in turn is approximated by the suppliers' marginal cost.[13]

If, in practice, the water usage charge is higher than the *efficient price* (marginal cost), as an input to industry the cost of the final product is higher than it needs to be, making South Australian industry less competitive to varying degrees (i.e., the extent to which water is an input in the production process for each company). Alternatively, high water usage charges may encourage water-intensive businesses to change the way they operate so they are less reliant on water (this may involve expensive equipment). Householders face higher bills than they need to for a given level of water consumption, and this particularly impacts financially vulnerable customers. Some will also forgo the gardens they would like, or potentially make larger investments in water saving devices than they might if the price was lower.

The level of water and sewerage prices will impact on customers to varying degrees and will be very important for industry uses such as agriculture, horticulture and livestock and other uses such as public open spaces and community sporting facilities.[14]

Were the actual price to be lower than the *efficient price*, customers would not see the true value of the water they consume and would be likely to consume more water than is socially desirable. Business SA has stated that cost-reflective water pricing would provide an incentive for businesses to change their water usage and noted that 92 per cent of its

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[12] For a more formal presentation of the economic theory of water pricing refer to: Productivity Commission, *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011*, Chapter 6; available at http://www.pc.gov.au/projects/inquiry/urban-water/report.

[13] South Australian Government, *Water and sewerage pricing for SA Water Corporation – a pricing oversight investigation under the Government Business Enterprises (Competition) Act 1996*, Final Report, Attachment 2, p.5, April 1997.

[14] South Australian Centre for Economic Studies, *Water pricing and positive externalities in respect of public open spaces and community sporting facilities*, Final Draft Report, January 2014, commissioned by the Local Government Association of South Australia; available at: http://www.lga.sa.gov.au/webdata/resources/files/SACES%20Water%20Pricing%20and%20Open%20Spaces%20March%202014.pdf.

members who participated in a recent survey agreed that water prices should be made more cost-reflective.[15]

An efficient price should also provide SA Water with the information required to undertake an efficient level of investment. There is a risk of distorting SA Water's investment decisions if prices are not *efficient*, with feed-back effects on the level of future prices. For example, a higher level of consumption induced by a price lower than the efficient price puts pressure on SA Water to bring forward augmentation of the water and/or sewerage system infrastructure, resulting in a higher than efficient level of costs.

As the Productivity Commission has said:

> *When prices unnecessarily exceed costs, they act as a tax on consumers. Households are left with less income for other uses, and the competitiveness of businesses is reduced. When prices are below costs, consumption is being subsidised. This encourages excess consumption, places pressure on existing capacity, and brings forward the need to expand capacity.*[16]

In its submission, SA Water argued that the pricing of its services should also have some reference to "customer value". It stated that:

> *It cannot be assumed that changes in customer value will be the same for those who will be required to pay more, compared to those who will pay less. SA Water therefore believes that it will not be sufficient for the Commission to determine the matters under review by only considering the relationship between prices and cost allocations*.[17]

SA Water used an example to illustrate this point:

> *The value of having sewerage connected to a property may be more in dollar terms for a high value suburb than in a lower one (e.g. the "value" of a sewerage service may be 10% of the value of a house, and it may therefore be quite appropriate for the service provider to charge a higher price to that landowner.* [18]

Even if it were possible to demonstrate that a dollar gained results in less value to a person than the dollar lost from another,[19] the tax and welfare systems are better income

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[15] Business SA, *2014 Charter for a more prosperous South Australia*, February 2014, p.36-37.

[16] Productivity Commission, *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011*, p.132.

[17] SA Water submission, p.6; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-SAWater.pdf.

[18] SA Water submission, p.6.

[19] An alternate view is presented by Edwards (2007), who argues that there is no reason to suggest that taking a dollar from a higher income person and giving it to a lower income person adds to total utility in society. He suggests that some people value material goods more than do others, and consequently work harder to obtain income, so that there must be a strong positive correlation between the personal valuation of marginal dollars of income and the magnitudes of incomes actually earned. He adds that the very assertion, made so frequently by advocates of compulsory income redistribution, that the rich are "greedy,"

redistribution mechanisms than water and sewerage prices. Tax and welfare systems would produce fewer efficiency distortions (and hence less community welfare losses) than would result from adopting non-cost-reflective water and sewerage service prices to achieve a desired income distribution outcome.

Further, in practice it would be difficult to derive a robust estimate of such a customer value. For example, the Commission has found no evidence to support a view that people in high value properties value essential services more than people in lower value properties, particularly where they receive the same service. To accurately measure customer value would require comprehensive annual surveys, or censuses, to be conducted on all elements of SA Water's business for all customers. This raises further practical problems, for example:

- What would the outcome be if the combined "customer value" for all customers, for instance, was less than the costs of providing the service? Would SA Water absorb these "unallocated" costs?
- What if certain customers determined that they did not value a service, or that they should not be required to pay? For example, some people in the community believe that water should be a free service for all.

The Commission does not see such a survey producing clear, significant benefits for customers.

This is not to say that customer engagement does not have its place. For example, SA Water, as a monopoly service provider, is encouraged to engage with customers to determine the best price-service delivery outcome. This is designed to achieve the best trade-off between the standards of service to customers and the costs of providing them. The key point is that once service levels have been established by reference to service characteristics valued by customers, prices should be set to reflect the resulting costs.

In order to be able to set cost-reflective prices it is important to understand the true resource costs for delivering water and sewerage services. A key focus of the Commission's work for this Inquiry has been to attempt to identify those costs. (This is presented in Chapters 3 and 4.)

Further, reforms could impose costs on SA Water in terms of transitioning to new billing systems and related arrangements. Those costs have been considered and quantified, with their impacts included in the assessment of the overall benefits identified by this Inquiry.

2.2 Defining the term efficient

The previous section referred to *efficient price*; this section explains that term more fully.

The term *economic efficiency*, which underlies the concept of an efficient price, is often cited in support of a proposed reform. In its simplest form, an economically efficient outcome is

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constitutes a tacit (if unwitting) admission of this relationship (p.7) (see Edwards, J. (2007) "The Costs of Public Income Redistribution and Private Charity", in *Journal of Libertarian Studies*, vol.21, no.2, pp.3-20.

one in which resources are allocated so as to serve each person in the best way while minimising waste and inefficiency. Economic efficiency involves combining an economy's resources to achieve the greatest possible value to the community at the lowest possible cost.

An *efficient price* is one that reflects and drives this optimal outcome. It should represent the marginal opportunity cost, being the *value of a resource in its best alternative*.[20] An efficient price must be cost-reflective and so properly reflect the actual real resource cost of supply. Price provides the signal for optimally allocating resources. It can only do so if it reflects the true or actual underlying costs of producing the product in question – in this case the costs of supplying water and sewerage services.

Economically efficient water and sewerage prices should:

- be set to recover only the efficient costs incurred by SA Water in the delivery of its services
- signal to customers the true cost of their consumption, thereby promoting usage only where the benefits exceed the costs
- promote efficient investment by businesses that rely on water (and sewerage) services, as their investment decisions can be based on the true cost of receiving those services.

Consistent with this approach is the principle of user pays, meaning that users bear the cost of their consumption.[21]

Inherent in this approach is the importance that the person or organisation which consumes the service (i.e. the end user) faces the price, so that the level of consumption by that party is informed by the actual costs associated with the consumption. This has implications for current SA Water landlord/tenant arrangements, where the landlord is the customer but the tenant is the one consuming the water. This issue is explored further in Chapter 6.

It also has implications for SA Water's current practice of rating on abuttal, which allows SA Water to charge customers located near water and sewer mains even if they are not directly consuming the service. This issue is explored further in Chapter 7.

2.3 Economic efficiency and water security

The Terms of Reference require the Commission to investigate pricing reforms that may also improve water security.

Water security means that sufficient water is available to consumers in the long term. There are two general ways in which water security can be promoted:

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[20] Productivity Commission, *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011*, p.135.

[21] Macquarie Dictionary defines "user-pays principle" as *the principle that the cost of a government service should be borne at least primarily, if not entirely, by the people who benefit from it* (www.macquariedictionary.com.au).

- by expanding water supply, for example, construction of the Adelaide Desalination Plant increased the capacity of SA Water to supply water to many South Australians
- by reducing demand for water, for example, through water restrictions and measures to promote greater water conservation. Water efficiency can help promote water security by ensuring that water appliances operate properly using the least amount of water necessary.

Water security can deliver economic efficiency but an acceptable balance must be found between an appropriate level of water security and cost. For example, if the level of water security is too low, i.e. there is insufficient capacity in the water and sewerage systems to meet demand at peak times, customers may not be able to receive an essential service. If the level of water security is too high, i.e. the capacity available in the system far exceeds demand, even at peak times, then consumers may be paying for infrastructure that will never be required.

The challenge is to determine the optimal level of water security and the most efficient means of achieving it. To facilitate greater economic efficiency, water security standards should be made explicit, so that decisions about future capacity expansion and policies for water conservation can be clearly linked to a security-of-supply outcome. In the absence of a clear security-of-supply standard, it is difficult to determine the most efficient way to manage the supply/demand balance.

2.4 Non-economic principles

As discussed earlier, the Commission has been asked to make its findings and present options based on economic efficiency and water security considerations.

Some submissions suggested that the Commission also take into account non-economic objectives. SACOSS, for example, made references to social equity. SA Water's view was that the Commission should be guided by the value customers place on services, arguing that the customer who owns a high value property may place a greater value (in absolute terms) on services than the customer at a low value property. Other submissions suggested using pricing mechanisms as a means of promoting water conservation for environmental benefits.

The Commission recognises at the outset that the issues which are the subject of the Inquiry have many dimensions, such as social policy, equity and environmental, and that economic efficiency is but one of those. As a result, in considering when and how the Government might look to implement the recommended reforms, economic efficiency will be one of a range of its considerations. It will need to also consider matters such as customer impacts, equity, transition paths and the environment.

Those considerations sit outside of the Commission's role in terms of making findings and presenting options. However, to assist the Government in assessing those findings and options, the Commission has included information and analysis of potential customer impacts and has identified areas where further inquiry might be directed through future reviews and Inquiries.

There are broad economic benefits from cost-reflective pricing and, to the extent that there are some customers who may be significantly disadvantaged, it is better for the Government to address affordability more directly through targeted financial assistance than to distort prices for all customers.

2.5 Establishing efficient water and sewerage prices

Implementing cost-reflective usage charges would align the interests of consumers with the broader public interest because each customer would face a price that is equal to the costs to the community of supplying water and sewerage services.

As noted above, economic theory supports prices being set at the marginal cost of supply.[22] That is, price should be set to equal the cost of producing an additional unit of water. That cost may include an external cost not directly incurred by the supplier. For example, there are often costs to the environment of extracting additional water from natural sources and an efficient price based on marginal cost would recognise that cost. In economics language, it is appropriate to recognise *marginal social costs*, not just *marginal private costs*.

There can be debate over whether the appropriate marginal cost basis should be long-run or short-run, and the types of costs to be covered.[23] Long-run marginal cost (**LRMC**) assumes all costs (including fixed infrastructure costs) can be changed. LRMC includes costs such as bulk water costs (including water treatment costs) and transmission (pumping) costs, where transmission costs are ultimately driven by the need to transport bulk water (further explanation is provided in Appendix 1). Importantly, LRMC incorporates future network growth and augmentation costs, but not the value of past investment, which is treated as sunk and should not influence future consumption decisions.

Short-run marginal cost (**SRMC**) is the cost of supplying an additional unit of water, taking existing capacity as fixed. In practice, in the absence of a market, the SRMC cannot be directly observed for most water supply sources (other than the ADP) and the costs of maintaining SRMC-based pricing may outweigh the benefits. SRMC can also lead to larger

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[22] For example: Productivity Commission, *Australia's Urban Water Sector*, p.137; H. Sibly, 'Efficient urban water pricing', *The Australian Economic* Review, vol. 39, no.2, pp.227-37; and Hal R. Varian, *Intermediate microeconomics a modern* approach, third edition, Norton International Student Edition, 1993, p.407.

[23] The Productivity Commission, for example, would advocate tariffs for water services be based on the marginal opportunity of supply which includes the direct short-run marginal cost of supplying water; the value of any externalities and the scarcity value of water as supply and demand conditions change. Refer Productivity Commission, *Australia's Urban Water Sector*, p.177. Sapere notes that *a commonly accepted principle for water usage pricing is that prices should be set with regard to the long-run marginal cost (LRMC) of the supply of additional* water, Sapere Research Group, *LRMC Pricing for Water Services – Background Paper on LRMC pricing*, March 2014, p.vii, available at: http://www.escosa.sa.gov.au/library/140711-WaterInquiry-LRMCPricingWaterServicesBackground-Sapere-ConsultantReport.pdf. A 1997 pricing oversight investigation found that *efficient pricing means that the prices paid by consumers should closely reflect the costs of supply. It is widely accepted that for practical purposes this is achieved by a public enterprise when prices reflect the long-run marginal cost of supply, maintaining an appropriate balance between pure economic efficiency concepts in the short term, and longer term management of its resources in a way that provides adequate returns to its shareholders* (South Australian Government, *Water and Sewerage Pricing for SA Water Corporation*, Attachment 2, p.6).

variations in price over time[24], which can have adverse implications for long-term planning for business and budgetary impacts for residents.[25] An explanation of the concepts of LRMC and SRMC is set out in Box 1 below.

Box 1: Long-run marginal cost and short-run marginal cost

The LRMC is the cost of supplying an additional unit of water over the long run. In the long run, growth in water usage (demand) is likely to necessitate the expansion of production, storage and transport capacity. LRMC takes into account the additional capital costs required to meet future demand and usage.

LRMC is a forward-looking measure of cost; it does not take into account the cost of past investments. Those investments are "sunk" and irrelevant to determining the marginal cost of supply.

The SRMC of supply is the cost of supplying an additional unit of water in the short run, taking existing capacity as fixed. SRMC represents the "textbook definition" of marginal cost.

LRMC reduces the variability in the SRMC, which can increase or decrease depending on supply and demand for water at any point in time. In general, the SRMC of water will increase well above the LRMC at times of water scarcity. When water is plentiful, the SRMC will sit below the LRMC. Over the long run, the SRMC and LRMC will, on average, equate.

A more detailed discussion of LRMC and SRMC is contained the report *LRMC pricing for water services – background paper on LRMC pricing* prepared by Sapere Research Group.[26]

In practical terms, the measurable benefits of adopting cost-reflective pricing for water and sewerage services are estimated by placing a value on the change in consumption or production costs that follow. For example, if the cost-reflective price for water was lower than the existing price and hence led to additional consumption, then a value could be placed on the resulting additional consumption over and above the cost of producing it. If the cost-reflective price was higher than the existing price and hence led to lower consumption, then a value could be placed on the reduced supply costs over and above the value to the customer of the reduced consumption.

[24] For example, the price increasing to reflect progressive tightening of capacity, followed by a significant drop in price when the next increment of capacity is in place. This is sometimes referred to as "saw-tooth" pricing.

[25] A more detailed discussion of LRMC and SRMC is contained the report LRMC pricing for water services – background paper on LRMC pricing, prepared by Sapere Research Group (Sapere Research Group, *LRMC pricing for water services - background paper on LRMC pricing*, p.5).

[26] Sapere Research Group, *LRMC Pricing for Water Services - Background Paper on LRMC Pricing*, March 2014.

The Commission's approach to determining cost-reflective pricing (e.g. whether LRMC or SRMC), as well as estimates of the value of the benefits from adopting cost-reflective pricing, are presented in Chapters 3 and 4 respectively.

2.5.1 Locational pricing

Currently, SA Water's water usage charges are set on a statewide basis. The Treasurer's terms of reference require the Commission to consider *the impact of statewide pricing requirements on SA Water*. On the basis that individual customers should face the true costs of water supplied to them, then additional efficiencies could be achieved by introducing a location-specific price. Some locations may have higher (or lower) cost structures and hence cost-reflective pricing would result in higher (or lower) prices. The customer's decision to consume, or not, would then be based on the actual costs in their location, rather than an average statewide price, which is effectively a weighted-average of different location costs of supply.

However, the benefits of more refined prices need to be assessed against any additional implementation costs.

2.5.2 Scarcity pricing

Consideration could be given to implementing higher prices in times of drought should circumstances warrant. This would introduce the concept of scarcity pricing, which would lead to higher prices at times of emerging water scarcity, reflecting higher SRMC at such times due to the short-term capacity constraint.

Applied in this matter, the short-term higher price could be used to promote reduced consumption, either replacing standard water restrictions or complementing such restrictions. Scarcity pricing would be efficient because those customers who value water the least would be expected to respond by reducing consumption the most.

2.6 Fixed charges

Not all SA Water's costs of operation are variable, with the vast majority of its costs invariant to levels of consumption and hence are termed "fixed". Fixed or sunk costs are those that do not vary materially with any given volume of water supplied to customers.[27]

Typical of utilities with large infrastructure (e.g. pipes and headworks in the case of drinking water), setting charges that reflect the costs of usage will not cover the fixed costs of SA Water's operation. Only charging to recover marginal costs would *not* place SA Water in a financially sustainable position.[28]

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[27] Infrastructure and other costs that are not linked to future consumption include distribution customer connection assets, network costs and retail costs. Refer to Appendix 3 for more discussion.

[28] In brief, this is because for such utilities marginal cost is invariably lower than average cost over the typical range of consumption and a utility needs to recover average cost in order to recover total cost. Note that

Determining the efficient level of costs is undertaken by the Commission as part of its water revenue determination process, most recently performed in the *2013/14 – 2015/16 SA Water Revenue Determination*. This Inquiry assumes that SA Water will recover the same amount of revenue that it currently earns from customers, so that it can pay for its costs, including fixed costs. The Commission has considered pricing arrangements that will achieve greater economic efficiency without reducing SA Water's revenues from tariffs. This means that, to be revenue neutral, any reduction in usage charges would need to be offset by an increase in fixed charges (after application of the community service obligations (**CSO**), including the Statewide Pricing Facility..

While there are clear economic principles for the setting of usage charges, economic theory is less definitive on how fixed costs should be recouped from various customers. Economic theory advocates ensuring that the fixed charge is independent of the volume consumed.[29] This is required to ensure that the customers' consumption decisions are only influenced by the cost-reflective usage price, as only this reflects the true cost of the additional consumption. However, only limited guidance is provided on the precise structure of an appropriate fixed-cost recovery mechanism.

This is not to suggest that the level of fixed charges is not important. While fixed charges should have no influence on the level of consumption (given they should be structured so as to be unrelated to usage), there is the potential for them to influence a customer's decision to connect or disconnect from the water supply system. Fixed charges may affect economic efficiency by influencing connection and investment decisions (such as where to locate a business) but is a far less powerful driver of behavioural change than usage charges.

In developing a fixed-cost recovery mechanism, the Commission has had regard to the nature of SA Water's operations. The majority of fixed costs are incurred to provide capacity to deliver water and sewerage services. Consequently, a fixed charge that reflects demonstrated capacity requirements would appear more cost-reflective, and hence efficient, than the current basis.

Those customers requiring a higher volume of water at a given point impose additional costs and a cost-reflective price would take this into account.

Where a service is dominated by fixed costs, it may be efficient to recover all fixed costs through a fixed charge. Setting a supply charge to reflect different capacity requirements of sewerage customers is consistent with the Productivity Commission suggestion that:

> *Where a usage LRMC price is not feasible (for example, where wastewater is not metered) a fixed price that varies according to the expected contribution of users to peak demand would be the most efficient solution*.[30]

LRMC includes a target rate of return on new investment (South Australian Government, *Water and Sewerage Pricing for SA Water Corporation*, Attachment 2, p.7).

[29] H. Sibly, *Efficient urban water pricing*, p.232.

[30] Productivity Commission, *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011*, p. 149.

2.6.1 Customer impacts and transitional arrangements

As noted above, this Inquiry is to review and report on pricing reform options from an economic efficiency perspective so as to assist the Government and members of the community in general to understand the benefits of potential reforms. Therefore, through this report the Commission has been careful to identify customer impacts and transitional issues. It is essential to ensure community understanding and acceptance of the benefits those reforms will bring and to identify, for the Government and other stakeholders, the potential transition paths for those reforms.

Some of the recommendations represent a significant shift from the status quo and will impact both certain customer groups and SA Water. For example, property-based charging has for many years resulted in some customers subsidising others.

In particular, the Commission has presented information to identify those members of the community who may be impacted by changes to the current arrangements, and this includes an assessment of the financial impacts on various customer classes. This information will assist in identifying those who may require transitional support through any reform process.

This task is very important. Through the Inquiry the Commission has identified a number of areas where pricing reform would deliver net benefits to the South Australian community. However, the transition paths for those reforms will be critical, as there will be “winners” and “losers” in each case. Managing transitions, particularly in the context of Government concessions and subsidy arrangements, is discussed further in Chapter 11.

3. DRINKING WATER

The Terms of Reference for this Inquiry require the Commission to examine alternative approaches to charging for SA Water's drinking water retail services that may improve economic efficiency and/or South Australia's water security:

> *(b) The Commission is to consider, in particular, the following matters:*
>
> *i. approaches to drinking water supply charges for SA Water customers, including charges based on the number and size of meters, and transition arrangements for managing significant impacts on customers;*
>
> *ii. alternative approaches to charging for drinking water and sewerage retail services which may improve economic efficiency and/or South Australia's water security, including analysis of the costs and benefits of such approaches for different customer classes;*
>
> *iii. the impact of statewide pricing requirements on SA Water for drinking water and sewerage retail services in terms of economic efficiency, South Australia's water security, and costs and benefits for different customer classes.*

This chapter addresses the following three key aspects of drinking water prices, consistent with the terms of reference:

- Drinking water usage charges
- Drinking water supply charges
- Regional versus statewide pricing.

The principles for setting drinking water prices that best promote economic efficiency were discussed in Chapter 2. The Commission has applied those principles to SA Water's drinking water prices and has found that an economically efficient drinking water price structure comprises:

- a single usage charge based on the LRMC of water supply, with the flexibility to introduce SRMC-based prices during times of emerging scarcity;
- a fixed supply charge, to recover fixed costs that are not recovered through the usage charge or other fixed charges (e.g. connection charges); and
- region-based usage charges, to reflect the different LRMC of supply in different parts of South Australia.

The Commission's reasons for those findings, and further details about their application, are discussed in the subsequent sections of this chapter.

3.1 Drinking water usage charges

Draft findings

1. ***Consistent with the findings of the 2009 Water for Good plan, economic efficiency can be enhanced through setting cost-reflective drinking water usage charges.***
2. ***The marginal cost to SA Water of supplying drinking water has fallen since the commissioning of the Adelaide Desalination Plant. SA Water's current usage charges do not reflect that lower cost.***

Draft recommendations

1. ***To enhance economic efficiency, a single usage charge based on the long-run marginal cost of water supply should be adopted. The Commission estimates the LRMC of supply to Greater Adelaide to be around 62c per kL.***
2. ***There should be flexibility to allow usage prices to increase to the short-run marginal cost (SRMC) of water supply during any future periods of emerging water scarcity. If water usage charges are increased at those times, supply charges should be reduced to ensure there is no over-recovery of revenue.***
3. ***Any concessions provided by Government to SA Water's customers should not be delivered as a subsidised water usage charge. To ensure that usage charges remain cost-reflective, they should be delivered through fixed payments.***

3.1.1 Key reasons for recommendations

Cost-reflective water prices promote economic efficiency as they:

- recover only the efficient costs incurred in supplying drinking water
- signal to consumers the true cost of consumption, thereby promoting usage only where the perceived benefits exceed the costs
- promote efficient investment (investment decisions may be distorted where the revenue received from supplying additional drinking water is above the cost of supply).

Water pricing that reflects the LRMC of consumption will promote greater economic efficiency as LRMC aligns the interests of consumers with the broader public interest.

3.1.2 Current arrangements

For residential customers, there are three price levels (or tiers) based on consumption – the more a customer uses, the higher the per unit price of water (see Table 3.1.). This is called an "inclining block tariff" and it is applied in various forms by many Australian water utilities.

Table 3.1: SA Water's 2014/15 residential drinking water tariffs

WATER TARIFFS TIER	WATER-USE PRICE $ PER KILOLITRE	QUARTERLY USAGE THRESHOLD	ANNUAL USAGE THRESHOLD
Tariff Block 1	$2.32 per kL	30 kL	120 kL
Tariff Block 2	$3.32 per kL	30 to 130 kL	120 to 520 kL
Tariff Block 3	$3.59 per kL	above 130 kL	above 520 kL

The three-tier inclining block tariff that currently applies to SA Water's residential customers has been justified on the basis that:

- The first tier provides a subsidised price of water needed for critical human needs
- The second tier is cost-reflective, to ensure appropriate price signals for discretionary usage
- The third tier is above the cost-reflective price, to promote "efficient and environmentally sustainable water consumption choices".[31]

For non-residential customers (including commercial and industrial) there is a single usage charge currently set at $3.32 per kilolitre (for 2014/15).

Drinking water prices are currently set under a statewide pricing policy, which means that, for each customer class, prices are the same across all metropolitan and regional areas in the SA Water network. All SA Water residential customers pay the same drinking water price irrespective of their location.

There are, however, some exceptions to these arrangements. For example, usage charges for charities and places of public worship are below the residential usage charges.[32]

As discussed in Chapter 2, SA Water's current usage charges do not promote economically efficient water usage. They also create various incentives for SA Water and other industry participants, which may not be in consumers' long-term interests.

[31] South Australian Government, *Transparency Statement: Water and Wastewater Prices in Metropolitan and Regional South Australia 2008-09*, p.49; available at: http://www.escosa.sa.gov.au/projects/projectdetails.aspx?p=69&id=19#stage-list=0.

[32] SA Water, *2014/15 drinking water charges*; available at: http://www.sawater.com.au/NR/rdonlyres/D5BEE0B1-12A4-481D-AB48-C01CAA654852/105445/FeesandChargesScheduleRatesandSales.pdf.

- They encourage investment in alternative water supply technologies that may have higher costs than drinking water. For example, high drinking water prices may encourage the construction of recycled water schemes or infrastructure that is designed to save water. While there are environmental benefits from these alternatives, they can only be justified if those benefits exceed the costs. The benefits are overstated under current water pricing arrangements.
- They create an incentive for SA Water to sell as much drinking water as possible, even though consumers are receiving a signal to conserve water. SA Water has that incentive because many of its fixed costs are recovered through usage charges and, if water demand is low, it may not be able to recover all of its fixed costs.

As the current pricing arrangements lead to many of SA Water's fixed costs being recovered through variable charges, high water users are paying for more of those fixed costs than low water users. In addition, commercial customers that pay a property-based supply charge are likely to be paying more for SA Water's fixed costs than other customers, assuming they have high property values.

3.1.2.1 Usage prices in other jurisdictions

Drinking water prices are set under various different regulatory regimes in other states and territories. Table 3.2 summarises recent regulatory decisions/reviews that have examined usage charges and highlights those that are based on LRMC. Few states have adopted LRMC-based usage charges, primarily because the regulatory frameworks that apply require considerations such as equity or environmental factors to be taken into account, or because (unlike the current South Australian situation) major infrastructure works were in progress at the time of the decision.

Table 3.2: Comparison of usage charges in other jurisdictions

JURISDICTION	ARE USAGE TARIFFS LRMC-BASED?	MOST RECENT LRMC ESTIMATE	NOTES
Victoria	No	N/A	Victorian water businesses must have regard to marginal cost pricing principles, where appropriate, but consider pricing together with other principles, including equity principles, in developing their business plans for the Essential Services Commission's approval. The Commission does not determine prices. Rather, it ensures that the water businesses have regard to all relevant principles in setting their prices.

JURISDICTION	ARE USAGE TARIFFS LRMC-BASED?	MOST RECENT LRMC ESTIMATE	NOTES
NSW (Hunter Water, Sydney Water, Gosford Council, Wyong Council)	Yes	$1.95 - 2.15 (in 2013/14 prices). This reflects the range of usage charges across the water businesses, which are all based on LRMC.	Based on the respective LRMCs for each entity.
Queensland (Unity Water, Gold Coast, Logan and Redland)	No	N/A	The Queensland Competition Authority (**QCA**) administers a price monitoring regime limited to monitoring change in prices, revenues against costs and returns against a benchmark Weighted Average Cost of Capital (**WACC**).
WA (Water Corp)	Yes	$1.90 ($2013/14)	Increased LRMC based on the need for investment in desalination plant capacity.
Tasmania (Taswater)	No	N/A	The Tasmanian *Water and Sewerage Industry Act 2008* requires the regulator (Office of the Tasmanian Regulator (**OTTER**)) to consider the impact of the rate of change of prices on water users. Due to prices historically under-recovering costs, the overarching objective of the first price determination was to provide a transition path towards uniform cost-reflective tariffs using caps on annual increases in prices.

3.1.3 Summary of submissions

In response to the Issues Paper's discussion regarding drinking water usage charges, submissions were received from the following:

- ASM
- Business SA

- Ceduna Council
- Conservation Council
- COTA
- DCSI
- Hon. Sandra Kanck
- Landlords Association
- Mr. John Croser
- Property Council
- SA Water
- SACOSS
- Uniting Communities.

The full written submissions from these parties cover a range of issues and are available on the Commission's website.[33]

The majority of the submissions expressed support for continuation of the current inclining block water pricing structure (for residential customers) to be retained on equity or environmental policy grounds.

Submissions commenting on the merits of scarcity water pricing contained mixed views. For example, the Property Council of Australia supported pricing water at the short-run marginal cost of supply to reflect the scarcity of water or other significant short-term influences.[34] Business SA, however, did not support scarcity pricing on the basis that it is not a viable option for businesses, as they have limited capacity to alter their water usage in response to price increases during times of shortages.[35]

3.1.4 Discussion

As discussed in Chapter 2, economically efficient water pricing is not simply about reducing water prices. While setting prices at the lowest sustainable level is important, the manner in which prices are structured is also important, as prices influence the decisions made by

[33] Submissions received on the Issues Paper are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx.

[34] Property Council of Australia, *Submission to the 2013 Inquiry into Drinking Water and Sewerage Retail Services Pricing Reform*, 22 November 2013, p.5; available at: http://www.escosa.sa.gov.au/library/131122-WaterPricingInquiry-IssuesPaperSubmission-PropertyCouncilOfAust.pdf.

[35] Business SA, *Submission to the 2013 Inquiry into Drinking Water and Sewerage Retail Services Pricing Reform*, 1 November 2013, p.2; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-BusinessSA.pdf.

SA Water and its customers. The major economic efficiency benefit from water pricing reform is ensuring that water is used where it delivers the greatest value to the community.

Usage charges influence the amount of water consumed. Supply charges are unrelated to usage and do not impact on consumption decisions. However, in some cases they can influence a customer's decision to connect or disconnect from the water supply system. Supply charges may affect economic efficiency by influencing connection decisions (such as where to locate a business) but they are a far less powerful driver of behavioural change than usage charges. As a result, usage charges generally have a greater impact on economic efficiency than supply charges.

There is, however, an important relationship between the two types of charges that creates offsetting impacts on economic efficiency. To maintain a given amount of revenue, any decrease in usage charges would need to be accompanied by an increase in supply charges and vice versa. Any efficiency gain from lowering usage charges to a cost-reflective level may be offset by an efficiency loss from increased supply charges that would decrease the amount of income consumers would have available to spend on other goods and services. Whether or not it would wholly offset the efficiency gain from lower usage charges would depend on consumers' income elasticity (which measures the change in consumer demand from a change in income).

3.1.4.1 Cost-reflective usage charge

In its 2009 *Water for Good* plan, the South Australian Government noted the need to strengthen price signals to encourage efficient use, and highlighted the role of LRMC-based prices.[36]

> *"Water prices provide signals to customers about their water consumption and investment decisions.*
>
> *Prices that reflect the full cost of producing and supplying water and wastewater services (including environmental externalities where feasible and practical) encourage the efficient use of water and wastewater services. Cost-reflective prices are part of the solution for managing demand and possibly minimising the level and frequency of mandatory water restrictions.*
>
> *Cost-reflective prices provide incentives to consume an extra unit of water only if the value the customer places on that consumption is at least as high as the expected cost of providing it in the long run.*
>
> *Long-run marginal cost (LRMC) is a forward-looking cost benchmark incorporating estimates of long-run marginal operating costs and capital costs. It is used as a guide to setting cost-reflective prices. The latest best estimate of LRMC is in excess of $2 per kL (2009/10 dollars).*

[36] South Australian Government, *Water for Good – A plan to ensure our water future to 2050, June 2009*, p.143.

Cost-reflective prices can signal the need for new investment by existing or new industry participants and potentially defer the need for supply augmentations."

While the majority of submissions received agreed that drinking water should be priced at marginal cost to send the appropriate price signals to water users, some submissions expressed differing views on equity grounds. For example, DCSI submitted that pricing drinking water at its long-run marginal cost is likely to adversely affect low-income users.[37] This is based on the assumptions that low users are also low-income consumers, and that supply charges would need to increase significantly to compensate for the revenue foregone from lower usage charges, which would disproportionately impact low users.

