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Review of WaterNSW's proposed expenditure for the Wentworth to Broken Hill pipeline

A report for the Independent Pricing and Regulatory Tribunal of
New South Wales

19 March 2026

Report authors

Sam Pfeiffer

Adrian Kemp

Michelle Chen

Contact Us

Sydney

Level 40

161 Castlereagh Street

Sydney NSW 2000

Phone: +61 2 8880 4800

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Executive summary

HoustonKemp has been engaged by the Independent Pricing and Regulatory Tribunal of New South Wales (IPART) to conduct a review of WaterNSW's expenditure proposal for the Wentworth to Broken Hill pipeline (the pipeline) for the regulatory determination period from 1 July 2026 to 30 June 2031 (the upcoming determination period).

WaterNSW's proposal includes three expenditure categories, namely:

- capital expenditure;
- operating expenditure, excluding the costs paid for the consumption of energy at the pipeline; and
- energy costs.

We have reviewed each of these expenditure categories separately and, consistent with guidance from IPART, have considered an upper and lower bound of the prudent and efficient expenditure required by WaterNSW over the upcoming determination period. Assessing expenditure against such a range reflects the inherent uncertainty in determining the prudence and efficiency of proposed, future expenditure. In particular, the use of a range allows for the pivotal assumptions that underpin the expenditure proposal to be tested, highlighting the impact that these assumptions may have on customer outcomes, such as risk, cost and service quality.

That said, we have not found a reasonable justification to meaningfully distinguish between an upper bound estimate and a lower bound estimate in our assessment of WaterNSW's proposed capital expenditure and operating expenditure. This reflects the relatively low magnitude of proposed capital and operating expenditure and the straightforward composition of WaterNSW's proposed capital and operating expenditure plan in the upcoming regulatory period.

Table E1 presents our recommended upper and lower bound adjustments to WaterNSW's proposed expenditure by component in real financial year 2025-26 dollar terms (\$FY26). We recommend IPART adopt the lower bound estimate for energy costs. This results in total expenditure that is 1.22 per cent lower than WaterNSW's proposal.

Table E1: Proposed lower and upper bound expenditure adjustments (\$FY26, \$ millions)

Expenditure component	WaterNSW proposal	Upper bound estimate	Lower bound estimate	Recommendation	Recommended adjustment from proposal (%)
Capital expenditure	\$1.38	\$1.38	\$1.38	\$1.38	0.00%
Operating expenditure (excluding energy costs)	\$19.83	\$19.83	\$19.83	\$19.83	0.00%
Energy costs	\$9.98	\$9.72	\$9.60	\$9.60	-3.81%
Total	\$31.20	\$30.93	\$30.81	\$30.81	-1.22%

Source: HoustonKemp analysis.

Assessment of proposed capital expenditure

WaterNSW has proposed capital expenditure of \$1.38 million (\$FY26) over the 2026 to 2031 determination period which is:

- \$1.37 million (\$FY26) higher than allowed capital expenditure in the 2022 to 2026 determination period, which was only \$11,600 for the entire determination period; and
- 96 per cent higher than actual expected capital expenditure incurred in the current determination period.

Actual capital expenditure for 2022 to 2026

WaterNSW's actual capital expenditure in the 2022 to 2026 determination period comprises two components, namely:

- capital expenditure for offtake customers of \$4,500 (\$FY26) against an allowance of \$11,600 (FY26); and
- easement acquisition costs of \$0.7 million (\$FY26) against an allowance of zero.

We find that all WaterNSW's capital expenditure for offtake customers, which is 61 per cent or \$7,100 (\$FY26) lower than the regulatory allowance, is prudent and efficient.

With regards to the \$0.7 million (\$FY26) easement acquisition cost overruns, IPART's advisors noted for the 2019 to 2022 determination period that:

Land acquisition is a necessary activity to ensure infrastructure is available to support pipeline operations.

Further, IPART and its advisors stated that land acquisition costs are prudent and that WaterNSW's proposed easement acquisition costs were reasonable during the 2019 to 2022 determination period. Consistent with IPART's previous treatment of these costs, we find that the easement acquisition costs incurred in the 2022 to 2026 determination period are reasonable and should be treated as prudent and efficient by IPART.

Proposed capital expenditure for 2026 to 2031

The increase in proposed capital expenditure by WaterNSW in the upcoming determination period relative to the current determination period is almost entirely driven by a \$1.14 million (\$FY26) increase in asset replacement costs. This relatively modest amount of replacement expenditure reflects the early stage of the pipeline's asset life, with the significant increase relative to the current determination period reflecting the commencement of some asset replacement activities which were not required in the 2022 to 2026 determination period. We find WaterNSW's proposed asset replacement schedule and expenditure to be reasonable.

In addition, WaterNSW has proposed \$234,900 (\$FY26) in easement acquisition administration costs for access to Crown land in the upcoming determination period. We understand from WaterNSW that these administration costs are intended to reflect the engagement process that WaterNSW will conduct as it progresses towards acquiring access rights for these Crown lands. That is, these easement acquisition administration costs are distinct from the acquisition costs of the easements. WaterNSW proposes an ex post true-up for these easement acquisition costs.

We note that there is regulatory precedent in Australia for approving ex ante administrative costs such as social licence and community and stakeholder engagement. Although it is difficult to determine whether the characteristics of the costs proposed by WaterNSW are directly comparable to other relevant examples, the magnitude of these administrative costs proposed by WaterNSW do not appear excessive relative to these other relevant examples.

Accordingly, we agree that it is reasonable for WaterNSW to propose to recover these easement acquisition administration costs separately to the acquisition costs of these easements.

Table E2 presents our recommended upper and lower bound adjustments (which are equal) to WaterNSW's proposed capital expenditure. As explained above, we present a single estimate of prudent and efficient capital expenditure rather than an upper and lower bound. We do not recommend IPART make any adjustments to WaterNSW's proposed capital expenditure.

Table E2: Proposed lower and upper bound capital expenditure adjustments (\$FY26, \$ millions)

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Annual average
WaterNSW proposal							
Total capital expenditure	\$0.26	\$0.29	\$0.78	\$0.01	\$0.04	\$1.38	\$0.28
HoustonKemp estimate (upper bound)							
Total capital expenditure	\$0.26	\$0.29	\$0.78	\$0.01	\$0.04	\$1.38	\$0.28
Upper bound adjustment	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HoustonKemp estimate (lower bound)							
Total capital expenditure	\$0.26	\$0.29	\$0.78	\$0.01	\$0.04	\$1.38	\$0.28
Lower bound adjustment	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: HoustonKemp analysis.

Assessment of proposed operating expenditure (excluding energy costs)

WaterNSW has proposed operating expenditure (excluding energy costs) of \$19.83 million (\$FY26) over the 2026 to 2031 determination period which is:

- 17 per cent higher than allowed operating expenditure (excluding energy costs) in the 2022 to 2026 determination period; and
- 8 per cent higher than actual expected operating expenditure (excluding energy costs) incurred in the current determination period.

WaterNSW's proposed operating expenditure has been derived using a base-step-trend methodology. We present our assessment of each component of WaterNSW's proposed operating expenditure in turn below.

Base component

Actual operating expenditure in the 2024-25 financial year has been proposed as the efficient base year, with proposed adjustments for:

- regulatory submission costs, as non-recurrent operating expenditure; and
- energy costs, as these costs are handled separately.

We find these proposed adjustments to base year operating expenditure to be appropriate.

WaterNSW's actual operating expenditure (excluding energy costs) in the 2024-25 financial year was 10 per cent higher than the regulatory allowance in that year, of which 6 per cent is explained by overruns on regulatory submission costs. This results in \$133,000 (\$FY26) in total operating expenditure (excluding energy costs) overruns above in the 2024-25 financial year relative to the regulatory allowance.

This aggregate operating expenditure overrun comprises \$205,776 (\$FY26) from increased allocation of corporate overheads relative to the regulatory allowance. We have assumed that WaterNSW's corporate

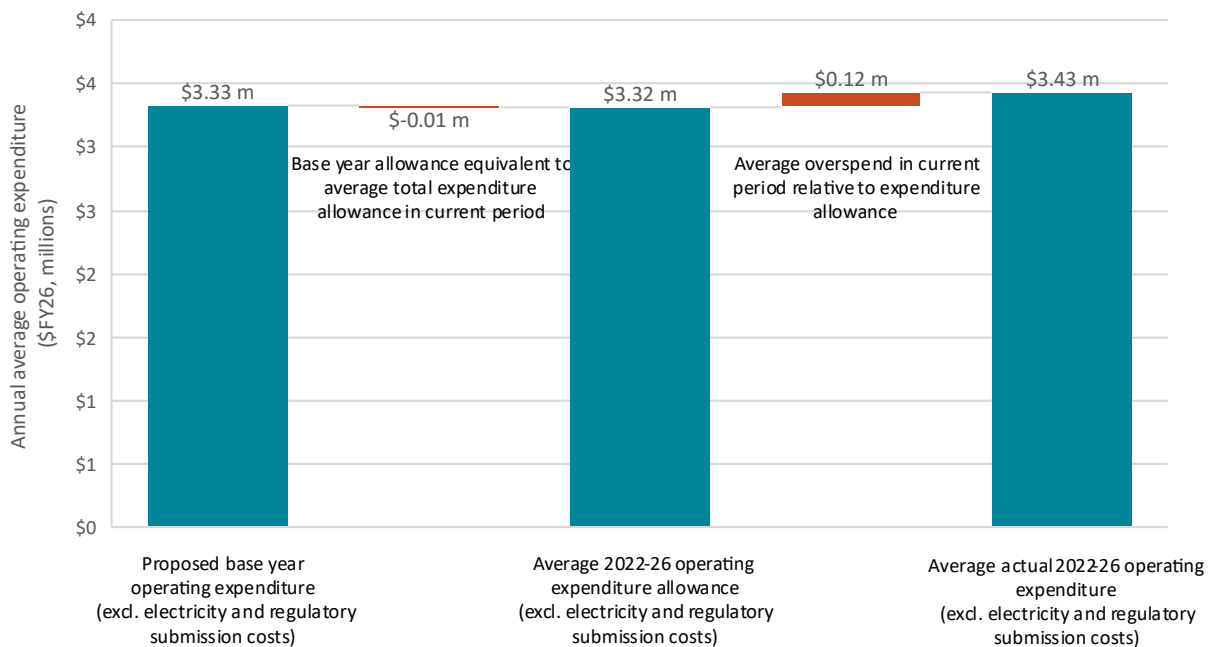
overhead cost allocation methodology has been evaluated elsewhere as it is relevant to other aspects of WaterNSW's activities. The removal of corporate overhead cost overruns results in WaterNSW's proposed base year expenditure being \$72,436 (\$FY26) below its regulatory allowance.

