



Attachment 11

Revenue requirement and price path

30 June 2017

2018–23 Water and Sewerage Price Proposal



Quality
drinking water



Reliable
supply



Affordable
pricing



Customer
service



Environmental
sustainability

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1 Summary

The total and net revenue requirement is calculated using the same methodology as applied in the 2015 Industry Panel decision. This approach sums each of the building blocks to determine the total revenue requirement and then deducts other relevant income to arrive at the net revenue requirement. The net revenue requirement is then used to determine the prices for water and sewerage services.

This attachment sets out Icon Water's approach to calculating the total revenue requirement, the net revenue requirement and the price path for water and sewerage services. The resulting bill impacts for residential and commercial customers are also presented together with the impact on Icon Water's financial viability.

Box 1-1: Key points

The total and net revenue requirement for water and sewerage are calculated consistently with the methodology used in the 2015 Industry Panel decision. The net revenue requirement for 2018–19 represents a significant decline on the net revenue requirement estimated by the Industry Panel for 2017–18 driven by a lower return on capital and operating expenditure efficiencies.

Net revenue requirement (\$million, nominal)

	2018–19	2019–20	2020–21	2021–22	2022–23
Water	\$167.49	\$174.40	\$181.44	\$189.75	\$195.06
Sewerage	\$125.99	\$132.26	\$137.82	\$144.62	\$149.51

The net revenue requirement is converted to a price path with the objectives of improving the efficiency of the pricing structure while avoiding significant bill impacts for ACT water and sewerage customers.

Forecast price path for water and sewerage services (\$, nominal)

	2018–19	2019–20	2020–21	2021–22	2022–23
Water supply charge (\$/customer)	\$120.00	\$140.00	\$160.00	\$180.00	\$200.00
Tier 1 water usage charge (\$/kL)	\$2.73	\$2.76	\$2.79	\$2.81	\$2.84
Tier 2 water usage charge (\$/kL)	\$4.95	\$4.95	\$4.95	\$4.95	\$4.95
Sewerage supply charge (\$/customer)	\$541.84	\$546.39	\$550.97	\$555.59	\$560.24
Sewerage fixtures charge (\$/fixture)	\$529.92	\$534.36	\$538.84	\$543.35	\$547.91

2 Total revenue requirement

The total revenue requirement is the sum of the building blocks discussed in attachments 7 to 10. Specifically, the total revenue requirement is comprised of the following elements.

- operating expenses, including controllable operation expenditure, the Water Abstraction Charge and the Utilities Network Facilities Tax ([Attachment 7: Operating expenditure](#))
- depreciation ([Attachment 8: Regulatory asset base](#))
- return on capital ([Attachment 9: Rate of return and forecast inflation](#))
- net tax liabilities ([Attachment 10: Corporate tax income](#)).

2.1 Total revenue requirement

Each of the building blocks that make up the total revenue requirement are presented below in Table 2-1 for water and Table 2-2 for sewerage.

Table 2-1: Total revenue requirement, water (\$million, nominal)

	2018–19	2019–20	2020–21	2021–22	2022–23
Return on capital	\$54.62	\$56.34	\$58.06	\$59.58	\$60.79
Depreciation	\$31.09	\$34.53	\$37.63	\$40.44	\$41.78
Controllable operating expenditure	\$61.75	\$62.61	\$63.84	\$66.82	\$68.03
Water Abstraction Charge	\$29.07	\$30.15	\$31.25	\$32.50	\$33.77
Utilities Network Facilities Tax	\$5.67	\$6.02	\$6.39	\$6.78	\$7.19
Net tax liabilities	\$1.82	\$1.57	\$1.48	\$1.25	\$1.53
Total revenue requirement	\$184.01	\$191.22	\$198.65	\$207.36	\$213.08

Source: Icon Water analysis.

Table 2-2: Total revenue requirement, sewerage (\$million, nominal)

	2018–19	2019–20	2020–21	2021–22	2022–23
Return on capital	\$31.93	\$33.84	\$35.27	\$36.59	\$37.69
Depreciation	\$26.53	\$30.53	\$33.63	\$36.38	\$38.77
Operating expenditure	\$73.52	\$74.54	\$75.90	\$79.28	\$80.73
Utilities Network Facilities Tax	\$4.65	\$4.94	\$5.24	\$5.56	\$5.90
Net tax liabilities	\$3.46	\$2.93	\$2.64	\$2.02	\$1.99
Total revenue requirement	\$140.10	\$146.78	\$152.68	\$159.83	\$165.08

Source: Icon Water analysis.