SA Water noted a similar concern, stating that moving to a single water use equal to LRMC, and still recovering the level of allowable revenue determined by the Commission, may require increases in the supply charge in the order of 75 per cent.[38] It also stated that:

> *…consideration should be given to the impact any such approach would have on customers that use low volumes of water and how this would impact on their ability to control their water bill.*[39]

The Commission recognises that ensuring access to affordable water is an important objective. However, it is possible to retain efficient usage charges while also addressing affordability concerns through other means (such as transition pathways and fixed concession payments). This is further discussed later in this chapter.

Consistent with the Government's position, the Commission agrees that economic efficiency is maximised when usage charges are set based on marginal cost.

3.1.4.2 Long-run versus short-run marginal cost

The Commission has considered the costs and benefits of using SRMC and LRMC as the basis for setting usage charges.[40] As discussed by the Productivity Commission in its *2011 Inquiry into Urban Water Reform*, [41] any departure from SRMC represents a movement away from the theoretically efficient usage charge. This view is shared by Sapere Research Group (**Sapere**).[42]

The Productivity Commission has recommended the use of SRMC-based pricing, as it considers this delivers better short-term price signals to consumers, particularly during times of water scarcity.

There are, however, practical difficulties in setting SRMC-based usage charges in South Australia. The bulk water market is relatively immature and there is little publicly available

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[37] DCSI submission, p.1 (of unnumbered document); available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-DCSI.pdf.

[38] SA Water submission, p.13; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-SAWater.pdf.

[39] SA Water submission, p.13.

[40] See Box 1 in Section 2.5 of this draft Inquiry report.

[41] Productivity Commission, *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011.*

[42] Sapere Research Group, *LRMC Pricing for Water Services – Background Paper on LRMC Pricing,* March 2014.

information on market-based prices of wholesale water, other than for the Murray Darling Basin, where tradable entitlements exist.

Further, pricing at SRMC can lead to substantial price variation when expanding capacity involves 'lumpy' (e.g. large and infrequent) investments. Given that, in the water industry, expanding capacity generally involves large, infrequent investments, an SRMC price will follow a saw-tooth pattern, whereby the price is low when there is excess capacity, increases as capacity is constrained, and then falls suddenly once additional capacity is installed.

In addition, as SRMC is more volatile than LRMC, in South Australia there would be greater administrative costs incurred in changing prices to move in line with SRMC. Those costs would need to be traded off against the efficiency benefits from the short-term price signal. It is important to recognise that LRMC can also change significantly from time to time, particularly following a significant capacity expansion (as has been the case in South Australia following construction of the ADP). However, LRMC is generally more stable and changes less often than SRMC.

Until the wholesale water market in South Australia develops to the point where the SRMC of water supply becomes transparent, the Commission agrees with the position taken in *Water for Good* and recommends a continuation and refinement of the implementation of LRMC-based usage charges. This is unless there is an emerging period of water shortage, where there may be additional benefits in recognising the higher SRMC (this matter is developed later in this chapter in the context of scarcity pricing).

3.1.4.3 Implications for water security

Cost-reflective water pricing promotes efficient use of water and better decision making around future capacity expansions. In that sense, it can help promote an efficient level of water security.

Ensuring that SA Water has access to secure supplies of water is important, but an acceptable balance between the level of water security and its cost must be found. For example, if the level of water security is too low (i.e. there is insufficient capacity in the water systems to meet demand at peak times), customers may not be able to receive an essential service. If the level of water security is too high (i.e. the capacity available in the system far exceeds demand even at peak times), consumers may be paying for infrastructure that will never be required.

Setting LRMC-based usage charges that can be set higher during times of emerging water scarcity will promote the optimal level of water security. It sends the correct price signal to consumers about the cost of consumption and sends the right signal to SA Water about investment in water supply infrastructure. This is because revenues from usage charges will reflect its future costs.

3.1.4.4 Setting a single usage charge – moving away from multiple tiers for residential customers

Noting that practical application of the concept of LRMC leads logically to the adoption of a single LRMC-based usage charge, the Commission has considered, as a preliminary matter, the current three-tier usage charge practice applied to residential customers. In doing so, the Commission notes that the Government has already transitioned commercial and industrial customers away from a multi-tiered approach and, in 2012/13, implemented a single usage charge for those customers.[43]

The commonly stated objective of multi-tier usage charges is to set a range of prices that either encourage consumption or promote water conservation (depending on how high or low the usage charges are set).

For example, SA Water's inclining block residential tariffs are intended to provide a subsidised price of water for essential human needs through a low first tier. The second-tier price is intended to be cost-reflective and the third-tier price is set above the LRMC as a "*penalty for excessive residential use*".[44]

Various submissions supported the continuation of inclining block tariffs.[45] For example, the Conservation Council stated that:

> *We do not have an issue with a tiered approach, which on balance provides a lower cost for meeting essential human needs, and higher costs where excessive water use is more likely to be for discretional use, or for commercial use where costs can be recovered.*[46]

Ceduna Council submitted that the current tiered system should be retained, on the basis that it assists low-income water users and encourages water conservation.[47]

The Australasian Sub Meters submission was consistent with that view, commenting that a tiered tariff structure rewards responsible water users by lowering their water usage charges.[48]

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[43] South Australian Government, *Regulatory Statement – 2012-13 Drinking Water and Sewerage Prices*, July 2012, pp.5 and 6; available at: http://www.treasury.sa.gov.au/__data/assets/pdf_file/0017/1196/regulatory-statement-201213.pdf.

[44] South Australian Government, *Regulatory Statement – 2011-12 Drinking Water and Sewerage Prices*, May 2011 p.5.

[45] See submissions from the Ceduna Council, DCSI, the Conservation Council and ASM, available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx#stage-list=1.

[46] Conservation Council submission, p.3; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-ConservationCouncilSA.pdf.

[47] Ceduna Council submission, p.1 (page 1 of unnumbered document); available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-CedunaCouncil.pdf.

[48] ASM submission, p.1 (of unnumbered document); available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-AustraliasianSubMeters.pdf.

The DCSI submission also supported retaining the current water usage tariff structure, but for a different reason. The submission noted that the introduction of an alternative tariff structure would require considerable modifications to the current Housing SA ICT Water charging infrastructure and therefore, in turn, have financial implications for the Department.[49]

The reasons why a usage charge based on LRMC promotes economic efficiency was discussed in the previous section of this chapter. For those same reasons, multi-tier usage charges do not promote economic efficiency (and can serve to dilute the economic efficiency benefits of LRMC-based prices) as only one price can relate to the LRMC. Any additional usage charges must depart from the LRMC and therefore from the economically efficient price.

A single usage charge would have the added benefit of allowing customers to more clearly understand the cost (saving) of an increase (decrease) in consumption. It would be more administratively simple given that all consumption would be priced at the same rate rather than, as now, needing to allocate consumption across three tariffs bands in the case of residential customers.[50]

To date, stakeholders appear to have generally accepted the view, largely on the basis of achieving equity and conservation objectives, that residential drinking water prices should be set based on an inclining block tariff structure. However, the Commission has concerns about its efficacy to promote such objectives for two key reasons.

First, the "conservation" case for inclining block water tariffs assumes that usage above a certain threshold should be considered "wasteful" for all consumers. However, it is questionable whether that assumption holds true, as water consumption correlates to a number of explanatory variables, including the number of people in the household and the geographical location. The point at which discretionary water usage begins will therefore be materially different for different consumers (for example, large versus small families).

Second, the argument that a low tier 1 price (below LRMC) assists vulnerable customers by providing access to affordable drinking water supply is also unlikely to hold true.[51]

This is because *all* residential drinking water customers receive the water subsidy embedded in the tier 1 charges, regardless of their capacity to pay, and water users who *do not* consume their full tier 1 quota do not receive the full subsidy (whereas those who do exceed the quota – and move into the second tier – do receive the full subsidy).

The equity impacts of inclining block tariffs was noted in a 2009 independent review of household water and sewerage charges in the United Kingdom, which stated that:

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[49] DCSI submission, p.1 (of unnumbered document).

[50] Productivity Commission, *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011,* p.161.

[51] The implicit assumption underpinning this rationale is that low water users (those consuming less that the Tier 1 quota) are more vulnerable that other users.

> *… the general adoption of rising block tariffs is unlikely to maximise fairness within the charging structure, and would provide everyone with cheaper blocks of water, rather than targeting those who really need help.*[52]

The Commission agrees that inclining block tariffs are inconsistent with the policy intent of creating equity by providing well-targeted subsidy payments to worthy recipients.

As the marginal cost of consumption does not differ between residential, commercial and other non-residential customers, the efficient cost-reflective usage charge will be the same for all of those groups.

For these reasons, the Commission recommends that the current multi-tier approach for residential usage charges should be removed and replaced by a single LRMC-based usage charge, as is presently the case for all other non-residential customers.

3.1.4.5 Setting a single usage charge above LRMC

The Commission has considered the option of setting a single usage charge at a level above the estimate of LRMC. Submissions from the Conservation Council and Hon. Sandra Kanck supported increased usage charges to provide a stronger incentive for consumers to conserve water.[53]

Setting usage charges above LRMC will result in the recovery of not just marginal usage costs, but other costs incurred in supplying drinking water. In the extreme, a price that comprised only of a usage charge would need to recover all of SA Water's costs, including its fixed costs.

While this may be consistent with a water conservation objective, it is not consistent with the principle of economic efficiency, as the decision to consume additional water only influences marginal costs, not fixed costs. Pricing water above marginal cost would encourage consumers to reduce water consumption even though the benefit of consumption may exceed the cost of supply, including environmental costs.

3.1.4.6 What LRMC value should be adopted?

Setting a single usage charge for all customer types, based on LRMC, will significantly improve economic efficiency relative to SA Water's existing usage charges.

This principle is consistent with current practices in this State for non-residential customers and, for residential customers, is consistent with the principle applied to the middle of the current three tiers.

If there is to be a shift for all customer classes to move to a single LRMC-based usage charge, the question becomes: what value should be adopted?

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[52] Walker, A. *The Independent Review of Charging for Household Water and Sewerage Services*, December 2009, p.92.

[53] Conservation Council submission, p.2 and Hon. Sandra Kanck submission, p.2; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-HonSandraKanck.pdf.

The range of values presently ascribed to LRMC of $2.00/kL - $2.75/kL was calculated by SA Water prior to the commissioning of the Adelaide Desalination Plant. Commencement of water production by that major investment is likely to have had a material impact on the value of LRMC, as compared with those estimates.

As a matter of principle, the Commission considers that LRMC estimates, although they will not by their nature generally vary significantly in the short-term, should nevertheless be re-assessed prior to the commencement of a regulatory period.

Under the *Water Industry Act*, the Commission may make price determinations with respect to SA Water's water and sewerage charges and revenues. Those determinations are not required to be for the same period – the initial determination was required to be of three-years' duration but subsequent determinations may be of longer periods.

Through a price determination process, all relevant inputs to prices should be assessed and determined as prudent and efficient, whether by the Commission or by the Government (through setting parameters in the legislative framework). That process ensures that the prices ultimately paid by customers are no higher than necessary. Where usage charges are intended to be based on LRMC, this principle should extend to encompass the value of LRMC. That value should therefore be set on the most current estimates.

As part of this Inquiry, the Commission engaged the Sapere Research Group to provide a current best estimate of the LRMC of drinking water supply in South Australia.

Sapere has estimated that, for the Greater Adelaide region, the LRMC of water supply is 62c/kL. This means that it costs SA Water 62c in the long run to supply one additional kilolitre of water – about a quarter of the current tier 1 (cheapest) price under the current pricing system.

That LRMC estimate is based on long-term demand forecasts and long-term capital expenditure plans provided by SA Water. Those long-term supply and demand forecasts were used to estimate the cost of meeting an additional and permanent increase in demand using the Turvey "perturbation" method.[54] The estimated LRMC takes into account the probability of needing to purchase additional permanent water allocations from the River Murray and use of the ADP.

The LRMC estimate also reflects the environmental costs of meeting additional water consumption. In particular, it takes into account Natural Resource Management (**NRM**) levies that SA Water must pay for taking water from the Murray Darling Basin.

As explained previously, the LRMC represents forecast costs; it does not include the value of past investments, which are irrelevant to the determination of the cost of additional usage. It also includes only those forecast costs that are attributable to an increase in consumption. There may be a range of costs that are not driven by consumption and which are excluded

[54] The Turvey "perturbation" method for calculating LRMC is described in the report from Sapere Research Group, *LRMC Pricing for Water Services - Background Paper on LRMC Pricing*, March 2014, pp.5-6.

from the LRMC. Those costs should be recovered through fixed charges (this is discussed further later). [55]

Based on those estimates, under current water usage charges, consumers are likely to be paying much more per kilolitre than the cost of supply. They are, therefore, likely to be using less water than is economically efficient from a personal, business or community perspective.

As suggested above, the low cost of supplying water to meet additional demand is not surprising, given the capacity expansion resulting from the construction of the Adelaide Desalination Plant. In normal weather, SA Water's customers use about 180GL of water a year. SA Water has about 200GL of storage capacity in its reservoirs, 100GL in capacity from the desalination plant and it can also purchase unlimited water entitlements from the River Murray, depending on flows.

As the capacity to supply exceeds normal demand, the cost of meeting additional demand is relatively low. While the LRMC was likely to have been much greater during the drought and prior to the construction of the Adelaide Desalination Plant (SA Water estimated it to be between $2.00/kL and $2.75/kL at that time), it was estimated at a much lower amount prior to that period.

Through the period 2004/05 to 2007/08, the Government suggested in its annual Transparency Statements that SA Water's tier 2 usage charge (which was around $1.30/kL to $1.40/kL in 2013/14 prices) was at the upper end of the range of LRMC estimates. [56] This lends weight to the finding of a significantly lower LRMC estimate than is currently utilised.

The Commission stresses that, under current usage charges, all three tiers are well above the best current estimates of LRMC.

The lowest usage charge of $2.32/kL does not represent a subsidised price to meet essential human needs. It is, in fact, discouraging the use of water to meet essential human needs.

The highest usage charge of $3.59/kL is over five times the current best estimate of LRMC. While the Conservation Council supports a high third-tier charge to discourage discretionary water use, economic efficiency would suggest that discretionary usage of water should be encouraged where the benefits of that use exceed the costs, including environmental costs. Setting the price at LRMC will encourage that behaviour and maximise the net benefits to all consumers.

Even under a statewide pricing regime, the overall net benefit to the South Australian community of introducing a single usage charge at the best current estimate of the Greater Adelaide LRMC is approximately $25 million per annum (Net Present Value (NPV) of around $420 million).[57] This reflects the value to all consumers of the additional water that would be

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[55] See Appendix 1 for further detail on the economically efficient basis for setting prices to recover various types of costs, including usage costs and connection costs.

[56] The Transparency Statements are available at: http://www.escosa.sa.gov.au/projects/149/2010-11-potable-water-and-sewerage-pricing-processes-inquiry.aspx.

[57] Estimated over a 25 year period.

consumed under lower prices, less the cost of producing that additional water and the cost to households from increased fixed charges, which would need to offset lower usage charges if current revenues are to be maintained (as discussed in Section 3.2).

While the net benefits of cost-reflective usage charges are substantial, they also need to be seen in the context of the value of the South Australian economy, which has an annual Gross State Product valued at around $95 billion.[58]

The benefits of cost-reflective pricing are most likely to accrue to high water users, such as producers of livestock, grapes and other horticultural industries.

Households may receive benefits from additional consumption, depending on the extent to which discretionary water usage can increase. Many households have, however, installed water efficient appliances and reduced the size of their gardens, which would limit their ability to increase water usage significantly in the short to medium term.

However, the Commission stresses that, under a revenue neutral approach, fixed charges would need to increase significantly to recover the revenue that would be foregone if usage charges were reduced. An increase in fixed charges would impact all consumers and reduce their capacity to buy other goods and services. This would partially offset the economic efficiency benefit from lowering usage charges, although the overall net benefit to the community would still be positive (approximately $30 million per annum). Further detail on the setting of fixed charges is discussed in Section 3.2.

3.1.4.7 Price elasticity of demand

A critical input to the calculation of an LRMC is the extent to which customers change their consumption based on a change in price. This is called "price elasticity of demand". In estimating the elasticity of demand for water in South Australia, the Commission has had regard to:

- empirical studies of price elasticity of demand, which have produced a wide range of estimates
- the many factors that influence elasticity, including economic and social factors
- longer-term impacts, including water efficiency improvements and changes in customer behaviour resulting from a period of water restrictions, which may limit the extent to which demand increases in the future in response to any fall in prices
- the fact that price rises have often, historically, been accompanied by water restrictions. It is difficult to separate the role of price in the demand response in these situations
- the time period being analysed, which can lead to varying estimates of price elasticities.

Estimates of price elasticity of demand vary substantially across various empirical studies.

[58] Australian Bureau of Statistics, *Australian National Accounts: State Accounts 2012/13*, p.13; available at: http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/154DF709B44199D0CA257C3000115973/$File/52200_2012-13.pdf.

As part of its Regulatory Business Proposal to the Commission prior to the *2013 SA Water Price Determination*, SA Water submitted a demand model that found that the price elasticity of demand, ranged from -0.28 to -0.37 across SA Water's customer classes.[59] This model was designed to be reliable for the three-year regulatory period until 2016/17, rather than the long-term, and was based on the current usage charges.

SA Water's proposal was also based on estimates resulting from other empirical studies, which found that residential customers were relatively price inelastic in the short term, with elasticities between -0.1 and -0.5. It found that demand was more price elastic in the long term, and/or for outdoor usage, citing findings that ranged from -0.70 to -1.45. Additionally, it found that in a total of 32 international studies, estimates of the price elasticity of residential demand ranged between -0.03 and -1.63.

The Commission notes that the most recent major Australian study of price elasticity of water demand was by Abrams et al in Sydney, 2011. They found that the short-run price elasticity of demand was -0.09 at $2.00 per kL, rising to -0.18 in the long run at $2.00 per kL.[60] They also found that the level of price elasticity of demand increased with price level.

The Commission has received expert advice from Sapere on the price elasticity estimate to be used for the purposes of calculating LRMC. Sapere has suggested that the demand response is likely to be lower than that predicted through SA Water's demand model, and is at the low end of the -0.03 to -1.63 range.

Sapere has assumed that a significant reduction in usage charges would lead to a 30 per cent demand increase over five years, or around a 5 per cent demand increase in the first year of LRMC pricing being introduced, than would otherwise be expected from modelling the status quo. This implies a short-run price elasticity of demand of -0.033 and a long-run elasticity of -0.172. These are relatively low when compared to the empirical studies discussed above.

The Commission has adopted these conservative estimates to minimise the possibility of overstating the benefits that accrue from LRMC pricing. It has taken this approach noting that there do not appear to be any studies assessing the impacts of reducing usage charges by the magnitude it proposes. Furthermore, empirical studies have focused on demand changes in response to price *rises*, while there do not appear to be any comprehensive studies of demand for water after *falls* in price.[61]

While that estimate differs from the residential price elasticity figure of -0.28 used in SA Water's demand model, the modelling was undertaken based on usage charges that are

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[59] SA Water, *Regulatory Business Proposal, Attachment E.1 Demand Forecasting Methodology: SA Water Regulatory Business Proposal 2013*, p. 56.

[60] Abrams, B., Kumaradevan, S., Sarafidis, V. and Spaninks, F. *The Residential Price Elasticity of Demand for Water, Joint Research Study*, Sydney, February 2011, p.7.

[61] There are, however, some studies of the change in demand in response to rises and falls in oil prices that have found consumers will respond more to price rises than to price falls. For example, Gately and Huntington (2002) found that demand in OECD countries responds much more to increases in oil prices than to decreases. More recently Sentenac-Chemin (2012) found empirical evidence that for gasoline prices households are more sensitive to price increases than price decreases.

much higher than the 62c/kL current best estimate of LRMC. Given the evidence that elasticity increases with higher usage charges, it is reasonable to expect a higher demand elasticity from SA Water's 3-year model.

While the price elasticity of water demand is low in the short run, a reduction in the usage charge to 62c/kL in South Australia would lead to a short-run increase in demand of around 5 per cent. This would produce a net benefit (above the short-run cost of supply) of $11.75 million per annum.

The higher long-run price elasticity of demand of -0.18 reflects the increased ability of consumers to change water use behaviour over time, in response to price changes. For example, a reduction in the usage charge to 62c/kL would be expected to lead to a long-run increase in demand of around 30 per cent, which would have a net benefit (above the long-run cost of supply) of around $39 million per annum ($645 million in NPV terms). Further information on the calculation of these net benefits is provided in Appendix 2.

3.1.4.8 Usage prices during times of emerging water scarcity

While the Commission generally recommends LRMC-based usage charges, there are times when it is likely to be beneficial to implement SRMC-based pricing. In particular, in times of emerging water scarcity, the SRMC of supply is likely to increase well above the LRMC. To give consumers the right price signal regarding their usage as water becomes more scarce, it is recommended that the usage charge be allowed to increase during those times to reflect the higher marginal cost of supply. This is consistent with the objective of cost-reflective pricing and economic efficiency.

The net benefit of introducing a scarcity charge will depend on the extent to which SRMC exceeds the LRMC. For example, the SRMC of supplying water from the Adelaide Desalination Plant is greater than the $0.62/kL LRMC estimate for Greater Adelaide. At times when the plant is required to operate in order to meet demand, the net benefit of increasing the usage charge to SRMC would be in the order of $318,000 (NPV) overall, or around $19,000 per annum.

The net benefit is small in this case, because the LRMC already incorporates an expectation of the desalination plant running at some time in the future and, therefore, the difference between the LRMC and SRMC is not large. (Further detail on calculating the net benefits from scarcity pricing is contained in Appendix 2.)

Despite the net benefits being small, the alternative approach of using demand management (e.g. water restrictions) to ration demand is very expensive. The Productivity Commission has estimated that the cost of level 3a restrictions in Melbourne creates a net cost to that city of up to $1.5 billion over a 10-year period.[62] Likewise, the cost to consumers in Sydney in

[62] Productivity Commission, *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011*, p.192.

2004/05 from mandatory water restrictions was estimated to be $235 million, equivalent to around $150 per household in that year.[63]

Those costs arise because water restrictions target activities such as gardening, irrespective of the value individuals might place on their gardens. Water restrictions also carry costs associated with their implementation and enforcement. Those costs could be reduced if scarcity pricing is included in the suite of measures used by the Government to reduce demand when necessary, lessening the need for mandatory water restrictions.

It is possible that scarcity pricing would deliver greater benefits in regional areas where the SRMC of marginal production in times of scarcity is often much higher than in the metropolitan area. However, the regional areas have fewer customers and the benefits would need to be weighed against the costs.

The Commission notes that the implementation of a single usage charge will help customers understand the difference between the cost of using water at times of emerging scarcity and at other times. It may be more difficult to understand those costs when there are multiple usage charges, as is currently the case.

While any "scarcity price" would reflect the additional cost incurred by SA Water in supplying water in times of drought, it may lead to over-recovery of revenues in the long run. This is because SA Water would earn LRMC (which factors in the use of the Desalination Plant) at most times, but would also earn a scarcity premium at other times.

It is therefore necessary to offset the additional revenue produced by the higher scarcity charge to ensure that SA Water recovers no more than the LRMC. The proposed means of doing that is through a reduction in the fixed charge during times of scarcity. This would provide the correct short-run price signals and achieve recovery of efficient costs in the long-term. It would also provide customers with reasonably stable bills, despite the circumstances.

There are various implementation issues associated with scarcity pricing, including defining the trigger point for introducing such a price and the communications program that would be needed to complement it. Those details would require further detailed consideration if this recommendation were to be adopted.

3.1.5 Costs and other implications

Implementing more economically efficient drinking water prices would lead to an unwinding of cross-subsidies between customer groups.

Table 3.3 summarises the magnitude of the cross-subsidies between different customer groups resulting from current prices, based on the Commission's comparison of current revenues with those that would result from its recommended price reforms, including proposed supply charges. It shows that residential customers are currently being subsidised

[63] See, for example, Grafton, Q. and Ward, M. *Prices versus Rationing: Marshallian Surplus and Mandatory Water Restrictions*, September 2008, The Economic Record, Vol. 84.

by all other customers. The amount of the cross-subsidy is around $93 million per annum which, when allocated to the approximately 70,000 non-residential customers, equates to an additional $1,330 per non-residential customer per annum.

The Commission notes that, in reaching that finding, it has taken a view on the appropriate basis for allocating fixed costs between customer types. This can be a matter of contention and is discussed further in Section 3.2.2.

While it is common for cross-subsidies to be built into utility prices for social policy reasons, economically efficient prices would not contain cross-subsidies. This would ensure that all customers face prices that reflect the efficient cost of supply.

Table 3.3: Cross-subsidies resulting from current drinking water prices

	CONTRIBUTION TO TOTAL CAPACITY (%)	CONTRIBUTION TO TOTAL WATER USE (%)	CURRENT CONTRIBUTION TO TOTAL DRINKING WATER REVENUE	CONTRIBUTION IF PRICES WERE COST-REFLECTIVE	DIFFERENCE
Residential	83%	65%	68%	80%	+12%
Commercial	5%	6%	8%	5%	-2%
Non-residential [64]	12%	29%	25%	15%	-10%
Total	100%	100%	100%	100%	0%

Noting the considerable economic efficiency benefits that would accrue from setting a single water usage charge based on a current best estimate of LRMC, the Commission nevertheless acknowledges that this would have profound impacts on the supply charges when compared with current levels.

In combination, usage charges and supply charges across all customers will deliver to SA Water the amount of revenue required to operate its business in a prudent and efficient manner. Assuming that the required revenue amount is prudent and efficient and is maintained at the same level, a reduction in the amount of overall revenue recovered through usage charges will mean that the amount of revenue required to be recovered through supply charges will increase.

The Commission has calculated that reducing the usage charges to the current best estimates of LRMC (at 62c/kL) would significantly reduce the amount of revenue earned by SA Water from usage charges. To maintain the same overall revenue, this would require a material increase in supply charges (discussed in the following section). Overall, this will generally lead to lower bills for high water users and higher bills for low water users.

[64] Non-residential/industrial customers including country lands customers.

This recommendation cannot, therefore, be considered in isolation from the discussion below in relation to supply charges.

3.1.6 Customer bill impacts

As noted above, analysis of the customer impacts of LRMC-based usage charges is considered along with supply charges and is presented later in this chapter.

3.1.7 Implementation

There are significant economic benefits to the community that would result from the reform of SA Water's usage charges and the Government will need to consider those benefits along with impacts on other policy objectives, such as social policy objectives and the potential implications for supply charges. The Commission is keen to assist the Government in considering ways in which the economic benefits can be obtained while addressing other objectives and concerns.

For example, in the case that water pricing is to remain as a tool for delivering social equity objectives, to ensure that usage charges remain cost-reflective, any exemptions and concessions should not be dependent on the amount of water consumed (i.e. they should apply to the fixed charge only). It is important that usage charges be set at cost-reflective levels to promote economic efficiency and applying subsidies to usage charges will distort consumption decisions and reduce economic efficiency. (This is discussed further in Chapter 11.)

It is also suggested that, in light of the current environment where water is relatively inexpensive to produce and transport, one short-term way in which additional benefits could be gained would be through a review of the range of water conservation policies that remain in place.[65]

Those policies provide relatively costly ways of reducing reliance on mains water at a time when there is value to the community in encouraging greater use of mains water. For example, the Commission estimates that around $24 million per annum is being spent on mandatory plumbed rainwater tanks for new houses and additions. Government rebates of $200 for rainwater tanks have also led to a cost to the Government of nearly $10 million over the life of the rebate scheme[66].

The implementation of a single LRMC-based usage charge, with the scope for higher usage charges at times of emerging water scarcity, can be accommodated within SA Water's existing billing systems. Based on advice from PricewaterhouseCoopers, the Commission's proposed usage charge reforms (and associated supply charge reforms discussed below) can

[65] For example, the water conservation measures prescribed in Schedule 4 of the *Water Industry Regulations* 2012; available at: http://www.legislation.sa.gov.au/LZ/C/R/Water%20Industry%20Regulations%202012.aspx.

[66] This scheme closed on 30 June 2014.

be implemented at a cost of around $650,000 over a period of 33 weeks. The Commission has factored that cost into its cost-benefit analysis.

No legislative changes would be required to implement this reform.

3.2 Drinking water supply charges

Draft findings

3. ***Economic efficiency is promoted by ensuring that fixed costs are allocated to those that are responsible for them.***
4. ***Economically efficient drinking water supply charges should recover the prudent and efficient costs of maintaining and replacing connection and distribution infrastructure and ongoing account management costs, plus any bulk water supply, treatment and transmission costs not recovered by long-run marginal cost-based usage charges.***
5. ***Capacity-based charging is the most cost-reflective way to set SA Water's drinking water supply charges.***
6. ***If usage charges are reduced to cost-reflective levels, drinking water supply charges would need to increase significantly, assuming SA Water recovers the same amount of revenue. This would lead to bill increases for most residential customers, while large water users may receive lower bills.***

Draft recommendations

4. ***Drinking water supply charges should be based on the size of a water meter, which is a measure of a customer's capacity requirements and is therefore cost-reflective.***
5. ***All cost inputs to supply charges should be prudent and efficient and reviewed by the relevant decision-maker (whether the Commission or Government) on a regular basis.***
6. ***Connection charges should be set to recover efficient connection and account establishment costs, and disconnection charges should be set to recover efficient disconnection and account finalisation costs.***
7. ***Development connection and augmentation charges should be set to recover all efficient costs driven by developer requirements.***

3.2.1 Key reasons for recommendations

- Supply charges should reflect efficient costs only and should not recover consumption-driven costs already recovered through usage charges.
- People making the decision to incur efficient costs should pay for them. For example, connection costs are incurred through a customer's decision to connect. That customer should pay for the efficient execution of this task.

- Where fixed costs relate to assets shared between customers, those customers should share the costs based on the relevant cost driver from their perspective. For example, businesses requiring larger pipes can draw more water at any point in time and should pay more for that benefit than other businesses that draw less water through smaller pipes.
- If water usage charges are to be set at a single rate based on the current best estimate of LRMC (for example, 62c/kL) and if the overall annual revenue requirement for SA Water does not change, then the amount of revenue to be recovered through supply charges would need to increase by over 200 per cent (from $274.80 per annum to around $843 per annum for a residential customer, 2013/14 comparison). As a result, all input costs should be reviewed by the relevant decision-maker (the Commission or the Government), to ensure that they are prudent and efficient.

3.2.2 Current arrangements

The Commission has considered all fixed charges relevant to SA Water's supply of drinking water and sewerage services. They include:

- supply charges
- connection/disconnection charges
- augmentation charges.

As noted in the previous section, given a fixed, prudent and efficient revenue requirement (less CSOs) for SA Water and assuming that usage charges are set to recover only those costs associated with the marginal cost of consuming water, supply charges should recover the difference between this revenue requirement and the revenue recovered through usage charges and other fixed charges (such as developer charges).

Supply charges do currently recover that gap, albeit that, as shown by the Commission in the previous section, current usage charges are not cost-reflective. The implications of that latter point are drawn out in this section.

All customers pay a supply charge, even if no water is consumed. The fixed supply charge for 2014/15 is $282.80 a year, however some commercial customers pay more, depending on their property values.

Some customers also pay less. For example:

- multiple residential properties that have only one water meter, such as those on strata or community titles, are not charged by SA Water for the highest priced tier
- commercial car parking properties receive a 50 per cent reduction in the minimum supply charge
- lower water rates apply for community properties such as memorial gardens, children's services centres, swimming pools and other community or charity facilities.

However, low-income customers fall into a different category because the concessions they receive are paid by the Government in the form of rebates.

As discussed previously, SA Water's prices lead to significant cross-subsidies between customers. In determining the extent of cross-subsidies (see Table 3.3) the Commission has apportioned fixed costs based on the number and size of meter.

The Commission notes that a commonly accepted definition of a cross-subsidy is where a customer is either paying less than the incremental cost of supply to that customer, or more than the stand-alone cost of supplying that customer. It is likely that few customers would meet that definition of a cross-subsidy, given that the incremental cost of supply is generally very low (e.g. the cost of a service pipe, meter and water consumed) and the stand-alone cost is likely to be very high (as it would cover all infrastructure required to supply that customer, on a stand-alone basis). That test does not involve the apportionments of existing fixed infrastructure to different consumer groups.

The Commission's approach assumes that fixed charges not based on capacity would lead to a cross-subsidy between customer groups. This is because those customers with greater capacity are not paying their share of the total cost of providing capacity, which is a significant cost to SA Water.

3.2.3 Summary of submissions

Submissions were received from the following in response to the Issues Paper discussion regarding drinking water fixed charges:

- ASM
- Ceduna Council
- Conservation Council
- Hon. Sandra Kanck
- Property Council
- SA Water
- SCCA
- Uniting Communities
- Woolworths Limited.

All of the submissions received expressed support for the concept of supply charges being set based on the number and size of meters, as suggested in the Terms of Reference. This was on the basis that it is fair and sends the correct price signals to water users.