We therefore find the base component of WaterNSW's operating expenditure proposal to be reasonable.

Figure E1 shows that WaterNSW's proposed base component of operating expenditure of \$3,329,000 (\$FY26) is:

- equivalent to the annual average operating expenditure allowance (excluding regulatory submission and energy costs) in the current determination period, ie, \$3,316,000 (\$FY26); and
- 3.0 per cent lower, ie, \$120,000 (\$FY26), than the expected actual annual average actual operating expenditure (excluding regulatory submission and energy costs) in the current determination period, ie, \$3,433,000 (\$FY26).

Figure E1: Comparison of proposed base year operating expenditure with actual and allowed operating expenditure from the current period



Source: HoustonKemp analysis.

We have not conducted a benchmarking process to compare WaterNSW's base year operating expenditure to other comparable service providers due to the lack of information available for these other water pipelines, such as the Goldfields Water Supply Scheme in Western Australia and the Goldfields Superpipe in Victoria.

We therefore estimate the upper bound and lower bound of the base component of operating expenditure to be equal to WaterNSW's proposed value.

Trend component

WaterNSW has proposed four trend components of its operating expenditure, ie:

- audit fees of \$2,000 (\$FY26) each year;
- an uplift to the operating and maintenance (O&M) contract to escalate payments made under the contract to real financial year 2025-26 dollar terms;

- an 8.9 per cent nominal annual increases in insurance premiums (between the 2024-25 and 2030-31 financial years), as advised by icare as the NSW government insurance service provider, which WaterNSW has converted to a real annual increase using an assumed inflation rate of 2.1 per cent; and
- a one per cent annual, compounding efficiency factor applied to total corporate overheads. Total efficiency gains over the upcoming determination period are 5.6 per cent of total corporate overheads over the 2026 to 2031 determination period, which we estimate to be consistent with an annual compounding efficiency factor of 0.98 per cent commencing in the 2024-25 financial year.

We recommend that audit fees be redefined as a step change component as it is recurrent and constant. This categorisation has no influence on the magnitude of operating expenditure.

WaterNSW's proposed annual changes in real O&M contract costs comprise an inflation escalation component (as described above) and real O&M contract annual cost change component which is included as a step component and described below. We have reviewed WaterNSW's proposed O&M contract expenditure in aggregate and find these proposed values to be reasonable and justified, we have also verified that these aggregate O&M contract costs have been appropriately disaggregated to these two distinct components. We note that an alternate approach would have been to capture this trend component as an inflation escalation to base year expenditure, however WaterNSW has included this trend component and not applied an inflation escalation of O&M contract costs in the base year.

We find that WaterNSW's proposed real increase in insurance premiums is overstated, due to an inflation assumption that is too low. We derive an estimate of the real increase in insurance premiums by reference to an assumed inflation rate of 2.4 per cent, which is consistent with inflation assumptions used elsewhere in WaterNSW's proposal.¹ This adjustment reduces the implied real increase by \$12,000 (\$FY26) over the 2026 to 2031 determination period. Considering the materiality of this adjustment, we do not recommend that this adjustment be applied to WaterNSW's proposed expenditure.

Finally, we make no adjustments to the proposed ongoing efficiency factor, as WaterNSW's proposed one per cent annual compounding value is a realistic and reasonable continued improvement goal.

We therefore estimate the upper bound and lower bound of the trend component of operating expenditure to be equal to WaterNSW's proposed value.

Step component

WaterNSW has proposed seven step components of its operating expenditure, ie:

- a 54 per cent increase (in aggregate) in the allocation of corporate overheads, relative to the current allowance. We find that WaterNSW's proposed value is reasonable as this is the outworkings of an approved cost allocation methodology at the broader WaterNSW level and is out of scope in this review;
- a \$338,000 (\$FY26) increase in asset refurbishment costs relative to the original asset refurbishment schedule for the 2026 to 2031 determination period. We have reviewed material provided by WaterNSW, in which the holder of the O&M contract provides the justification for this acceleration of the asset refurbishment schedule. As such, we find WaterNSW's proposed value to be reasonable;
- a real O&M cost escalation of \$742,000 (\$FY26) over the upcoming determination period, relative to the current allowance;
- a \$456,000 (\$FY26) in regulatory submission costs, reflecting a 14 per cent reduction relative to actual regulatory submission costs in the current determination period, and another \$57,000 (\$FY26) in regulatory implementation costs. We find that WaterNSW's proposed value reflects a reasonable improvement on increased costs in the current determination to implement IPART's 3Cs framework for the first time;

¹ We understand that IPART has advised assumed inflation rates of 2.0 per cent for the 2024-25 financial year, 2.7 per cent for the 2025-26 financial year and 2.5 per cent for all future years. This implies an average inflation rate of 2.4 per cent between the 2024-25 and 2030-31 financial years. See: Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 9.

- a \$47,000 (\$FY26) reduction in the contract management costs incurred specifically by the SPV business arm of WaterNSW;
- a \$4,000 (\$FY26) reduction in annual travel costs; and
- a \$287,000 (\$FY26) reduction in other operating expenditure over the 2026 to 2031 determination period, which relates to the conclusion of a discrete tree planting and maintenance work package in the 2024-25 determination period.

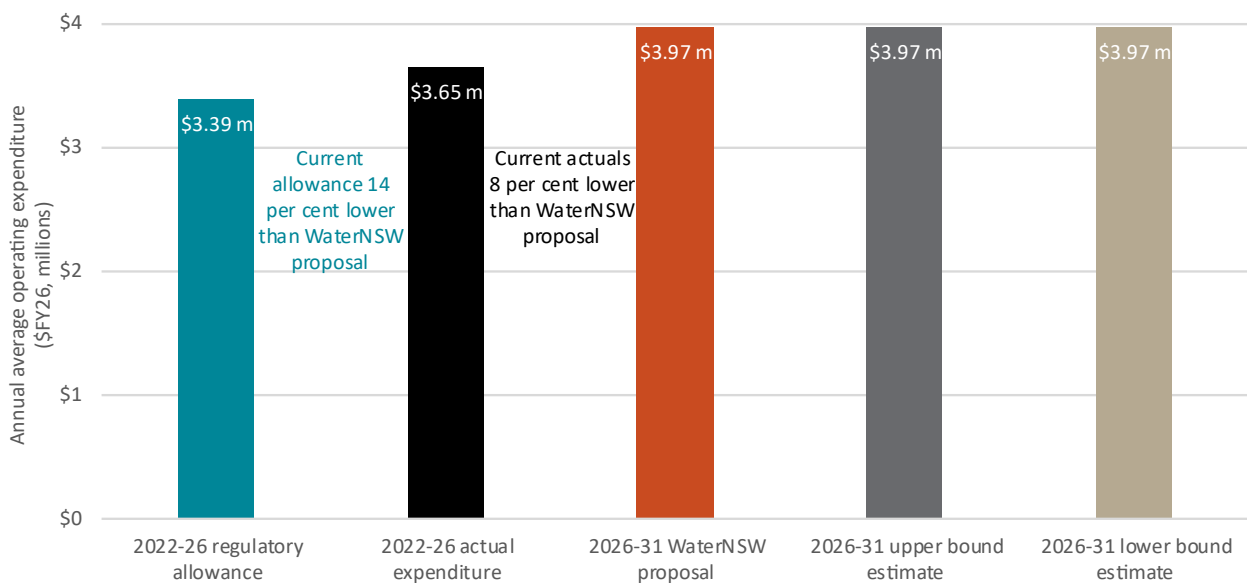
We do not recommend any adjustments to WaterNSW's proposed step change components in our upper bound estimate. We therefore estimate the upper bound and lower bound of the step component of operating expenditure to be equal to WaterNSW's proposed value.

Total operating expenditure (excluding energy costs)

We do not recommend adjustments to WaterNSW's proposed total operating expenditure over the 2026 to 2031 determination period.

Figure E2 presents a comparison of WaterNSW's annual average proposed operating expenditure for the 2026 to 2031 determination period with the annual average regulatory allowance and actual operating expenditure in the 2022 to 2026 determination period and our upper and lower bound estimates for the 2026 to 2031 determination period.

Figure E2: Comparison of WaterNSW annual average proposed operating expenditure



Source: HoustonKemp analysis.

Table E3 presents our recommended upper and lower bound adjustments (which are equal) to WaterNSW's proposed operating expenditure. As explained above, we present a single estimate of prudent and efficient operating expenditure rather than an upper and lower bound. We do not recommend IPART make any adjustments to WaterNSW's proposed operating expenditure.

Table E3: Proposed lower and upper bound operating expenditure adjustments (\$FY26, \$ millions)

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Annual average
WaterNSW proposal							
Total operating expenditure (excluding energy costs)	\$3.86	\$3.71	\$4.47	\$4.00	\$3.80	\$19.83	\$3.97
HoustonKemp estimate (upper bound)							
Total operating expenditure (excluding energy costs)	\$3.86	\$3.71	\$4.47	\$4.00	\$3.80	\$19.83	\$3.97
Upper bound adjustment	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HoustonKemp estimate (lower bound)							
Total operating expenditure (excluding energy costs)	\$3.86	\$3.71	\$4.47	\$4.00	\$3.80	\$19.83	\$3.97
Lower bound adjustment	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: HoustonKemp analysis.