3 Net revenue requirement

3.1 Revenue adjustments

To determine the net revenue to be recovered through water and sewerage prices, the income that Icon Water derives from other sources must be deducted from the total revenue requirement. The income items from other sources are comprised of:

- charges for bulk water provided to Queanbeyan Palerang Regional Council (QPRC)
- special purpose (subvention) payments by the Commonwealth
- miscellaneous charges and income from other sources.

Further details of these revenue adjustments are provided in Table 6.2 of the *Information Request Response*.

In addition, an adjustment is made for notional community service obligation (CSO) payments for three projects:

- the Cotter Dam Discovery Trail
- the greenhouse gas abatement activities associated with the water security projects
- the Uriarra Village sewerage services, over and above what would be recovered from local residents through the standard sewerage charge.

In its 2013 Final Decision, the Independent Competition and Regulatory Commission (ICRC) concluded these projects should not be paid for by customers and should have been funded via a CSO¹. The ICRC therefore reproduced the outcomes that would have been achieved had a CSO been applied before the project was undertaken. This was achieved by including the efficient project costs in the regulatory asset base (RAB) but then making a revenue adjustment equal to the ongoing costs (return on capital, depreciation and operating expenditure) of the projects. The revenue adjustment is netted off the total revenue requirement so that the costs associated with the CSO projects are not recovered from customers. The 2015 Industry Panel decision adopted the same methodology as the ICRC except that it calculated the depreciation component using asset specific economic lives and included an additional \$0.1 million of expenditure on the Cotter Dam Discovery Trail that was incurred by Icon Water in 2013–14.²

Icon Water has adopted the same approach as the 2015 Industry Panel decision except for the correction of an error where tax depreciation was used in the CSO calculation rather than depreciation from the RAB.

Each of the revenue adjustments and resulting net revenue requirement are presented below in Table 3-1 and Table 3-2 for water and sewerage, respectively.

¹ ICRC, 2013: 87-99.

² Industry Panel, 2015: 105.

Table 3-1: Revenue adjustments and net revenue requirement, water (\$million, nominal)

	2018–19	2019–20	2020–21	2021–22	2022–23
Total revenue requirement	\$184.01	\$191.22	\$198.65	\$207.36	\$213.08
Subvention	\$1.12	\$1.14	\$1.17	\$1.20	\$1.23
Sales to QPRC and other income	\$13.65	\$13.91	\$14.27	\$14.63	\$15.01
Notional CSO payments	\$1.75	\$1.76	\$1.77	\$1.78	\$1.79
Total other income	\$16.52	\$16.82	\$17.21	\$17.62	\$18.03
Net revenue requirement	\$167.49	\$174.40	\$181.44	\$189.75	\$195.06

Source: Icon Water analysis.

Table 3-2: Revenue adjustments and net revenue requirement, sewerage (\$million, nominal)