In particular, Woolworths Limited submitted that the current approach of setting fixed charges based on the capital value of property is not cost-reflective, and deters investment

within South Australia.[67] Using its Murray Bridge Marketplace development in South Australia as an example, Woolworths asserted that the annual water supply charge for a similarly sized development in New South Wales is approximately 94 per cent lower.[68]

3.2.4 Discussion

Efficient supply charges can play an important role in the South Australian economy. As discussed in the submissions provided by Woolworths Ltd and the SCCA, SA Water's high water prices, including high water supply charges, increase the cost of doing business in South Australia relative to other states.[69]

Water supply charges will have some impact on the decisions of customers to connect or disconnect from SA Water's network. While that impact is likely to be smaller than the impact that usage charges have on consumption decisions, it is nevertheless still present. The water supply charge for commercial customers is currently based on property value and is unlikely to reflect the fixed costs of providing drinking water services. For commercial customers, the case for an alternative, more cost-reflective supply charge is strong.

3.2.4.1 Capacity-based supply charges

It is recommended that drinking water supply charges be set based on the capacity requirements of customers rather than on the value of the properties receiving the service. This will promote cost-reflective pricing and increased economic efficiency. The Commission notes that SA Water raised the option of charging fixed costs based on meter size in its submission to the Commission's Issues Papers.[70]

Connection and distribution costs depend on the capacity requirements of the customer – the greater the requirement, the more substantial the infrastructure required. As capacity is a cost driver of connection and distribution infrastructure (assets), it is consistent with the principles of cost-reflective pricing and economic efficiency to set the supply charge based on a customer's capacity requirement.

The vast majority (approximately 92 per cent) of customers have a 20mm water connection and the supply charge will therefore be the same for most of them. In circumstances where a larger connection is required (e.g. up to 300mm for industrial customers), the supply charge should increase to reflect that greater requirement.

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67 Woolworths Limited submission, p.2; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-WoolworthsLimited.pdf.

68 The difference arose out of the different pricing approaches used to set water supply charges. In New South Wales, water supply charges are set based on the size of the water meter, the number of properties sharing the meter and the number of meters.

69 Both submissions are available at http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx.

70 SA Water, *ESCOSA Inquiry into SA Water's Drinking Water and Sewerage Prices*, November 2013, p.19.

Under the proposed recommendation, a property with multiple connections would pay a supply charge for each connection, as each connection provides additional capacity. The provision of that additional capacity should be paid for by the customer.

3.2.4.2 Other fixed charges

Other fixed costs resulting from the decisions of customers and developers should be recovered through fixed charges. Details of those costs and their drivers are set out in Appendix 1.

The decision to develop land generally requires extension and/or augmentation to existing infrastructure (water assets). The full incremental cost of this should be borne by the developer.

Once infrastructure is in place, a customer can choose to connect to it, in which case any connection and account establishment costs can be recovered from the customer. When a customer decides to disconnect from the network, any disconnection and account finalisation costs can be recovered directly from that customer.

All of this ensures that decision-makers incur the cost of their decisions and this promotes economic efficiency.

3.2.5 Costs and other implications

As noted in the previous section, if water usage charges were to decrease to the best estimate of LRMC (currently 62c/kL), supply charges would need to increase by more than 200 per cent (from $274.80 per annum to around $843 per annum for a residential customer, 2013/14 comparison).

The Commission recognises that this would have dramatic social impacts, with the majority of residential customers paying significantly higher supply charges even though their overall usage charges would fall. This could act as a major impediment to the introduction of a single LRMC-based usage charge for all customers.

The Commission's consideration of these impacts is discussed further in Sections 3.3.4 and 3.3.5.

3.2.6 General equilibrium modelling of efficient water prices

Noting the potential impacts described above, the Commission has sought to model more fully the nature and incidence of those impacts. This has been done in two ways.

First, the Commission conducted a cost benefit analysis (**CBA**) taking into consideration only varying the water usage charge, with incomes and prices of all other products in the economy held fixed (a partial equilibrium analysis). The CBA modelled the consumption impact of adopting an efficient water usage charge (a variable charge), which is significantly lower than the current level of water tariffs.

However, the requirement to achieve a similar revenue outcome for SA Water means that there would be a large increase in the value of the fixed component (supply charge) of a residential customer's bill if low usage charges were implemented. It is important that any impact this might have also be modelled. The Commission therefore also used a general equilibrium model, which includes the entire economy, to enable broader economy effects to be captured, including the potential income effect of a higher supply charge.

This section reports on the results of modelling undertaken to assess the potential general equilibrium outcome of changing drinking water prices, with the modelling attempting to identify the impact on the efficiency or productiveness of the South Australian economy. Importantly, this analysis is designed to identify the net impact of reducing the water usage charge (recommended to be set at LRMC) and a corresponding increase in level of supply charge (in order to maintain the financial viability of SA Water).

The general equilibrium modelling was performed by the Centre of Policy Studies (**CoPS**) at Victoria University using its multi-regional dynamic CGE model, TERM. A copy of the CoPs report detailing the modelling results has been released with this paper.[71]

The following three scenarios were modelled:

- *Non-drought scenario* – identifies the welfare impacts of the Commission's LRMC pricing option (including corresponding increase in supply charge), without the requirement to run the desalination plant. This scenario is designed to isolate the impact of pricing at LRMC.
- *Scarcity pricing scenario* – building on the non-drought scenario to model the welfare impact of the ability to also introduce short-term price increases to deal with drought events.
- *Reduced fixed costs scenario* – building on the scarcity-pricing scenario to model the welfare impacts of maintaining the level of LRMC costs but reducing the amount of fixed costs by $310 million. This scenario is designed to identify the extent of the welfare effect were it possible to reduce the level of non-LRMC costs through efficiencies or some other means.

The results of the modelling for these scenarios are provided in Table 3.4.

Table 3.4: Welfare Gains

SCENARIO	WELFARE IMPACT - PER ANNUM
Non-drought	$25 million
Scarcity pricing	$31 million
Reduced fixed costs of $310 million	$120 million

[71] Glyn Wittwer, *Modelling the economic impacts of changing SA Water's pricing*, Centre of Policy Studies, Victoria University, June 2014; available at http://www.escosa.sa.gov.au/library/140711-WaterInquiry-ModellingEconomicImpactsChangingPricing-VicUni-ConsultantReport.pdf.

The results for the first two scenarios, based on the existing level of SA Water costs, show a positive welfare effect of around $30 million per annum. This supports the positive NPV associated with the Commission's CBA that provided an estimate of net benefits of around $40 million, which was based only on modelling the impact of a lower water usage charge.

The third scenario produces a higher positive welfare effect of around $120 million, which demonstrates the potential to achieve higher benefits for the South Australian economy should it be possible to reduce the level of non-LRMC costs. The reduction in fixed costs ($310 million) would represent a reduction of around 50 per cent on the current fixed component of revenues.

The Commission has included the third scenario to demonstrate that the most significant efficiency benefits are achieved through cost reductions, rather than by making prices more reflective of current costs. While the Commission's Inquiry must focus primarily on issues of price structure, the potential gains that could be made by reducing SA Water's total cost base and revenue requirement need to be recognised. The ongoing review of the prudence and efficiency of SA Water's costs is critical to promoting greater economic efficiency.

3.2.7 Implementation

The potential customer impacts from the reform of both usage and supply charges will require careful consideration by the Government, particularly from an equity perspective. The customer impact analysis contained in this report is intended to assist the Government with that task.

From a practical perspective, SA Water would need to modify its existing billing systems to enable capacity-based supply charges. As discussed earlier, PricewaterhouseCoopers has estimated that the implementation of the Commission's usage charge and supply charge recommendations will cost around $650,000 and take around 33 weeks to deliver. No legislative changes would be required.

3.3 Regional drinking water charges

Draft findings

7. ***Differentiating water usage charges by region would further enhance economic efficiency, albeit by only a small amount relative to applying a statewide LRMC-based usage charge.***
8. ***There is unlikely to be any net benefit in setting water supply charges on a regional basis based on existing fixed assets, although there may be benefits in allocating future fixed costs to regional customers to promote efficient investment decisions.***

Draft recommendations

8. ***Consideration should be given to regional usage charges based on the long-run marginal cost of each region, noting that the additional economic benefits are small.***

9. ***Drinking water supply charges should initially be set on a statewide basis. For all new investments in a particular region that are not reflected in the long-run marginal cost or other fixed charges, the supply charge for that region should reflect those investments. This would result in supply charges diverging across regions over time, as assets are added or removed from each region.***

3.3.1 Key reasons for recommendations

- The cost of supplying drinking water differs between regions of South Australia and prices should reflect those differences to promote economic efficiency.
- Relative to the option of setting a single, statewide usage charge using the best estimate of 62c/kL, applying regional LRMC-based usage charges would produce an additional net benefit to the community of around $2.3 million per annum or $38 million (net present value (**NPV**)) in the long run. This reflects the additional value of usage that would be encouraged in low water-cost regions, as well as the value to all South Australians of reduced water usage in regions where costs are relatively high.
- Supply charges may have an impact on consumers' decisions to connect or disconnect from SA Water's network. While the Commission recommends statewide pricing for existing assets, which represent sunk investments, economic efficiency is promoted by ensuring that consumers incur the costs of maintaining and replacing new assets required to supply water to them. Those assets and costs can vary between regions.

3.3.2 Summary of submissions

In response to the Issues Paper regarding alternative approaches to the current statewide water pricing policy, submissions were received from the following:

- Ceduna Council
- COTA
- DCSI
- Landlords Association
- Property Council
- SA Water
- Uniting Communities.

The full written submissions from these parties cover a range of issues and are available on the Commission's website.[72] No submissions received expressed support for regional-based

[72] Submissions received to the Issues Paper are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx.

drinking water prices, noting concerns on equity grounds. Submissions were in broad agreement that the essential nature of drinking water justifies the current statewide water pricing policy and that any departure would give rise to social inequality. In particular, the Council on the Ageing submitted that any discrepancy in water prices between regions would adversely affect the elderly because regional communities have greater proportions of older people than metropolitan Adelaide.[73]

3.3.3 Discussion

3.3.3.1 Regional usage charges

Different regions in South Australia are supplied with drinking water from different sources. The marginal cost of supplying each region will depend on each source and the costs of transport.

The Commission has received expert advice from Sapere on the differences in the LRMC of water supply across 12 South Australian regions. That advice, which is based on information provided by SA Water, provides LRMC estimates for each region that range between $0.37/kL and $2.00/kL. The estimated weighted average LRMC for the state is around $0.65/kL, which is close to the LRMC for Greater Adelaide of $0.62/kL.

The LRMC estimates are based on long-term projections of demand and investment requirements and, as with forecasts generally, are subject to uncertainty. However, the analysis demonstrates that localised demand and supply factors drive differences in the LRMC for each region and that a cost-reflective usage charge should also differ by region.

Regional usage charges provide a much smaller economic benefit than moving to a single LRMC-based usage charge (on a statewide basis). The additional net benefit of setting regional LRMC-based usage charges (above the benefit from statewide LRMC-based usage charges) is about $2.3 million per annum or $38 million (NPV) in the long run. This represents the costs to the community of retaining a statewide single usage price of 62c/kL, relative to implementing the regional usage prices set out in Table 3.5. Those costs comprise the inefficient amount of water usage that occurs in each region, because usage charges do not reflect the LRMC in each region. It also takes into account an estimate of the system costs incurred by SA Water in administering regional pricing. Details of this calculation are provided in Appendix 2.

3.3.3.2 Regional-based supply charges

Currently, all customers in a particular class pay a standard supply charge, regardless of the cost of supplying that customer's region. This means that some people are not incurring the true cost of supply, and their decisions about where to locate or whether to connect to SA Water's network may be distorted.

[73] The Council on the Ageing SA, *Submission to the 2013 Inquiry into Drinking Water and Sewerage Retail Services Pricing Reform*, 22 December 2013, page 5 of unnumbered document; available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx.

The fixed costs of supplying drinking water to different parts of the state can vary widely due both to historical investment decisions and factors including customer density per kilometre of pipeline.

The Commission has considered the option of regional supply charges that reflect the different fixed costs in each region. It recommends an approach whereby regional asset values are established for new and replacement infrastructure, not for existing infrastructure (assets). New infrastructure would be added to regional asset bases and, over time, the fixed supply charges for each region would diverge from a common starting point. This approach may deliver the following benefits:

- Ensuring that consumers incur all future operating, maintenance and replacement costs associated with their local network assets because their decisions to remain customers drive those costs. This is consistent with the principle of economic efficiency.
- Delivering pricing signals for new investment based on location – an important driver of economic efficiency. While augmentation charges will address the full incremental cost of any new connection infrastructure required, the supply charge will reinforce that price signal by recognising the ongoing fixed costs that SA Water incurs to maintain supply.

This approach does not apportion existing assets to regions; all past investments are treated on a statewide basis. As past investments have little bearing on future decision-making, there is little loss of efficiency in treating them that way.

There are practical difficulties in apportioning existing assets to different regions. SA Water's supply networks have grown over a long period of time under a regime of statewide pricing. If regional pricing had existed previously, it is quite possible that the networks would have been developed differently. For example, it may have been uneconomic to build networks to support remote townships if the costs had to be recovered from those townships. The recommended approach draws a "line in the sand" by spreading the existing fixed costs equally between regions, and focusing only on future costs.

The Commission's proposed approach will provide strong incentives to SA Water about the locational impacts of its future investments, which would be paid for by the communities that benefit from those investments. While this is consistent with the principle of economic efficiency, the Government has historically had a policy of providing either direct subsidies or cross-subsidies to regional areas and it will need to consider whether or not the economic benefits from greater cost reflectivity in regional prices outweighs the benefits of regional subsidies.

3.3.4 Costs and other implications

The movement towards more cost-reflective drinking water charges would involve the removal of cross-subsidies that have largely been borne by businesses and would have material financial impacts on most households. If prices were to be adjusted immediately, for example, the overall average impact on residential customers would be bill increases of

$100 per annum (with more significant impacts on concession customers). Recognising the long-term benefits of the proposals as well as these transitional impacts, the Commission has considered options for implementation that would ameliorate the financial impacts and allow an orderly transition over time, avoiding price shocks.

The magnitude of the financial impacts is driven largely by the extent to which usage charges are above cost-reflective levels. Whereas around 85 per cent of SA Water's total drinking water costs are fixed, only 28 per cent of its revenue is derived from fixed drinking water charges and around 68 per cent of its drinking water revenue comes from water usage charges. This highlights the challenge faced by the Government in moving to more economically efficient prices. While the majority of the economic efficiency benefits would come from lowering usage charges to the current best estimate of LRMC, the associated increase in fixed charges creates the greatest impact in terms of bill increases for most customers, particularly households and concession customers. There is, therefore, a direct trade-off between promoting greater economic efficiency and limiting bill increases for small customers.

Possible options for transitioning price reform are contained in Chapter 11. In summary, the Government could consider:

- a gradual transition to cost-reflective usage prices, which would smooth bill impacts over time but defer the achievement of economic efficiency benefits
- implementing some reforms ahead of others, e.g. removing property-based sewerage charging in the short-term while leaving other aspects of the exiting arrangement in place pending alternative implementation debates and models
- implementing cost-reflective usage charges for all customers as soon as possible while allocating a higher proportion of fixed costs to large customers to keep fixed costs for small customers as low as possible (with the potential move to more cost-reflective fixed charges over time). This approach could allow LRMC-based usage charges to be introduced, while managing bill impacts for households (at the expense of businesses)
- implementing price reform within customer groups, rather than between customer groups. This would preserve the current cross-subsidies between customer groups, but may allow for more cost-reflective pricing within a particular group (e.g. large customers). This option would not deliver any significant economic efficiency benefits, which rely largely on the unwinding of cross-subsidies from large users to small users.

The Government could also take ongoing action to facilitate more cost-reflective pricing while managing bill impacts by:

1. Ensuring that concessions and exemptions are well targeted and provide adequate financial assistance to those that require it.
2. Reviewing taxes and transfers more broadly, to ensure that fixed costs incurred by the Government are recovered in the most efficient manner.

3. Reducing SA Water's cost base further, e.g. through the Commission's reviews of SA Water's capital and operating expenditure and/or by reducing the value of SA Water's regulated asset base (**RAB**).

The Commission invites members of the community to comment on these and any other options that could help manage bill impacts while also achieving greater economic efficiency from more cost-reflective prices.

3.3.5 Customer bill impacts

The Commission has calculated the potential impacts on customer bills that would result from reducing usage charges to LRMC and setting supply charges based on the number and size of meter. The bill impacts have been calculated based on an assumption that consumption does not change. The bill change is therefore driven solely by price changes, not changes in demand.

Table 3.5 highlights the significant bill increases that many customers, including residential and concession holders, would face. They would be driven primarily by the unwinding of the cross-subsidising that currently occurs between large water users (e.g. industrial customers) and low users. The Commission recognises that moving to economically efficient prices would produce significant social and political challenges for the South Australian Government in the short-term and, if these prices were adopted, an essential complement to those prices would be the direct assistance to financial hardship customers impacted by bill increases.

Table 3.5: Bill impacts of combined water usage and supply charge changes

CUSTOMER TYPE[74]	METROPOLITAN[75]			REST OF STATE[76]		
	Increases greater than $50 p.a.	Decreases greater than $50 p.a.	Average bill change $ p.a.	Increases greater than $50 p.a.	Decreases greater than $50 p.a.	Average bill change $ p.a.
Residential	63%	30%	+$112.30	77%	18%	+$230.13
Industrial	44%	54%	-$1,007.82	56%	41%	-$699.46
Commercial	43%	54%	-$551.91	72%	25%	+$187.97
Concession[77]	79%	18%	+$219.20	85%	13%	+$274.71
Exempt[78]	41%	49%	-$211.18	61%	31%	+$35.95

3.3.6 Implementation

Regional drinking water charges would require SA Water to modify its billing systems. PricewaterhouseCoopers has estimated that the system changes needed to support regional pricing would cost SA Water around $870,000 and take 34 weeks to deliver.

The current policy of statewide pricing is set out in a direction from the Minister for Water and the River Murray to SA Water, pursuant to Section 6 of the *Public Corporations Act 1993*. To implement regional pricing a variation to the direction, or new direction, would be required.

[74] Excludes multiple metered, country lands, memorial gardens, swimming pools and other customers receiving individualised charges.

[75] Metropolitan is defined as Greater Adelaide (refer to the WIZ/WWAS areas in Appendix 9).

[76] Includes all LRMC regions, except Greater Adelaide, as they are outlined earlier in this Chapter and depicted in Appendix 9.

[77] A fixed concession of $195 pa has been applied to the water connection supply charge for concession customers. See Appendix 9 for more information.

[78] A fixed remission of $354 pa has been applied to the water connection supply charge for exempt customers. See Appendix 9 for more information.

4. SEWERAGE

The Terms of Reference for this Inquiry require the Commission to examine alternative approaches to charging for SA Water's sewerage retail services that may improve economic efficiency and/or water security:

> *(b) The Commission is to consider, in particular, the following matters:*
>
> *iv. alternative approaches to charging for drinking water and sewerage retail services which may improve economic efficiency and/or South Australia's water security, including analysis of the costs and benefits of such approaches for different customer classes …*
>
> *v. the impact of statewide pricing requirements on SA Water for drinking water and sewerage retail services in terms of economic efficiency, South Australia's water security, and costs and benefits for different customer classes.*

4.1 Sewerage charges

Draft findings

9. SA Water's sewerage costs are largely independent of sewage volumes and there is no economic basis for usage sewerage charges.

10. Capacity-based charging is the most cost-reflective way to set SA Water's sewerage charges.

Draft recommendations

10. Sewerage charges should be set to recover the prudent and efficient costs of maintaining and replacing all sewerage infrastructure and ongoing account management costs.

11. Sewerage charges should reflect the "capacity requirement" a customer places on the sewerage system, not the value of the property. The most appropriate reflection of capacity is the size of the sewerage connection.

12. Sewerage augmentation charges should be set to recover all efficient costs driven by developer requirements.

13. Sewerage connection charges should be set to recover efficient connection and account establishment costs, and disconnection charges should be set to recover efficient disconnection and account finalisation costs.

4.1.1 Key reasons for recommendation

- Economic efficiency is maximised when all decision-makers pay prices that reflect the costs of their decisions. Sewerage service customers should bear the true cost of being provided with those services.
- Currently, the prices charged for SA Water's sewerage services are based on the value of a person's property. This bears little relationship to the actual cost of providing the

service. As a result, property-based charges may not be efficient or reflect true costs and may be discouraging investment and competition.

- Property-based costs may also be distorting decisions about where to live, where to locate a business, and the level of capital improvement to be undertaken on a property.

4.1.2 Current approach

Charges for domestic sewerage services currently are based on the capital value of an SA Water customer's property, with valuations determined by the Valuer General each year.

SA Water calculates charges based on a percentage of the capital value of the property – the "rate in the dollar" – which differs for properties in metropolitan and non-metropolitan locations and for residential and non-residential customers. There is a minimum charge but SA Water has not been able to explain the rationale behind it.

SA Water's property-based charging practice has been justified in the past on the basis that it is a *"way of collecting money through a taxation base for what can be regarded as a system which provides general community benefit rather than immediate benefit user by user"*.[79]

Most Australian states and territories have moved away from property-based charging for water and sewerage services. Only South Australia and Western Australia still use this practice.[80]

Case studies 4.1 and 4.2 highlight some of the deficiencies with the current arrangements and the need for reform.

Case Study 4.1.

A family home in an inner Adelaide suburb, valued at **$500,000**, is supplied with both water and sewerage services by SA Water via a standard/typical 20mm domestic supply water meter.

The current annual sewerage charge is based on the property value, as determined by the Valuer General, and levied by SA Water at a level of 31.525 cents per $1,000 of property value per quarter (for 2013/14). The annual sewerage bill is, therefore, currently **$630.50**.

If the owner were to improve his/her property by building an additional room, and increasing its assessed value to **$600,000**, the annual sewerage bill would increase to **$756.60.**

[79] Industry Commission (1992) *Water Resources and Waste Water Disposal*, report No.26, 17 July 1992, p.2.46.

[80] In 2012 the Western Australian Economic Regulation Authority (**ERA**) recommended the removal of property-based charging for the Western Australian water provider – Water Corporation.

Clearly, it remains the same property with the same connection to the sewerage network, generating the same costs for SA Water. However the annual charge has increased by 20 per cent.

Under the recommended reforms, the property would receive a cost-reflective charge of **$507.00**, based on its estimated sewer capacity requirement.

Case study 4.2.

A 452m^2 office on Grenfell Street, Adelaide was available on 7 April 2013 for **$2.35 million**. This office has one bathroom and one kitchen, the requirements for which are serviced by a 20mm water meter.

Under the current mechanism for calculating sewerage rates, the owner of this property would be imposed with an annual fee for sewerage services of **$3,271.20**. Under the proposed reforms for capacity-based charging, this property would attract a charge based on its sewer capacity requirement, which would see its likely annual sewer bill fall to **$507.00**, a reduction of 85 per cent.

4.1.3 Summary of submissions

Submissions from the following parties raised specific issues regarding sewerage pricing:

- Alano Water
- Ceduna Council
- Conservation Council
- COTA
- DCSI
- DPTI
- DTF
- Hon. Sandra Kanck
- Property Council
- Richard Clark & Associates
- SA Water
- SCCA
- Uniting Communities
- Woolworths Limited.

Only SA Water and Uniting Communities specifically supported retaining the status quo, for social equity reasons.

The majority of these submissions supported changing the current property-based approach for charging for sewerage services. Of the alternatives presented, the most popular was a "consumption" based charge, linked to water use.

The full written submissions from these parties cover a range of issues and are available on the Commission's website.[81]

The Commission has taken account of the views of all of these parties in assessing the options for reform and in reaching its draft conclusions. As appropriate, the views of individual parties are stated throughout the remainder of this chapter.

4.1.4 Discussion

4.1.4.1 Property-based versus capacity-based charging

Property-based charging for sewerage services is considered by some as a "fair" way of sharing the costs of sewerage services. That is, it attempts to redistribute income from business to households, and from wealthy households to poor households.[82] However, there appears to be limited relationship between property value and household income.[83] Therefore, the current approach may not be efficiently targeting those it is aiming to assist.

The Commission notes, however, that some stakeholder submissions supported the continuation of this approach.

SA Water stated that the sewerage system benefits the community as a whole in terms of environmental and public health benefits, and that the costs should be shared across the community in a manner that is affordable. It considered that property-based charges were a valid basis for applying charges that take account of the ability to pay.

Uniting Communities stated that it believes that sewerage charges based on property values remain the best of the proposed options, stating that property value remains a good proxy for capacity to pay.[84]

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[81] Submissions received to the Issues Paper are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx.

[82] Industry Commission (1992), *Water Resources and Waste Water Disposal*, report No.26, 17 July 1992, C.278.

[83] For example, refer to Walker (2009) *The Independent review of Charging for Household Water and Sewerage Services – Final Report*, p.61, and Industry Commission (1992), *Water Resources and Waste Water Disposal*, report No.26, 17 July 1992, C.278.

[84] Uniting Communities submission, p.7, available at: http://www.escosa.sa.gov.au/library/140107-WaterPricingInquiry-IssuesPaperSubmission-UnitingCommunities.pdf.

It is the Commission's view that it should seek to maximise economic efficiency. It believes that social equity matters, to the extent that they are separate from economic matters, are best considered by the Government, which is best placed to address them.

An opposing view was presented in the submission of Woolworths Limited, which stated that linking charges to the improved capital value of property discourages investment within the State, and that charges should be based on the recovery of efficient costs, rather than the value of buildings and commercial operations.[85]

The Commission recognises that the current approach has the benefits of acceptance and familiarity in the community, and that maintaining it would avoid any costs associated with change (e.g. to information systems). However, this Inquiry is focusing on maximising economic efficiency, and that occurs when prices are based on the costs of the services provided.

Clearly, with the current approach, the prices charged are likely to bear little relation to the actual cost of providing sewerage services to a property. As a result, property-based charges may not be efficient or reflect true costs, and may be discouraging investment and stifling competition.[86]

The Commission has also recommended, as part of this Inquiry, that end users of water/sewerage services, rather than the owner of the land/premises (as currently occurs), should become SA Water's customer for those retail services.[87] This reform, which breaks the link of sewerage costs being considered as a land holding cost, further weakens the case for continuing with property-based charging.

There is no economic efficiency basis for setting sewerage connection charges based on property values.

As discussed further below, property-based costs may also distort decisions on where to live and the level of capital improvement to undertake on a property.

For the above reasons, the retention of the current property-based pricing arrangements is not supported.

Economic efficiency could be improved by setting SA Water's sewerage charge on a capacity basis, rather than a property-value basis. Property-based charging is not consistent with the objective of economic efficiency as there is no strong link between the value of a property and the costs imposed on the sewerage network.[88] A customer's initial capacity requirement should be recovered by appropriate augmentation charges. However, customers with large

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85 Woolworths Limited submission, p.1.

86 For example, refer to: http://tigger.uic.edu/cuppa/gci/publications/workingpaperseries/pdfs/Property%20Taxes.pdf.

87 Woolworths Limited submission, p.2.

88 A number of submissions commented that the current property−based arrangements adversely affect those who are "asset rich, cash poor" (DCSI submission, p.2)(Uniting Communities submission, p.7)(COTA submission, p.4; available at http://www.escosa.sa.gov.au/library/131224-WaterPricingInquiry-IssuesPaperSubmission-COTA%20SA.pdf.pdf) .

capacity requirements would be expected to incur proportionally higher fixed costs on the system for repairs, maintenance and eventual asset replacement.

The Property Council supported pricing reform to better reflect the actual cost and use of the sewerage service and promote economic efficiency.[89] COTA is also supportive of sewerage pricing that uses cost-reflective pricing as its starting point, however it seeks to ensure that social equity is preserved and, where appropriate, extended.[90]

Setting a cost-reflective sewerage price would increase economic efficiency, as it would provide customers with a signal to connect to SA Water's sewerage system where the benefits to them outweigh the costs of the connection. Likewise, it would encourage disconnection from the sewerage system where the costs of the connection are greater than the customer benefits. (Customers could, for example, choose to connect to alternative sewage treatment units, such as septic tanks.)

Property-based costs may distort decisions about where people live and the level of capital improvement they undertake on a property.[91] For example, such costs may encourage development and over-population in low property-value areas, thus encouraging urban sprawl. Property-based costs may also distort decisions about where businesses locate[92] and have been linked to deterring employment growth[93]. In its submission, Woolworths Limited stated that linking charges to capital values discourages investment.[94]

Cost-reflective pricing is necessary for efficient competition in the sewerage market. Property-based charging can result in 'cherry picking' of customers in high property-value areas and discourage competition in low property-value areas.

Prospective and existing sewerage customers can make various decisions that incur associated costs and have various cost-recovery pathways, as outlined in Appendix 1 (e.g. the decision to connect to sewerage infrastructure, which is best achieved through a one-off connection charge to the customer).

Because the capacity requirement of a sewerage customer is the main (customer-based) cost driver of sewerage services, charging based on that capacity is therefore the most cost-reflective way of setting prices.

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[89] Property Council submission, p.7, available at: http://www.escosa.sa.gov.au/library/131122-WaterPricingInquiry-IssuesPaperSubmission-PropertyCouncilOfAust.pdf.

[90] COTA submission, p.5.

[91] For example, refer to Johnson, E. and Walsh, R. (2009) "The effect of property taxes on location decisions – evidence from the market for vacation homes", *NBER Working Paper*, Cambridge MA, p.21., and Carlton D. (1981) "The spatial effects of a tax on housing and land", in *Regional Science and Urban Economics 11*, pp.509-527, and http://tigger.uic.edu/cuppa/gci/publications/workingpaperseries/pdfs/Property%20Taxes.pdf.

[92] For example, refer to Carlton D. (1981) "The spatial effects of a tax on housing and land", in *Regional Science and Urban Economics 11*, p.522.

[93] For example, refer to Luce, T. (1994) "Local taxes on public services, and the intrametropolitan location of firms and households" in *Public Finance Quarterly*, vol. 22 no. 2, pp.139-167.

[94] Woolworths submission, p.1.

In its submission, DTF stated that, assuming that the Commission determines that a fixed charge is the most appropriate basis for setting sewerage charges, there would be no *efficiency impact* from changing the way in which those fixed charges are allocated to customers.[95] That is, if it is decided that sewerage costs are, essentially, entirely fixed, then there can be no change in behaviour to improve economic efficiency. DTF added that the matter of allocating this fixed charge becomes an issue of *equity* and should be addressed by Government, not regulators.

An alternative view is that many of the benefits outlined above still exist under a fixed charge, and can therefore have an impact on efficiency. For example:

- Cost-reflective pricing is important to facilitate efficient investment and competition in the sewerage market.
- Cost-reflective pricing would encourage efficient disconnection and connection to SA Water's sewerage system, and this should be made possible under the recommendations relating to rating on abuttal.
- Property-based costs may distort peoples', or businesses', decisions about where to locate and the level of capital improvement to undertake on a property.[96] For example, in its submission to the Productivity Commission's study into the *costs of doing business in the retail trade industry*, Woolworths highlights (using the example in Table 4.1) that linking water charges to capital value acts as a disincentive to investment, and that this is ultimately detrimental to living standards and economic growth.[97]

Table 4.1: Diffferences in water and sewerage costs between South Australia and New South Wales – Woolworths example

CHARGE	MURRAY BRIDGE MARKETPLACE (SA)	BEGA MARKETPLACE (NSW)
Annual water supply charge	$51,000 p.a.	$3,000 p.a.
Annual sewerage charge	$126,000 p.a.	$15,000 p.a.

- The SCCA, in its submission to the Productivity Commission study, raised concerns about the efficiency of property-based charges, and stated the view that the practice in South

[95] DTF submission, p.2; available at http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-DTF.pdf.

[96] For example, refer to: http://tigger.uic.edu/cuppa/gci/publications/workingpaperseries/pdfs/Property%20Taxes.pdf.

[97] Woolworths Limited, Submission to the Productivity Commission Relative Costs of Doing Business in Australia: Retail Trade Industry, p.7; available at: http://www.pc.gov.au/__data/assets/pdf_file/0004/136453/sub013-retail-trade.pdf.

Australia of pricing according to the capital value of land, rather than actual water usage, is "absurd"[98].

This change to pricing should be reflected in the supply charge. A usage or usage component should not be applied.[99] There is minimal benefit from setting a usage sewerage charge, as sewerage flows do not significantly impact on SA Water's costs. Based on data provided by SA Water, in the short run, its sewerage costs are 97 per cent fixed, with only 3 per cent varying according to volumes received into its treatment plants.

Furthermore, the volume of sewage produced by customers has very little impact on the remaining 3 per cent of SA Water's costs for treatment and disposal. It is estimated that the variable cost of treating sewage is in the order of 5 to 10 cents per kL of billed water use. However, these variable costs are largely independent of consumer behaviour, because:

- approximately two-thirds of variable costs for sewerage flow are attributable to infiltration and stormwater; and
- with respect to the remaining one-third, it is considered that customers will have little ability to control how much discharge makes its way into the sewerage network, as most water that makes its way into the sewerage system is largely from non-discretionary water-using activities (e.g. water use for personal hygiene).[100]

Even in the long run, most of the costs of serving existing customers remain fixed because of the requirement for long-life fixed assets (e.g. sewerage pipe networks and wastewater treatment plants). Because of the inelastic characteristics of demand, long-run cost increases relating to capacity constraints are, generally, the result of population increases or a change in the nature of the customer base (e.g. more trade waste customers). The costs associated with this are best dealt with by fixed charges.