Assessment of proposed energy costs

WaterNSW has proposed energy costs of \$9.98 million (\$FY26) over the 2026 to 2031 determination period which is:

- 24 per cent lower than benchmark efficient energy costs in the 2022 to 2026 determination period; and
- 12 per cent higher than actual expected energy costs incurred in the current determination period.

WaterNSW engaged Frontier Economics (Frontier) to conduct the analysis underpinning the energy cost estimate. We find that the methodology proposed by Frontier to estimate energy consumption, unit energy prices and total energy costs is reasonable.

WaterNSW's proposed energy costs are derived by taking the product of two separately estimated components, ie:

- efficient annual energy consumption and profile to meet the annual pumping volume requirement; and
- efficient annual benchmark unit energy price.

Our assessment of WaterNSW's proposed energy consumption profile revealed inconsistencies in how WaterNSW has converted its annual pumping volume requirement to an annual energy consumption estimate. WaterNSW has acknowledged this inconsistency and has quantified the effect of this inconsistency to be of a similar magnitude to our estimates. In addition, we recommend re-calibration of the variable energy consumption parameter (ie, the conversion of pumping volume to energy consumption) to align with more recent observed data.

We derive upper and lower bound estimates for energy consumption in which:

- the upper bound estimate is derived by addressing the inconsistencies in the application of the methodology, resulting in estimates that are, in aggregate, around two per cent higher than WaterNSW's proposed values; and
- the lower bound estimate is derived by using a lower variable energy consumption parameter, resulting in estimates that are, in aggregate, around 0.3 per cent lower than WaterNSW's proposed values.

We also recommend a profile of energy consumption that more closely aligns with recent historical data than proposed by WaterNSW.

We present a single estimate of efficient unit energy prices, reflecting input data updated to the end of the 2025 calendar year as compared to the end of the 2024-25 financial year for WaterNSW's proposed values. Relative to WaterNSW's proposed values, our estimated per unit energy prices are:

- between 5-9 per cent lower for wholesale energy costs;
- around 50 per cent lower for compliance with the large-scale renewable energy target (LRET);
- between 13-25 per cent higher for compliance with the NSW government energy savings scheme (ESS);
- 6.2 per cent lower for ancillary services costs;
- 0.1 per cent higher for market fees; and
- no different for all network charges and retail costs.

Combining the above assessment of energy consumption and unit energy prices, we estimate energy costs to be:

- 3.84 per cent lower than WaterNSW's proposal in the lower bound estimate – which reflects the effect of updating inputs for more recent data; and
- 2.19 per cent lower than WaterNSW's proposal in the upper bound estimate – for which the delta with the lower bound estimate, ie, 1.65 per cent, reflects the effect of inconsistencies in WaterNSW's approach to estimating energy consumption.

Table E4 presents our recommended upper and lower bound adjustments to WaterNSW's proposed energy costs. We recommend that IPART adopt the lower bound estimate for energy costs as the lower bound reflects:

- a relationship between water pumping volume and energy consumption that has been derived from econometric analysis that we have conducted using recent operation data at the pipeline; and
- the most recent publicly available information regarding forward looking energy prices.

Table E4: Proposed lower and upper bound energy cost adjustments (\$FY26, \$ millions)

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Annual average
WaterNSW proposal							
Total energy costs	\$2.00	\$1.99	\$2.01	\$2.00	\$1.98	\$9.98	\$2.00
HoustonKemp estimate (upper bound)							
Total energy costs	\$1.97	\$1.96	\$1.95	\$1.95	\$1.93	\$9.77	\$1.95
Upper bound adjustment	-1.69%	-1.43%	-2.70%	-2.59%	-2.39%	-2.16%	-2.16%
HoustonKemp estimate (lower bound)							
Total energy costs	\$1.94	\$1.93	\$1.92	\$1.92	\$1.90	\$9.60	\$1.92
Lower bound adjustment	-3.38%	-3.10%	-4.34%	-4.22%	-4.03%	-3.81%	-3.81%

Source: HoustonKemp analysis.

Note: adjustments reported in this table differ to those quoted in the report due to rounding of WaterNSW's proposed costs to two decimal places in this table.

Assessment of proposed energy costs true-up mechanism

WaterNSW have proposed an energy cost true-up mechanism for the 2022 to 2026 determination period that includes the wholesale, network and renewable energy policy (ie, environmental costs) cost components of the benchmark energy price. WaterNSW's proposal differs from IPART's determination, which included the wholesale and network cost components but did not include renewable policy costs.

We find that WaterNSW's proposed inclusion of renewable energy policy is reasonable, as we find that renewable energy policy costs are:

- material, ie, environmental costs accounted for between 13-14 per cent of estimated annual efficient benchmark energy costs and nine per cent of actual energy costs in the 2022 to 2026 determination period;
- potentially volatile in the current market environment, ie, renewable certificate prices can change significantly over a reasonable short period of time, as evidenced by the change in LGC prices in the time between WaterNSW's proposal and our assessment; and
- largely outside of WaterNSW's control, ie, renewable certificate prices are set in an open market and the volume of certificates required to be purchased is determined by a government authority, such as the Clean Energy Regulator or the NSW government.

WaterNSW has proposed an annual reduction to the notional revenue requirement of \$128,083 (\$FY26) throughout the 2026 to 2031 determination period, reflecting a net present value neutral true-up of the over-recovery of efficient energy costs from customers in the 2022 to 2026 determination period.

We recommend that IPART adopt WaterNSW's proposed energy cost true-up mechanism for the 2022 to 2026 determination period and WaterNSW's proposed methodology for the energy cost true-up mechanism for the 2026 to 2031 determination period.

1. Introduction

We have been engaged by the Independent Pricing and Regulatory Tribunal (IPART) to review the prudence and efficiency of the expenditure proposal for water transport services supplied by WaterNSW via the Wentworth to Broken Hill pipeline (the pipeline) for the regulatory determination period from 1 July 2026 to 30 June 2031 (the upcoming determination period).

WaterNSW's proposed expenditure for the pipeline comprises both operating expenditure, of which energy costs are a significant component, and capital expenditure. In this review, we have assessed operating and capital expenditure separately and assessed energy costs separately from other operating expenditure.

1.1 Details of WaterNSW's proposed pipeline expenditure

WaterNSW proposes \$1.4 million (real financial year 2025-26 dollars)² in capital expenditure over the 2026 to 2031 determination period, of which:³

- \$1.1 million (\$FY26) relates to asset replacement, representing only 0.27 per cent of the expected value of the regulated asset base of the pipeline as at the end of the 2030-31 financial year;⁴ and
- \$235,000 (\$FY26) relates to the administrative costs of easement acquisitions, which do not reflect total expected easement acquisition costs for Crown land for the upcoming determination period.

WaterNSW's proposed capital expenditure in the upcoming determination period represents a significant increase relative to its allowance (\$11,600, \$FY26) and actual (\$0.7 million, \$FY26) in the current determination period.⁵

The operation of the pipeline is relatively more operating expenditure intensive, with WaterNSW proposing an average of \$6 million (\$FY26) per year in operating expenditure over the 2026 to 2031 determination period, representing 22 per cent of the proposed notional revenue requirement (NRR).⁶

Of this total operating expenditure:⁷

- 35 per cent is attributed to payments made under contract for the operation and maintenance of the pipeline;
- 33 per cent is attributed to energy costs;
- 20 per cent is attributed to the allocation of WaterNSW's corporate overheads to the pipeline; and
- the residual attributed to a range of other operating expenditure categories.

² Throughout this report, we refer to real dollars for a particular financial year, say the 2025-26 financial year, as \$FY26.

³ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 75.

⁴ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 76.

⁵ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 71-73.

⁶ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 50.

⁷ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 52.

WaterNSW expects actual operating expenditure in the current determination period to be ten per cent below its regulatory allowance, and is proposing a slight decrease (one per cent) in its annual operating expenditure allowance for the upcoming determination period relative to the current determination period.⁸ A one per cent ongoing annual efficiency improvement factor has been proposed for non-energy operating expenditure by WaterNSW.⁹

1.2 Structure of this report

The remainder of our report is structured as follows:

- in section 2, we set out our approach to the expenditure review;
- in section 3, we provide an overview of the pipeline's operating environment;
- in section 4, we set out our assessment of WaterNSW's proposed capital expenditure;
- in section 5, we set out our assessment of WaterNSW's proposed operating expenditure; and
- in section 6, we set out our assessment of WaterNSW's proposed energy costs, including proposed energy consumption volumes to deliver forecast annual water pumping volume.

⁸ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 67-69.

⁹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 53.

2. Our approach to the expenditure review

In this section, we explain the:

- relevance of IPART's 3Cs framework, which is being applied to the pipeline for the first time in this determination period, in guiding our analysis;
- present an overview of our assessment methodology;
- set out the information sources we rely on to conduct our expenditure review;
- explain the interpretation and derivation of dollar values presented in this report; and
- describe the use of upper and lower bounds in our assessment.

2.1 The 3Cs framework

In November 2022, IPART introduced the 3Cs framework, which broadened the focus of IPART pricing reviews to customer value, cost-efficiency and credibility over the short and long term. By centring the regulatory process around customer priorities, IPART aimed to ensure that pricing proposals promoted efficient use of water infrastructure and investment.¹⁰

We note that the 3Cs framework was implemented after the commencement of the current determination period applying to the pipeline, which commenced on 1 July 2022, and so this determination will be the first under this framework.

The 3Cs framework is underpinned by twelve guiding principles, which water businesses and IPART are expected to use to develop and assess pricing proposals. These guiding principles are categorised into:¹¹

- six 'customer principles' related to how customer preferences are integrated into the proposal;
- four 'cost principles' relating to how customer needs and preferences are delivered in a cost-efficient matter; and
- two 'credibility principles' focusing on how businesses provide assurance about the deliverability of its proposal.

These principles are illustrated in figure 2.1.