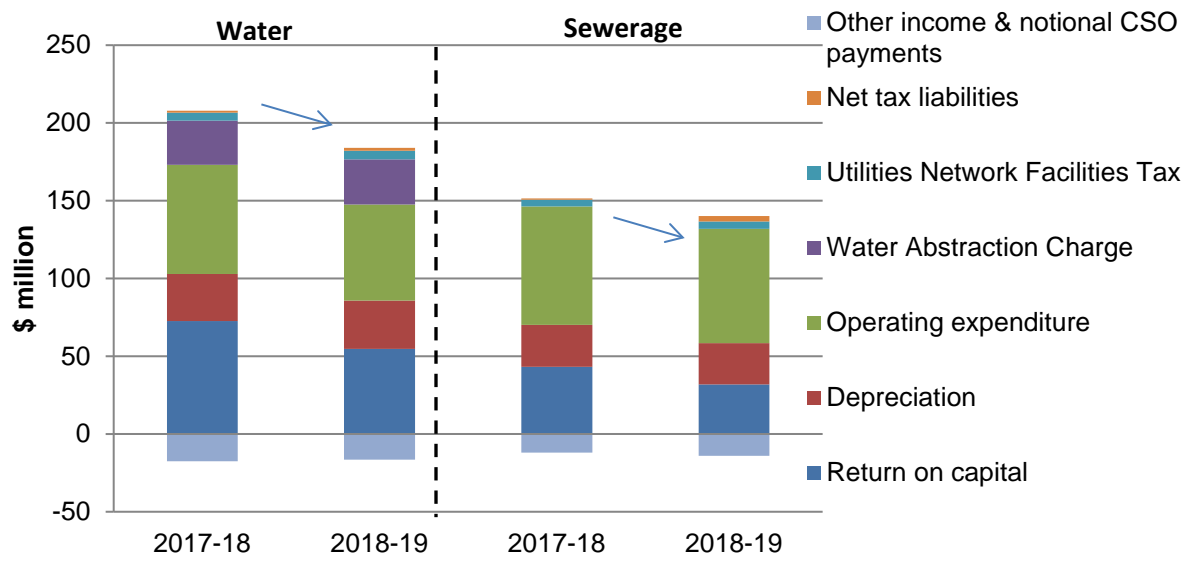
	2018–19	2019–20	2020–21	2021–22	2022–23
Total revenue requirement	\$140.10	\$146.78	\$152.68	\$159.83	\$165.08
Subvention	\$11.16	\$11.44	\$11.73	\$12.02	\$12.32
Other income	\$2.30	\$2.42	\$2.46	\$2.51	\$2.55
Notional CSO payments	\$0.64	\$0.66	\$0.67	\$0.69	\$0.70
Total other income	\$14.11	\$14.52	\$14.86	\$15.22	\$15.58
Net revenue requirement	\$125.99	\$132.26	\$137.82	\$144.62	\$149.51

Source: Icon Water analysis.

3.2 Net revenue requirement

The change in the net revenue requirement from the final year of the 2013–18 regulatory period (2017–18) to the first year of the 2018–23 regulatory period (2018–19) is shown in Figure 3-1 below. There is a substantial reduction in the net revenue requirement for both water and sewerage, which is driven largely by the lower return on capital (discussed in [Attachment 9: Rate of return and forecast inflation](#)) and reduced operating expenditure (discussed in [Attachment 7: Operating expenditure](#)).

Figure 3-1: Net revenue requirement 2017–18 to 2018–19 (\$m nominal)



4 Price path

The net revenue requirement set out in section 3 represents the total amount that Icon Water needs to recover over the 2018–23 regulatory period in order to fully recover the prudent and efficient costs of providing water and sewerage services. The price path is the mechanism by which these costs are recovered from customers of water and sewerage services.

4.1 Price path methodology

Icon Water proposes to maintain the current components of the tariff structure.

For water services, the tariff comprises the following components:

- a fixed supply charge
- a Tier 1 usage charge, which applies to the first 0.548 kL of water consumed per day³
- a Tier 2 usage charge for usage in excess of 0.548 kL per day.

For sewerage services, the tariff structure comprises of:

- a fixed supply charge
- a fixtures charge for non-residential customers, which is payable per flushing fixture in excess of two fixtures.

Icon Water has determined the price path for each component of the tariff structure over the 2018–23 regulatory period using the following steps.

1. Fixing the value of the water supply charge and the Tier 2 water usage charge in nominal terms for each year of the 2018–23 regulatory period. These values reflect a measured and balanced approach to tariff reform, which is discussed in detail in [Attachment 12: Tariff structure](#).
2. Setting the X factors for the Tier 1 water usage charge, the fixed sewerage supply charge and the sewerage fixtures charge to values less than zero. This differs to the approach used in the 2015 Industry Panel decision where the X factors were set to exactly zero. This change in approach has been implemented to smooth price changes for customers over the 2018–23 regulatory period.⁴
3. Solving for the Tier 1 water usage charge, the sewerage supply charge and the sewerage fixture charge in year 1 of the 2018–23 regulatory period by equating the following values:
 - the net present value (NPV) of the net revenue requirement over the 2018–23 regulatory period
 - the NPV of tariff revenue over the 2018–23 regulatory period, where tariff revenue is calculated by multiplying unit prices by demand.