Were there to be any benefits of usage sewerage charging, the costs of implementing it are likely to be significant. Measurement of sewage volumes is not practical or cost effective, except in the case of large, trade waste customers.[101]

An alternative to direct metering of sewage is the use of water consumption as a measure of sewage volumes. That approach would also impose high costs because such regimes are also

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[98] SCCA Submission to the Productivity Commission Relative Costs of Doing Business in Australia: Retail Trade Industry, p.8, available at: http://www.pc.gov.au/__data/assets/pdf_file/0020/136460/sub017-retail-trade.pdf.

[99] This is consistent with the Productivity Commission's *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011*, findings (refer p.143).

[100] This view is shared by the Productivity Commission; refer to: http://pc.gov.au/__data/assets/pdf_file/0017/113192/urban-water-volume1.pdf, p.143.

[101] See, for example, the Productivity Commission *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011*, p.142 and the Essential Services Commission of SA at: http://www.escosa.sa.gov.au/library/101031-PotableWaterSeweragePricingProcessesInquiry_2010-11-FinalReport.pdf, p.59.

complex and may be confusing. (This view is shared by the Essential Services Commission (**ESC**) Vic[102] and Alano Water.[103])

In addition, it is likely that water consumption is, in many cases, not a good measure of sewage flows. This is because:

- water consumption may include water used outdoors that does not enter the sewerage system and this varies considerably between individual customers. This point was raised by SA Water.[104]
- sewage may enter the network from a source other than SA Water's drinking water network (e.g. plumbed rainwater tanks).[105] This point was also raised by SA Water.[106]

The capacity requirements of sewerage customers impact the cost of providing sewerage services. In particular, sewerage networks are designed to provide capacity and it is, therefore, appropriate that sewerage customers contribute towards the cost of providing and maintaining infrastructure based on their connection capacity. This is most easily measured using the sewerage connection diameter, which, for around 97 per cent of customers, is 100mm.

Nearly all residential customers would receive the same sewerage bill under this approach, given that they place the same capacity requirement on the sewerage network. Large sewerage customers requesting a connection up to 375mm would pay a much higher amount, reflecting their greater capacity demand on the network. This approach is simple, easy to implement and meets the principle of cost-reflective pricing.

The Commission therefore recommends fixed sewerage charges only, based on capacity.

4.1.4.2 Setting the capacity-based charges

SA Water's data linking customers to the size of their sewerage connection is currently of poor quality. The billing system review has estimated that it could cost about $700,000 to include sewerage connection information in the SA Water billing system, and the process could take up to seven months.

Water meter size information is currently linked to customer accounts. The billing review has estimated that changes based on using water meter size as a proxy would cost around $550,000 and take up to six months to implement. Given the similar cost and timeframe to implement both of these alternatives, the Commission recommends that SA Water implement sewerage connection size as the basis of charging.

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[102] Refer to http://www.esc.vic.gov.au/getattachment/b1e2e093-1401-42eb-90d9-8cff7c760655/Executive-summary-(1).pdf, pp. 191-195.

[103] Alano Water submission, p.2; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-AlanoWater.pdf.

[104] SA Water submission, p.17.

[105] Productivity Commission, *Australia's urban water sector, inquiry report, Volume 1, No.55, 31 August 2011*, p.142.

[106] SA Water submission, p17.

As SA Water does not currently have data linking sewerage connection diameters to customer accounts, the Commission has, for the purposes of estimating sewerage charges, used water meter size as a proxy for sewerage capacity requirement.

Based on an extract from its billing system, SA Water provided the Commission with the following information on the number of sewerage connections at each water meter size (Table 4.2).

Table 4.2: Water meter volumes by size

WATER METER SIZE (MM)	NUMBER OF SEWERAGE CONNECTIONS
15	3,257
20	591,181
25	23,961
32	9,034
40	6,812
50	5,372
80	350
100	231
150	87
200	3
300	1

SA Water was also able to extract the following information on sewerage connection sizes from its asset information systems (Table 4.3).

Table 4.3: Sewerage connections by size

SEWERAGE CONNECTION SIZE (MM)	100	150	225	300	375
Number of Sewerage Connections	630,000	21,000	85	10	5

By analysing these two sets of data and taking account of the potential capacity requirements on the sewerage system of the different connections sizes, the Commission has produced a set of indicative sewerage charges by water meter size (Table 4.4).

In determining the impact of the sewerage pricing reforms to customers, the Commission has assumed that SA Water will recover the same amount of revenue as it currently earns from its customers (less CSO's), so that it can pay its costs, including fixed costs. This amount spread across a higher number of connections (approx. 640,000) compared to land assessments (approx. 590,000) would, on average, reduce the charge payable at each land assessment which has only one connection.

Table 4.4: Estimated sewerage fixed charge by water meter size 2013/14 (statewide) [107]

METER SIZE (MM)	<=25	32 TO 100	150	200	300
Annual supply charge	$507	$1,140	$2,564	$4,559	$7,123

These indicative charges have been used for the purposes of assessing the customer bill impacts of this proposed reform, as discussed in Chapter 10.

4.1.5 Costs and other implications

To implement billing based on sewerage connection size, SA Water would need to map existing sewerage connection asset information to sewerage customer accounts and maintain that information. This is estimated to cost approximately $700,000 and take up to seven months to implement.

There may be instances where it is found that a customer has a larger sewerage connection than they require. For example, there may be situations where a large sewerage connection was required in the past (such as for a multi-dwelling property), but property changes (including subdivisions) mean that requirement no longer exists. In these situations, customers should be able to request SA Water to "down size" the connection, for a fee. If, for any reason that does not directly benefit the customer, there is a requirement for a customer to have a larger sewerage connection, (such as for "future proofing" the network), there should be some process for compensation to ensure they do not pay more than their capacity requirement.

4.1.6 Customer bill impacts

Moving from property-based to connection based sewerage charges on average would reduce the bills of those with higher property values and increase the bills of those with lower property values. Charging according to connection size also removes the current cross-subsidising (explained further in Chapter 10) between industrial and commercial, and residential customers. This would result in residential customers, on average, seeing an

[107] SA Water provided five sizes of sewerage connections, and 11 sizes of water meters. For the purposes of assessing customer impacts, the Commission has grouped water meter sizes according to those in this table, based on the profile of SA Water's customers.

increase. However, as described above at 4.1.4.2, the move to connection based charging would reduce the average charge to land assessments with a single connection.

The recommendations that follow for trade waste charging (see Chapter 5) also impact the bill changes that would be experienced by all customers receiving a sewerage service. The Commission has, therefore, outlined its considerations of the customer impacts of sewerage pricing reform as a whole at Section 5.1.6.

4.1.7 Other options

In arriving at the recommendations proposed in this report, the Commission examined other options for charging for sewerage services, in line with those presented in the Commission's Issues Papers.[108] These included:

- retaining the current property-value based arrangements (status quo)
- pricing according to a fixed charge (flat rate)
- pricing according to an estimated amount of sewerage discharged into the network (consumption-based charge)
- pricing according to a combination of consumption-based (variable) and fixed charging.

These options are not supported at this time, as they produce lower levels of benefit than the option discussed in Section 4.1.4.2 above.

Retaining the current property-value based arrangement is not supported on the basis that it is not cost-reflective and leads to inefficient customer decisions on investment (such as connecting or disconnecting to the sewerage network) and location.

Pricing according to a fixed charge (flat rate) is not supported on the basis that, while it is partially cost-reflective, it does not take account of the differing levels of system capacity required to serve different customers.

Pricing according to an estimated amount of sewerage discharged into the network (consumption-based charge) is not supported on the basis that:

- the volume of water supplied is not always a good indicator of the volume of sewage produced, and the available methods of correcting for this (i.e. using periodically reviewed, industry specific, discharge factors with an associated review and exemption regime) is administratively complex and potentially confusing for customers
- a charge based on water use will lead to inefficiencies in water use decisions

[108] ESCOSA, *Sewerage, Trade Waste and Property-Based Charging Issues Paper*; available at http://www.escosa.sa.gov.au/library/130829-WaterPricingInquiry-IssuesPaper_3-SewerageTrade-WastePropertyBasedCharging_0.pdf.

- it unlikely that, given the very small variable cost component of SA Water's sewerage services (around 3 per cent), a variable cost element would drive customer behaviour. Therefore, the costs of this option would almost certainly outweigh any benefits.

Pricing according to a combination of consumption-based (variable) and fixed charging is not supported on the basis of the reasons provided above. Furthermore, this option would be likely to be even more administratively complex and confusing for customers.

Pricing according to the level of occupancy or, for example, the number of bathrooms/pedestals, is not supported. This is because no database of such information exists, and the establishment and ongoing maintenance of such a database has the potential to be both expensive and administratively complex. It would also be open to the potential for "gaming", with customers incentivised to under-declare the number of occupants or bathrooms/pedestals on their property to minimise their sewerage bill.

Further discussion on these other options is included in Appendix 3.

4.1.8 Implementation

This recommendation would not require any immediate changes to legislation.

As shown above, dispensing with property-based charging will have some significant distributional effects. However, despite these effects, other water authorities have been able to accomplish this reform in a relatively short time.[109]

The Department of Planning, Transport and Infrastructure's submission stated that any move away from using capital values would require legislative change to the *Valuation of Land Act 1971*, and that the Valuer General has no discretion in charging SA Water (via the Minister) the current statutory fee. Its view is that the timeframe for any change to legislation should be several years.[110]

4.2 Regional sewerage charges

Draft finding

11. There is unlikely to be any net benefit in setting sewerage charges on a regional basis utilising the value of existing fixed assets, although there may be benefits in allocating future sewerage costs on a regional basis to promote efficient investment decisions.

[109] Industry Commission (1992) *Water Resources and Waste Water Disposal, report No.26, 17 July 1992*, p.6.98.
[110] DPTI submission, p.1; available at http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-DPTI.pdf.

Draft recommendation

14. Sewerage charges should initially be set on a statewide basis. Where subsequent investments in a particular region are not reflected in other fixed charges, the sewerage charge for that region should be set to reflect those investments. This would result in sewerage charges diverging across regions over time, as assets are added or removed from each region.

4.2.1 Key reasons for recommendation

The Commission has used the following guiding principles in making its recommendations:

- Economic efficiency is maximised when all decision-makers pay prices that reflect the costs of their decisions. In the case of sewerage services, customers should incur the true cost of being provided with those services.
- The cost of supplying sewerage services in South Australia differs between regions and cost-reflective pricing should reflect those differences to promote economic efficiency.
- Supply charges may have an impact on consumers' decisions to connect or disconnect. Economic efficiency is promoted when consumers incur the costs of maintaining and replacing the assets required to supply them. Those assets and costs can vary between regions.

4.2.2 Current approach

SA Water has 24 distinct catchment regions for collecting and treating sewage. It refers to them as "wastewater asset systems" (refer to Appendix 9).

The pricing methodology for sewerage customers in these regions is exactly the same (i.e. property-based charging). However, each of these regions has a discrete "cost profile". As a result, fixed costs per customer per year range considerably (there is a ten-fold difference between some regions). This currently results in a cross-subsidy between the regions.

4.2.3 Discussion

The cost of supplying sewerage services in South Australia differs between regions, and economic efficiency can be enhanced by setting sewerage prices with reference to regional costs. However, as discussed in Chapter 3, the efficiency benefits are likely to be small.

Consistent with its approach of considering drinking water supply charges, the Commission has distinguished between the recovery of the fixed sewerage costs already incurred and those that will be incurred in the future. On the basis that past investments do not significantly impact future decision making, there is little efficiency gain in recovering existing (and therefore sunk) investments from regional customers. Past investments have occurred under a statewide pricing regime and some of those investments may not have occurred if those costs had only been recovered from customers in a particular region. Case

study 4.3 is an example of the cost impact that one significant sewerage investment decision could make on a group of customers if it was recovered under regional pricing. In this example, the costs of the decision to upgrade the plant may have not been supported by consumers. (For example, some of the customers may not have been willing to pay for the increased visual amenity of the nearby creek.) It is therefore not appropriate for those customers to now be required to pay for those costs.

Case Study 4.3: Bird in Hand Wastewater Treatment Plant (WWTP)

The Bird in Hand WWTP is located near Woodside, approximately 35 km east of Adelaide. The plant treats sewerage from Lobethal, Woodside and Inverbrackie. It was originally an anaerobic and aerated lagoon plant, commissioned in 1965.

The plant was upgraded to an activated sludge plant in late 2011. The primary aim of the upgrade was to improve the quality of treated wastewater to a standard that would minimise impacts on the nearby creek aquatic environment.[111] Other benefits identified by SA Water were:

- to improve the visual amenity of the nearby creek
- to expand the reuse of treated wastewater through increased usage for irrigation
- to support economic growth in the region through increased capacity to provide sustainable wastewater treatment services to the catchment.[112]

The plant has a capacity of 2.5 ML per day. The upgrade cost approximately $60 million[113], and the plant now provides treatment services for about 830 SA Water connections[114] (around $72,000 per connection).

However, there is a stronger argument for treating all *future* costs on a regional basis, to ensure that new investment decisions take into account the beneficiaries of those investments and their preparedness to pay for them.

Consistent with its approach to regional drinking water supply charges, sewerage charges would initially be set on a statewide basis but be allowed to diverge between regions as new investments were made. Charges levied on developers would provide a strong locational signal, assuming those charges reflected the costs of providing sewerage infrastructure in the region in question.

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[111] Refer to "Public Works Committee - 367th Report - Bird in Hand Wastewater Treatment Plant Upgrade", p.12; available at: http://www.parliament.sa.gov.au/HOUSEOFASSEMBLY/BUSINESSOFTHEASSEMBLY/RECORDSANDPAPERS/TABLEDPAPERSANDPETITIONS/Pages/TabledPapersandPetitions.aspx?TPDocName=llgowyxi&TPSelectedView=1&TPProperties=P&TPParliamentSession=52%2C1&tpso=p&tpsd=1, p.12.

[112] Refer to "Public Works Committee - 367th Report - Bird in Hand Wastewater Treatment Plant Upgrade", p.12.

[113] SA Water, *Bird in Hand Wastewater Treatment Upgrade*; available at: http://www.sawater.com.au/sawater/whatsnew/majorprojects/birdinhand.htm.

[114] Based on information provided to the Commission, by SA Water, as a part of this Inquiry.

However, those charges would only recover the cost of providing new infrastructure. The ongoing cost of maintaining and replacing existing infrastructure should be borne by the customers who benefit from that infrastructure.

4.2.4 Costs and other implications

This recommendation would not require any immediate changes to legislation.

The costs associated with this recommendation are limited to the SA Water billing system changes to allow for regional pricing (see Chapter 3, Section 3.3). The SA Water billing system review estimated those costs at approximately $870,000.

The suite of sewerage recommendations would lead to an unwinding of the cross-subsidies that currently exist between consumer groups. Table 4.5 summarises the cross-subsidies resulting from current prices, based on a comparison of current revenues to the revenues that would result from the recommended sewerage price reforms. The table shows that residential customers are currently being subsidised by all other customers by around 8% of total revenue (approximately $30 million per annum).

While it is common for cross-subsidies to be built into utility prices for social policy reasons, economically efficient prices would not contain cross-subsidies and would ensure that all customers face prices that reflect the efficient cost of supply.

Table 4.5: Cross-subsidies resulting from current sewerage prices

CUSTOMER TYPE	% OF ALL SA WATER CUSTOMERS	CURRENT CONTRIBUTION TO TOTAL SEWERAGE REVENUE	CONTRIBUTION IF PRICES WERE COST-REFLECTIVE	DIFFERENCE
Residential	95%	80%	88%	+8%
Commercial	4%	12%	4%	-7%
Non-residential	2%	7%	3%	-4%
Trade Waste[115]	0%[116]	1%	4%	+3%
Total		100%	100%	0%

4.2.5 Customer bill impacts

No additional customer bill impacts would result from the Commission's recommendation on regional sewerage charges, given that it recommends a continuation of statewide pricing

[115] Trade Waste customers pay an additional usage charge because of the nature of the sewage they put into the system.

[116] There are around 100 metered trade waste customers.

in the short-term. It is not possible to forecast the future impacts on bills that would result from a gradual movement towards regional pricing. The Commission can only factor in the immediate system costs that SA Water would need to incur, and these are estimated to be around $1.30 per customer in the first year of implementation.

4.2.6 Other options

In arriving at the recommendations proposed in this report, the Commission examined another option of charging for sewerage services at a regional level. As largely explained in Section 4.2 (regional water), the Commission does not support this option, mainly because past investments have little bearing on future decision-making and, therefore, there would be little efficiency gain in moving to sewerage charges based on location and existing assets.

The SA Water billing system review has estimated that it may take up to eight months for its billing systems to be modified to accommodate this recommendation. However, its implementation should be considered in conjunction with the other sewerage recommendation, which is to move away from property-based charging.

5. TRADE WASTE

Trade waste services are a type of retail sewerage service and, therefore, alternative approaches to charging for these services are within the Terms of Reference for this Inquiry (refer to the beginning of Chapter 4 for the relevant Terms of Reference clauses).

5.1 Trade waste charges

Draft finding

12. Unlike other sewerage customers, there is a usage cost imposed by trade waste customers and long-run marginal cost -based charging is the most economically efficient way to set trade waste charges.

Draft recommendations

15. Trade waste charges should continue to be based on volume and load, set with reference to long-run marginal cost.

16. SA Water should revisit its "flow" trade waste long-run marginal cost estimate for Bolivar, which is set too high.

17. All of SA Water's remaining trade waste long-run marginal cost estimates for non-flow parameters should be independently reviewed before being implemented.

5.1.1 Key reasons for recommendation

- Economic efficiency is maximised when all decision-makers pay prices that reflect the costs of their decisions. In the case of trade waste services, customers should incur the true cost of being provided with those services.
- LRMC-based pricing for trade waste services sends efficient price signals, promotes economic efficiency and is the most appropriate pricing mechanism where a cost is associated with levels of usage or disposal.
- As noted by SA Water, the current prices for trade waste parameters are set well below LRMC estimates, which indicates that full-cost recovery from trade waste customers is not being achieved and is resulting in other sewerage customers subsidising trade waste customers (by around $14 per sewerage customer). The presence of cross-subsidies and the lack of full-cost recovery are inconsistent with economic efficiency.
- SA Water's new proposed LRMC estimates for at least one trade waste parameter (flow), to be implemented gradually from July 2014, appears to be set too high. If this LRMC estimate were adopted, this would see the opposite effect from that discussed above, i.e. an *over-recovery* of costs from trade waste customers, leading to those customers subsidising sewerage customers (by approximately $5 million per year, or $52,600 per trade waste customer).

- The adoption of LRMC estimates for trade waste would address these issues. However, given the large impact on some customers through LRMC pricing, and given that Sapere's review of the flow parameter recommended a substantially lower LRMC price than SA Water's modelling, the Commission recommends that all LRMC estimates should be independently reviewed before being implemented.

5.1.2 Current approach

SA Water collects and treats trade waste through its sewerage system.[117] The vast majority of trade waste customers discharge only small volumes and are not charged on the basis of particular waste parameters.

Trade waste charges are additional to sewerage charges[118] and comprise application, audit and related fees and, for customers with load above a certain threshold, a fee based on the metered volume and type of pollutants discharged into the sewerage network. These pollutants include Nitrogen, measured as Total Kjeldahl Nitrogen (**TKN**), Biological Oxygen Demand (**BOD**), Total Phosphorus (**TP**), Suspended Solids (**SS**), Potassium (**K**) and Total Dissolved Solids (**TDS**).

The larger volume and load-based (**VLB**) trade waste customers (approximately 100 out of a total of 9000 trade waste customers) have samples taken from their sewage discharge on a regular basis. The quantity of the chargeable trade waste components is determined by multiplying their concentration by the volume of flow, as metered. Some VLB customers do not have sewage meters and their sewage flow is estimated in proportion to their water meter readings, according to an agreed formula.

VLB customers receive a remission on their sewerage rates[119]which, SA Water has stated, is applied in recognition of the fact that some of the cost of accepting and treating discharges has been met through the existing sewer rating arrangements.

This remission is calculated as the lower of one-third of the applicable sewerage rate, or half of the VLB charge. Regardless of whether or not the remission is calculated based on the sewerage rate or VLB charge, it is applied as a reduction against the VLB charge.

The remainder of SA Water's trade waste customers are not charged on the basis of particular trade waste parameters, but pay application and audit fees, and must comply with the conditions of their trade waste permits. A common requirement for small customers (e.g. restaurants) is the installation and maintenance of grease traps to prevent such material entering the sewer. Compliance audits are used to check, among other things, that such routine maintenance has been performed.

A schedule of all SA Water trade waste fees and charges can be found in Appendix 4.

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[117] SA Water classifies trade waste as "*sewage, and substances contained within it, arising from any industrial, business, trade or manufacturing activity, which is discharged from a property's internal sewer to SA Water's sewerage system*"

[118] That is, a trade waste customer is also a sewerage customer (and therefore pays for both services).

[119] Calculated as the lower of one-third of the applicable sewerage rate, or half of the VLB charge

The largest VLB customers discharge a disproportionately high quantity of trade waste. For example, between April-June 2013, the top five dischargers of BOD accounted for 44 per cent of the top 100 customers' total BOD, and the top five dischargers of nitrogen made up 58 per cent of all the nitrogen discharged by the top 100 customers.[120]

The majority of the trade waste volume (in the order of 97 per cent) is received at the Bolivar sewerage treatment plant.

SA Water has proposed new estimates for its trade waste parameters, based on LRMC and following a study in 2012/13. As the new estimates will result in significant price rises for trade waste customers, SA Water intends to gradually implement these from 1 July 2014.

5.1.3 Summary of submissions

The Commission received submissions relating to SA Water's trade waste services from:

- Business SA
- Conservation Council
- Property Council of Australia.

Both Business SA and the Property Council supported reforming the current trade waste pricing arrangements, stating support for cost-reflective pricing. The Conservation Council supported the current regime, on the basis that it is "targeted towards risks and opportunities associated with discharging various wastewater streams to the sewer network".[121]

The full written submissions from these parties cover a range of issues and are available on the Commission's website.[122] In assessing the options for reform and in reaching its draft conclusions, the Commission has taken account of all of the views expressed in these submissions.

5.1.4 Discussion

LRMC-based pricing sends efficient price signals and promotes economic efficiency. It is therefore the most appropriate pricing mechanism where there is a cost associated with levels of usage or disposal.

For example, a large trade waste customer's discharge is potentially expensive for SA Water to treat and dispose of and may bring forward the need for infrastructure augmentation. Augmentation of sewerage infrastructure can be expensive and, as far as possible, should be avoided or postponed through the LRMC price signal.

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[120] Calculated from information provided to the Commission by SA Water

[121] Conservation Council submission, p.6.

[122] Submissions received to the Issues Paper are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx

Cost-reflective pricing with reference to LRMC removes an inefficient subsidy to industries that may not be paying for their share of trade waste costs.

The Property Council supported moving to a charging model that better reflects actual costs and demand for trade waste services.[123] The views expressed by the Property Council are consistent with the efficient cost-reflective pricing principles proposed by the Commission.

In its submission, Business SA said that it was concerned about uncertainty over trade waste costs[124] and the likely future cost increases for trade waste, which "will add to the already high cost of doing business in South Australia".[125] Business SA stated it was concerned that, over time, the costs of wastewater treatment "have increasingly been shifted from Government to business". [126]

Business SA also stated that it was keen to see greater incentives for businesses that invest in their own treatment facilities.[127] It further noted that it is sometimes cheaper for a business to use more water as this ensures they meet their trade waste concentration limits and sees this as being at odds with the need to encourage efficient usage of water.[128]

In response to Business SA's submission, the Commission recognises that although cost-reflective pricing is likely to add to some trade waste costs, it is economically efficient that those who incur the costs should be responsible for paying them. This means that appropriate price signals are sent and appropriate behavioural or infrastructure changes are made.

Cost-reflective pricing principles are being implemented across Australia, so South Australia would not be at a competitive disadvantage by adopting them. It is true that the environmental standards required to discharge into the Gulf St Vincent requires a higher level of treatment, and it therefore costs more to deal with sewage here than in some other jurisdictions such as Sydney. However, these costs must be met by the relevant dischargers. If it is cheaper to use additional water to deal with waste concentrations, so long as the water and trade waste charges are efficiently set, that is an appropriate outcome.

The Conservation Council said it supported the continuation of the current approach.[129] However, it wanted a degree of flexibility to look at opportunities that benefit recycling and management of wastewater[130] although no specific detail was provided on this matter.

The Commission engaged Sapere to assist in determining an appropriate methodology for pricing SA Water's trade waste services. In summary, Sapere concluded that the broad approach adopted by SA Water to estimate LRMC for the other trade waste pollutants (measured by load) appears reasonable.

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[123] Property Council submission, p.7.
[124] Business SA submission, p.2; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-BusinessSA.pdf.
[125] Business SA submission, p.3.
[126] Business SA submission, p.3.
[127] Business SA submission, p.3.
[128] Business SA submission, p.3.
[129] Conservation Council submission, p.6.
[130] Conservation Council submission, p.6.

However, Sapere found that:

- the current charge for one trade waste parameter (flow) is currently priced at $0.151 per kL, although it should be around $0.40 per kL. This difference is attributed to SA Water not correctly accounting for infiltration flows in its LRMC estimates, leading it to overestimate costs attributable to trade waste customers. This is explained further below.
- the methodology of apportioning costs between trade waste pollutants does not accurately estimate the marginal impact of each pollutant. This may not be a material issue, given the uncertainty in forecasting future demand.

The Commission supports the continuation of LRMC-based trade waste charges as this is consistent with the principles of economic efficiency.

5.1.4.1 Usage charges

Unlike most sewerage charges, volumes of trade waste can be measured and usage-based pricing is practical. The quantities and composition of trade waste can be sufficient to disturb the sewage treatment process, which is designed to accept domestic-strength waste. It is therefore appropriate that LRMC-based pricing be used to send efficient price signals to users.

While consideration has been given to the option of SRMC-based pricing, it is not recommended because of its inherent volatility. Although it may provide a short-term pricing signal, in practice many trade waste-generating processes (e.g. manufacturing) and systems are inflexible in the short term, and are unable to respond to a price signal.

The marginal usage costs of managing trade waste relate to the cost of processing peak flows at the wastewater treatment plant. However, peak volume received at a plant is greater than the volume discharged by customers, mainly due to infiltration into the network. Based on estimates provided by SA Water, the level of infiltration is high. As a result, during peak flow events at Bolivar (driven largely by stormwater infiltration), flows over a 24-hour period increase by up to 2.7 times the normal flow.

5.1.4.2 Fixed charges

While there are fixed components to a trade waste customer's total charges (e.g. audit and sewerage service fees), a fixed charge for large trade waste customers is not considered the most efficient approach. This is because of the disproportionately large amount of trade waste that can be generated, and the costs of dealing with it. It is viable to identify the largest customers, meter their trade waste, and charge accordingly – where the pricing signal can be implemented as one means of controlling the quantity and strength of waste discharged. This approach is generally consistent in the water industry across Australia.

SA Water's current charges and its new LRMC estimates for trade waste flow and other pollutants are presented in Table 5.1.

Table 5.1: SA Water's LRMC estimates for trade waste flow and pollutants (ex. GST)

PARAMETER	CURRENT CHARGE RATE 2014/15	NEW SA WATER LRMC ESTIMATES	% OF LRMC ESTIMATE DUE TO CAPITAL AUGMENTATION
Flow	$0.156/kL	$1.33/kL	97%
BOD	$0.256/kg to $0.386/kg	$0.74/kg	98%
SS	$0.227/kg to $0.328/kg	$0.82/kg	95%
TDS	$0.129/kg	$1.37/kg	43%
TKN	$0.400/kg	$2.91/kg	58%
TP	$1.946/kg	$12.05/kg	87%

5.1.5 Costs and other implications

5.1.5.1 Current SA Water trade waste LRMC

SA Water advised the Commission, as a part of this Inquiry, that the total costs attributable to trade waste VLB customers is $9.84 million (for 2012/13), while the VLB revenue received is $3.513 million per annum (i.e. overall 36 per cent of costs are recovered). For some trade waste parameters, the level of cost recovery is even lower (e.g. TDS charges only cover 9 per cent of LRMC, see Table 5.2). This implies a revenue under recovery of $6.327 million per annum and a cross subsidy from general sewerage customers of approximately $10 per sewerage customer.[131]

The Commission has undertaken its own analysis and agrees that SA Water's current trade waste charges, compared with LRMC, are set too low. This is preventing full-cost recovery from trade waste customers and is resulting in other sewerage customers subsidising them by around $14 per sewerage customer.

[131] Using a forecast (2013/14) of sewerage customer numbers of approximately 630,000.

5.1.5.2 Proposed SA Water trade waste LRMC

SA Water has stated that, from July 2014, it intends to move towards full cost recovery for trade waste services and will increase the price of each trade waste parameter by the Consumer Price Index between 2014 and 2017 (which means there will be no real price increases). Thereafter, it will continue to move towards LRMC.[132]

The Commission has not undertaken a detailed review of the LRMC of all trade waste parameters for this Inquiry. However, its view is that, where full-cost recovery is not being achieved for a particular service, some cross-subsidies will exist. Therefore, full-cost recovery should be implemented as soon as possible.

Table 5.2: Comparison of SA Water's LRMC estimates with current trade waste charges

PARAMETER	CURRENT CHARGE RATE	SA WATER NEW LRMC ESTIMATE	% OF LRMC CURRENTLY RECOVERED
Flow	$0.156/kL	$1.33/kL	12%
BOD	$0.256/kg to $0.386/kg	$0.74/kg	35 to 52%
SS	$0.227/kg to 0.328/kg	$0.82/kg	28 to 40%
TDS	$0.129/kg	$1.37/kg	9%
TKN	$0.400/kg	$2.91/kg	14%
TP	$1.946/kg	$12.05/kg	16%

5.1.5.3 Which trade waste LRMC should be used?

The Commission has examined the usage cost attributable to trade waste VLB customers. Preliminary analysis indicates that SA Water is likely to have significantly overestimated (by around two-thirds) the usage cost (i.e. flow) attributable to these customers. This suggests that SA Water may not be under-recovering its trade waste costs relating to flow at the level it thinks it is.

An adjustment to SA Water's estimated LRMC attributable to trade waste VLB customers should be considered. This is because SA Water's LRMC estimate is based on the cost associated with Peak Wet Weather Flows (**PWWF**), which is greater than the cost associated with flows originating from trade waste customers. The cost of PWWF will be driven largely

[132] Fact sheet – frequently asked questions – Trade Waste Pricing for Volume and Load Based (VLB) customers.

by stormwater infiltration, not the amount of waste produced by trade waste customers. On the basis that trade waste prices should deliver a signal to trade waste customers about the cost of their decisions to discharge into SA Water's sewerage system, including the cost of managing PWWF (which is independent of those decisions) does not promote economic efficiency. Sapere estimates that SA Water's LRMC of sewage volume should be around $0.40 per kL of sewage produced, rather than SA Water's estimate of $1.33/kL.

The Commission proposes that alterations be made to the methodology for calculating the LRMC of flow, to account for infiltration flows in LRMC estimates. Consequently, in calculating the impact on customers from the proposed adoption of LRMC for trade waste, the Commission has used Sapere's flow LRMC of $0.40/kL rather than SA Water's proposed LRMC estimate of $1.33/kL. (In comparison, the 2013/14 charge for flow in trade waste was $0.151/kL).

5.1.6 Customer bill impacts

In adopting this recommendation, the current cross-subsidy between sewerage and trade waste customers will cease, resulting in a decrease in a typical sewerage customer's bill of approximately $14 per year.

VLB Trade waste customers' bills will rise to compensate this, by on average $90,000 per year, although this will vary considerably between customers according to their level, and type, of discharge. For example, initial analysis by the Commission indicates that for the largest 100 VLB customers, trade waste bills will increase, on average, by 434 per cent. Revenue for the TDS component of trade waste would also rise, and would be the largest increase of the trade waste parameters (1,087 per cent). The largest TDS discharger would see this component of its trade waste bill increasing by approximately $1.2 million per annum. Given the extent of the impact, the Commission recommends that the remaining non-flow parameters of SA Water's LRMC estimates be scrutinised independently prior to implementation.

However, assuming SA Water's proposed LRMC for flow was to be introduced, these cost impacts would look very different – on average, the top 100 VLB Trade waste bills would increase by approximately $140,000 per annum.

The estimated customer bill impacts that arise from all sewerage and trade waste recommendations, using the indicative water meter size analysis found at 4.1.4.2 as a proxy, are presented in Table 5.3. The fact that there are decreases in the average bills for most customers is driven by the unwinding of the current cross-subsidy to trade waste customers from all other sewerage customer types (i.e. less revenue needs to be collected from non-trade waste customers). This is coupled with the move to connection based charging, which would, as described in Section 4.1.4.2 above, reduce the average charge to land assessments with a single connection.