¹⁰ IPART, *How we regulate the water business*, available at <https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Metro-Pricing/How-we-regulate-the-water-businesses>, accessed on 23 January 2026.

¹¹ IPART, *Water regulation handbook*, July 2023, pp 2 and 10.

Figure 2.1: Guiding principles under the 3Cs framework



Source: IPART Water Regulation Handbook, July 2023, figure 1.1, p 2.

Each business self-assesses its proposal as either 'standard', 'advanced' or 'leading' against the 3Cs framework. They will further identify focus principles, which will be given greater emphasis in IPART's assessment if well justified.¹²

WaterNSW has:

- assessed its pricing proposal as 'standard';¹³ and
- identified three focus principles:¹⁴
 - > customer outcomes, from the 'customer principles';
 - > robust costs, from the 'costs principles';
 - > delivering, from the 'credibility principles'.

IPART will either affirm or challenge and downgrade a water business' self-assessment using a grading rubric. This rubric is structured along the twelve guiding principles, with the 'standard', 'advanced' and 'leading' grading levels for each principle. The principles will be weighted according to the focus principles identified by the water business, if well-justified.¹⁵

2.2 Our assessment methodology

We have performed numerous regulatory expenditure reviews across a range of sectors, including for water service providers regulated by IPART under the 3Cs framework.

¹² IPART, *Water regulation handbook*, July 2023, pp 9-10.

¹³ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 16.

¹⁴ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 23.

¹⁵ IPART, *Water regulation handbook*, July 2023, p 101.

We have developed an assessment framework consistent with IPART's 3Cs framework, that we have applied to WaterNSW's proposal, ie, we focus our assessment on:

- the materiality of the impact on customer bills;
- the sufficiency of customer engagement; and
- changes to risk appetite and/or risk assessment.

2.2.1 Assessment of materiality

Assessment of materiality ensures that the review is tailored to reflect the relevance of the proposed expenditure on the long-term interests of customers.

In light of the relatively unique nature of the pipeline, it is difficult to conduct cross-business and benchmark comparisons in this context. Accordingly, our assessment of materiality has focused on historical comparison with previous proposed, accepted and incurred expenditure of the pipeline.

In doing so, we pay due consideration to the specific reasons that proposed expenditure may be inconsistent with historical expenditure, as it is plausible that prudent and efficient costs vary over time. As such, we have sought evidence and analysis from WaterNSW to justify any historical discrepancies in expenditure we have identified.

2.2.2 Risk appetite and risk assessment

In our assessment, we consider WaterNSW's:

- level of risk and the allocation of risk to its customers; and
- approach to risk management, in particular the trade-off between risk, cost and quality of service.

WaterNSW presents its approach to risk management through the following five principles, ie:¹⁶

- allocating risks to the party best placed to manage them;
- allocating highly uncertain risks to WaterNSW, with appropriate incentives to manage the risks under its control;
- not jeopardising public health or the environment;
- focusing on long-term outcomes; and
- promoting customer value.

We find that these principles of risk management are appropriate and, importantly, explicitly consider the relationship between risk, cost and quality of the services provided.

2.2.3 Sufficiency of customer engagement

The 3Cs framework focuses on ensuring that customer engagement is sought on matters most relevant and material to customer outcomes, eg, customer bills and service standards, and that this customer feedback is incorporated into the decisions underpinning the expenditure proposal.

In assessing the sufficiency of customer engagement for WaterNSW's expenditure proposal, we have not undertaken a detailed evaluation of customer engagement protocols. Rather, we have assessed whether WaterNSW has adequately consulted customers before making decisions that are likely to have a material effect on customer bills or the quality of the services provided by the pipeline.

¹⁶ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 43.

2.3 Information sources used to inform our expenditure review

We have drawn on information provided by WaterNSW to conduct this review, with this information comprising:

- WaterNSW's submitted pricing proposal and supporting attachments, which include Annual Information Return (AIR) and Special Information Return (SIR) documentation; and
- additional confidential documents containing supporting information, as requested from WaterNSW throughout our assessment process. Where we have relied on this confidential information in this report, we have clearly marked this in the citations.

In addition to reviewing these documents we also engaged in email exchanges and remote meetings with WaterNSW and IPART to better understand the proposal.

We also reviewed publicly available documents and data sources that were not provided to us by IPART or WaterNSW, in particular, for the purposes of estimating benchmark energy costs for the pipeline.

2.4 Interpretation of dollar values

Unless otherwise stated, all dollar values are presented in this report as real financial year 2025-26 dollars (\$FY26). Consistent with the approach taken by WaterNSW in its submission, assumed annual inflation has been based on IPART advice, ie:¹⁷

- 2.0 per cent for the year to June 2025;
- 2.7 per cent for the year to June 2026; and
- 2.5 per cent for each year to June for 2027 to 2031, inclusive.

2.5 A range of efficient expenditure

IPART has requested that we provide an upper bound and lower bound estimate of prudent and efficient expenditure in this review, providing a range of reasonable prudent and efficient expenditure levels. Assessing expenditure against such a range reflects the inherent uncertainty in determining the prudence and efficiency of proposed, future expenditure. In particular, the use of a range allows for the pivotal assumptions that underpin the expenditure proposal to be tested, highlighting the impact that these assumptions may have on customer outcomes, such as risk, cost and service quality.

However, there are circumstances where presenting a range of potential prudent and efficient outcomes may not be necessary. That is, in circumstances where there is relatively less uncertainty regarding the expenditure proposal, such as, where proposed expenditure is relatively less material or where the proposed expenditure plan is relatively straightforward.

We find that there are relatively few elements of WaterNSW's proposed capital and operating expenditure driving substantial uncertainty or complexity, for which an expenditure range would provide meaningful assistance in IPART's assessment. Further, the components of WaterNSW's proposed capital and operating expenditure that for which there may be merit in assessing over a range of potential outcomes are relatively small in magnitude. Accordingly, we do not propose upper and lower bound estimates for prudent and efficient capital and operating expenditure, as the distinction of such bounds is not commensurate with the materiality or complexity of WaterNSW's expenditure proposal.

Conversely, we propose upper and lower bound estimates for prudent and efficient energy costs, reflecting uncertainty as to energy consumption requirements of the pipeline over the upcoming determination period.

¹⁷ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 9.

3. Overview of the pipeline's operating environment

In this section, we describe the operating context of the pipeline, including:

- the physical characteristics of the pipeline;
- WaterNSW's operating regime for the pipeline;
- relevant context from the current determination period; and
- the customer outcomes WaterNSW is targeting in this upcoming regulatory determination.

3.1 Introduction to the pipeline

The Wentworth to Broken Hill pipeline is situated in regional New South Wales and comprises three pump stations, through which raw water is pumped from the Murray River to a bulk water storage facility south of Broken Hill, spanning a total of 248 kilometres.¹⁸ This bulk water storage is owned and operated by WaterNSW and has a capacity of 830 megalitres (ML), which is capable of meeting Broken Hill's water demand for 22 days.¹⁹

The pipeline became fully operational in April 2019 and services:²⁰

- one large customer, Essential Water, who pays over 99 per cent of the costs of providing water transportation services along the pipeline; and
- four small offtake customers.

WaterNSW and Essential Water have entered into a Raw Water Supply Agreement that sets out the services and the service standards applying to WaterNSW's use of the pipeline to provide water to Essential Water.²¹ Relevant terms of the Raw Water Supply Agreement include:²²

- the requirement for WaterNSW to use its reasonable endeavours to:
 - > extract water from the Murray River and to supply that water to the Broken Hill Delivery Point (ie, the connection point immediately downstream of the bulk water storage facility); and
 - > operate and maintain the pipeline to the extent necessary for the provision of the supply of raw water to the Broken Hill Delivery Point;
- WaterNSW's obligations to monitor a number of water quality indicators along the pipeline, ie:
 - > turbidity;
 - > pH;
 - > electrical conductivity;

¹⁸ WaterNSW, *Attachment 11 | Wentworth to Broken Hill pipeline asset management plan*, September 2025, p 6.

¹⁹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 33.

²⁰ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 17.

²¹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 36.

²² WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 36.

- > dissolved oxygen;
- > Calcium Carbonate Precipitation Potential (CCPP);
- > temperature; and
- > algae; and
- the requirement for Essential Water to provide WaterNSW with a written weekly order notice setting out its weekly water demand volume, being between the maximum demand (as measured by a range of metrics) and minimum take values. Further, Essential Water is required to take within ten per cent above or below the weekly ordered notice volume.

Essential Water pumps water from the bulk water storage facility via their own pump station for distribution to customers.²³

3.2 Operation of the pipeline

WaterNSW established a wholly owned proprietary company, or special purpose vehicle (SPV), to financially separate the pipeline assets from WaterNSW's other regulated and non-regulated businesses and assets.²⁴ The SPV was established on 5 November 2018 and commenced its operations on 5 April 2019.²⁵

Operation of the pipeline is one of WaterNSW's four distinct business operations, with the other three being:²⁶

- two regulated bulk water supply services, ie, Greater Sydney and Rural Valleys; and
- carrying out delegated functions of the Water Administration Ministerial Corporation (WAMC), eg, water delivery, customer transactional dealings, in-field services and resource management for groundwater, regulated and non-regulated surface water.

WaterNSW notes that:²⁷

The primary contracts for the pipeline (Design and Construct (D&C) and Operations and Maintenance (O&M) have been novated to the SPV.

The O&M contract is held by the John Holland/Trility Joint Venture (JHTJV) for the operation and maintenance of the pipeline for the 10-years to 2029, with the option for two 5-year extensions.²⁸ The SPV makes monthly payments to JHTJV under the O&M contract, which includes staffing costs at the pipeline by the JHTJV.²⁹

Consistent with WaterNSW's proposal, we refer to WaterNSW and not the SPV.³⁰

²³ WaterNSW, *Attachment 11 | Wentworth to Broken Hill pipeline asset management plan*, September 2025, p 6.

²⁴ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 18.

²⁵ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 18.

²⁶ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 29-30.

²⁷ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 18.