This calculation ensures that across all tariffs, Icon Water is permitted to recover no more than the net revenue requirement, which reflects the net costs of supplying water and sewerage services to ACT customers. The calculation is undertaken separately for water and sewerage services to ensure the

³ The usage charge is calculated quarterly in line with billing cycle and hence on a quarterly basis the Tier 1 usage charge applies to approximately 50 kL of water consumption.

⁴ Full details are contained in Icon Water's revenue model which is available on Icon Water's website.

costs associated with supplying water services are recovered from water charges and the costs associated with supplying sewerage services are recovered from sewerage charges.

4.2 Price path for water and sewerage services

The forecast price path resulting from application of the methodology set out in section 4.1 above is presented in Table 4-1 below for each element of the price structure.

As discussed above, the water supply charge and the Tier 2 water usage charge are set at fixed values for the 2018–23 regulatory period. The model then solves for the 2018–19 Tier 1 water usage charge. The result is a small nominal increase in the Tier 1 water usage charge in each year of the 2018–23 regulatory period, prior to any adjustments for cost pass-through events or revenue ‘unders and overs’. Similarly, for sewerage, there is a small nominal increase in supply and fixture charges over the 2018–23 regulatory period, but well below the rate of inflation, leading to forecast real price reductions.⁵

Table 4-1: Forecast price path for water and sewerage services (\$ nominal)

	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Water supply charge (\$/customer)	\$104.21	\$120.00	\$140.00	\$160.00	\$180.00	\$200.00
Tier 1 usage charge (\$/kL)	\$2.68	\$2.73	\$2.76	\$2.79	\$2.81	\$2.84
Tier 2 usage charge (\$/kL)	\$5.38	\$4.95	\$4.95	\$4.95	\$4.95	\$4.95
Sewerage supply charge (\$/customer)	\$537.34	\$541.84	\$546.39	\$550.97	\$555.59	\$560.24
Sewerage fixtures charge (\$/fixture)	\$525.51	\$529.92	\$534.36	\$538.84	\$543.35	\$547.91

Source: Icon Water analysis.

⁵ For the purposes of calculating and presenting a price path, CPI is assumed to be 2.5 per cent per annum. This assumption will be replaced with actual CPI in the annual price adjustment process.

5 Customer impacts

Across all customer usage, the forecast average change in the indicative water and sewerage bill is shown in Table 5-1 below. This is calculated by multiplying the charges in Table 4-1 by total customer usage for the relevant year divided by the total number of customers for the relevant year.

Table 5-1: Average annual bill impacts across all customers (\$ nominal)

	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Water (\$/customer)	\$989	\$950	\$963	\$976	\$992	\$1,007
% change		-3.9%	1.4%	1.3%	1.6%	1.6%
Sewerage (\$/customer)	\$730	\$733	\$739	\$744	\$750	\$756
% change		0.5%	0.8%	0.8%	0.8%	0.8%
Total (\$/customer)	\$1,718	\$1,683	\$1,702	\$1,720	\$1,742	\$1,763
% change		-2.0%	1.1%	1.1%	1.2%	1.2%

Source: Icon Water analysis.