Table 5.3: Bill impacts of sewerage and trade waste tariffs reform

CUSTOMER TYPE	METROPOLITAN			REST OF STATE		
	***Increases* greater than $50 p.a.**	***Decreases* greater than $50 p.a.**	**Average bill change $ p.a.**	***Increases* greater than $50 p.a.**	***Decreases* greater than $50 p.a.**	**Average bill change $ p.a.**
Residential	40%	37%	-$98.46	34%	11%	+$10.69
Industrial	11%	61%	-$1087.72	10%	13%	-$177.89
Commercial	12%	77%	-$908.01	15%	26%	-$172.08
Concession	43%	32%	-$17.93	34%	8%	+$31.28
Exempt	1%	99%	-$952.51	2%	98%	-$666.74

5.1.7 Other options

The Commission also considered setting trade waste prices with reference to SRMC. SRMC-based pricing is not recommended because of its inherently volatility. Although it may provide a short-term pricing signal, in practice, many trade waste-generating processes (e.g. manufacturing) and systems are inflexible in the short term and likely to be unable to respond to a price signal. If firms are unable to respond to price changes, there are no benefits in terms of economic efficiency to be gained from using SRMC. In addition, as SRMC does not provide a long-term price signal, businesses have a weakened incentive to install appropriate treatment infrastructure.

5.1.8 Implementation

This recommendation does not require any immediate changes to legislation, or to SA Water's billing system, and transition towards full cost recovery could begin immediately. However, there is a substantial discrepancy between current charges and LRMC, as shown in Table 5.2. Issues associated with determining an appropriate lead-time, to allow certain industries to plan for and implement infrastructure improvements or alternative disposal arrangements, may need to be considered.

5.2 Regional trade waste charges

Draft finding

13. The price of trade waste disposal should depend upon the long-run marginal cost at each individual sewerage catchment.

Draft recommendation

18. Until long-run marginal cost estimates have been developed for individual sewerage catchments, trade waste prices should be set with regard to the long-run marginal cost at Bolivar, which accepts 97 per cent of trade waste volume.

5.2.1 Key reasons for recommendation

- Economic efficiency is maximised when all decision-makers pay prices that reflect the costs of their decisions. In the case of trade waste services, customers should incur the true cost of being provided with those services.
- The cost of supplying trade services is likely to differ between regions and cost-reflective prices should reflect those differences to promote economic efficiency.

5.2.2 Discussion

It is likely that trade waste LRMCs would differ substantially between sewerage catchments, depending on local supply and demand conditions. Regional LRMC pricing would, over time, lead to customers receiving a true price signal for the discharge of trade waste in their regions. For example, a new, large trade-waste customer in a small sewerage catchment area is likely to have a significant impact on the capacity constraints of the local treatment plant and should receive appropriate price signals in making its decision to locate there.

As trade waste uses the sewerage network, the regional pricing of trade waste services should consider the same 24 sewerage regions, or wastewater asset systems, discussed under Recommendation 14.

Ideally, the charge for trade waste disposal should depend on the LRMC at each individual sewerage region and the price should send the relevant usage signal. This should be possible because large trade waste customers, unlike general sewerage customers, have flow meters to measure their waste outputs.

Furthermore, an LRMC value prior to the entry of a significant trade waste customer may be vastly different to an LRMC estimate after that customer has become a part of the trade waste network. This is because a large customer's ongoing activities could require the augmentation of infrastructure which would otherwise not be required. In this case, the change in demand would be significant, and an appropriate locational signal should be sent through augmentation charges. If an appropriate augmentation charge is imposed, this should allow LRMC to remain unchanged, and existing customers would not need to pay for the cost of entry of a new customer.

SA Water stated that 97 per cent of all trade waste is currently treated at Bolivar. It also advised that it has not determined LRMC estimates for any wastewater asset systems other than Bolivar.

Given that, as at 2013/14, only 3 per cent of trade waste volumes are treated at wastewater treatment plants other than Bolivar, the efficiency benefits of location-based pricing of trade waste would currently only apply to a small proportion of trade waste. The Commission notes, however, that the costs of location-based pricing, which are administrative, may also be very small, while the potential benefits are large if costly and disruptive trade waste decisions are met with appropriate and relevant price signals.

However, due to the potentially different costs of treatment between SA Water sewerage regions, LRMC estimates should be developed for each region. (The Commission has not undertaken a detailed review of regional LRMCs for trade waste parameters for this Inquiry). Until this has been done, trade waste prices should be set at the Bolivar LRMC (subject to further reviews of the LRMC parameters as per Recommendation 18).

Price signals for the location of new trade waste customers should be set via augmentation charges. In situations where the entry of a new customer (or the expansion of an existing customer) drives (or advances) the need for new investment, it would be efficient for the customer to be levied directly for the incremental cost caused by the customer's action. Such a levy would provide an efficient signal about the costs of new development and expansion, and provide an appropriate location-based price signal.

It is the Commission's view (as stated in the drinking water and sewerage sections) that augmentation charges are not the only ones that should deliver a locational signal. Supply charges and sewerage charges should also signal the cost of maintenance/replacement of assets. Therefore, a combined augmentation and trade waste charge should be used to provide location specific price signals. Much of the necessary information required in the calculation of the augmentation charges would also be used in calculating regional trade waste LRMCs.

5.2.3 Costs and other implications

Determining regional LRMC estimates and ensuring these remain accurate over time would incur costs. A move to apply regionally specific LRMC values to trade waste customers is linked to the implementation of the regional water pricing recommendations discussed earlier in this report (refer to Recommendations 8 and 9). Those recommendations would include costs related to SA Water's billing system changes, estimated by the billing system review to be around $870,000. Once these changes were made, it is expected that they could accommodate the regional LRMC recommendation with no additional billing system costs.

5.2.4 Customer bill impacts

There would be no immediate impact on customer bill as a result of this recommendation. Any that arose over time, would be dependent on the findings of any regional trade waste

LRMC study. Until such studies are carried out, there is no way of knowing whether any bill impacts will arise, relative to the setting of all trade waste prices with reference to Bolivar.

5.2.5 Other options

In arriving at the recommendations proposed in this report, the Commission examined another option for charging for trade waste services on a statewide basis. It is not supported for the following reasons:

- It is likely that the LRMC would differ substantially between sewerage catchments, depending on local supply and demand conditions.
- Not addressing these cost differences would preserve any cross subsidies that may exist between sewerage catchment areas for sewerage and trade waste customers.
- It may result in inefficient location decisions for industries that generate trade waste.

5.2.6 Implementation

This recommendation would not require any immediate changes to legislation. Some SA Water billing system changes are necessary though. The costs of regional pricing are discussed in Section 3.3.3.

Ideally, implementing regional trade waste LRMC prices would be undertaken at the same time as implementing regional drinking water and sewerage LRMC prices, and transition towards full cost recovery could begin immediately. However, there is a substantial discrepancy between current charges and LRMC, as shown in Table 5.2. Issues associated with determining an appropriate lead-time, to allow certain industries to plan for and implement infrastructure improvements or alternative disposal arrangements, may need to be considered.

6. BILLING END USERS OF SERVICES

Clause (b)(ii)(A) of the Terms of Reference for this Inquiry require the Commission to examine the likely impact of billing a consumer of water and sewerage services (rather than the owner of land) and the associated elimination of rating on abuttal. This chapter discusses the billing of end users. Recommendations relating to the practice of rating on abuttal can be found in Chapter 7.

6.1 Billing end users

Draft finding

14. There are net economic benefits to be derived from SA Water having a direct contractual relationship with end users rather than landowners, as is currently the case.

Draft recommendation

19. The end user of a retail service, rather than the owner of the premises to which that retail service is supplied, should be SA Water's customer for that retail service.

6.1.1 Key reasons for recommendation

- The guiding economic efficiency principle is that costs associated with the provision of a service should be recovered from the users of that service.
- Costs incurred by landlords in billing tenants would be avoided. Some, but not all, of those costs would be transferred to SA Water, and overall administrative costs would reduce significantly.
- Residential end users would be able gain access to the full suite of consumer protection measures under the *Water Industry Act*.
- Billing end users would improve transparency about usage, resulting in more efficient usage and decreased leakage.
- It would reduce confusion about billing and reduce the number of disputes (and associated costs) with respect to tenanted arrangements.
- It would not only deliver economic efficiency benefits but also align South Australia's water industry with its energy industry.

6.1.2 Current approach

Under the terms of the *Water Industry Act*, the customer with whom SA Water contracts to provide a water or sewerage retail service must be the owner of the land to which that service is provided, whether or not that person is resident on that land, or receives the retail service.

In South Australia, 68 per cent of properties are owner-occupied.[133] If those properties receive SA Water retail services, the owner is both the customer and the end user.

Twenty-eight per cent of all properties in the State are tenanted. This means that, if the property receives SA Water retail services, the tenants are the end users. However, they are not classed as customers by SA Water and are therefore unable to benefit from most customer protection measures available to owner-occupiers, such as access to flexible payment arrangements and financial hardship programs, a billing dispute process, or early notification about possible concealed water leaks.[134]

Under current arrangements, there can be up to a three-month delay between a landowner receiving a bill and passing the charges on to the tenant. Further, tenants are not always provided with copies of bills. Although landlords are likely to pass on any sewerage or water costs that they incur to the tenant through rent, if it is not billed directly, the price signal is weakened as these costs are not transparent and may be delayed.

6.1.2.1 Residential customers

The current practice is unique to the water sector – it does not apply in the case of other utilities, such as gas, electricity or telecommunications. The Productivity Commission has recently suggested that where water is separately metered there is "*no clear justification for landlords, rather than tenants paying for water usage*".[135]

Currently, there can be up to three-month's delay between a landowner receiving a bill and passing the charges on to the tenant. Further, tenants are not always provided with copies of bills. Although landlords are likely to pass on any sewerage or water costs that they incur to the tenant, either directly though the bill or indirectly through rent, the price signal is weakened because these costs are not transparent and may be delayed.

Landlords are responsible for paying SA Water's water and sewerage charges, pursuant to the *Water Industry Act.*

In relation to water charges, Section 73 of the *Residential Tenancies Act 1995* (**Residential Tenancies Act**) allows landlords and tenants to agree whether water usage and/or supply charges should be directly passed through to the tenant. In the absence of an agreement, the landlord is able to request payment from the tenant for the water supply and usage

[133] ABS Census Data 2011 Quickstats at www.abs.gov.au

[134] ESCOSA, *Water Retail Code – Major Retailers*, November 2012, accessible at http://www.escosa.sa.gov.au/projects/183/water-retail-code.aspx.

[135] Productivity Commission, *Australia's Urban Water Sector*, *Report No. 55, Final Inquiry Report, August 2011,* p.159.

charges where separately metered. (If the water supply is not separately metered, the water supply and charges are still to be borne by the landlord).[136]

Where the charges are passed on directly to the tenant, the landlord (or a Property Manager) is not required to provide the tenant with a copy of the SA Water invoice, unless requested by the tenant. Therefore, tenants are generally unable to monitor their water consumption and adjust their behaviour to use water more efficiently.

All sewerage charges are currently paid for by the landlord and cannot be directly passed onto tenants pursuant to the *Residential Tenancies Act*.

Where there is no direct passing on of water or sewerage charges to tenants, it is expected that these costs will be recovered by landlords indirectly through rent.

As tenants are not SA Water's customers they do not receive various consumer protections, such as access to flexible payment arrangements and financial hardship programs, a billing dispute process or early notification about possible concealed water leaks.

Further, in the residential sector, the passing on of water charges to tenants is a manual and time consuming process, carried out by either the landlord or a Property Manager, with the costs passed onto tenants indirectly through rent. Disputes between landlords and tenants relating to water charges are heard by the Residential Tenancies Tribunal.

Despite the general rule, a tenant will not be required to pay for water charges if the landlord does not request payment within three months of the issue of the bill. Further, a tenant is not required to pay water charges if they have requested a copy of the account and the landlord has failed to provide one (at no cost to the tenant) within 30 days of the request.

Under the Commission's *Water Retail Code*, a tenant can also request billing data directly from SA Water.[137]

Case study 6.1

Mary and Ted have been renting their home for just over two years. Recently, Ted was informed that his working hours would be reduced due to an industry downturn.

The tenancy agreement entered into by Mary and Ted contains a term specifically requiring them to pay for water supply and usage charges.

Since they have been living at the house, the landlord's agency has sent Mary and Ted invoices for water on its standard invoice template and has not provided them with a copy of the SA Water invoice. The detail on the invoice has varied over the tenancy period and at times has not contained any information on the amount of water consumed.

[136] Amendments to the *Residential Tenancies Act* prescribing these arrangements came into force 1 March 2014.

[137] Refer clauses 18.11.4 and 18.11.5 of the Commission's *Water Retail Code – Major Retailers*.

The reduction in Ted's working hours has resulted in him and Mary experiencing financial difficulties and they have found it difficult to pay all of their bills. They have been assessed and placed on the hardship program with their energy retailer. They have continued to pay rent on time so they can remain living in the home they have established.

The couple received an invoice from their landlord for water charges for the last quarter, and were given 14 days to pay. Ted contacted the landlord to seek to pay the bill in instalments. The landlord refused this request and said that if payment was not received by the due date, he would begin the process of eviction. Mary and Ted feel this is unfair because the landlord is entitled to ask SA Water for an instalment plan, then seek payment from them under the same provisions, and not be out of pocket.

During a conversation with the landlord, Ted requests a copy of the SA Water bill and one is subsequently provided. Mary and Ted review the bill and notice that they have been using a large amount of water compared to other like households. They believe that had they known, they would have been able to change their behaviours to reduce consumption or take steps to investigate the possibility of a leaking pipe.

If end users were directly billed by SA Water, Mary and Ted would always have been able to compare their water consumption with other like users and implement changes to reduce water usage promptly. They would also be able to access SA Water's consumer protection measures and be assessed for its hardship program.

6.1.2.2 Non-residential customers

Under Section 26 of the *Retail and Commercial Leases Act 1995* (**Retail and Commercial Leases Act**), a lessee is liable to pay an amount to the lessor in respect of outgoings – and this includes water and sewerage charges. The lease must specify:

- the outgoings
- how the amount of outgoings will be determined
- how they will be apportioned to the lessee
- how those amounts will be recovered.

The lessor is required to provide a disclosure statement to the lessee before a lease is entered into. This statement must include outgoings – including water and sewerage charges payable – together with an estimate of the lessee's annual liability.

Under Section 31 of the *Retail and Commercial Leases Act*, the lessor has an ongoing obligation to give the lessee a written estimate of outgoings, including an itemised list, every year. This estimate must be for each accounting period during the term of the lease and be provided at least one month prior to the start of each period.

Under the Commission's *Water Retail Code*, retail and commercial tenants are also able to directly request billing data from SA Water.[138]

[138] Refer clauses 18.11.4 and 18.11.5 of the Commission's Water Retail Code – Major Retailers.

6.1.3 Summary of submissions

The Commission received 17 submissions regarding the potential reform of the current arrangement of billing landowners from the following parties:

- ASM
- Business SA
- Ceduna Council
- Community Housing Council
- COTA
- DCSI
- DPTI
- Landlords Association
- Livestock SA
- Private individual, John Croser
- Property Council
- Residential Tenancies Tribunal
- REISA
- SA Water
- SACOSS
- Strata Water Solutions
- Uniting Communities.

The full written submissions from these parties cover a range of issues and are available on the Commission's website.[139]

In summary, of the 17 submissions received regarding who should be billed for water and sewerage services, most were supportive of consumers being billed directly by SA Water. SA Water was not supportive of reforming the current arrangements.

[139] Submissions received to the Issues Paper are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx

6.1.4 Discussion

It is proposed that the end user should be the customer and contract with SA Water for the provision of the retail service.

Where SA Water is notified that a premise is unoccupied and no customer is nominated to take responsibility for retail services consumed there, no bill for supply or consumption charges would be issued.[140]

The approach will not preclude end users from entering into arrangements with a third party (possibly their landlord), on a case-by-case basis, and agreeing that the third-party would be the customer of SA Water. This occurs frequently in the energy industry and, provided a utility such as SA Water receives payment for the services provided, it should be indifferent (as a matter of principle) to who pays for them.

In the case of tenancies, tenants and landowners could still agree that the landowner would remain SA Water's customer and, for example, pass on only usage charges. Supply charges would continue to be incorporated into rent.

In the case of rooming houses or other short-term accommodation premises (hotels, apartments), the owner of the land would remain the customer. In those cases, the nature of the occupancy is such that the landowner is properly the customer (as is the case for the energy sector).

The Commission has assessed the costs and benefits of various options for SA Water's billing arrangements in forming this recommendation. A list of all the costs and benefits that were taken into account in this cost benefit analysis are listed in Appendix 5. This includes details of the assumptions used in the analysis, relating to, for example, SA Water's customers (e.g. customer numbers and their usage) and the level of tenant turnover (or churn).

The quantifiable benefits of residential end users becoming SA Water's customers outweigh the quantifiable costs, with a mid-point of benefit estimated at $53.8 million (in NPV terms, assuming a mid case)(Table 6.1).

Table 6.1: NPV for billing residential end users rather than landowners ($m Dec-13)

DISCOUNT RATE	LOW CASE	MID CASE	HIGH CASE
4%	25.8	66.6	107.4
6%	20.3	53.8	87.4
8%	16.1	44.0	71.9

The main benefits associated with this recommendation are listed in Table 6.2.

[140] As SA Water will not be able to charge a supply charge in these instances, the fixed costs will be recovered from remaining customers.

Table 6.2: Main benefits of billing residential end users

BENEFIT	NATURE OF BENEFIT	OCCURRENCE OF BENEFIT	NPV AMOUNT (MID CASE, 6%) ($DEC-13)	WHO RECEIVES THE BENEFIT?
Reduced costs of property managers and/or landlords passing on charges to tenants	Removal of need for landlords and/or property managers to calculate charges to pass on to tenants	Recurring	$47.3m	Landlords and Tenants
Reduced/economically efficient water consumption	Improved signals would lead to economically efficient levels of consumption and reduce overall consumption	Recurring	$5.0m	Tenants
Capital efficiency	Reduced demand load; deferral of network upgrades	Once only	$5.0m	SA Water
Reduction in Residential Tenancies Tribunal hearings	Fewer disputes requiring determinations	Recurring	$4.8m	Residential Tenancies Tribunal Landlords Tenants
Reduced leakage	Better detection of leaks resulting from consumption signals in bills	Recurring	$1.2m	Tenants

There is no comparable data on commercial and retail leases, however the net benefits are expected to be similar to those in the residential sector.

As can be seen in Table 6.2, the most significant benefit of end users becoming SA Water customers is the substantial savings in administration costs currently incurred by landowners and/or property managers in calculating, invoicing and recovering water and sewerage charges from tenants. It is estimated that, for residential premises, this would avoid

$47.3 million in costs (NPV). The Commission expects that these savings would be passed on to tenants, over time, through reduced rental charges. This view is shared by REISA. [141]

Providing end users with consumption and pricing information would also reduce the number of disputes[142] relating to water charges heard by the Residential Tenancies Tribunal. The savings from this are estimated to be $4.8 million (NPV).

The following organisations agreed that this move would create greater transparency and allow end users who are tenants to better monitor their water usage and change their behaviours accordingly:

- ASM
- Business SA
- Ceduna Council
- DCSI
- Landlords Association
- Livestock SA
- Property Council
- REISA
- Residential Tenancies Tribunal.

The submission from John Croser stated a similar view.

Currently, there is little incentive for landowners to identify and fix leaks on or within a property, as tenants generally pay the water usage charges. A net present benefit of about $1.2 million is likely to result from end users addressing leaks, having noted or detected issues because they receive the bills. Reduced consumption and leakage would mean that network augmentation can be deferred, which produces an additional net present benefit of $5 million.

SA Water stated that, under the current arrangements, there is an incentive for the landlord to fix leaks and install water efficient devices, as he or she is 'ultimately responsible'.[143] However, as suggested in the REISA submission, tenants will ultimately pay for water consumption, whether it is directly through separate water charges or indirectly through rent. The submission from REISA supports this view. Furthermore, due to recent changes to Section 73 of the *Residential Tenancies Act*, it is likely that more tenants will become

[141] REISA submission, p.7; available at: http://www.escosa.sa.gov.au/library/131129-WaterPricingInquiry-IssuesPaperSubmission-REISA.pdf.

[142] The Residential Tenancies Tribunal, in its submission, stated it regularly deals with disputes between landlords and tenants about water (approximately 30% of the 11,000-12,000 disputes seen each year); available at http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-ResidentialTenanciesTribunal.pdf.

[143] SA Water submission, p.21.

responsible for water usage charges (under these changes the tenant is responsible for these charges in the absence of an agreement with the landlord).

The Commission also notes the Residential Tenancies Tribunal's comment that it has seen applications for claims of up to $2,000 for one quarter of water use where a leak is detected by the tenant. Under current arrangements, the tenant must pay the bill. While landlords can apply for a leakage rebate, according to the Tribunal, they regularly refuse to do so. [144]

The Tribunal also contends that the current system creates delays in water bills being provided to tenants and that recording water payments and charges on rent records adds confusion. It commonly receives claims where the agent/landlord has not properly carried out water calculations, or kept proper records. [145]

There are other non-quantifiable benefits of end users becoming SA Water customers. For example, tenants would benefit from greater transparency with respect to sewerage charges, which are currently indirectly recovered through rental charges.

Additionally, residential end users would gain access to the full suite of consumer protection measures under the *Water Retail Code*. They would:

- have rights to regular bills containing detailed consumption and payment information
- have access to flexible payment plans and bill-smoothing arrangements
- be better able to detect water leaks
- have access to SA Water's financial hardship program.

Under the current arrangements where a tenant cannot pay their landlord for their water charges, the landlord is able to serve a Notice of Termination requiring the tenant to either pay all outstanding charges or vacate the property. If the tenant does not make the payment or vacate the property, an application is then lodged by the landlord with the Residential Tenancies Tribunal seeking either an order for vacant possession or a payment plan. The recommended option provides a quicker and easier identification of customers experiencing financial hardship, as opposed to this being found out at a Tribunal hearing. Community Housing Council expressed concern that this recommendation would remove the flexibility for tenants to make additional payments to their community housing provider so they do not fall in arrears. However, it should be noted that this flexibility would not be removed and, under the Water Retail Code, all end users have a legally enforceable right to make advance payments to SA Water directly.

Both residential *and* non-residential end users would be eligible to access SA Water's dispute resolution process, which includes mechanisms for having bills reviewed, meters tested and adjustments made to bills for previously over- or under-charged amounts.

Currently, end users who do not own the premises at which they consume a water or sewerage retail service do not have access to any of these consumer protections.

[144] Residential Tenancies Tribunal submission, p.2.
[145] Residential Tenancies Tribunal submission, p.2.

DCSI noted that billing end users would make the processing of water concessions it provides more efficient. Currently, to receive a water concession, an eligible tenant must attach to an application form a copy of the residential tenancy agreement and the most recent bill provided by the landlord. This adds a layer of complexity to the application process. Further, tenants that do not receive a copy of their bill may not be aware that they are able to receive a water concession from DCSI.

Consumer protection advantages were raised by the Landlord's Association,[146] COTA,[147] and REISA.[148] SACOSS also supported the principle of ensuring that tenants are able to access adequate consumer protections, although it states that it does not necessarily believe a change in billing arrangements is required.[149]

The Commission notes that certain consumer protection mechanisms could be made to apply to tenants without billing end users, although this would require changes to regulations under the *Water Industry Act*.

While the Commission has estimated a significant net benefit for the South Australian community from SA Water moving to end user billing, the change would impact on some parties more than others. These distributional impacts are discussed in Appendix 6.

6.1.5 Costs and other implications

The most significant cost associated with this recommendation would be that incurred by SA Water for changes to its billing system and related business processes (refer to Appendix 5). These costs have been estimated at $4.6 million. Other main costs are presented in Table 6.3.

In its submission to the Issues Paper,[150] SA Water stated that billing end users would require significant changes to its billing system and require an additional CMS at significant cost.[151] It stated that this would take at least five years to implement[152] and could cost upwards of $60 million.[153]

The Commission engaged consultants PricewaterhouseCoopers to undertake an independent review of all billing system changes that would be required to support this recommendation. PricewaterhouseCoopers determined that SA Water's existing system

[146] Landlord's Association submission, p.2; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-LandlordsAssocSA.pdf.
[147] COTA submission, p.4.
[148] REISA submission, p.6.
[149] SACOSS submission, p.5.
[150] ESCOSA, *Billing Consumers Rather than Landowners - Issues Paper No.6 – Inquiry into the reform of SA Water's Drinking Water and Sewerage Prices*, August 2013, available at: http://www.escosa.sa.gov.au/library/130829-WaterPricingInquiry-IssuesPaper_6-ImpactsBillingConsumersRatherThanLandOwners_0.pdf.
[151] SA Water submission, p.21.
[152] SA Water submission, p.21.
[153] SA Water submission, p.11.

would need to be modified at an estimated cost of $4.8 million and that these changes could be made within a 24-month timeframe.

Table 6.3: Main costs of billing end users[154]

COST	NATURE OF COST	OCCURRENCE OF COST	NPV AMOUNT (MID CASE, 6%) ($DEC-13)	WHO RECEIVES THE COSTS?
Billing System changes and related business processes modifications (including communications)	Cost of upgrading the billing system to enable billing to consumers and modifications to business processes (including communications program to educate customers about the change)	At implementation for billing system changes and for business processes changes	$4.6m	SA Water
Meter readings and sending final accounts	An increase in final meter readings and sending final accounts when a tenant moves in and out of a property	Recurring	$4.4m	SA Water
Hardship Program	Increased costs in administrating the hardship program due to an increase in the number of customers accessing it	Recurring	$0.5m	SA Water

Some further costs would be incurred in the change. In particular:

- given the more frequent turnover of rental premises compared with owner-occupied premises, additional meter readings for account finalisation, and costs associated with sending additional bills, would be required at a cost of $4.4 million (NPV);
- there may be additional administrative costs involved with having more customers participate in SA Water's hardship program, as the demographic evidence is that tenants are more likely to face financial hardship than owner-occupiers $0.5 million (NPV).

[154] The Commission notes that there would also be significant communications-related costs associated with moving towards billing end users. However, the Commission has not separately attributed these to this reform option, as it would be expected that an overarching communication package would be developed for all the Inquiry related reforms. In terms of expected costs for such a communications package, the Commission notes that the Water for Good reform initiative, whose application and reach was broader than urban water, had a communications budget of approximately $2.0 million.

DPTI[155] and the Community Housing Council[156] argued that charging end users would increase tenant costs and the current arrangement is more effective. SA Water also argued that charging property owners results in a lower cost structure for tenants overall, citing extra costs relating to disconnection fees and special meter reads.[157]

In response to those submissions, the Commission notes that all relevant costs have been taken into account in its calculations and the case for reform is still financially positive. For further detail on those calculations, refer to Appendix 5.

6.1.6 Other options

In developing this recommendation, the Commission considered a range of other options, including:

- A hybrid approach involving landowners and end users paying for separate charges.
- Requiring landlords to install certain water efficient devices, such as water saving showerheads
- Retaining the status quo.

The alternatives of requiring landlords to install water efficient devices and maintain the status quo are at odds with the user pays principle. The benefits to be derived from sending proper price signals can only be fully realised if they are sent to the consumer of the service. Therefore, it is preferable that the consumer of the water and sewerage services received be the customer of SA Water. A move to this type of arrangement would also bring water in line with other utility service providers in the state, such as electricity, gas and telecommunications.

The hybrid approach and the recommended approach to bill end users for all water and sewerage charges have been assessed for costs and benefits against maintenance of the status quo. The Commission's analysis (detailed in full at Appendix 9) shows that when compared to the recommended approach, the hybrid approach, the second best option in terms of economic efficiency, would involve additional costs, such as the sending of two bills and maintenance of an increased number of customer records. The estimated net benefit of the hybrid approach option is $39.5 million, which is almost $14.3m less than the recommended option to only bill end users.

The Commission has not undertaken a detailed cost-benefit analysis for requiring landlords to install certain water efficient devices, as this option falls outside the scope of the inquiry.

Further details of the Commission's consideration of these options can be found in Appendix 5.

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[155] DPTI submission, p.4.

[156] Community Housing Council submission, p.3; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-CommunityHousingSA.pdf.

[157] SA Water submission, p.21.

6.1.7 Implementation

To effectively implement this recommendation, changes would need to be made to the *Water Industry Act* and accompanying regulations.

The Commission notes that SA Water would need a 24-month timeframe to modify its billing systems.

Finally, the implementation of this recommendation should be considered in conjunction with the implementation of the removal of SA Water's statutory debt recovery and debt security provisions (see Recommendation 20 below), and the proposed recommendations relating to non-connected properties (refer to Recommendation 21).

As stated earlier in this report, the proposed reform represents a significant change for SA Water, with current IT and billing systems designed around a landowner relationship, not an end user relationship. This will impact SA Water beyond its billing system (e.g. communications, debt management). While PricewaterhouseCoopers took into account some of the billing system-related business costs, there will be others that have not been taken into account. However, the costs of these other changes are unlikely to be as significant, as the billing costs and would still result in this reform being NPV positive.

6.2 Debt risk and debt security

Draft finding

15. The existing rights granted to SA Water to secure and recover debt imposes unreasonable risks on landowners and is inappropriate if the end user becomes SA Water's customer.

Draft recommendation

20. The current provisions in the South Australian Water Corporation Act 1994, which confer on SA Water the right to secure debts through a statutory charge on land, and the right to sell land to satisfy a debt, should be repealed.

6.2.1 Key reasons for recommendation

This recommendation can be viewed as consequential to Recommendation 19 and is made on the basis that:

- it is not efficient for SA Water to have debt security and recovery right over and above other market participants (as this conflicts with the principle of 'competitive neutrality'[158]).

[158] Competitive neutrality aims to promote efficient competition between public and private businesses. Specifically, it seeks to ensure that government businesses do not enjoy competitive advantages over their private sector competitors simply by virtue of their public sector ownership. The Australian and all State and Territory Governments have agreed to implement competitive neutrality policies (refer to http://www.pc.gov.au/agcnco/competitive-neutrality).

- if end users are to become customers (as recommended) then, in the case of tenancies, the owner of the land on which a retail service is consumed by the customer should not be required to provide security for the debts of that customer.

6.2.2 Current approach

Under the terms of the South Australian Water Corporation Act, SA Water obtains a first-charge over a property to which a water or sewerage retail service is provided, for any amounts owing to it for that service. The charge need not be registered on the title. At the time of sale of the property (SA Water is advised of this through arrangements with the Lands Titles Office), it can enforce that charge.

That Act also provides SA Water with a right to effect the sale of land to which a water or sewerage retail service is provided in the event that there is a payment default in relation to that service and that payment has remained in arrears for two years.

6.2.3 Discussion

It is recommended that SA Water's ability to recover debts from the landowner – and use land as a security – be removed. Removing this power does not reduce risks to society but transfers the risk from landowners to SA Water.

The benefits of this proposal are not directly quantifiable, but include the following:

- It is not appropriate to require a third party to assume liability for the debts of an SA Water customer (although the third party may agree to do so)
- SA Water's powers to obtain first-charge on land, or sell land, are disproportionate to the risk of a customer not paying the amount due. Other avenues for the recovery of debts are available through the general law and these are effective and used by other businesses (including utilities).

6.2.4 Costs and other implications

SA Water has stated that its power of first-charge on land provides "certainty over the tracking and recovery of debt". It argues that removing this power would result in an increase in resourcing for debt recovery and for debt write-offs and that this would result in higher prices and costs for consumers. However, the additional cost impact on SA Water is simply a transfer from landlords to SA Water, as the cost already exists but is carried by landlords.

The Commission's analysis indicates that billing tenants directly would result in an impact on SA Water's debt risk of about $3.6 million a year. This would arise as a result of increases in bad debt write-offs. Further, there would be an estimated one-off step increase in the provision for bad debt of $3.5 million (refer to Appendix 7).

It is the Commission's view that SA Water should have the resources to manage late and non-payment more efficiently than landlords. This view is supported by REISA, which noted in its submission that the majority of landlords are investors who own only one rental property.

6.2.5 Customer bill impacts

The estimated customer bill impacts that arise from this recommendation are expected to be around $5 per customer per year. The costs associated with the implementation of this recommendation arise from additional costs incurred by SA Water, such as up-front implementation costs. The Commission has assumed that these costs will flow through to all customers equally.

6.2.6 Implementation

To effectively implement this recommendation, changes would need to be made to the *SA Water Corporation Act* and accompanying regulations.

The implementation of this recommendation should be considered in conjunction with the recommendation relating to billing end users of water and sewerage services (see Recommendation 19), and the Commission's proposed recommendations relating to non-connected properties (refer to Recommendations 21 and 22).

7. NON-CONNECTED PROPERTIES

Clause (b)(ii)(A) of the Terms of Reference for this Inquiry require the Commission to examine the likely impact of billing a consumer of water and sewerage services (rather than the owner of land) and the associated elimination of rating on abuttal. This chapter discusses the removal of rating on abuttal.

Draft finding

16. Customers that choose not to connect to SA Water's network should not be required to pay a fixed charge to SA Water.

Draft recommendations

21. Customers should only be charged for a water and sewerage service if they enter into an agreement with SA Water to become a customer.

22. Customers should be able to cease being a customer of SA Water subject to providing reasonable notice and paying appropriate disconnection and account finalisation fees.