²⁸ WaterNSW, *Attachment 11 | Wentworth to Broken Hill pipeline asset management plan*, September 2025, p 12.

²⁹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 55.

³⁰ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 18.

3.3 Context of current determination period

As described in section 2.1, IPART introduced the 3Cs framework in November 2022. This new framework includes increased requirements and places heavier emphasis on embedding customer preferences into pricing proposals. As a result, WaterNSW has conducted a different approach to preparing for this upcoming determination than the two previous proposals. WaterNSW notes that the introduction of the 3Cs framework has contributed to regulatory submission and reporting costs exceeding the regulatory allowance in the 2022 to 2026 determination period, ie, the current determination period, due to:³¹

- increased requirements under the 3Cs framework;
- enhanced stakeholder engagement; and
- the need to provide assurance regarding the quality of the proposal.

In addition to these higher regulatory submission and report costs, operating expenditure in the current determination period have exceeded the regulatory allowance with regards to:³²

- an increase in the proportion of WaterNSW overhead costs allocated to the pipeline; and
- other operating costs, such as travel, materials and other minor expenses.

However, cost overruns in these operating expenditure categories has been more than offset by reductions in the other operating expenditure categories at the pipeline in the current determination period, primarily through the reduction in energy costs, which were 32 per cent lower than the regulatory allowance.³³ Overall, WaterNSW expects to spend ten per cent less than its regulatory operating expenditure allowance in the current determination period.

In the current determination period, WaterNSW's capital expenditure allowance was \$11,600 (\$FY26) over the entire period, reflecting the early stage of the pipeline in its useful life and relatively good condition of the pipeline, for which:³⁴

- the relatively small investment requirements did not meet WaterNSW's \$5,000 capitalisation thresholds; and
- the treatment of asset refurbishment as operating expenditure, rather than capital expenditure.

However, WaterNSW states that:³⁵

As the pipeline approaches its first decade of operation, additional scheduled maintenance or replacement of assets... is becoming more prevalent.

WaterNSW's total capital expenditure in the current determination period was \$0.7 million (\$FY26) over its regulatory allowance, of which almost all was accounted for by the costs associated with private land easement acquisitions.³⁶

³¹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 67.

³² WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 67-68.

³³ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 67-68.

³⁴ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 71.

³⁵ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 70.

³⁶ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 71.

In its proposal, WaterNSW refers to the practical experience it has obtained in the six years it has been operating the pipeline and how this practical experience has informed its proposal. WaterNSW states that:³⁷

This practical experience has provided critical insights that we have relied on when analysing past performance and making our forward proposal, including, but not limited to:

- pumping volumes and pumping profiles
- energy profiles, such as half hourly data, peak demand and fixed energy use
- renewals (maintenance) expenditure
- replacement (capital) expenditure
- customer operational requirements and customer outcomes.

In addition, WaterNSW has also developed a strong relationship and connection with Essential Water during these years of operation, with regular contact between operational and regulatory economics staff.³⁸

3.4 Customer outcomes

WaterNSW constructed its stakeholder engagement group as including:³⁹

- its customers, being Essential Water and other offtake customers (alongside one former offtake customer); and
- other parties affected by the pipeline's route, being:
 - > Wentworth Shire and Broken Hill Councils; and
 - > the Barkandji Native Title Group.

With regards to its customers, WaterNSW received the following rankings of customer outcomes:⁴⁰

1. secure and reliable water supply;
2. optimal water quality;
3. efficiency and keeping costs low;
4. transparent and consistent communication, ie, keep customers in the loop to ensure peak operations and support Essential Water in delivering optimal outcomes for end use customers.

WaterNSW notes that the relatively low ranking of affordability, ie, customer outcome 3, is contextualised by government funding provided to Essential Water to maintain low customer costs.⁴¹ In the absence of this subsidy, Essential Water notes that affordability would likely be the number one ranked priority, consistent with other offtake customers.⁴²

WaterNSW explains that this customer feedback shaped the focus principles it adopted for its proposal, as identified in section 2.1.

³⁷ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 16.

³⁸ WaterNSW, *Attachment 5 | Stakeholder Engagement Summary Report*, September 2025, p 4.

³⁹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 19.

⁴⁰ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 23.

⁴¹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 23.

⁴² WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 23.

4. Capital expenditure assessment

In this section, we present our assessment of WaterNSW's proposed capital expenditure for the 2026 to 2031 regulatory period. In addition, we conduct an ex post assessment of the prudence and efficiency of the capital expenditure incurred by WaterNSW in the 2022 to 2026 determination period.

WaterNSW has proposed capital expenditure of \$1.38 million (\$FY26) over the 2026 to 2031 determination period which is:⁴³

- \$1.37 million (\$FY26) higher than allowed capital expenditure in the 2022 to 2026 determination period, which was only \$11,600 for the entire determination period; and
- 96 per cent higher than actual expected capital expenditure incurred in the current determination period.

We have not found a reasonable justification to meaningfully distinguish between an upper bound estimate and a lower bound estimate in our assessment of WaterNSW's proposed capital expenditure. This reflects the relatively low magnitude of proposed capital expenditure and the relatively straightforward composition of the proposed capital expenditure plan in the upcoming regulatory period.

We summarise the findings and recommendations of our review of WaterNSW's proposed capital expenditure in box 4.1.

Box 4.1: Summary of findings and recommendations – capital expenditure

- We find all of WaterNSW's proposed capital expenditure in the 2022 to 2026 determination period to be prudent and efficient. Specifically:
 - > capital expenditure for offtake customers was 61 per cent or \$7,100 (\$FY26) lower than the regulatory allowance; and
 - > consistent with IPART's previous treatment of easement acquisition cost overruns in the 2019 to 2022 determination period, easement acquisition costs of \$0.7 million (\$FY26) incurred in the 2022 to 2026 determination period are reasonable, prudent and efficient.
- We find all of WaterNSW's proposed capital expenditure for the 2026 to 2031 determination period to be reasonable.
- We present a single estimate of prudent and efficient capital expenditure rather than an upper and lower bound because we have not found a reasonable justification to meaningfully distinguish between an upper bound and a lower bound within WaterNSW's proposed capital expenditure plan.
- The increase in proposed capital expenditure by WaterNSW in the 2026 to 2031 determination period relative to the 2022 to 2026 determination period is almost entirely driven by a \$1.14 million (\$FY26) increase in proposed asset replacement costs. This relatively modest amount of replacement expenditure reflects the early stage of the pipeline's asset life, with the significant increase relative to the current determination period reflecting the commencement of some asset replacement activities which were not required in the 2022 to 2026 determination period.
- We understand from WaterNSW that proposed easement acquisition administration costs of \$234,900 (\$FY26) are intended to reflect the engagement process that WaterNSW has conducted, and will continue to conduct, as it progresses towards acquiring access rights for Crown lands. These easement acquisition administrative costs are distinct from the acquisition costs of the easement, which WaterNSW proposes to recover through an ex post true-up mechanism.

⁴³ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, 30 September 2025, pp 70-75.

- We agree that it is reasonable for WaterNSW to propose to recover these easement acquisition administrative costs separately to the acquisition costs of these easements, as:
 - > there is regulatory precedent in Australia for approving ex ante administrative costs;
 - > the magnitude of these administrative costs, while not directly comparable, do not appear excessive relative to other relevant examples; and
 - > a true-up mechanism for actual easement acquisition costs ensures that consumers only pay the prudent and efficient costs incurred by WaterNSW in obtaining access to land required to support ongoing pipeline operations.

4.1 Assessment of 2022 to 2026 determination period capital expenditure

WaterNSW's capital expenditure allowance for the 2022 to 2026 determination period was modest, totalling \$10,000 (real financial year 2021-22 dollars), with the entirety of this capital expenditure allowance attributable to offtake customers.⁴⁴ That is, WaterNSW's capital expenditure allowance for the 2022 to 2026 determination period was zero for all non-offtake customer capital expenditure categories.

Relatedly, asset replacement costs were treated as operating expenditure due to the relatively low magnitude of these costs, which did not exceed certain relevant capitalisation thresholds.⁴⁵

Despite this zero allowance for non-offtake related capital expenditure, WaterNSW expects to incur \$0.7 million (\$FY26) in easement acquisition costs for private land during the 2022 to 2026 determination period.⁴⁶ We note that a similar situation arose in the preceding regulatory determination, in which WaterNSW incurred expected easement acquisition costs for private land of \$1.2 million (real financial year 2021-22 dollars). IPART accepted these costs as efficient,⁴⁷ with its advisors noting that:⁴⁸

Land acquisition is a necessary activity to ensure infrastructure is available to support pipeline operations. WaterNSW has cited the nature of commercial negotiations for the excess costs in this area. We find that the costs are reasonable, however note that the quality documentation made available to support review of these costs has been low.

Consistent with IPART's treatment of these costs in the previous determination, we find that these easement costs are reasonable and should be treated as efficient by IPART.

In addition, WaterNSW's capital expenditure in relation to offtake customers is expected to be 61 per cent lower than its allowance for the 2022 to 2026 determination period.⁴⁹ We recommend that IPART treat this significant underspend of the capital expenditure allowance as efficient, noting that the total capital expenditure allowance for offtake customers was equal to only \$11,600 (\$FY26) over the entirety of the 2022 to 2026 determination period.

We present our assessment of WaterNSW's actual capital expenditure for the 2022 to 2026 determination period in table 4.1.

⁴⁴ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical report, November 2022, p 45.

⁴⁵ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical report, November 2022, p 35.

⁴⁶ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 71-72.

⁴⁷ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical report, November 2022, pp 43-44.

⁴⁸ AECOM, *Expenditure review of WaterNSW Broken Hill Pipeline excluding energy costs*, May 2022, p 53.

⁴⁹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 71-72.