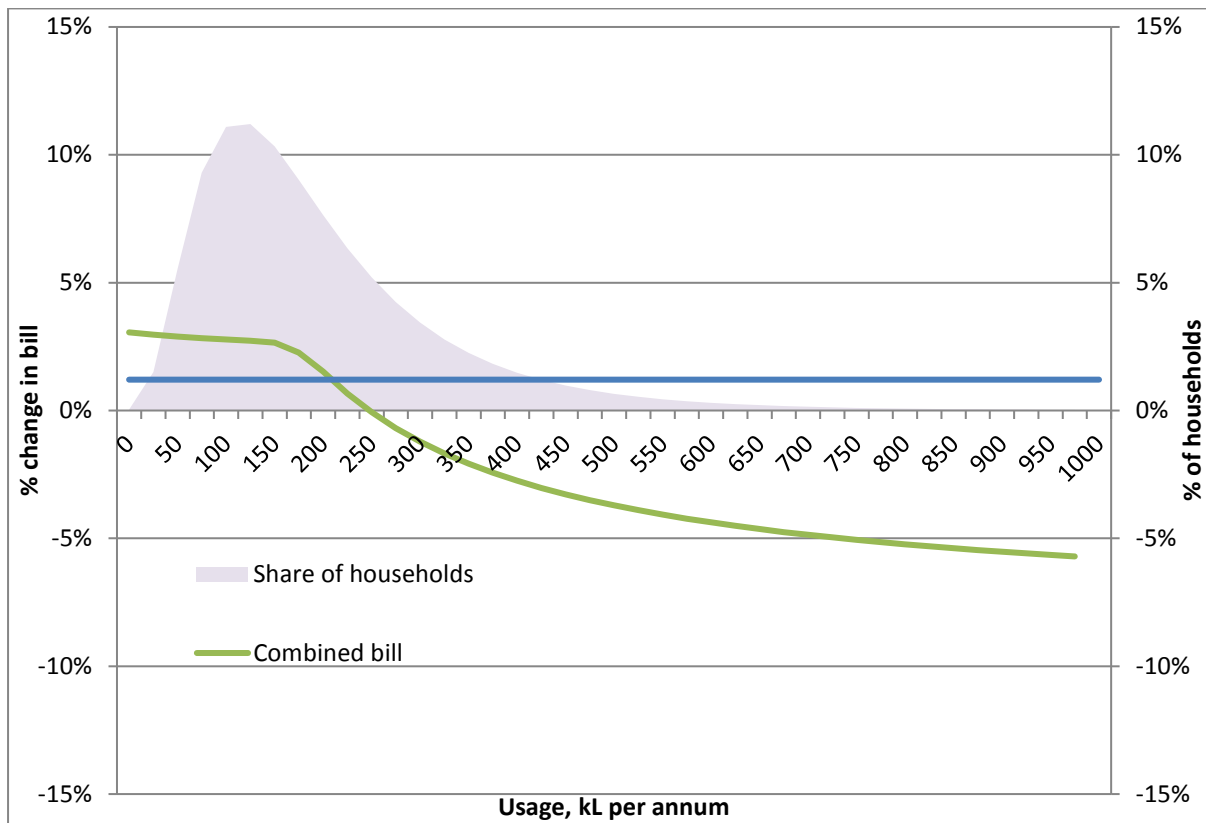
While there is minimal change in the average indicative bill across all customers, this is comprised of differing impacts across residential and commercial customers and across usage bands.

5.1 Residential customers

For residential customers, the distribution of indicative bill impacts across all household usage is presented below in Figure 5-1.⁶ For most residential customers there is a small nominal increase in the combined bill between 2017–18 and 2018–19, with the maximum indicative bill impact only slightly above the level of inflation.

⁶ Indicative bill impacts reflect the combined water and sewerage bill. The distribution of households by usage is based on 2013/14 data.

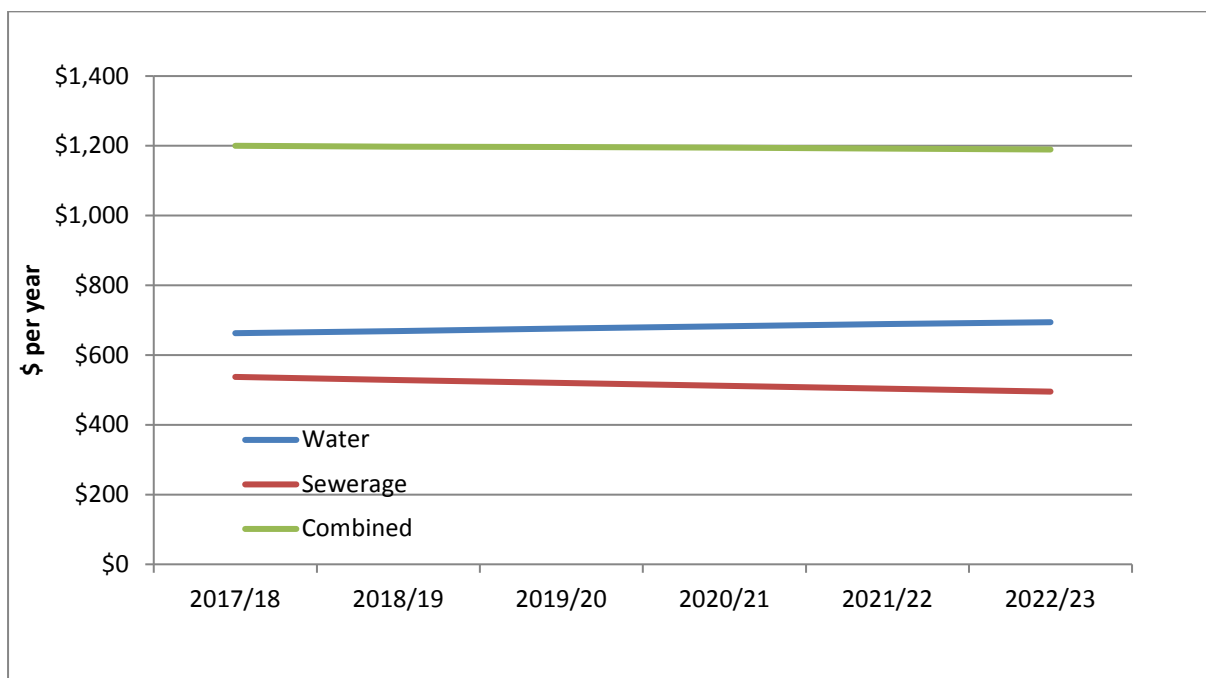
Figure 5-1: Distribution of residential indicative nominal bill impacts by usage, 2017–18 to 2018–19