7.1.1 Key reason for recommendations

- People should pay for the costs of the decisions they make. Payment for water and sewerage services should only be required from a customer when they receive that service. People should be able to choose whether or not they receive a service.

7.1.2 Current approach

Where its sewerage and water network runs past a property, SA Water recovers full drinking water supply and sewerage charges from the landowner, even if no service is connected. This practice is referred to as rating on abuttal (**ROA**) and is allowed for under the *Water Industry Act* as an "availability charge" (a distinct charging arrangement for water and sewerage charges paid under contract to SA Water).

SA Water has stated that it is currently unable to separately identify ROA customers from customers that are connected but do not use the service for long periods of time. Table 7.1 shows the Commission's estimates of the number of ROA customers and the revenue recovered from them by SA Water.

Table 7.1: Estimated number of ROA customers and annual revenue[159]

	ROA CUSTOMERS	ANNUAL REVENUE
Water	22,000	$5.6m
Sewer	10,500	$5.2m

Case study 7.1 identifies some of the deficiencies with the current arrangements and highlights the need for reform.

Case study 7.1

ROA customers often pay a higher rate in the dollar charge than owners of connected properties. This is because of SA Water's minimum rate arrangements.

For example, the current minimum rate for sewer is $341.40, which implies a metropolitan property value of $270,738[160] or a country property value of $205,539[161].

Many ROA customers are vacant allotments and, particularly in regional areas, may be worth less than this. However, landowners still pay the minimum rate.

For example, a vacant allotment in Mt. Gambier is readily available for $70,000. Under current arrangements, despite not being connected to the sewer system, the property owner would need to pay an "availability charge" to SA Water. The property-based rate would deliver a sewerage charge of $116.27 per year, but instead the $341.40 minimum charge means this property owner is paying 121.929 cents per $1000 of property value. This is almost three times the usual rate in the dollar – for a service that they do not receive or need.

The Commission has estimated that 60 per cent of all sewer ROA customers, and 86 per cent of those with vacant land, are paying the minimum rate.

7.1.3 Summary of submissions

The Commission received submissions regarding the potential reform of the current arrangement of billing ROA properties, from the following parties:

- Alano Water
- ASM

[159] The Commission has estimated ROA customer numbers through the SA Water customer database. For these purposes, a ROA customer for water is defined as a customer who receives a water bill but has recorded exactly zero usage for each of the four quarters of 2011/12. A ROA sewer customer is defined for the purpose of this report, as one who appears on the database as a sewer customer by having a non-blank sewer supply charge, yet is paying a water supply charge but recorded zero water use for each of the four quarter of 2011/12.

[160] Assumes the metropolitan property-based quarterly rate of 31.525 cents per $1,000 of property value.

[161] Assumes the country property-based quarterly rate of 41.525 cents per $1,000 of property value.

- Conservation Council
- DCSI
- Property Council of Australia
- SA Water.

In summary, stakeholders expressed different views on the current arrangements. Of the submissions received, three supported the retention of ROA (SA Water, Alano Water and ASM), two advocated for its removal (Property Council and DCSI), and one was neutral (Conservation Council).

The full written submissions from these parties cover a range of issues and are available on the Commission's website.[162]

7.1.4 Discussion

This recommendation would mean that:

- existing non-connected customers would cease to be levied an availability charge
- SA Water would not be able to charge a new customer for the provision of an "available" service unless that person consents to a connection to receive that service
- existing connected customers would have the option to disconnect (for an appropriate fee) and avoid future service charges.

ROA is inconsistent with the principle that people should pay for the costs of the decisions they make. If people choose not to connect to a service, they should not have to pay for it.

In its submission, DCSI suggested that ROA may be seen to be penalising those who elect to be self-sufficient in the provision of sewerage services.[163] The Property Council also did not support ROA.[164]

The practice can result in over-investment by SA Water, as it allows SA Water to levy a charge simply as a consequence of laying a pipeline next to a property, regardless of whether or not any service is required. Removing ROA would reduce this incentive and, potentially, lower costs and prices to consumers. This view is shared by the Property Council, which stated that ROA can contribute to inefficient investment decisions.[165]

In other utility industries (e.g. energy and telecommunications), no ROA-type arrangements exist. Some interstate water utilities do have ROA charging (Table 7.2).

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[162] Submissions received to the Issues Paper are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx

[163] DCSI submission, p.2.

[164] Property Council of Australia submission, p.5.

[165] Property Council of Australia submission, p.5.

Table 7.2: Rating on abuttal – Australian metropolitan water utilities

STATE	METROPOLITAN UTILITY	CHARGE FOR PROPERTIES NOT CONNECTED, BUT AVAILABLE FOR CONNECTION
South Australia	SA Water	Yes
Victoria	City West Water	No
	South East Water	No
	Yarra Valley Water	No
	Western Water	No
New South Wales	Hunter Water	Yes
	Sydney Water	Yes
	Gosford City Council	Yes
	Wyong Shire Council	Yes
Western Australia	Water Corporation	Yes
Queensland	Urban Utilities	No
ACT	ACTEW	Yes
Tasmania	TasWater	Yes
Northern Territory	Power and Water Corporation	No

ROA reduces the viability of alternative supply options and its removal would encourage competition and consumer choice. For example, ROA changes the economics for consumers to become self-sufficient in water supply and/or sewerage disposal. Under ROA, only the

usage charge is avoided if a consumer makes alternative supply arrangements and, as such, consumer choice is reduced.

Furthermore, in an environment where customers could choose between water retailers, ROA would give SA Water an unfair advantage. Customers would be more likely to choose SA Water's service because they would be required to pay its fixed charge even if they selected a different retailer. In its submission, DCSI raised a similar concern.[166]

The removal of ROA would reduce the holding costs for owners of unconnected land. This view is shared by the Property Council.[167]

7.1.5 Costs and other implications

SA Water[168] and Alano Water[169] argued that removing ROA may present a public health risk. However, the Commission has not been presented with any evidence which demonstrates that South Australian residents in areas that are not connected to SA Water, or to central sewerage schemes, have different health outcomes from those residents living in areas that are connected. This would suggest that public health concerns do not apply where appropriate standards for alternative water or sewer arrangements are met. The Commission notes the role of the State's *Public Health Act 2011*, the *Safe Drinking Water Act 2011,* and related regulations, in addressing these risks.

Furthermore, in the case of sewerage, public health arguments are not accepted on the following basis.

- A large proportion of properties (67 per cent[170]) attracting an ROA charge are vacant blocks and do not contain a house or other structure capable of producing sewage. Those properties do not present any public health risk.
- In addition, existing legislation already addresses this risk. For example, under Section 48 of the *Water Industry Act* a landowner is obliged to connect to an "approved scheme" to ensure the provision of sewerage services.[171] This section recognises that there are alternative sewerage disposal mechanisms beyond the typical sewerage system. The Commission considers that this is a better way of achieving public health outcomes than changing the economics of the alternatives.

Moving away from ROA would lead to a slight increase in prices for the remaining customers (see Section 7.1.6 below).

[166] DCSI submission, p.2.
[167] Property Council submission, p.5.
[168] SA Water submission, p.22.
[169] Alano Water submission, p.2.
[170] Based on analysis of SA Water's customer database.
[171] The South Australian *Public Health (Wastewater) Regulations 2013*, also have a role in regulating public health risks associated with wastewater disposal.

SA Water contends that removing ROA provides little scope for cost savings, as it is simply a redistribution of costs to connected customers.[172] However, if cost-reflective pricing were to be implemented, inappropriate distributions of costs and uneconomic investments, which can lead to perverse economic outcomes, are unlikely to occur. For example, investments, and associated costs, are likely to flow to where the demand for them lies. This enhances total community welfare.

DCSI also raised a concern relating to inefficient investment choices. It stated that:

> *"It should be noted that the concept of paying the fixed charge, whether a property is connected or not, may not be a valid process where several water industries may have infrastructure in the street. Further to this, rating on abuttal charges may be seen to be penalising those who elect to be self-sufficient."*[173]

SA Water's submission[174] and the submission from ASM[175] contend that the practice of rating on abuttal captures the "option value" to the landowner of having infrastructure available to connect to, which is then reflected in higher property values. However, this option value is already reflected in the price of land (and paid for) at the time of purchase.

While there may be difficulty in identifying ROA customers at present, work by SA Water in interrogating its systems, publicising the change and inviting ROA customers to self-identify, should quickly overcome this issue.

To implement the removal of ROA, SA Water would incur costs due to changes to its billing system and related business processes. These changes are estimated to cost approximately $555,000 and could take up to 6 months to implement.

7.1.6 Customer bill impacts

The estimated customer bill impacts that arise from this recommendation are approximately $8 per water customer and $8 per sewer customer per year for those non-ROA customers, plus about $1 per customer for first-year implementation costs. These cost increases arise from lost revenue to SA Water from ROA customers no longer paying SA Water, which must be recovered from the remaining customer base. The Commission has assumed that these costs will flow through to all remaining customers equally.

However, as explained above, the removal of ROA should reduce any incentive for SA Water to over invest and in this respect would, at least partially, offset cost increases to consumers.

7.1.7 Other options

In arriving at the recommendations proposed in this report, the Commission examined other options for charging non-connected properties. These were:

[172] SA Water submission, p.22.
[173] DCSI submission, p.2.
[174] SA Water submission, p.22.
[175] ASM submission, p.1.

- Maintenance of the status quo, whereby non-connected properties pay full rates for sewer and water supply
- The option of having a 'concessional rate for non-connected properties' (e.g. 59 per cent of supply charges).

The discussion above explains the reasoning for why the Commission does not support the maintenance of the status quo at this time.

With respect to a concessional rate, this option is a compromised position on the principle of user pays, and still largely ignores the issues raised in response to retaining the status quo. Furthermore, the Commission can see no sound basis for selecting an arbitrary concessional rate.

7.1.8 Implementation

This recommendation requires an amendment to Section 48 of the Water Industry Act. The Commission notes that there is a 6 month timeframe needed for SA Water to modify its billing systems**.** The implementation of this recommendation should be considered in conjunction with the implementation of billing end users (see Recommendation 19) and the removal of SA Water's statutory debt recovery and debt security provisions (see Recommendation 20).

8. METERING

The Terms of Reference for this Inquiry require the Commission to examine:

- the likely impact of requiring the installation of individual meters for each customer (clause (b)(ii)(B))
- the likely impact of requiring the installation of smart meters (clause (b)(ii)(C))

8.1 Individual metering

Draft finding

17. The costs of installing water meters to all properties that are currently not metered would outweigh the associated benefits.

Draft recommendation

23. The installation of individual water meters to group-metered properties, both retrofit and new properties, should be optional (i.e. maintain the status quo).

8.1.1 Key reasons for recommendation

- Not all water consumers have an individual water meter. For example, in a group-housing situation (e.g. a block of flats) there is often only one water meter to record the total water consumption for all users.
- While water consumers *should* receive accurate information about their usage, the cost of moving to a situation where there is an individual water meter for each dwelling currently outweighs the benefits.
- There are, however, likely to be particular group-dwelling or occupancy situations where the benefits would outweigh the costs. In those situations, consumers should carefully consider the costs they would incur and the benefits they would receive and choose individual or group water metering on that basis.

8.1.2 Current approach

While the majority of residential and commercial properties are individually metered, a number of sites (referred to as "group-metered properties") are serviced by a single meter. It is estimated that about 138,000 customers are not individually metered.

Individual users within these sites are billed in various ways, for example, through issuing single or separate bills, or apportioning use. In some Australian jurisdictions, such as Tasmania and New South Wales, water companies maintain, read, and bill where sub-meters have been installed on a group site. However, this is not the current practice in South Australia.

Usage charging relies on meter readings to send price signals to drive economically efficient consumption behaviours.

For customers without an individual meter, the price signals they receive can be distorted, as the share of the group bill they are required to pay is unlikely to reflect their actual consumption.

As there is minimal cost saving unless all members of a group moderate their water use, there is little incentive for any one member to do so. Low water-use customers will have their "saving" diluted when it is shared among all customers with whom they share a meter.

8.1.3 Summary of submissions

The Commission received nine responses referring to the issue of individual metering, from the following parties:

- ASM
- Ceduna Council
- Community Housing Council
- DCSI
- Landlords Association
- Residential Tenancies Tribunal
- SA Water
- Strata Water Solutions
- Uniting Communities.

The full written submissions from these parties cover a range of issues and are available on the Commission's website.[176]

A number of submissions expressed dissatisfaction with the current group metering arrangements, citing, for example, inequity arguments. Four submissions fully supported change (ASM, Strata Water Solutions and Residential Tenancies Tribunal) and three submissions supported change on a case-by-case basis (Landlords Association, DCSI and the Community Housing Council). Only SA Water provided arguments against change in this area. There was mixed opinion as to whether individual metering should be made mandatory for all properties (e.g. ASM), or just mandatory for new builds (e.g. Ceduna Council).

[176] Submissions received to the Issues Paper are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx

The Commission has taken account of all of these views in assessing the options for reform and in reaching its draft conclusions.

8.1.4 Discussion

In its analysis, the Commission has considered two options:

- Mandating individual metering for new group-metered properties (the preferred option of the Ceduna Council[177] and DCSI.[178]
- Mandating individual metering for new group-metered properties and retrofitting individual meters to all existing group-metered properties (the preferred option of ASM[179]).

Many of the quantitative benefits of individual metering arise from reduced customer water demand, from reduced consumption, and from improved leakage detection (estimated at between five per cent and 15 per cent of current levels). This is because price signals can alert users to abnormal use. However, with the long-range marginal cost of water (weighted average of regions) at about 65c/kL,[180] the value of this ongoing benefit is far outweighed by the additional ongoing costs. These include the costs of installing individual meters and, for properties where they would need to be retrofitted, extensive re-plumbing work. There are also ongoing costs associated with maintaining extra meters.

The Commission's analysis concludes that there is no financial case for mandatory individual metering, as shown in Table 8.1. These findings are consistent with the cost and benefit analysis it conducted under the *Water Industry Act* in respect of South Australian Housing Trust metering arrangements in 2013.[181] Details of the analysis for the metering reform options, including all of the key assumptions and inputs, can be found in Appendix 8.

Table 8.1: NPV of individual metering options

INDIVIDUAL METERING OPTION	NPV MID CASE
Mandate individual metering for all new grouped properties	-$7.6m
Mandate individual metering for all new grouped properties and retrofit individual meters to all existing group-metered properties	-$74.4m

The analysis shows that the mandatory retrofitting of all existing, non-individually metered properties would cost approximately 8 per cent more per meter (in NPV terms) than to ensure all new grouped properties were individually metered. The average retrofit install cost is $542 compared to $500 for installation at new properties.

[177] Ceduna Council submission, p.7.
[178] DCSI submission, p.3.
[179] ASM submission, p.10.
[180] See Chapter 2, table 3.5.
[181] Refer to http://www.escosa.sa.gov.au/Projects/ProjectDetails.aspx?id=188.

The status quo option allows owners and occupiers of group site dwellings/occupancies to choose whether they will continue to share a water meter, or have individual water meters installed. It also allows builders and developers of new group site dwellings and occupancies to choose to install a larger group meter, or numerous smaller individual water meters when building.

The continuation of the current arrangements (status quo) avoids the high costs of installing individual meters, especially for retrofit properties, where extensive re-plumbing work can often be required. There are also ongoing costs associated with maintaining extra meters if their installation was mandated. While there are reduced demand benefits, as described above, their value is outweighed by the additional ongoing costs.

It is therefore recommended that individual metering for these properties remains optional. This view is shared by Strata Water Solutions,[182] Ceduna Council,[183] the Community Housing Council,[184] DCSI,[185] Uniting Communities,[186] and the Landlords Association.[187]

8.1.5 Costs and other implications

For new grouped properties, the costs outweigh the benefits at the whole-of-society level. However, in these cases, it may be worth considering some of the qualitative benefits that can arise from individual metering (as noted in the ASM[188] and Strata Water Solutions[189] submissions) – benefits such as fewer disputes between neighbours of shared meters.

While the costs of mandatory retrofitting far outweigh the benefits at the whole-of-state level, for individual properties and property developers, in a limited number of situations, the benefits are likely to outweigh the costs. Those customers living in group-metered sites should still carefully consider the costs and benefits before proceeding with group metering or individual metering.

Individual metering is more likely to be beneficial for some properties:

- in areas where there are higher water usage costs (assuming the adoption of the proposed regional LRMC recommendation, this could include Kangaroo Island and Eyre Peninsula)
- with higher discretionary use (e.g. private gardens, little or no common areas)
- with an existing supply pipework configuration that would readily support sub metering

[182] Strata Water Solutions submission, p.2; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-StrataWaterSolutions.pdf.
[183] Ceduna Council submission, p.7.
[184] Community Housing Council submission, p.2.
[185] DCSI submission, p.3.
[186] Uniting Communities submission, p.9.
[187] Landlords Association submission, p.1; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-LandlordsAssocSA.pdf.
[188] ASM submission, p.2.
[189] Strata Water Solutions submission, p.3.

- with dwellings/occupancies of varying demographics (in a residential sense, one-bedroom, two-bedroom and three-bedroom dwellings sharing a meter; in a non-residential sense, high use and low use businesses sharing a meter)

However, the Commission nevertheless recommends that, for now, individual metering remains optional for all properties in South Australia. The submissions of the Landlords Association, DCSI, the Community Housing Council and Uniting Communities supported this view.

8.1.6 Customer bill impacts

As this recommendation proposes retaining the status quo, there are no resulting customer bill impacts.

8.1.7 Other options

In developing this recommendation, the Commission undertook a cost-benefit analysis of the options to:

- mandate individual metering for all properties
- mandate individual metering for new build properties only.

These options are not supported as the costs far outweigh the benefits at this time.

The analysis shows mandated individual metering for all properties has a net present cost of $542 per meter, while for new build properties only, the net present cost is $500 per meter (net present cost per meter refers to the cost over the life of a single meter). This is the sum of the costs of the meter, plumbing, meter reading, billing and customer service, minus the benefits of reduced consumption, reduced leakage and deferred capital expenditure, over the life of the meter.

Further details of the Commission's consideration of these options can be found in Appendix 8.

8.1.8 Implementation

As this reform option recommends a continuation of the status quo, no consideration of implementation issues is required. However, SA Water may wish to explore the release of fact sheets and/or guidelines that more clearly articulate its preferred option of optional water meter installation to new multi-dwelling/occupancy properties, similar to that available to Victorian metropolitan water customers.[190]

[190] For example see City West Water, South East Water and Yarra Valley Water, *Water Metering & Servicing Guidelines, Version Three, 2013,* available at: https://www.yvw.com.au/yvw/groups/public/documents/document/yvw1003607.pdf.

8.2 Smart Metering

Draft finding

18. The cost of mandatory smart water meters outweigh the benefits to consumers.

Draft recommendation

24. Smart water metering should be optional (i.e. maintain the status quo).

8.2.1 Key reasons for recommendation

- Economic efficiency is maximised when all decision-makers receive price signals that reflect the true costs of their decisions. In the case of smart water metering, this means that customers receive the right price signals and are encouraged to use water efficiently.
- While the benefits of smart water metering include a greater understanding of customer water use behaviour and demand, there is currently no financial case for making the use of this technology compulsory. The Commission estimates this would cost between $48 million and $170.5 million (NPV) depending on the installation option adopted.
- Instead, smart metering should remain optional and customers should make choices on a case-by-case basis.

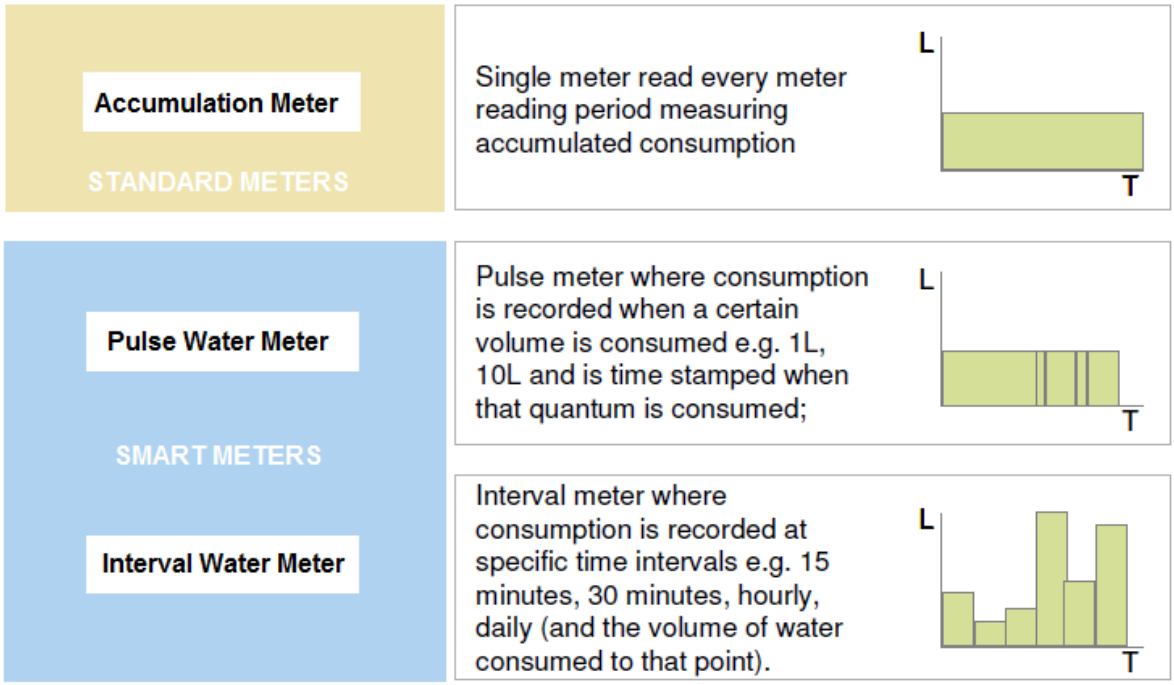
8.2.2 Further explanation of recommendation

Smart water meters have digital communications technology that records water usage at short intervals and sends consumption data automatically to the water retailer. That is, they provide time-of-day consumption data. They differ from traditional "accumulation meters" which are single meters that measure accumulated consumption and are manually read semi-regularly, or less frequently (refer to Figure 8.1). Accumulation meters are standard for most residential customers.

Smart meters are more expensive than accumulation meters but the potential benefits include:

- greater consumer involvement – they enable customers to see their real-time consumption and also better indicate leaks (this benefits the utility, too)
- reduced costs associated with meter reading
- more sophisticated pricing structures, potentially involving time-of-use (**TOU**) tariffs, for example, peak, off-peak and other levels of pricing – similar to smart electricity meters.

Figure 8.1: Different types of meters



Source: Marchment Hill Consulting (2010) 'Smart Water Metering Cost Benefit Study – Final Report', p.12

This recommendation, which maintains the status quo, allows individual customers to install a smart water meter at their discretion. SA Water will continue to read and bill based on the accumulation meters in place. The Commission's finding, that there is no financial case for making smart meters compulsory, is consistent with other, similar smart meter studies. [191]

8.2.3 Summary of submissions

The Commission received eight responses referring to the issue of smart metering, from the following parties:

- ASM
- Business SA
- Ceduna Council
- Itron
- Landlords Association
- Residential Tenancies Tribunal
- SA Water

[191] See, for example, http://www.itnews.com.au/News/364156,wa-struggles-to-justify-smart-water-meters.aspx, and http://www.nera.com/extImage/PUB_SmartMetering_Overview_Feb2008.pdf.

- Strata Water Solutions.

In summary, stakeholders were divided about whether or not smart metering should be mandated.

The full written submissions from these parties cover a range of issues and are available on the Commission's website.[192]

8.2.4 Discussion

In terms of benefits, smart meters would provide greater consumer involvement, reduce the costs associated with meter reading and enable the introduction of more sophisticated pricing structures (potentially involving time-of-use tariffs).

Smart water metering trials have been conducted around Australia (e.g. Kalgoorlie-Boulder (Western Australia) in 2012/13, Hervey Bay (Queensland) in 2006). The benefits noted in these trials include the ability to provide a higher level of customer service when customers enquire about their bills and a greater understanding of customer water-use behaviour and demand. The trials also identified real-time downloading of meter data to a water service provider to enable immediate analysis and response to leaks, improved identification of water restrictions violations, and the opportunity to evaluate demand management initiatives.

However, as the trials concluded, these benefits were not significant enough to be cost effective. In their submissions to this Inquiry, SA Water,[193] the Landlords Association[194] and Business SA[195] all cautioned that the benefits of a wide-scale roll out might not outweigh the costs. Strata Water Solutions submitted that it did not support mandatory smart metering because the current technologies were still too unreliable.[196]

Ceduna Council supported a phased or end-of-life replacement approach, although it said there could be cost limitations.[197] The Landlords Association said it would only support a roll out of smart metering at the end-of-life of existing meters, when the benefits clearly outweighed the costs and would be fully passed on to consumers.[198]

Uniting Communities said it would only support mandatory smart metering if it was shown to produce an unequivocal saving to consumers in the medium term (i.e. a payback period of five years).[199]

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[192] Submissions received to the Issues Paper are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx
[193] SA Water submission, p.20.
[194] Landlords Association submission, p.2.
[195] Business SA submission, pp.2-3.
[196] Strata Water Solutions submission, p.4.
[197] Ceduna Council submission, p.7.
[198] Landlords Association submission, p.2.
[199] Uniting Communities submission, p.9

The Commission's analysis has concluded that there is no strong financial case for pursuing mandatory smart metering at this time in South Australia. (See Table 8.2) Its full cost and benefit analysis, including all key assumptions and inputs, can be found in Appendix 8.

Table 8.2: NPV of smart metering options

SMART METERING OPTION	NPV MID-POINT
Mandate smart metering for all existing and new properties	-$80.6m
Mandate smart metering for new properties and replacements (at failure or end-of-life)	-$48.0m
Mandate smart metering for all existing, new and unmetered properties	-$170.5m

Maintaining the status quo avoids the high costs of installing smart water meters (using even the cheapest solution) and developing necessary data and communications networks.

Communication back to the smart metered customer directly can achieve the majority of the benefits of smart metering. It therefore does not make economic sense for optional smart meters to communicate back to the utility. It is also likely that customers opting in will be geographically dispersed. This would exponentially increase the costs to SA Water of the communications infrastructure per smart metered customer (compared to a situation where all customers were smart metered). The potential savings in reduced manual metering would also be limited if smart metered customers were geographically dispersed. In this case, it would be less costly to continue manual reading on site, or to have data retrieved by handheld receivers and downloaded to the utility at the same time as for the manual reads of non-smart meters.

The benefits associated with providing customers with more frequent price signals are low, with consumption and leakage reduction expected to total only around 4 per cent of current consumption. With the LRMC of water (based on weighted average of the regions) of around 65c/kL, the total value of water saved would be comparatively small. It remains cost-restrictive to roll out smart meters in those regions with a much higher LRMC for water, because of the fixed costs associated with a roll out.

The reduced meter reading costs to SA Water would total $18.3 million in NPV terms (assuming the roll out of smart meters was scheduled on a geographical basis).

The Commission notes that there are also important qualitative costs and benefits to be considered by the Government before it adopts any change. Some qualitative benefits considered, but determined not to materially reduce the net present cost of smart metering, include reduced occupational health and safety risks (e.g. from contractors not having to manually read water meters), and the potential to introduce more frequent billing and restrictions monitoring in the future. ASM has stated that some customers are strongly opposed to smart water meter roll out, due to perceived concerns such as health and

privacy.[200] There are also concerns relating to the reliability of the technology, especially in the area of communications, which have the potential to add significantly to ongoing costs (e.g. Strata Water Solutions[201]). Maintaining the status quo, as recommended, avoids such concerns. Appendix 8 discusses actual and potential benefits of all options in more detail.

8.2.5 Costs and other implications

No costs are associated with this recommendation, as it involves a continuation of the status quo.

While the costs of smart water metering far outweigh the benefits at the whole-of-state level, it is likely that some properties could benefit from it. Current options that enable customers to install smart meters at their own expense already cater for these situations.

8.2.6 Customer bill impacts

As this recommendation proposes retaining the status quo, there are no resulting customer bill impacts.

8.2.7 Other options

In developing this recommendation, the Commission undertook CBA of the other options to:

- mandate smart meters for all existing and new properties
- mandate smart meters for all – existing, new and where unmetered
- mandate on a new and replacement basis only.

These options are not supported because the costs far outweigh the benefits at this time.

The analysis shows mandated smart metering has a net present cost of $115 per meter. This is the sum of the costs of the meter, install, communications, computer systems, billing and customer service, minus the benefits of reduced consumption, reduced leakage, deferred capital expenditure, cheaper meter reading, and enhanced customer service, over the life of the meter.

Further details of the Commission's consideration of these options can be found in Appendix 8.

8.2.8 Implementation

As this reform option recommends a continuation of the status quo, no consideration of implementation issues is required. The Commission further recognises that SA Water has undertaken internal investigations into the possible roll out of smart metering technologies

[200] ASM submission, p.2.
[201] Strata Water Solutions submission, p.4.

to its customers and notes that, at this time, there is no business case for it to do so, even under a best case scenario where communications infrastructure from an electricity smart meter system can be accessed (this system does not exist yet in South Australia).

Advancements in technology, as well as better data and information coming from trials and roll outs of smart metering across other jurisdictions and industries, are expected in the coming years. For these reasons, the Commission encourages SA Water to regularly review its business case for the roll out of smart water metering to its customers.

9. WATER PLANNING AND MANAGEMENT COSTS

Clause (a) of the Terms of Reference for this Inquiry requires the Commission to *"inquire into options for pricing reform for drinking water and sewerage retail services provided by SA Water in South Australia".* The pricing of the cost components that make up these services is important in driving economically efficient consumption behaviour. This chapter discusses one such cost component – water planning and management costs.

Draft finding

19. Current water planning and management charges paid by SA Water's customers may not be economically efficient.

Draft recommendations

25. The State Government should consider commissioning an independent public review of the prudence and efficiency of all water planning and management-related costs incurred by SA Water, including the manner in which they are recovered.

26. Until such a review is conducted, SA Water should make clear on customers' bills that a water planning and management payment is being collected through them – and that it is being done for the benefit of the wider South Australian public.

9.1.1 Key reasons for recommendations

- The way water planning and management (**WPM**) charges are set and recovered from SA Water may be impacting economic efficiency.
- There is no current formal process for the independent review of the prudence or efficiency of these costs and there is the potential for greater transparency about how they are set and recovered.
- There may be some potential efficiency to be gained from reviewing the current WPM collection mechanisms.
- When WPM costs are passed on to consumers, the process should be transparent.

9.1.2 Current approach

The supply of water and sewerage services brings obvious benefits – for example, to public health – but it can also involve costs – for example, to the environment. These costs or benefits, referred to by economists as "externalities", are not always reflected in the prices charged. However, pricing externalities and charging for them can be important in driving economically efficient consumption behaviours.

In 2007, an NWI Steering Group made a clear distinction between externality charges and charges to recover the cost of water planning and management activities. (See further detail in Appendix 9).

WPM activities include, for example:

- development, implementation and review of water resource plans
- environmental and ecosystem management planning
- measures to improve water use, such as water efficiency programs.

Across the Murray Darling Basin, governments use a variety of charges to fund or recover the costs of WPM activities. These include:

- fees and charges for the issuing of water access rights and other permits
- service/transaction fees (e.g. application for trade or transfer of a water access entitlement)
- charges (often in the form of a levy) that fund multiple activities.

SA Water makes contributions to the Department of Environment, Water and Natural Resources (**DEWNR**), at the direction of the Minister for Water, to support water planning and management activities required for the implementation of the NWI and the SA Government's *Water for Good* Plan. For the period 2013/14 to 2015/16, these charges will total $51.4 million (equating to approximately $78 for each water customer across the three years)(Table 9.1).

Table 9.1: WPMC amounts payable by SA Water to DEWNR

2013/14	2014/15	2015/16	TOTAL
$16.7m	$17.1m	$17.6m	$51.4m

The WPM charges SA Water incurs are ultimately paid for by its customers. The monies recovered are passed on to Government and other authorities to fund a number of water-related activities.

Most water customers also pay the Save the River Murray Levy, which is collected from both residential and non-residential customers to be spent on certain River Murray-related activities in accordance with the *Water Industry Act*. The estimated cost of these activities for 2013/14 is $26.1 million (approximately $40 for each water customer per year).

9.1.3 Summary of submissions

The Commission received seven responses referring to WPM issues, from the following parties:

- Ceduna Council

- Conservation Council
- Hon. Sandra Kanck
- Property Council
- Richard Clark and Associates
- SA Water
- Uniting Communities.

All submissions, except for SA Water's, expressed support for further reform in this area. For example, Richard Clark and Associates,[202] the Conservation Council[203] and Ceduna Council[204] supported stronger independent oversight of WPM costs as they apply to SA Water. The Conservation Council[205] and Richard Clark and Associates[206] also raised concerns about the limited progress to date in implementing externality pricing.