Table 4.1: WaterNSW capital expenditure for the 2022 to 2026 determination period (\$FY26)

Category	IPART determination	WaterNSW actual	HoustonKemp estimate
Pipeline	\$0	\$0	\$0
Bulk water storage facility	\$0	\$0	\$0
Plant and machinery (including pump stations and river intake)	\$0	\$0	\$0
Buildings	\$0	\$0	\$0
Regulatory submission and other support costs	\$0	\$0	\$0
Cost of land swap agreement	\$0	\$0	\$0
Wentworth Ski park rehabilitation	\$0	\$0	\$0
Non-depreciating assets (eg, land)	\$0	\$697,300	\$697,300
Offtake customers (excluding land swap agreement offtake)	\$11,600	\$4,500	\$4,500
Total	\$11,600	\$701,800	\$701,800

Source: HoustonKemp analysis; IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline, Final technical report, November 2022, p 45*; and WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, September 2025, pp 71-73*.

4.2 Assessment of proposed 2026 to 2031 determination period capital expenditure

WaterNSW's proposed capital expenditure for the 2026 to 2031 determination period comprise two primary components, ie:

- easement acquisition costs, which are attributed to the costs allocated to Essential Water; and
- asset replacement costs, which can be attributed to either:
 - > Essential Water, as the primary customer; and
 - > other offtake customers.

We have not found a reasonable justification to meaningfully distinguish between an upper bound estimate and a lower bound estimate in our assessment of WaterNSW's proposed capital expenditure. The intention of the upper and lower bound is to reflect the uncertainty of WaterNSW's efficient capital expenditure. However, the relatively straightforward nature of WaterNSW's proposed capital expenditure plan has few discretionary elements which could be reflected in this range of outcomes.

We present our assessment of WaterNSW's proposed capital expenditure for the 2026 to 2031 determination period in table 4.2.

Table 4.2: Capital expenditure allowance (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
WaterNSW proposal						
Easement acquisition	\$234,900	\$0	\$0	\$0	\$0	\$234,900
Asset replacement – Essential Water	\$25,800	\$275,100	\$734,100	\$11,200	\$43,100	\$1,089,400
Asset replacement – offtakes	\$0	\$11,700	\$41,500	\$0	\$0	\$53,100
Total	\$260,700	\$286,800	\$775,600	\$11,200	\$43,100	\$1,377,400
HoustonKemp estimate (upper and lower bound)						
Easement acquisition	\$234,900	\$0	\$0	\$0	\$0	\$234,900
Asset replacement – Essential Water	\$25,800	\$275,100	\$734,100	\$11,200	\$43,100	\$1,089,400
Asset replacement – offtakes	\$0	\$11,700	\$41,500	\$0	\$0	\$53,100
Total	\$260,700	\$286,800	\$775,600	\$11,200	\$43,100	\$1,377,400

Source: HoustonKemp analysis; and WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, September 2025, pp 73-75.

Note: totals may not sum due to rounding.

We discuss our approach to each category of WaterNSW's capital expenditure proposal in turn below.

4.2.1 Easement acquisition costs

With regards to the acquisition of access rights to land for the operation of the pipeline, WaterNSW explains that:⁵⁰

While the investment in acquiring easements over private land is largely complete, easements and access rights are also required for Crown land and land subject to Native Title determinations to ensure enduring and uninterrupted access to the remainder of our infrastructure. WaterNSW will need to secure access for 17 parcels of Crown land.

WaterNSW has proposed \$234,900 for easement and access right acquisition administration costs for Crown lands over the 2026 to 2031 determination period, incurred in the 2026-27 financial year only.⁵¹ Importantly, WaterNSW stresses that these proposed easement acquisition costs reflect administration costs only and do not reflect the expected capital expenditure required to actually acquire access rights for these Crown lands. WaterNSW explains that:⁵²

The actual acquisition costs for the easements and access rights for Crown land are contingent on the outcomes of negotiation processes including assessments by the Valuer General that are still pending. For the avoidance of doubt, the proposed easement acquisition costs for the 2026 Determination period ... do not include the outcomes of the ongoing negotiation processes.

We understand from WaterNSW that these administration costs are intended to reflect the engagement process that WaterNSW has conducted, and will continue to conduct, as it progresses towards acquiring access rights for these Crown lands.

WaterNSW provided us with further details as to the components of these easement acquisition administration costs. We understand that these costs comprise:

⁵⁰ WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, September 2025, p 74.

⁵¹ WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, September 2025, p 74.

⁵² WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, September 2025, p 74.

- a funding commitment to the Barkandji Native Title Group to allow them to participate in the negotiation of land and easement acquisition; and
- capitalised overheads allocated to this easement acquisition process.

We find the inclusion of these administrative costs to be reasonable.

To mitigate the risks associated with easement acquisition costs, WaterNSW has proposed the following:

- an ex post review, ie, a true-up, of the prudence of actual easement acquisition costs incurred for these Crown lands in the next IPART determination; and
- the inclusion of actual capitalised costs for the acquisition of easements and access rights, including any holding costs included in the regulatory asset base (RAB) in the next IPART determination.

In our opinion, WaterNSW's proposed approach to easement acquisition administration costs are reasonable, as:

- there is regulatory precedent in Australia for approving ex ante administrative costs;
- the magnitude of these administrative costs, while not directly comparable, do not appear excessive relative to other relevant examples; and
- a true-up mechanism for actual easement acquisition costs ensures that consumers only pay the prudent and efficient costs incurred by WaterNSW in obtaining access to land required to support ongoing pipeline operations.

In particular, we note that the Australian Energy Regulator (AER) has explicitly allowed for administrative costs such as social licence and community and stakeholder engagement in its determination of early works revenue proposals for contingent project applications in the National Electricity Market (NEM).⁵³ Accordingly, we agree that it is reasonable for WaterNSW to propose to recover these administrative costs separately from the acquisition costs of the easement.

The proposed costs equate to \$13,818 (\$FY26) per parcel of Crown land for which an easement will be acquired.⁵⁴ It is difficult to compare this estimate directly to other applications. However, Transgrid estimated the necessary Valuer General fees for 'a determination on the compensation to be paid to each landholder for establishing easements resumed under compulsory acquisition', which formed part of its land easement acquisitions capital expenditure forecast for HumeLink early works.⁵⁵ Transgrid estimated a Valuer General Fee per property is \$13,396 (\$FY26),⁵⁶ which is broadly comparable with the per parcel administration costs proposed by WaterNSW. We acknowledge that while Transgrid and WaterNSW may not be estimating the same concept, it is a useful comparison to ensure that the magnitude of WaterNSW's proposed costs are appropriate.

4.2.2 Asset replacement costs

Consistent with the approach taken in the 2022 to 2026 determination period, WaterNSW proposes to treat activities and costs relating to:

- refurbishment of existing assets as operating expenditure; and
- asset replacement as capital expenditure.

⁵³ See, for example: AER, *Transgrid's Victoria to NSW Interconnector West | Stage 1 Early Works Contingent Project Application*, May 2024, p 14.

⁵⁴ Calculated as \$234,900 total costs divided by 17 parcels of Crown land.

⁵⁵ Transgrid, *HumeLink - Stage 1(early works) Contingent Project Application | A.3 Capex Forecasting Methodology*, April 2022, pp 18-22.

⁵⁶ In real financial year 2021-22 dollar terms, Transgrid estimated this value as \$11,617.80. See: Transgrid, *HumeLink - Stage 1(early works) Contingent Project Application | A.3 Capex Forecasting Methodology*, April 2022, p 21.

These asset replacement costs can be segmented into those servicing Essential Water, as the primary customer of the pipeline, and those servicing offtake customers.

JHTJV provides WaterNSW with a forecast of annual capital expenditure required for asset replacement over the length of the O&M contract, with this forecast provided in table 4.3. We note that all categories other than those directly related to offtake customers are allocated to servicing Essential Water.

Table 4.3: Forecast asset replacement costs (\$FY26)

Expenditure category	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Pipeline	\$30,757	\$86,302	\$149,221	\$4,362	\$0	\$270,641
Bulk water storage	\$51,260	\$51,260	\$0	\$0	\$0	\$102,520
Buildings	\$22,647	\$89,118	\$200,103	\$9,181	\$37,374	\$358,424
Plant and machinery	\$0	\$197,931	\$905,512	\$0	\$46,134	\$1,149,577
Other asset replacement costs	\$0	\$0	\$0	\$0	\$0	\$0
Related to offtakes	\$0	\$10,220	\$35,994	\$0	\$0	\$46,214
Total	\$104,663	\$434,832	\$1,290,829	\$13,543	\$83,508	\$1,927,376

Source: *HoustonKemp analysis of WaterNSW, Attachment 11 | Wentworth to Broken Hill pipeline asset management plan, September 2025, table 12, p 36.*

We understand that these forecast replacement costs reflect the most up to date performance data available as at the end of the 2024-25 financial year and include the acceleration of approximately \$220,000 (real financial year 2015-16 dollars) to allow for earlier intervention of plant and machinery,⁵⁷ which we understand to be proposed for the 2028-29 financial year.

With regards to this required asset replacement capital expenditure, we understand that customers are involved in the asset management planning process. With regards to Essential Water, WaterNSW states that:⁵⁸

The parties also meet formally and informally to discuss operational risks and opportunities to ensure reliable and efficient operation of the pipeline to supply bulk water to Essential Water.

While:⁵⁹

WaterNSW also engages with the small number of farm offtake customers who are supplied lower volumes of water for stock and domestic purposes. Feedback from these customers is incorporated into decisions on how the pipeline is operated and maintained.

Notwithstanding the relatively modest magnitude of these costs, we understand that WaterNSW has communicated these asset replacement costs with its customers.

Accordingly, we understand that these asset replacement cost forecasts reflect both:

- the most current requirements for asset performance and reliability considerations; and
- customer preferences.

From the asset replacement costs presented in table 4.3, WaterNSW has classified these costs into either:

⁵⁷ WaterNSW, *Attachment 11 | Wentworth to Broken Hill pipeline asset management plan*, September 2025, p 37.

⁵⁸ WaterNSW, *Attachment 11 | Wentworth to Broken Hill pipeline asset management plan*, September 2025, p 25.

⁵⁹ WaterNSW, *Attachment 11 | Wentworth to Broken Hill pipeline asset management plan*, September 2025, p 25.