Source: Icon Water analysis.

The combined bill for a typical representative customer using 200 kL of water annually is forecast to remain relatively constant in real terms over the 2018–23 regulatory period as shown in Figure 5-2 below.

Figure 5-2: Bill impacts for 200 kL residential customer, \$ real 2017–18



Source: Icon Water analysis.

Indicative bill changes for residential customers over the full 2018–23 regulatory period are presented in Table 5-2 below. Given that indicative bill impacts for the majority of residential customers are in line with or below the level of forecast inflation, Icon Water believes that the proposed price path and tariff structure is successful in avoiding significant price fluctuations and delivering minimal social impact.

Table 5-2: Indicative impacts on residential water and sewerage bills (\$ nominal)

	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
50 kL	\$776	\$799	\$824	\$850	\$876	\$902
% change		3.0%	3.2%	3.1%	3.0%	3.0%
100 kL	\$910	\$935	\$962	\$990	\$1,017	\$1,044
% change		2.8%	2.9%	2.8%	2.8%	2.7%
150 kL	\$1,044	\$1,072	\$1,100	\$1,129	\$1,157	\$1,186
% change		2.7%	2.6%	2.6%	2.5%	2.5%
200 kL	\$1,200	\$1,227	\$1,257	\$1,286	\$1,316	\$1,346
% change		2.3%	2.4%	2.4%	2.3%	2.3%
250 kL	\$1,447	\$1,456	\$1,486	\$1,516	\$1,546	\$1,576
% change		0.7%	2.0%	2.0%	2.0%	1.9%
300kL	\$1,716	\$1,704	\$1,733	\$1,763	\$1,793	\$1,823
% change		-0.7%	1.7%	1.7%	1.7%	1.7%
400 kL	\$2,254	\$2,199	\$2,228	\$2,258	\$2,288	\$2,318
% change		-2.4%	1.4%	1.3%	1.3%	1.3%
500 kL	\$2,792	\$2,694	\$2,723	\$2,753	\$2,783	\$2,813
% change		-3.5%	1.1%	1.1%	1.1%	1.1%
750 kL	\$4,137	\$3,931	\$3,961	\$3,991	\$4,021	\$4,051
% change		-5.0%	0.8%	0.8%	0.7%	0.7%

Source: Icon Water analysis.

5.2 Commercial customers

Indicative combined bill changes for commercial customers are presented in Table 5-3 below.⁷ Indicative bills are presented by water usage and number of billable sewerage fixtures. The indicative

⁷ Indicative bill impacts reflect the combined water and sewerage bill.

combined bills for most commercial customers decline between 2017–18 and 2018–19 due to a lower Tier 2 water usage charge. The combined bill impacts over the full regulatory period are minimal.