Uniting Communities accepted that reasonable WPM costs are part of the operating costs of providing water and sewerage services, but suggested that broader policies, such as those relating to the environment, should be funded by Treasury rather than through consumers' water bills.[207]

The full written submissions from these parties cover a range of issues and are available on the Commission's website.[208]

9.1.4 Discussion

The main WPM-related charges relevant to SA Water (and reviewed in determining this recommendation) are:

- the *Save the River Murray Levy* ($26.1 million a year)
- the State's Murray Darling Basin Agreement payments ($26.4 million a year)
- NRM levies ($45.41 million in 2012/13)
- WPM-related charges included in the Ministerial Direction issued by the Minister for Water in May 2013, payable to DEWNR ($16.7 million in 2013/14).

[202] Richard Clark and Associates submission, p.8; available at: http://www.escosa.sa.gov.au/library/131118-WaterPricingInquiry-IssuesPaperSubmission-RichardClarkAssoc.pdf.
[203] Conservation Council of SA submission, p.5.
[204] Ceduna Council submission, p.6.
[205] Conservation Council of SA submission, p.4.
[206] Richard Clark and Associates submission, p.8.
[207] Uniting Communities submission, p.8.
[208] Submissions received to the Issues Paper are available at: http://www.escosa.sa.gov.au/projects/189/inquiry-into-drinking-water-and-sewerage-retail-services-pricing-reform.aspx.

As WPM charges do not include sufficient detail about the way these costs are calculated or applied, it is difficult to determine whether they are efficient or provide SA Water and/or its customers with appropriate price signals and incentives to change behaviour.

For example, of the $15.9 million SA Water paid to the Government in 2011/12, $8.7 million has been attributed to it being a "water licensee" and $7.2 million has been allocated for it to collect on behalf of the South Australian public, as a general "public good", on the basis that its customers represent a large proportion of the State's population. This information is not public, is not visible on customers' bills and, potentially, it sends distorted price signals to water users.

SA Water holds a water entitlement in four of the State's NRM regions: the SA Murray Darling Basin; Adelaide Mount Lofty Ranges; South East; and Eyre Peninsula. As shown in Tables 9.2 and 9.3, SA Water pays a differential water levy rate much higher than other water users in each of these regions. For example, it pays over six times more than other users in the South East and three times more than other users in the SA Murray Darling Basin region.

Table 9.2: 2013/14 NRM water levies – SA Water and other water extractors

NRM REGION	WATER LEVY ($ PER ML) (2013/14)	
	SA WATER	OTHERS (AVERAGE)
Adelaide Mt Lofty Ranges	$1.2 million (flat rate)	–
SA Murray Darling Basin	$17.00	$5.43
Eyre	$3.96	$2.44
South East	$16.80	$2.65

Table 9.3: Comparison of SA Water NRM Levy to its water entitlement[209]

NRM REGION	SA WATER ENTITLEMENT PORTION (%)	SA WATER WATER LEVY PORTION (%)
Adelaide Mt Lofty Ranges	43.3%	100.0%
Eyre	96.6%	98.9%
South East	1.8%	2.9%
SA Murray Darling Basin	22.0%	64.1%

DEWNR has stated that SA Water's higher NRM water levy rate generally reflects "SA Water's status as the major public water supplier, taking account of relative levels of water security for entitlement it holds, and social impact".[210]

[209] Water entitlement can be considered a proxy for 'capacity share'.

SA Water appears to have had a greater level of water security for its entitlement, compared with other water extractors during the drought.211 This is due to the South Australian Government policy and practice of prioritising critical human water needs over other needs. (A similar level of priority is now reflected in the Commonwealth Water Act 2007 (Water Act), which requires the Basin Plan212 to be prepared having regard to the fact that critical human water needs are the highest priority water use for communities dependent on Basin water resources).

For example, in the 10 years from 2003/04 to 2012/13, SA Water had access to 100 per cent of River Murray water entitlement for the Adelaide metropolitan area. In contrast, irrigators had access to 100 per cent of River Murray entitlement in three years out those 10. In five of those years irrigators had access to less than 70 per cent of entitlement[213].

SA Water could, therefore, be considered to possess a different water "product", and there may be a case for it paying a higher rate than "lower security" water entitlement holders. However, the Commission has not been able to obtain any information that shows how this high water entitlement security exactly translates into NRM Levy rates, and whether these higher rates are commensurate with that security.

There may be some merit in "hard coding" rules in South Australia, so that the relationship between water security and price charged is more transparent.

As there is not a significant amount of publicly available information on this matter, the Commission has not undertaken a comprehensive review of costs as a part of this Inquiry.

Although it is understood that the WPM costs have been through some form of external review process (for example, there are a number of public and Parliamentary reporting requirements in place for the Save the River Murray Levy), none have been subject to specific tests of prudence and efficiency. It may be that some efficiency gains could be identified in a review.

To address those matters, the State Government could commission an independent (of Government) public review of the prudence and efficiency of all WPM-related costs incurred by SA Water and incorporated into customers' charges. However, while economic regulators have undertaken similar roles in other jurisdictions,[214] such a review need not be undertaken by the Commission. It could be conducted by any suitable individual or organisation independent of Government.

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[210] Information provided to the Commission, by DEWNR, as a part of this Inquiry.

[211] Information provided to the Commission, by DEWNR, as a part of this Inquiry.

[212] The Basin Plan provides a coordinated approach to water use across the Murray Darling Basin's states and the Australian Capital Territory. It limits water use at environmentally sustainable levels by determining long-term average sustainable diversion limits for surface water and groundwater resources.

[213] Information provided to the Commission by DEWNR.

[214] Similar reviews have been carried out in New South Wales (by the Independent Pricing and Regulatory Tribunal of NSW (IPART)), Western Australia (by the Western Australian Economic Regulation Authority (WA ERA)) and Australian Capital Territory (by the Independent Competition and Regulatory Commission (ICRC)).

9.1.4.1 Save the River Murray Levy

In 2012/13, SA Water's River Murray water entitlement was 130 GL out of a total water entitlement from the River Murray for South Australia of 857 GL.215 However, currently, only SA Water customers pay the STRM Levy.

Further, the proportion of SA Water's customer base that pays the levy has declined by 10 per cent since the introduction of the *Water Industry Act*. Under that Act, the Minister for Water can require that this levy be collected from other water retailers. This may be appropriate in an increasingly competitive environment.

9.1.4.2 SA Water's WPM contribution

The South Australian Government currently makes a MDBA contribution of approximately $26.5 million dollars per annum but, in response to the decision by the NSW Government to reduce its contributions by 70 per cent, has recently announced that, from 2014/15, it will halve its own contribution to approximately $13.25 million.

SA Water's contribution to the South Australian Government's MBDA payment is currently about $2.25 million per annum and it has not been suggested that this amount will reduce in line with the Government's overall MBDA payment changes.

DEWNR has stated that these arrangements are a transitional measure, and that it is intended that the amounts attributed to, and recovered from, SA Water (and its customers) and other beneficiaries will be reviewed before the end of the current SA Water Revenue Determination. However, it is recommended that consideration be given to the development of a mechanism whereby SA Water's DEWNR WPM costs are balanced or "trued up" at the end of this regulatory period. Adjustments should then be made to ensure any excess (i.e. unspent) or additional costs are taken into account, so that SA Water's customers only face true WPM costs.

9.1.5 Costs and other implications

Implementing these recommendations would attract costs associated with a) conducting the review and b) changing SA Water's billing system to make transparent the WPM charge collected on behalf of the wider community. Assuming the charge continues to be collected by SA Water, billing changes could cost approximately $480,000 and take about six months to implement. Collection costs should be similar for local councils as they, too, have billing systems in place.

9.1.6 Customer bill impacts

Without a detailed analysis of all the efficient DEWNR WPM cost components, the Commission has not been able to draw any conclusions about whether these costs should be allocated to customers as a fixed charge, or vary according to customer water use. However,

[215] See 2012-13 River Murray Water Allocation Framework, available http://www.environment.sa.gov.au

it notes that approaches vary across Australia. In New South Wales, the Independent Pricing and Regulatory Tribunal sets a fixed and usage WPM cost component. In Western Australia, the Economic Regulation Authority recommend that recovery of WPM costs vary according to region.[216]

The Commission has assumed that, until a review of the prudence and efficiency of WPM costs has been conducted, all customers will receive the same fixed charge on their bill. On this basis, the customer bill impact of this recommendation would be a once off (for the first year only) cost of around 75c for all customers.

9.1.7 Implementation

This recommendation would not require a change to legislation. However, SA Water estimates it would need a six-month timeframe to modify its billing systems to implement the recommendation.

The Commission has not estimated the time to implement the remaining recommendations. However, it notes that:

- they could begin immediately, and they are not dependent on any of the other Inquiry recommendations.
- there is merit in considering the SA Water price determination cycles in the implementation of these recommendations.

[216] Economic Regulation Authority of Western Australia, *Inquiry into Water Resource Management and Planning Charges*, 28 February 2011; available at: http://www.erawa.com.au/cproot/9476/2/20110329%20D62487%20Final%20Report%20-%20Inquiry%20into%20Water%20Resource%20Management%20and%20Planning%20Charges.PDF.

10. OVERALL CUSTOMER IMPACTS

10.1 Background

Moving to more cost-reflective pricing for drinking water and sewerage and reforming other arrangements based on economic efficiency would have significant transitional and customer impacts. To assist with consideration of those matters, the Commission has modelled customer impacts inherent in moving towards the suite of recommendations contained in this report. This chapter presents a summary of those customer impacts. Appendix 9 presents further detailed customer impact analysis, at a regional level.

10.2 Overall approach

To provide a baseline for analytical purposes, this section assumes that all recommendations would be implemented as a single package and as soon as possible. The Commission notes that any actual implementation may be of a different nature or over a different timeframe.

There are two components that determine customer impacts:

- *Customer benefits* – such as those that arise from economic efficiency, and lower costs to society overall, as discussed throughout this report (and in Chapter 2 in particular).
- *Customer bill impacts* – which include the direct bill impacts (either positive or negative) from pricing reform, and costs and benefits from implementation.

The analysis presented in this chapter focuses on customer bill impacts, presented at an overall statewide level. For specific analysis by region, see Appendix 9.

The Commission recognises that there may be additional costs and benefits that it has not taken into account and welcomes feedback from stakeholders on the inputs and assumptions in its Inquiry.

10.3 Statewide customer impacts

10.3.1 Customer bill impacts summary (all recommendations)

The terms outlined in Table 10.1 have been used in the following graphs to describe the level of impact. Each column is labelled according to its level of increase/decrease from the customer's previous bill (e.g. minor increase, moderate decrease). These labels are grouped by the percentage change from the bill issued under the current system, to the bill that is likely to be issued under a scenario that adopts all recommendations.

Table 10.1: Bill impact groupings

BILL IMPACT	% CHANGE IN BILL
Very significant decrease	> 50% decrease from previous bill
Significant decrease	25% to 50% decrease from previous bill
Moderate decrease	10% to 25% decrease from previous bill
Minor decrease	5% to 10% decrease from previous bill
No change	< 5% decrease or increase from previous bill
Minor increase	5% to 10% increase from previous bill
Moderate increase	10% to 25% increase from previous bill
Significant increase	> 25% increase from previous bill
Very significant increase	> 50% increase from previous bill

Figure 10.1 shows the degree to which all customers (residential, commercial and industrial, concession and exempt) are impacted by a scenario that adopts all recommendations. For a breakdown of these impacts according to customer type and region, refer to Appendix 9.

Figure 10.1: Customer impact state wide – All customers

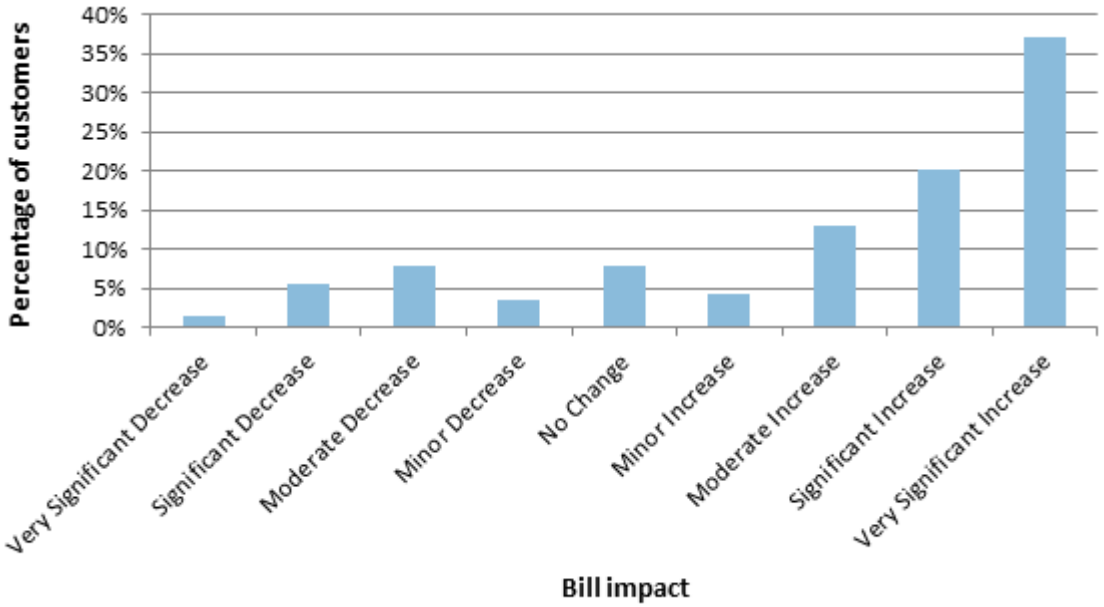


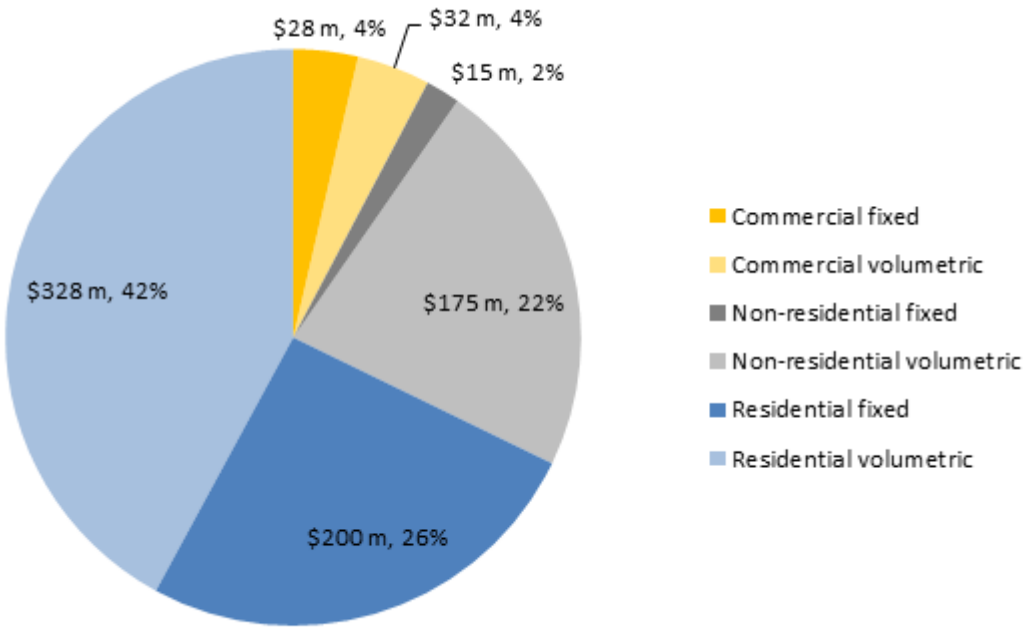
Figure 10.1 shows it is likely 18 per cent of customers would see their annual bill decrease and 74 per cent of customers would see their annual bill increase, by greater than 5 per cent. Furthermore, it is likely that 19 per cent of customers would see their annual water bill decrease by more than $50 while 75 per cent would see their annual water bill increase by more than $50.

10.3.2 Drivers of customer bill impacts (water)

A comparison of current revenue sources and cost-reflective revenue sources helps to explain the drivers of customer water bill impacts flowing from the recommendations for water pricing. [217]

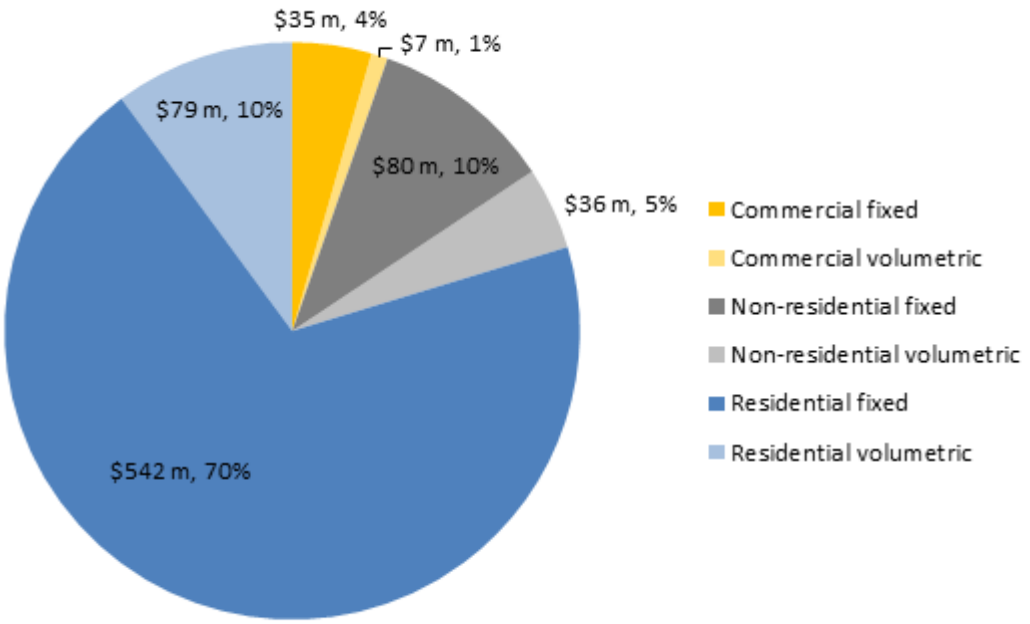
A comparison of Figures 10.2 and 10.3 shows current revenue from residential customers falls $93 million short of reflecting the current costs to serve these customers. Revenue from commercial customers is currently $18 million greater than the cost-reflective amount, with industrial customers $74 million greater. This is one driver of larger bill increases for residential customers when compared with commercial and industrial customers.

Figure 10.2: Current split of water revenues by fixed and usage charges by customer type (2013/14)



[217] The 2011/12 SA Water customer database has been used for the analysis in this chapter. Each year since 2011/12 SA Water has applied uniform price increases across the board. Therefore, this data is considered appropriate for determining the split of 2013/14 water revenue.

Figure 10.3: Cost-reflective split of water revenues by fixed and usage charges by customer type (2013/14)



The main driver of customer bill impacts, however, is the rebalancing of revenue from usage to fixed charges, to align these charges with costs. This arises because of the degree to which current prices have departed from costs over time. Any change would shift a large amount of revenue from higher users to be dispersed equally between all users through higher fixed charges and lower usage charges. Residential customers currently pay 38 per cent of their revenues in fixed charges whereas, under cost-reflective prices, 87 per cent should be recovered through fixed charges.

10.3.3 Average customer bill impacts (water)

The following figures show the average customer bill impact of the proposed changes to water tariffs, grouped by customer type and level of water use.

Figure 10.4: Statewide residential customer average water bill change by annual use

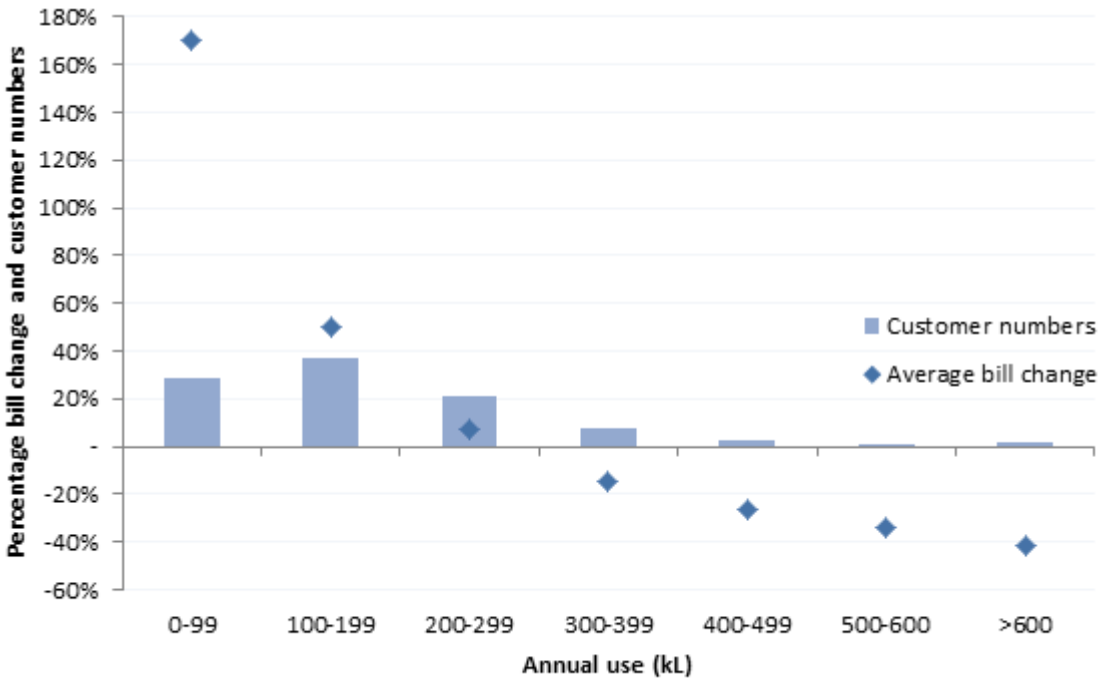


Figure 10.4 shows the lowest residential users (0-99kL pa), making up 28 per cent of residential customers, would experience an average water bill increase of 170 per cent. This is a direct result of the rebalance of fixed and usage charges to align with fixed and variable costs, which sees a significant increase in fixed charges and decrease in usage charges. The majority of residential customers (66 per cent) would see a change in their water bill in the range between a 50 per cent increase and a 14 per cent decrease.

Figure 10.5: Statewide industrial customer average water bill change by annual use

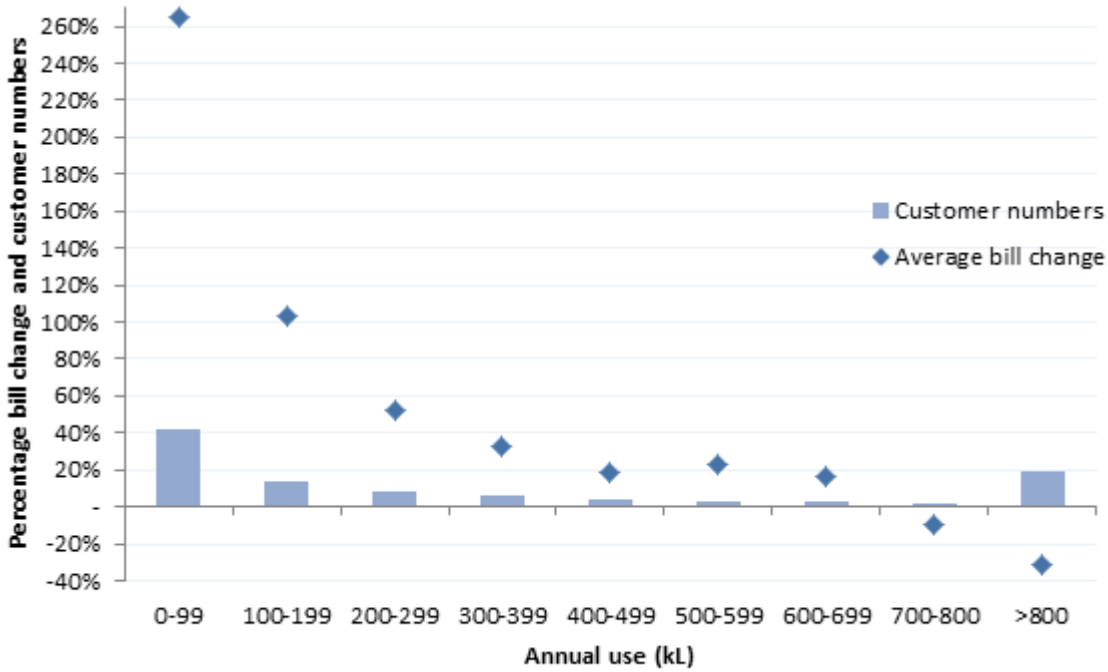


Figure 10.5 above shows that the lowest 42 per cent of industrial water users (0-99kL pa) would experience an average water bill increase of 265 per cent. This large increase results from the rebalance of fixed and usage charges to align with costs, and the allocation of fixed charges on a capacity basis. This means industrial customers as a group must pay an extra $65 million in annual supply charges. Higher using industrial customers see a much smaller increase, and even a decrease, as the increase in their fixed charges is offset by the drop in their usage charges.

Figure 10.6: Statewide commercial customer average water bill change by annual use

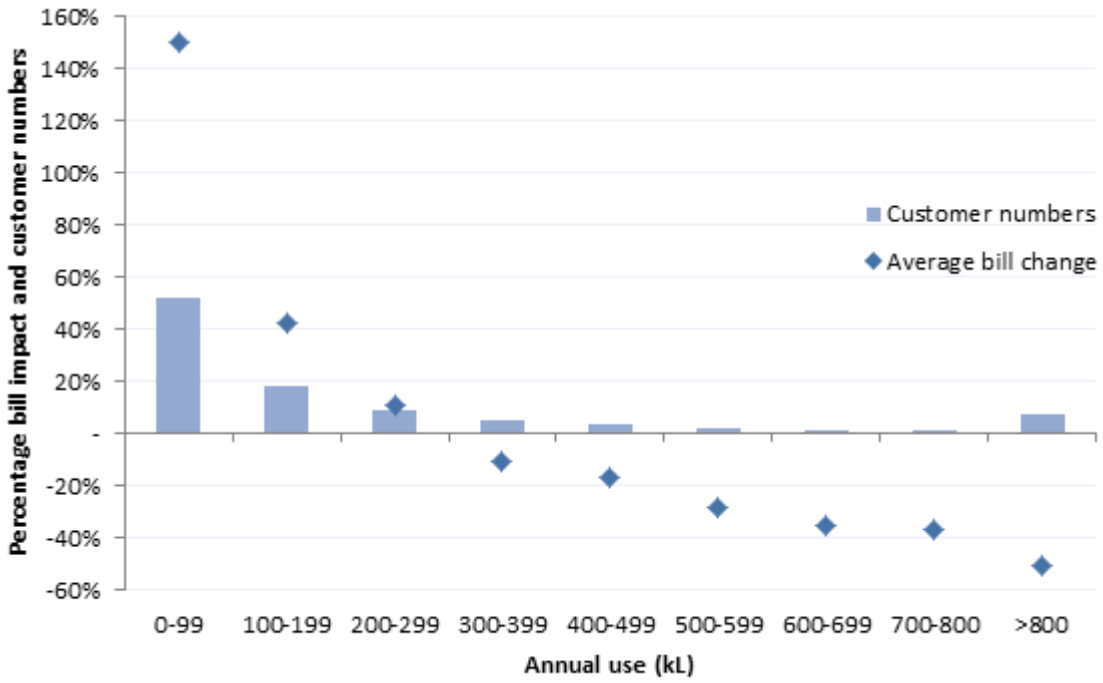


Figure 10.6 shows the lowest using 52 per cent of commercial customers (0-99kL pa) would see an average water bill increase of 150 per cent. Similar to residential and industrial customers, this results from the shift of charges from usage to fixed, to align with costs. At higher levels of use, commercial customers see significant decreases in water bills. The move from property-value based, to connection capacity-based, supply charges also has a material impact for commercial customers, and especially benefits those with smaller connections, but high property values.

Figure 10.7: Statewide concession customer average water bill change by annual use

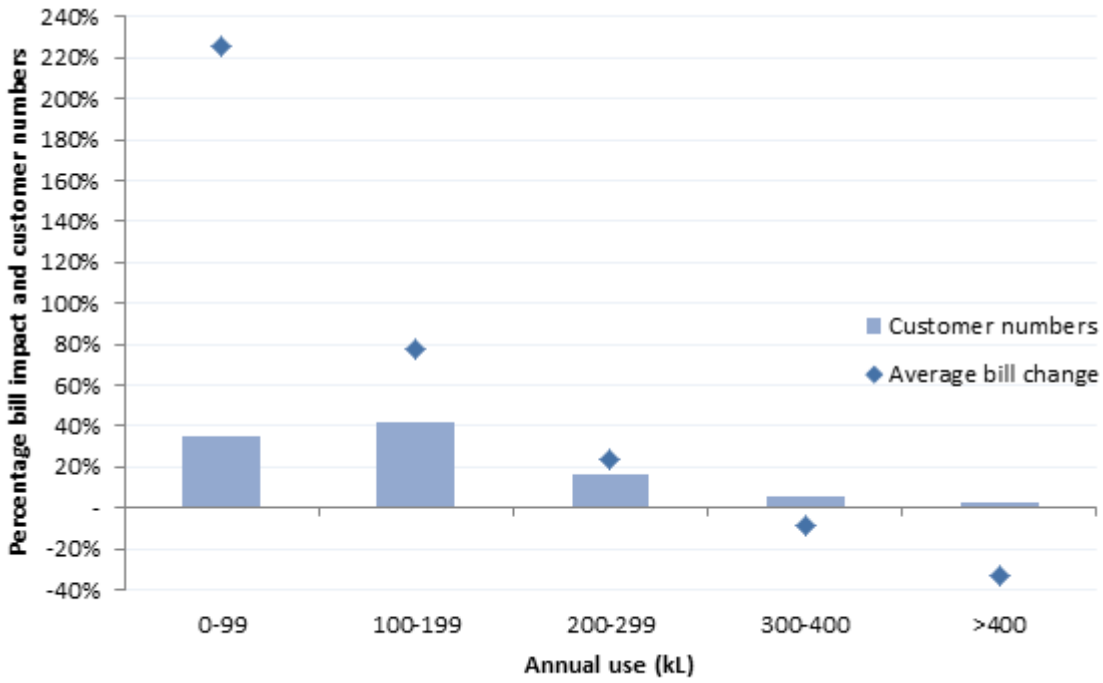


Figure 10.7 shows that the average water bill increase for concession customers using between 0 and 99kL pa is 225 per cent. Further, all concession customers with a 20mm connection using less than 300kL pa (90 per cent) would see an average increase in their water bill of more than 22 per cent. Applying the average concession of $195 as a discount to the fixed charge only, going forward, all concession customers with a 20mm connection who use more than 153kL a year would receive a smaller discount on their water bills than previously under concession arrangements. The rebalancing of the fixed and usage charges would also have a significant impact on concession water users, as they generally use less water than other non-concession residential customers.

Figure 10.8: Statewide exempt customer average water bill change by annual use

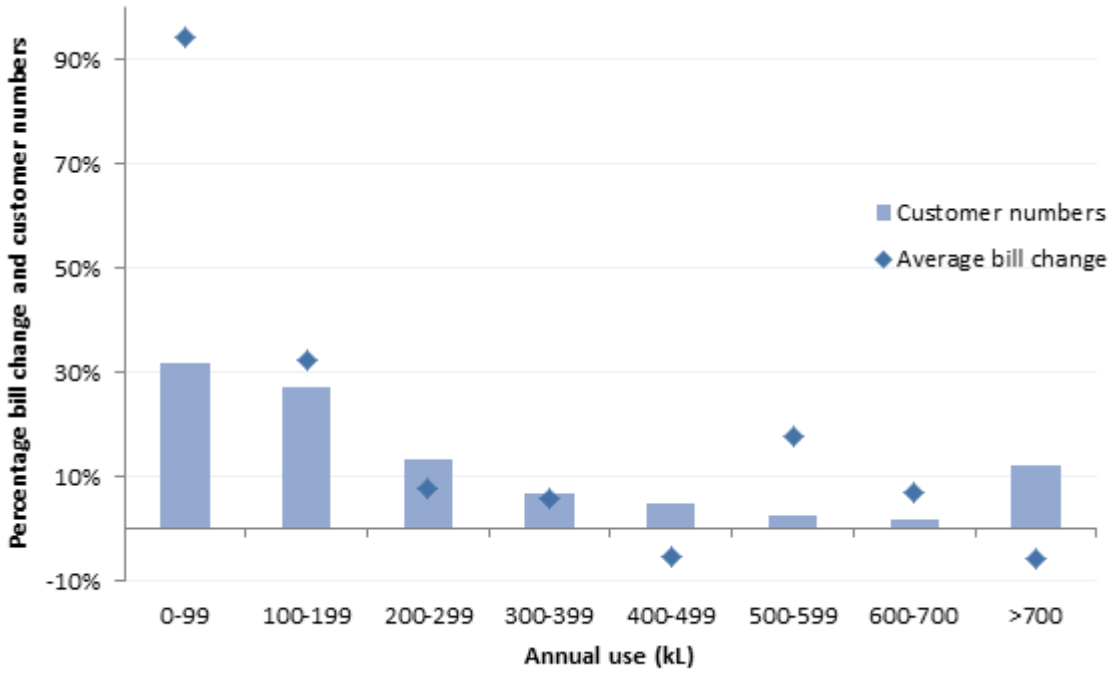


Figure 10.8 shows the majority of exempt customers would see an increase in their annual water bill, with 32 per cent experiencing an average increase of 94 per cent. As with the other customer groups, this is due to the rebalancing of fixed and usage charges to align with costs, despite the $354 supply charge discount going forward. It is further impacted by a lower reduction in usage charges for exempt customers, as they previously were charged a usage rate 25 per cent lower than other water customers.