- asset refurbishment activities, to be treated as operating expenditure – for which we present our assessment in section 5; or
- asset replacement activities, to be treated as capital expenditure, with associated capitalised overhead costs.

We present WaterNSW's proposed disaggregation of total asset replacement costs into the operating expenditure and capital expenditure components in table 4.4.

Table 4.4: Disaggregation of asset replacement costs to operating and capital expenditure components (\$FY26)

Expenditure category	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Asset refurbishment activities (operating expenditure)	\$82,017	\$183,989	\$617,364	\$4,362	\$46,134	\$933,866
Asset replacement activities (capital expenditure)						
Asset replacement capital costs	\$22,647	\$250,843	\$673,465	\$9,181	\$37,374	\$993,510
Capitalised overheads	\$3,161	\$35,961	\$102,134	\$1,972	\$5,770	\$148,999
Total capital expenditure	\$25,808	\$286,805	\$775,599	\$11,153	\$43,144	\$1,142,509
Total asset replacement expenditure	\$107,825	\$470,793	\$1,392,964	\$15,514	\$89,278	\$2,076,375

Source: WaterNSW, Attachment 16 | Populated IPART building block model.

WaterNSW has identified total asset replacement capital expenditure of \$1,142,500 (\$FY26) over the 2026 to 2031 determination period, which comprises:

- \$1,089,371 (\$FY26) directly attributable to the provision of services for Essential Water; and
- \$53,138 (\$FY26) directly attributable to the provision of services for offtake customers.

We discuss these proposed asset replacement costs for WaterNSW's two customer types in turn below.

Essential Water

WaterNSW has proposed total asset replacement expenditure directly related to the provision of services for Essential Water to be \$1,089,400 (\$FY26) over the course of the 2026 to 2031 determination period, which includes specific replacement items that include:⁶⁰

- pipeline assets such as air relief valves and pumps;
- cathodic protection;
- bulk water storage assets; and
- other assets such as a UPS battery bank.

Total proposed asset replacement costs for the 2026 to 2031 determination period as a portion of the total value of the assets used for the provision of services for Essential Water is very low. In particular, proposed asset replacement costs as a portion of the regulated asset base (RAB) is equal to:⁶¹

- 0.24 per cent, relative to the value at the start of the period, ie, \$456,868,000 (\$FY26); and
- 0.26 per cent, relative to the value at the end of the period, ie, \$426,303,000 (\$FY26).

⁶⁰ WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, September 2025, pp 73-74.

⁶¹ WaterNSW, Attachment 13 | RAB and return of capital (regulatory depreciation), September 2025, p 4.

Accordingly, we find that WaterNSW's proposed asset replacement costs for Essential Water are reasonable and justified and recommend IPART adopt these values.

Offtake customers

WaterNSW proposes total asset replacement expenditure – including capitalised overheads – directly related to the provision of services for offtake customers to be \$53,100 (\$FY26) over the course of the 2026 to 2031 determination period, comprising:⁶²

- non-return valves of \$11,000 (\$FY26), excluding capitalised overheads;
- remote terminal unit of \$25,000 (\$FY26), excluding capitalised overheads; and
- operating systems antennae of \$10,000 (\$FY26), excluding capitalised overheads.

Total proposed asset replacement costs for the 2026 to 2031 determination period as a portion of the total value of the assets used for the provision of services to offtake customers is substantially larger than that for Essential Water. In particular, proposed asset replacement costs as a portion of the regulated asset base (RAB) is equal to:⁶³

- 16.5 per cent, relative to the value at the start of the period, ie, \$321,000 (\$FY26); and
- 20.7 per cent, relative to the value at the end of the period, ie, \$256,000 (\$FY26).

Notwithstanding, we find that WaterNSW's proposed asset replacement costs for Essential Water are reasonable and justified and recommend IPART adopt these values.

⁶² WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 73-74.

⁶³ WaterNSW, *Attachment 13 | RAB and return of capital (regulatory depreciation)*, September 2025, p 5.

5. Operating expenditure assessment

In this section, we present our assessment of WaterNSW's proposed operating expenditure for the 2026 to 2031 regulatory period. WaterNSW's proposed operating expenditure has been derived using a base-step-trend methodology. We present our assessment of each individual component of this methodology in isolation below, and conclude this section with a summary of our assessment of total operating expenditure.

WaterNSW has proposed operating expenditure (excluding energy costs) of \$19.83 million (\$FY26) over the 2026 to 2031 determination period which is:⁶⁴

- 17 per cent higher than allowed operating expenditure (excluding energy costs) in the 2022 to 2026 determination period; and
- 9 per cent higher than actual expected operating expenditure (excluding energy costs) incurred in the current determination period.

We have not found a reasonable justification to meaningfully distinguish between an upper bound estimate and a lower bound estimate in our assessment of WaterNSW's proposed operating expenditure. This reflects the relatively low magnitude of proposed operating expenditure and the relatively straightforward composition of the proposed operating expenditure plan in the upcoming regulatory period.

We summarise the findings and recommendations of our review of WaterNSW's proposed operating expenditure (excluding energy costs) in box 5.1.

Box 5.1: Summary of findings and recommendations – operating expenditure (excluding energy costs)

- We find all of WaterNSW's proposed operating expenditure for the 2026 to 2031 determination period to be reasonable.
- We present a single estimate of prudent and efficient operating expenditure rather than an upper and lower bound because we have not found a reasonable justification to meaningfully distinguish between an upper bound and a lower bound within WaterNSW's proposed operating expenditure plan.
- WaterNSW's proposed operating expenditure has been derived using a base-step-trend methodology.
- Actual operating expenditure in the 2024-25 financial year has been proposed as the efficient base year. We have reviewed the categories contributing to total base year operating expenditure and find it appropriate for WaterNSW to have made the proposed adjustments to these actual base year costs, ie, to exclude only:
 - > regulatory submission costs, as non-recurrent operating expenditure; and
 - > energy costs, as these costs are handled separately.
- Actual operating expenditure in the 2024-25 financial year was four per cent higher than the regulatory allowance, excluding energy costs and regulatory submission costs. However, this cost overrun relative to the regulatory allowance in the proposed base year is primarily driven by the allocation of corporate overheads. We have assumed that WaterNSW's corporate overhead cost allocation methodology has been evaluated elsewhere as it is relevant to other aspects of WaterNSW's activities. It follows that we find WaterNSW's proposed base component of operating expenditure to be reasonable.
- WaterNSW's proposed base component of operating expenditure is:

⁶⁴ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, 30 September 2025, pp 67-69.

- > equivalent to the annual average operating expenditure allowance (excluding regulatory submission and energy costs) in the current determination period; and
- > 3.0 per cent lower than the expected actual annual average actual operating expenditure (excluding regulatory submission and energy costs) in the current determination period.
- We have not conducted a benchmarking process to compare WaterNSW's base year operating expenditure to other comparable service providers due to the lack of information available for these other pipelines, such as the Goldfields Water Supply Scheme in Western Australia and the Goldfields Superpipe in Victoria.
- With regards to the trend component, WaterNSW has proposed:
 - > audit fees of \$2,000 (\$FY26) each year;
 - > an uplift to the O&M contract to escalate payments made under the contract to real financial year 2025-26 dollar terms;
 - > an 8.9 per cent nominal annual increases in insurance premiums, as advised by the NSW government insurance service provider (ie, icare), which WaterNSW has converted to a real annual increase using an assumed inflation rate of 2.1 per cent; and
 - > a one per cent annual compounding efficiency factor, applied to total corporate overheads.
- We do not recommend adjustments to the magnitude of WaterNSW's proposed trend component, ie:
 - > audit fees are recurrent and constant and so can be defined as a step change component, however this has no effect on the magnitude of operating expenditure;
 - > the proposed escalation of O&M payments to real financial year 2025-26 dollar terms as a trend component, alongside the proposed real changes in O&M contract costs as a step component, has been conducted appropriately;
 - > although it would be more appropriate to derive the real increase in insurance premiums by reference to an assumed inflation rate of 2.4 per cent, which aligns with IPART's guidance as to assumed future rates of inflation, this adjustment reduces the implied real increase by only \$12,000 (\$FY26) and so has not been recommended due to relative low materiality of the change; and
 - > no adjustment to the proposed ongoing efficiency factor, as this one per cent value is a realistic and reasonable goal.
- With regards to the step component, WaterNSW has proposed:
 - > a 54 per cent increase (in aggregate) in the allocation of overheads, relative to the current allowance;
 - > a \$338,000 (\$FY26) increase in asset refurbishment costs relative to the original asset refurbishment schedule for the 2026 to 2031 determination period;
 - > a real O&M cost escalation of \$742,000 (\$FY26) over the upcoming determination period, relative to the current allowance;
 - > \$456,000 (\$FY26) in regulatory submission costs, reflecting a 13 per cent reduction relative to actual regulatory submission costs in the current determination period, and another \$57,000 (\$FY26) in regulatory implementation costs;
 - > a \$47,000 (\$FY26) reduction in the contract management costs incurred specifically by the SPV business arm of WaterNSW;
 - > a \$4,000 (\$FY26) reduction in annual travel costs; and
 - > a \$287,000 (\$FY26) reduction in other operating expenditure over the 2026 to 2031 determination period, which relates to the conclusion of a discrete tree planting and maintenance work package in the 2024-25 determination period.
- We recommend no adjustments to WaterNSW's proposed step component, ie:

- > the allocation of corporate overheads is the outworkings of an approved cost allocation methodology at the broader WaterNSW level and is out of scope in this review;
- > asset refurbishment costs align with the asset replacement schedule provided by the holder of the O&M contract;
- > the profile of real O&M cost escalation broadly aligns with increased O&M activities such as asset refurbishment;
- > regulatory submission costs reflect a reasonable improvement on increased costs in the current determination to implement IPART's 3Cs framework for the first time;
- > the reduction in contract management costs is reasonable;
- > the reduction in travel costs is reasonable; and
- > the reduction in other operating expenditure aligns with the cessation of a previous ongoing operating activity.