Table 5-3: Indicative impacts on commercial water and sewerage bills (\$ nominal)

Annual Water Usage	Number of billable fixtures	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23	Change between periods (2017–18 to 2018–19)	Change over period (2018–19 to 2022–23)
1,000 kL	10	\$10,737	\$10,468	\$10,542	\$10,617	\$10,692	\$10,767	-2.5%	2.9%
	50	\$31,757	\$31,664	\$31,916	\$32,170	\$32,426	\$32,683	-0.3%	3.2%
	100	\$58,033	\$58,160	\$58,634	\$59,112	\$59,593	\$60,079	0.2%	3.3%
2,500 kL	10	\$18,807	\$17,893	\$17,967	\$18,042	\$18,117	\$18,192	-4.9%	1.7%
	50	\$39,827	\$39,089	\$39,341	\$39,595	\$39,851	\$40,108	-1.9%	2.6%
	100	\$66,103	\$65,585	\$66,059	\$66,537	\$67,018	\$67,504	-0.8%	2.9%
7,000 kL	10	\$43,017	\$40,168	\$40,242	\$40,317	\$40,392	\$40,467	-6.6%	0.7%
	50	\$64,037	\$61,364	\$61,616	\$61,870	\$62,126	\$62,383	-4.2%	1.7%
	100	\$90,313	\$87,860	\$88,334	\$88,812	\$89,293	\$89,779	-2.7%	2.2%
15,000 kL	10	\$86,057	\$79,768	\$79,842	\$79,917	\$79,992	\$80,067	-7.3%	0.4%
	50	\$107,077	\$100,964	\$101,216	\$101,470	\$101,726	\$101,983	-5.7%	1.0%
	100	\$133,353	\$127,460	\$127,934	\$128,412	\$128,893	\$129,379	-4.4%	1.5%

Source: Icon Water analysis.

6 Impacts on Icon Water – financial viability

As part of the 2015 Industry Panel decision, the Panel explicitly tested the impact of its pricing decision on Icon Water’s financial position. In explaining the purpose of the analysis, the Industry Panel stated:

Robust financial health of utility businesses is generally considered to be in the best interests of customers. If a service provider is not financially viable, it may not be able to guarantee services to customers. Poor financial health may also lead to under-investment in assets and/or their maintenance, which could in turn lead to higher lifetime expenditure on assets (and consequently higher prices) and poorer quality services.⁸

In considering Icon Water’s financial viability, the 2015 Industry Panel decision presented the following financial ratios:

- Funds from operations (FFO) interest cover ratio, which provides an indication of Icon Water’s ability to make interest payments.
- Net debt gearing ratio, which measures the proportion of Icon Water’s overall regulatory capital structure that is made up by debt, and provides an indication of its ability to repay its debt (or increase borrowings in the short term if required).
- FFO to net debt ratio, which provides an indication of whether Icon Water’s debt servicing ability is improving, remaining stable or declining.
- Retained cash flow to capital expenditure ratio, which provides an indication of Icon Water’s ability to finance a prudent portion of capital expenditure after paying dividends.

Icon Water has replicated the methodology used in the 2015 Industry Panel decision to calculate these financial ratios. The resulting values for the 2018–23 regulatory period together with the Industry Panel target levels are presented below in Table 6-1. In the 2015 Industry Panel decision, greater weight was put on the FFO interest cover ratio and the net debt gearing ratio⁹.

Table 6-1: Icon Water modelled financial ratios

	Target	2018–19	2019–20	2020–21	2021–22	2022–23
FFO interest cover ratio	>1.8	2.37	2.48	2.55	2.56	2.61
Net debt gearing ratio	<85%	53%	50%	50%	49%	50%
FFO to net debt ratio	>6%	6.6%	7.2%	7.5%	7.4%	7.5%
Retained cash flow to capital expenditure ratio	>0.5	0.5	0.6	0.6	0.7	0.9

Source: Icon Water analysis.

⁸ Industry Panel, 2015: 120.

⁹ Industry Panel, 2015: 121.

Icon Water satisfies each of the minimum financial ratio targets as specified by the Industry Panel. Based on this assessment, Icon Water's proposed price path is consistent with Icon Water remaining financially viable and being able to continue to operate, maintain, renew and develop the assets required to deliver services.

Abbreviations and acronyms

ACT	Australian Capital Territory
CPI	consumer price index
CSO	community service obligation
FFO	funds from operations
ICRC	Independent Competition and Regulatory Commission
kL	kilolitre (one thousand litres)
NPV	net present value
QPRC	Queanbeyan Palerang Regional Council
RAB	regulatory asset base
UNFT	Utilities Network Facilities Tax
WAC	Water Abstraction Charge

References

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