10.3.4 Drivers of customer bill impacts (sewerage)

As with water, a comparison of current revenue sources and cost-reflective revenue sources helps to explain the drivers of customer sewerage bill impacts flowing from the recommendations for sewerage.

Figure 10.9: Current split of sewerage revenues by customer type (2013/14)

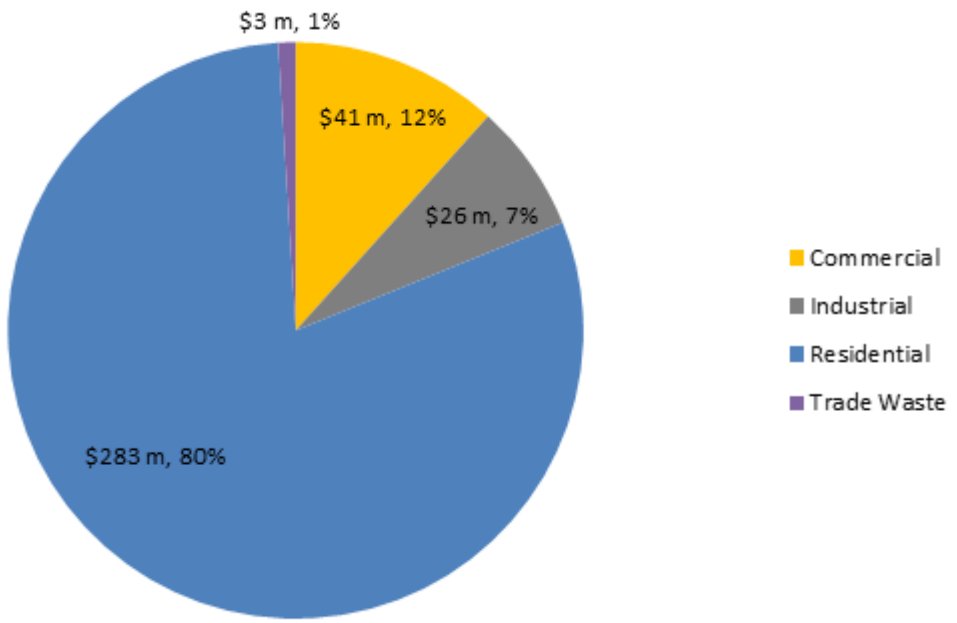
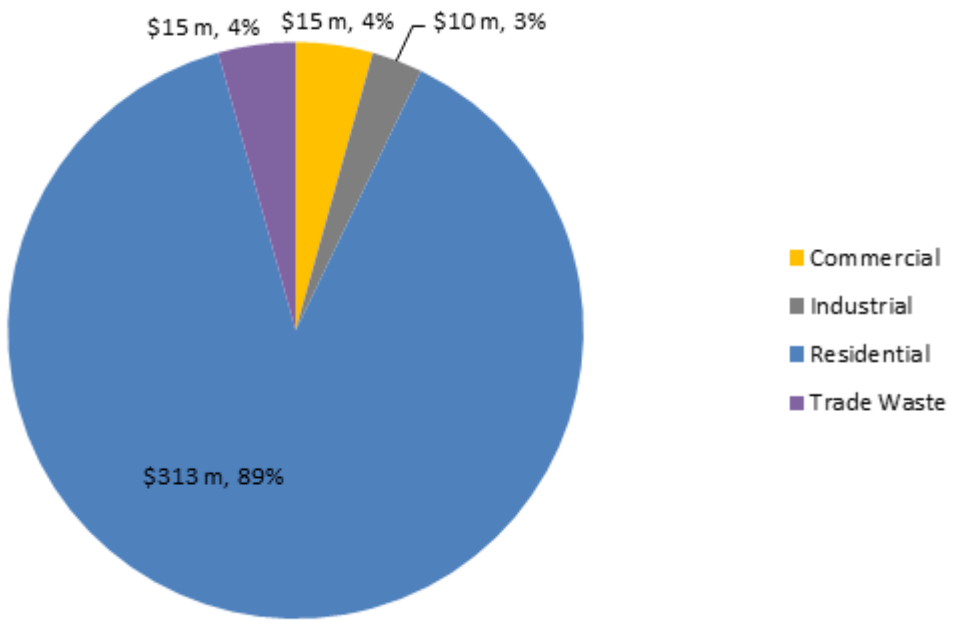


Figure 10.10: Cost-reflective split of sewerage revenue by customer type (2013/14)



A comparison of Figures 10.9 and 10.10 shows revenue from residential customers currently falls $30 million short, and for trade waste customers $12 million short, of the revenue allocated to those customers under cost-reflective pricing. Current revenue from commercial

customers is $26 million more than the cost-reflective amount, and industrial customers $16 million more. This is one of the drivers contributing to the greater bill increases for residential compared with commercial and industrial customers.

The main driver of customer bill impacts, however, is the rebalancing of revenue from high property value customers to all customers equally (by connection size). Further impacting the charges for all connected customers is the decrease in revenue coming from non-connected customers, who would no longer contribute to sewerage revenue. As outlined in Chapter 7, the Commission estimates this at about $5m per annum.

10.3.5 Average customer bill impacts (sewerage)

Figure 10.11: Statewide residential customer average sewerage bill change by property value

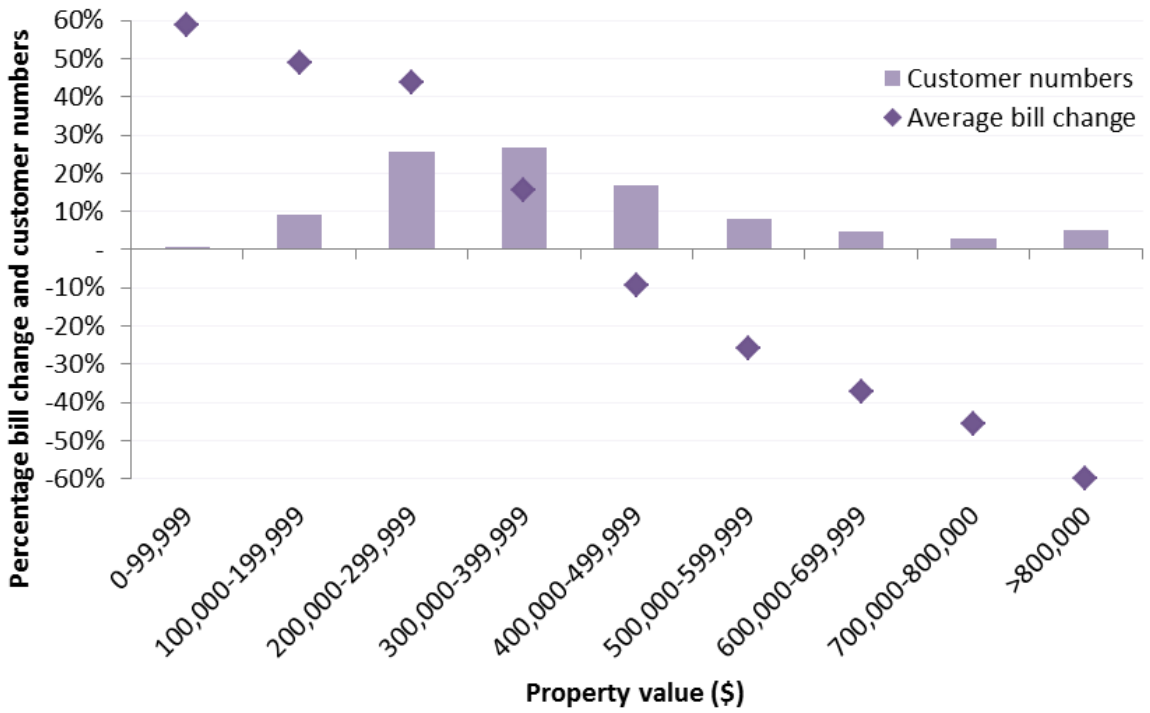
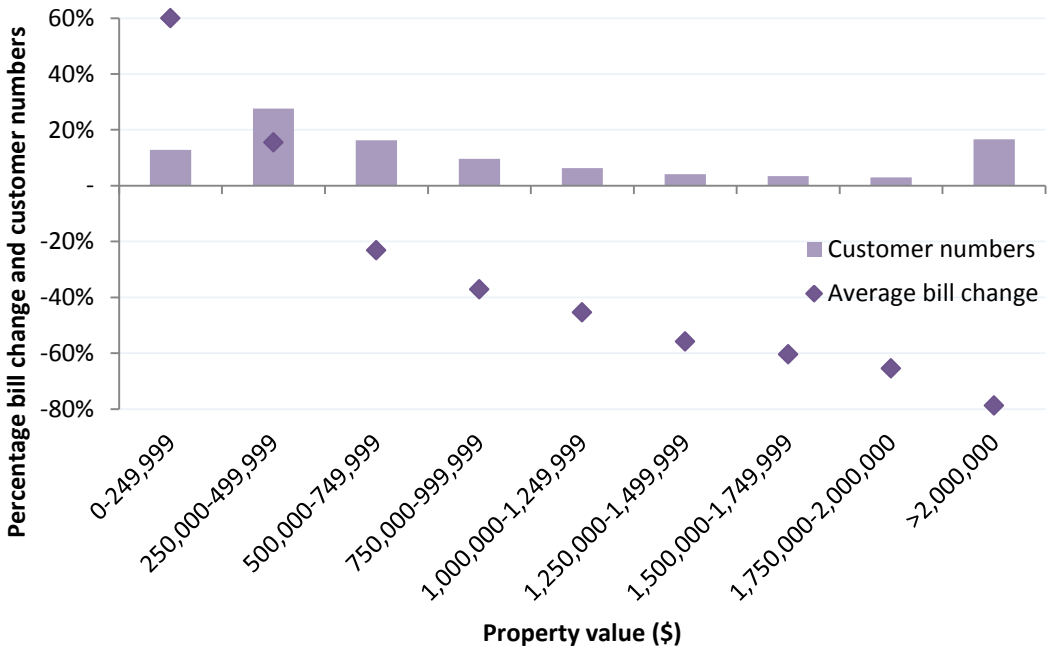


Figure 10.11 shows that 62 per cent of customers would see an average increase in their sewerage bills of between 16 and 59 per cent. Customers with a property value over $403,000 (36 per cent) would see a decrease in their sewerage bill. Those with a 100mm connection and property values below $382,000 (59 per cent) would see an increase of more than 5 per cent. The maximum increase, for single 100mm connections, would be 49 per cent because the minimum charge means every customer would be paying at least $341.40 per annum.

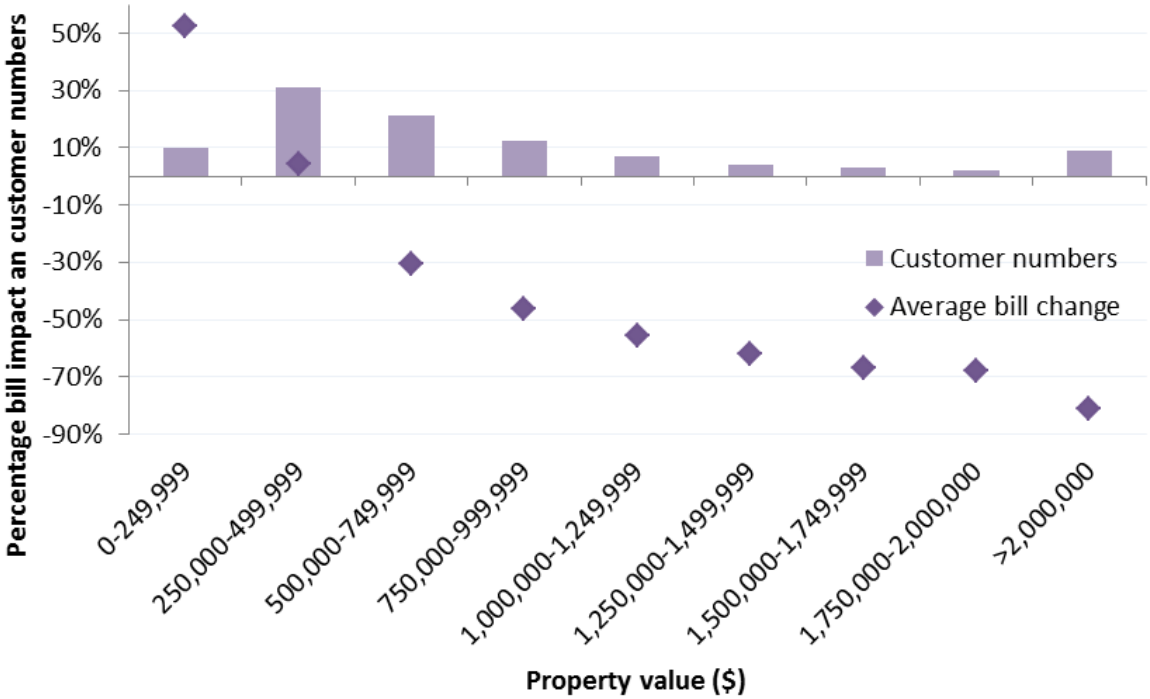
Figure 10.12: Statewide industrial customer average sewerage bill change by property value^



^Note: the property value data among the industrial customers analysed is highly dispersed ranging from as low as $900 to $211 million.

Figure 10.12 shows that 41 per cent of industrial customers would see an average increase in their sewerage bill of between 16 and 60 per cent. Further, those with a property value over $365,000 (38 per cent) would see a decrease in their annual sewerage bill. Those with property values below $346,000 (21 per cent) would see an increase of more than 5 per cent. The maximum increase for single 100mm connections would be 49 per cent because the minimum charge would mean every customer would be paying at least $341.40 per annum.

Figure 10.13: Statewide commercial customer average sewerage bill change by property value^



^Note: the property value data among the commercial customers analysed is highly dispersed ranging from as low as $20 to $95.8 million.

Figure 10.13 shows that 41 per cent of commercial customers would experience an average increase in their sewerage bills of between 4 and 52 per cent. Those with a 100mm connection and a property value over $365,000 (56 per cent) would see a decrease in their annual sewerage bill. Those with property values below $346,000 (20 per cent) would see an increase of more than 5 per cent. The maximum increase for single 100mm connections would be 49 per cent because the minimum charge would mean that every customer would be paying at least $341.40 per annum.

Figure 10.14: Statewide concession customer average sewerage bill change by property value

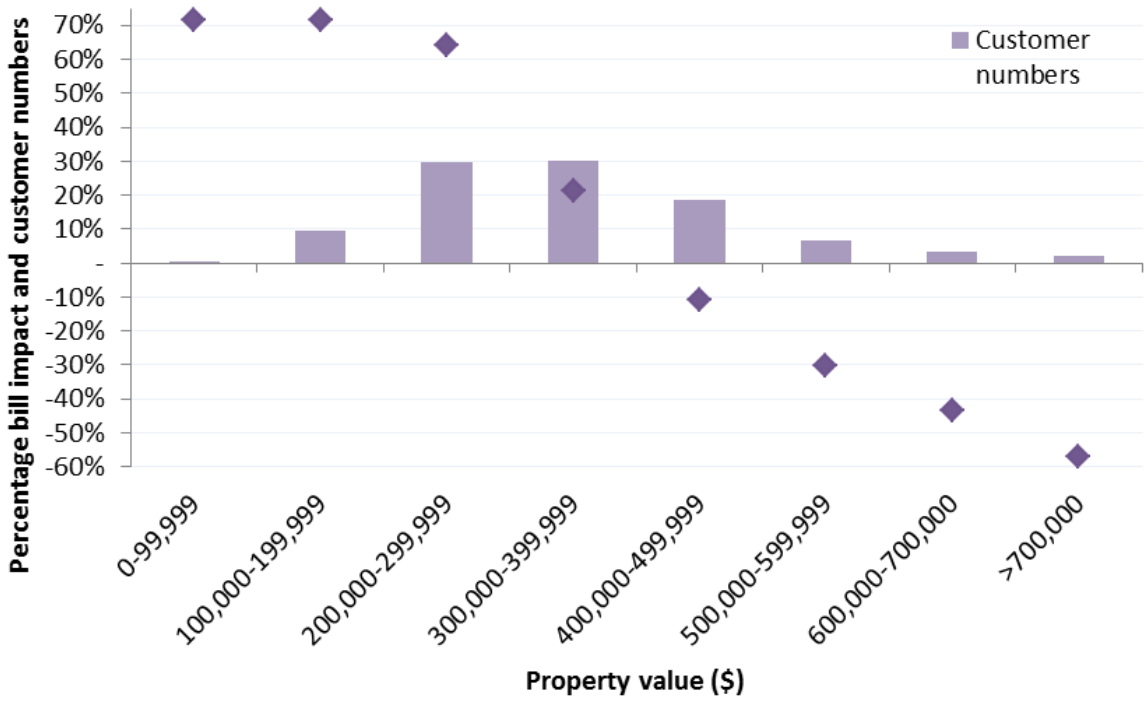


Figure 10.14 shows that 70 per cent of customers would see an average increase in their sewerage bills of between 21 and 72 per cent. Customers with a 100mm connection and a property value over $403,000 (29 per cent) would see a decrease in their sewerage bill. Those with a single 100mm connection and property values below $387,000 (67 per cent) would see an increase of more than 5 per cent. The maximum increase for single 100mm connections would be 72 per cent because the minimum charge and sewerage concession would mean that every customer would be paying at least $231.40 per annum.

Figure 10.15: Statewide exempt customer average sewerage bill change by property value

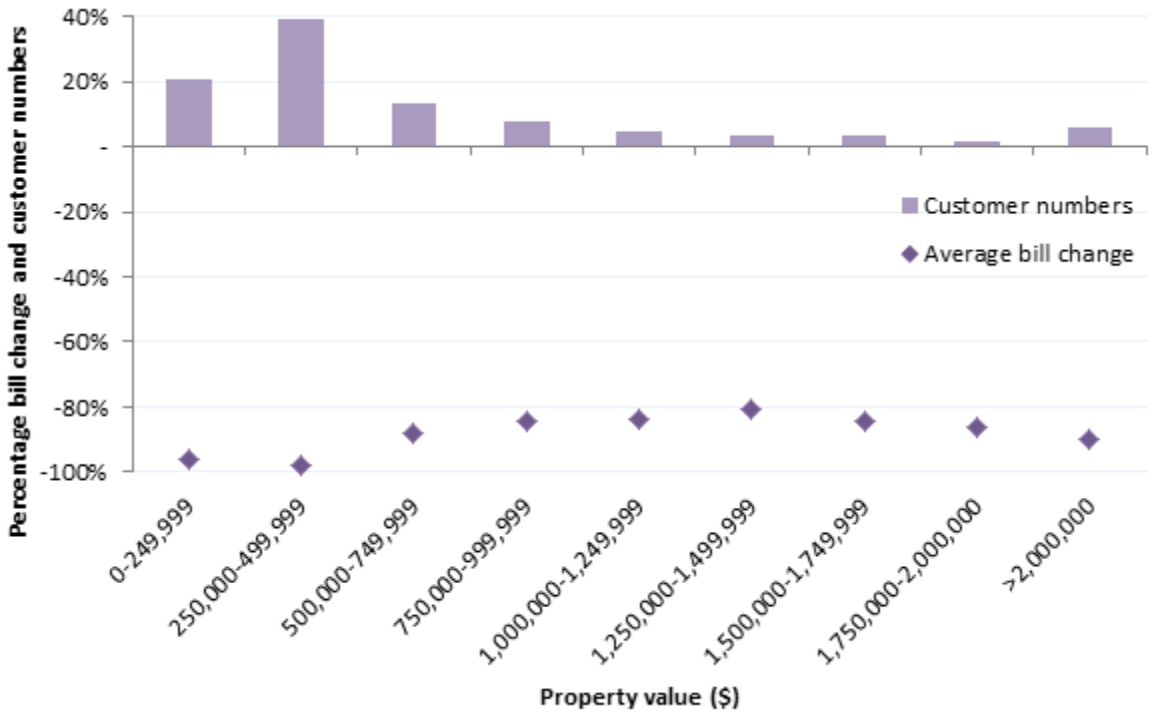


Figure 10.15 shows that all exempt customers would experience a decrease in their sewerage bill of between 81 and 98 per cent. This is due to the Commission's recommendation to apply the average value of sewerage exemptions as a fixed discount for all exempt customers. This reduces the fixed charge by up to $610. All exempt customers would receive the same dollar benefit going forward, where previously those with higher property values received a greater benefit from exempt charging than those with lower property values.

11. IMPLEMENTATION/TRANSITIONAL ISSUES

Draft finding

20. Moving to economically efficient prices would lead to significant bill impacts for many customers, due to the unwinding of the cross-subsidies that currently exist.

Draft recommendations

27. The Government should consider transitional arrangements to smooth the bill impacts of reform.

28. The State Government should consider ongoing implementation issues, including a review of the concession/exemption scheme to ensure that subsidies are targeted and effective.

Determining an optimal timetable and transitional arrangements for implementation are important matters for this Inquiry. The Terms of Reference require the Commission to consider transition arrangements specifically in relation to reforms of SA Water's drinking water supply charges.

The Commission notes that there are two types of implementation issues.

The first relates to practical implementation issues that may have an impact on the adoption of the recommendations. For example, the time taken to change legislation, or SA Water's billing system changes, would affect the timing of SA Water's commencement and completion of the implementation of some recommendations.

While the Commission is not in a position to estimate the time needed to make any legislative or other policy changes to support the reforms, it has sought to develop robust estimates of the time and cost associated with SA Water's billing system changes.

The other implementation issue relates to transitional issues to mitigate the impact of price rises on certain customers. The Commission recognises that the current pricing arrangements have developed over many years and, in a number of instances, economic efficiency has not been a major driver of price structures. This means that there would be significant impacts to certain customers should SA Water's prices be made more economically efficient.

It is the Commission's view that mitigating the impacts of price rises on certain customers are matters best dealt with by the Government, given its broad role. To assist the Government in this regard, the Commission has suggested some scenarios for transition of reforms that "smooth" bill impacts over time. It has also considered ongoing initiatives that the Government could undertake to promote affordability of SA Water's water and sewerage services over the longer term. These options are presented in this chapter, along with some high-level customer impacts that would be expected under each scenario. However, any partial implementation, or implementation over a longer period of time, would be trading-off some of the benefits that could be realised under this reform.

The Commission is seeking feedback on these implementation scenarios, or any others that stakeholders consider appropriate. The five scenarios for implementation that the Commission has included in this Draft Report are described below. The Commission has provided general information about each scenario, but intends to develop further detail in its Final Report, having regard to the views expressed in submissions.

11.1 Scenario 1 – Full reform as soon as possible

This scenario assumes that the Commission's proposed reform package is implemented in its entirety as soon as possible, taking account of the practical implementation issues known by the Commission at the time of preparing this Draft Report.

The Commission notes that SA Water's submission to the Commission's Issues Paper stated that billing end users rather than landowners would, in particular, require significant changes to its billing system and require an additional customer management system (**CMS**) at significant cost.[218] It stated that this would take at least five years to implement[219] and could cost upwards of $60 million.[220]

Having regard to SA Water's submission, the Commission engaged consultants PricewaterhouseCoopers to undertake an independent review of the billing system changes and associated business processes that would be required to adopt a number of reform scenarios, including changes to SA Water's billing system. PricewaterhouseCoopers developed estimated costs and timeframes in close consultation with SA Water and its information technology provider. While PricewaterhouseCoopers focused only on SA Water's billing system platform and associated business processes, it is expected that these would make up the most significant costs to SA Water of adopting these reforms. Other business-related costs, such as communications, metering and debt risk have been considered throughout this report and appendices. The Commission welcomes stakeholder feedback on its cost and benefit assumptions.

PricewaterhouseCoopers found that the changes required to be made to SA Water's existing IT systems would cost around $7 million (mid-case), and be implemented in just over three years (mid-case). According to PricewaterhouseCoopers, three years is a pessimistic view, due to very conservative assumptions about the number of people who would be allocated to implementing the reforms.[221] It added that the project duration would likely decrease if additional resources were allocated to the project, and it should be possible to increase resources to deliver it in a shorter timeframe without impacting the estimated project cost.

[218] SA Water submission, p.21.
[219] SA Water submission, p.21.
[220] SA Water submission, p.11.
[221] PricewaterhouseCoopers assumed one project manager, one business analyst, one solution architect, and one test lead resource would be allocated throughout the life of the Reform Package project.

11.1.1 Customer impacts

The Commission estimates that overall economic benefits in the order of $30 million to $40 million per annum could be unlocked through implementation of this Inquiry's recommendations. Further economic benefits of approximately $2 million to $3 million per annum may be available were it to prove feasible to move to location pricing arrangements over time. The Commission notes that in some areas, such as sewerage and trade waste pricing reform options and the removal of rating on abuttal practices, it has not been able to quantify all the potential benefits at this stage, although it has identified certain benefits on a qualitative basis.

The previous chapters in this report have presented customer bill impacts for various proposed reforms. Detailed customer impacts for the full reform package are presented in Chapter 11 and in Appendix 9.

11.2 Scenario 2 – Full reform over a longer timeframe

This option assumes that the full reform package is implemented in its entirety, but transitioned over a longer period of time. Given that the greatest bill impacts arise from the reduction in usage charges and associated increase in fixed charges, a gradual reduction in usage charges over, say, a 5-year period could be used as a means of smoothing bill impacts over time. However, the longer the period of transition, the longer it would take to realise the economic efficiency benefit.

Putting aside its drinking water recommendations, the Commission's reform options would increase economic efficiency without leading to significant bill changes for most customers. For example, the proposed reforms of sewerage and trade waste charges would lead to sewerage bill decreases for most customers. On that basis, the Commission would recommend implementation of those reforms as soon as possible.

11.2.1 Customer impacts

Given the various ways in which this scenario could be implemented, it is difficult to estimate the customer impacts that would result from this option. However, if drinking water usage charges were to be reduced from current levels to the estimated LRMC over a period of 5 years, household bills would increase by around 2 per cent and 4 per cent each year over that period, all else constant.

11.3 Scenario 3 – Implement some reforms ahead of others

It may be possible to achieve some economic efficiency improvements from certain reforms that have limited customer bill impacts, while deferring those that have the greater bill impacts.

11.3.1 Customer impacts

As noted previously, the reform of SA Water's drinking water tariffs produces the greatest customer bill impacts, but is also the reform that delivers the greatest economic efficiency benefit. Implementing other reforms in advance of that reform would limit bill increases significantly, but would forego economic efficiency benefits.

11.4 Scenario 4 - Allocate higher fixed charges to large customers

Under this scenario, LRMC-based water usage charges would be implemented immediately, but drinking water and sewerage fixed charges would be re-allocated so that large customers (those with large capacity requirements such as industrial users) would pay higher fixed charges than those recommended by the Commission. This would allow fixed charges for small customers to be set below those recommended by the Commission and reduce the extent to which small customers' bills would increase.

There are practical limits to this option, however. If the fixed charge for small customers (those with 20mm water connections and 100mm sewerage connections) was reduced by around $100 per annum, the fixed charge for larger customers would need to increase by several thousands of dollars, to achieve a given revenue. This is because there are far fewer large customers to absorb fixed costs than there are small customers. In addition, there would be limits to the increase that some large customers would bear before potentially disconnecting from SA Water's system and moving to alternative supplies. The stand-alone cost of providing water or water substitutes to a large customer would determine the maximum charge that the customer would be prepared to pay.

11.4.1 Customer impacts

The customer impacts of this option would depend on the extent to which fixed costs are to be borne by large customers. As indicated below, it is not possible to move to LRMC-based usage charges while keeping fixed charges for small customers constant, without imposing a significant additional cost burden on large customers.

11.5 Scenario 5 – Implement reform within, not between, customer groups

One approach to mitigating bill impacts could be to treat customer groups (e.g. residential, industrial, commercial) as "discreet revenue groups", and implement the Commission's proposed reform package in its entirety within each group. Under this approach, the revenues amounts SA Water currently allocates within each customer group are preserved, as are the current cross subsidies between customer groups. As the current cross subsidies are retained, bill impacts across groups are avoided. However, the transfers between high and low users and high and low property values within a customer group remain.

11.5.1 Customer impacts

Table 11.1 presents estimated customer impacts assuming that reforms occur within and not between customer groups.

Table 11.1: Bill impacts of all tariff reforms – comparison of preserving customer group revenues

CUSTOMER TYPE	SCENARIO 5		SCENARIO 1	
	Increases greater than $50 p.a.	Decreases greater than $50 p.a.	Increases greater than $50 p.a.	Decreases greater than $50 p.a.
Residential	50%	42%	63%	32%
Industrial	58%	41%	43%	55%
Commercial	60%	39%	41%	56%
Concession	65%	27%	74%	23%
Exempt	32%	61%	8%	91%

11.6 Other ways of reducing bill impacts

In addition to the options discussed above, there are other ways in which the Government can facilitate greater economic efficiency in SA Water's prices while also managing customer bill impacts.

- It is important that any subsidies provided by the Government to SA Water's customers are well targeted and provide adequate financial assistance to those that require it. This matter is discussed further below.
- The taxes and transfers system could be reviewed more broadly, to ensure that the Government's budget requirements are recovered in the most efficient manner.
- It would also be important to ensure that SA Water's cost base is prudent and efficient. This could be done through the actions of the Commission during price determination processes and the actions of the Government in setting regulatory parameters (such as the value to be ascribed to SA Water's regulatory asset base, through pricing orders under the *Water Industry Act)*.

11.6.1 Exemptions and concessions

The granting of exemptions and concessions is an important policy tool for assisting those most in need. Effective discounts on both water and sewerage charges are used to alleviate the financial burden on some types of organisations and individuals.

11.6.1.1 Exemptions

Exemptions for water and sewerage services are set out under the transitional provisions of the repealed *Waterworks Act 1932* and *Sewerage Act 1929*. The *Water Industry Act* supersedes both of these earlier laws, however, no exemption scheme has been implemented to apply under it.

Exempt land can be charged some form of water or sewerage rates if, after consultation with SA Water, the Minister so instructs. For example, exempt landowners are currently billed sewerage rates based on the lower of property value, the minimum charge, or a fixed charge per toilet connected to the sewerage system.

SA Water receives a CSO payment from the Treasurer to recognise the rates and revenue it forgoes under the exemption schemes.

11.6.1.2 Concessions

The current water concession scheme operates under Section 25(1)(o) of the *Water Industry Act*. Eligible pension and concession holders receive a discount (currently 30 per cent) of water charges, subject to a yearly minimum and maximum. This concession is applied as a credit on their bills.

For sewerage, a flat rate per annum sewerage concession is applied as a credit to the bill of eligible concession holders. This is in addition to any benefit arising under property-based charging.

Water and sewerage concessions are funded and administered by the Minister for Communities and Social Inclusion and applied to customer bills by SA Water.

11.6.1.3 Recommended review of exemptions and concessions

A number of the Commission's reform recommendations would have impacts on certain individuals and customer groups, including consumers who currently receive exemptions and concessions. The Commission has identified the impacts on customers of its recommended reforms and is keen to work with the Government to ensure that the benefits to all South Australians can be delivered, and that those customers most in need of support still receive assistance.

A review of the concession/exemption scheme should be undertaken to ensure that subsidies are targeted and effective. The Commission can assist the Government with such a review.

Consideration of the most effective form of exemptions and concessions is outside the scope of this Inquiry. As noted by DTF in its submission, the Commission's Inquiry:

> *… would not be able to adequately address the range of options that may be considered for vulnerable households, where water and sewerage costs/concessions are just one of many aspects of living affordably and*

Government support. This work is considered to be a matter for the Government's Affordable Place to Live Taskforce.[222]

The Commission supports the commitment from the DTF to address this issue through the Affordable Place to Live Taskforce.

If water pricing is to remain as a tool for delivering social equity objectives, to ensure that usage charges remain cost-reflective, any exemptions and concessions should not be dependent on the amount of water consumed (i.e. they should apply to the fixed charge only). It is important that usage charges be set at cost-reflective levels to promote economic efficiency. Applying subsidies to usage charges would distort consumption decisions and reduce economic efficiency.

The Commission does not support having concessions and exemptions based on an "allowance of essential volumes of water" (DCSI states that this may be beneficial to low income households[223]), or capping bills as a way of delivering these subsidies, (not supported by DCSI[224]). It follows that any concession should be applied to a water customer's fixed charge only. (This approach is supported by Hon. Sandra Kanck.[225])

The Commission supports an approach whereby social equity instruments are fully separated from water and sewage pricing policy. Using SA Water's drinking water and sewerage prices as a means of achieving equity outcomes is a blunt approach. The Government has other social policy measures available to it that are more efficient, better targeted and more transparent – in particular, the tax and transfer systems.

[222] DTF submission, p.1.
[223] DCSI submission, p.3.
[224] DCSI submission, p.3.
[225] Hon. Sandra Kanck submission, p.2.

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