5.1 Base operating expenditure

In the base-step-trend approach to forecasting operating expenditure, IPART states that:⁶⁵

The base is the current efficient level of recurrent controllable opex.

WaterNSW has proposed actual operating expenditure in the 2024-25 financial year as its base year operating expenditure with adjustments to remove:⁶⁶

- \$277,000 (\$FY26) in regulatory submission costs, which reflect the cyclical costs of preparing its regulatory proposal, ie, as non-recurrent operating expenditure; and
- all energy costs, for which the regulatory allowance is derived separately (see section 6).

We find the removal of these costs from proposed base year expenditure to be reasonable.

WaterNSW has provided the individual operating expenditure items that contribute to its base year operating expenditure estimate, which comprises:

- O&M and asset refurbishment costs;
- audit, insurance and land tax costs;
- contract management of the SPV;
- regulatory report costs, which represent annual, ongoing costs of regulatory compliance reporting;
- other operating costs; and
- corporate overheads.

Using this further information provided by WaterNSW, we find that actual incurred operating expenditure (excluding energy costs and regulatory submission costs) exceeds WaterNSW's regulatory allowance for the 2024-25 financial year by \$133,000 (\$FY26), or approximately four per cent. We present the disaggregation of this cost overrun for these base components of operating expenditure in table 5.1. We note that this aggregate cost overrun is not uniform across all individual components, with:

⁶⁵ IPART, *Water regulation handbook*, July 2023, p 42.

⁶⁶ WaterNSW, *Attachment 8 | Base Trend Step operating expenditure*, September 2025, pp 6-7. Note: we understand that WaterNSW has presented table 2 in real financial year 2024-25 dollar terms, whereas the label suggests these are real financial year 2025-26 dollar terms. Accordingly, these values should be escalated by 2.7 per cent to be interpreted as real financial year 2024-25 dollar terms.

- \$143,875 (\$FY26) in realised cost efficiencies in audit, insurance, land tax, contract management and other operating costs; more than offset by
- \$277,215 (\$FY26) in cost overruns, comprising:
 - > \$71,439 (\$FY26) in O&M costs and asset refurbishment costs; and
 - > \$205,776 (\$FY26) in the allocation of corporate overheads.

Table 5.1: Comparison of actual and allowed base operating expenditure (\$FY26)

Component	Actual incurred costs	Regulatory allowance	Incurred cost overrun
O&M costs and asset refurbishment costs	\$1,905,242	\$1,833,803	\$71,439
Audit, insurance and land tax	\$175,076	\$241,864	-\$66,789
Contract management	\$130,634	\$191,854	-\$61,219
Regulatory submission and reporting costs	\$0	\$0	\$0
Other operating costs	\$81,388	\$97,255	-\$15,867
Corporate overheads	\$976,668	\$770,892	\$205,776
Total	\$3,269,008	\$3,135,668	\$133,340

Source: HoustonKemp analysis of information provided by WaterNSW.

We understand that WaterNSW's cost allocation methodology for corporate overheads has been assessed in the review of other aspects of WaterNSW's activities. We explain in section 5.3.1 below that the application of the cost allocation methodology has been applied to the pipeline in a manner that is consistent with these other aspects of WaterNSW's activities. Accordingly, we find the corporate overhead costs included in the proposed base year expenditure to be reasonable as these proposed costs are consistent with the methodology applied to other aspects of WaterNSW's activities.

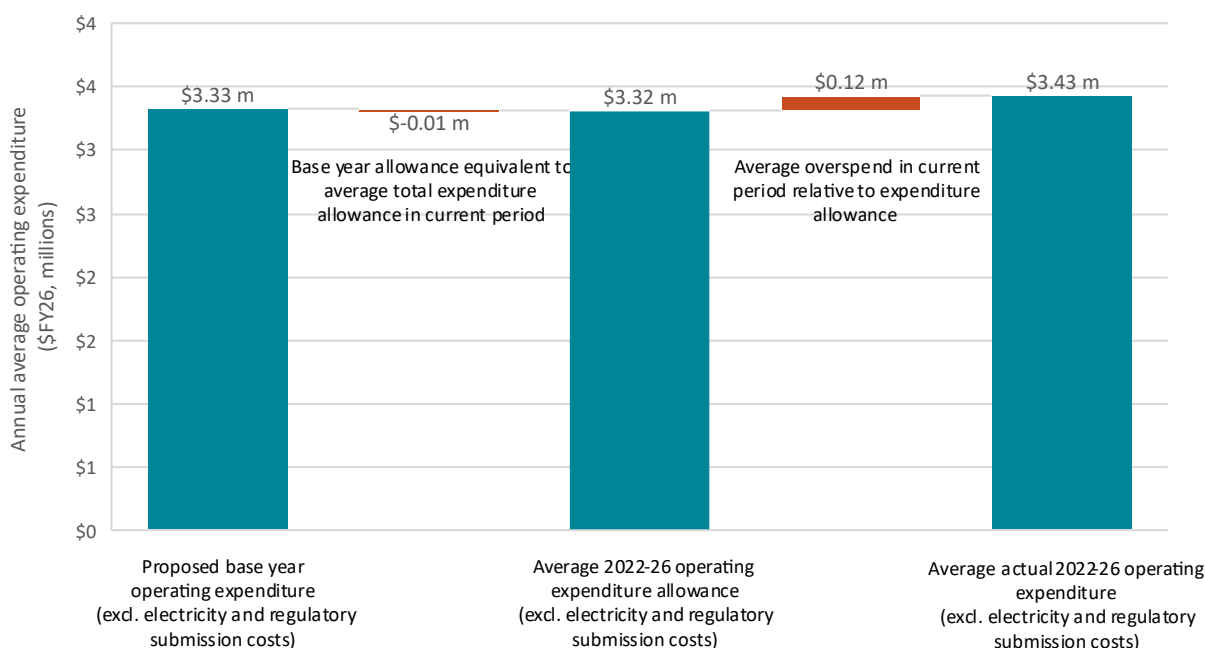
Removing the contribution of corporate overhead costs from aggregate cost overruns results in WaterNSW's proposed base expenditure being below its regulatory allowance by \$72,436 (\$FY26). That is, the cost overruns on O&M costs and asset refurbishment costs are more than offset by realised cost savings in other expenditure categories, relative to the regulatory allowance.

We therefore find the base component of WaterNSW's operating expenditure proposal to be reasonable. We estimate the upper bound and lower bound of the base component of operating expenditure to be equal to WaterNSW's proposed value.

In figure 5.1, we compare WaterNSW's proposed base operating expenditure in the 2026 to 2031 determination period, ie, \$3,329,000 (\$FY26) against:

- annual average allowed operating expenditure (excluding energy costs and regulatory submission costs) in the 2022 to 2026 determination period, ie, \$3,316,000 (\$FY26), which are, in effect, equal; and
- annual average incurred operating expenditure (excluding energy costs and regulatory submission costs) in the 2022 to 2026 determination period, ie, \$3,433,000 (\$FY26), which is around three percent higher than WaterNSW's proposed base operating expenditure.

Figure 5.1: Comparison of proposed base year operating expenditure with actual and allowed operating expenditure from the current period



Source: HoustonKemp analysis of WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, September 2025, tables 6 and 18, pp 50 and 68.

Potential comparator service providers for efficiency benchmarking

It is difficult to assess the relative efficiency of WaterNSW's proposed base operating expenditure against comparable service providers due to the relatively unique nature of the pipeline's operational characteristics and regulatory treatment. These relevant comparable long-distance Australian water pipelines include:

- the Goldfields Water Supply Scheme, which is a 560km water pipeline from Mundaring to Kalgoorlie in Western Australia,⁶⁷ operated by Water Corporation;⁶⁸ and
- the Goldfields Superpipe, which is a pipeline supporting the Ballarat and Bendigo regions jointly operated by Central Highlands Water and Coliban Water.⁶⁹

Although these pipelines are operated by water service providers like WaterNSW, we understand that they are not subject to a standalone regulatory determination like the Wentworth to Broken Hill pipeline. Accordingly, operational data from these pipelines that could be used for the purposes of cost benchmarking is not available. Similarly, although the Sydney Desalination Plant is a distinct water service provider regulated by IPART, like the Wentworth to Broken Hill pipeline, operating expenditure at a desalination is unlikely to be comparable to those at a water pumping pipeline.

⁶⁷ Government of Western Australia, *Goldfields Water Supply Scheme*, available at <https://www.wa.gov.au/government/announcements/goldfields-water-supply-scheme>, accessed 23 January 2026.

⁶⁸ Water Corporation, *Goldfields and agricultural*, available at <https://www.watercorporation.com.au/our-water/climate-change-and-wa/climate-and-goldfields-and-agricultural/goldfields-and-agricultural>, accessed 23 January 2026.

⁶⁹ Central Highlands Water, *Goldfields Superpipe*, available at <https://www.chw.net.au/community/water-storage-levels/goldfields-superpipe>, accessed 23 January 2026.

5.2 Trend operating expenditure

In the base-step-trend approach to forecasting operating expenditure, IPART states that:⁷⁰

The trend is any predictable change in the efficient level of recurrent controllable opex due output growth, productivity improvements and real input price changes.

WaterNSW has proposed the following four trend components in its proposed operating expenditure for the 2026 to 2031 determination period, ie:⁷¹

- increased audit fees;
- increased insurance premiums;
- escalation of the O&M contract to real financial year 2025-26 dollar terms; and
- an ongoing annual efficiency factor.

We assess each of these proposed components of trend operating expenditure in turn below.

We estimate the upper bound and lower bound of the trend component of operating expenditure to be equal to WaterNSW's proposed value.

5.2.1 Audit costs

WaterNSW has proposed a \$2,000 (\$FY26) annual increase in audit fees in each year of the 2026 to 2031 determination period.⁷²

We find that this proposed change in operating expenditure reflects a step change in the efficient level of recurrent controllable operating expenditure, and therefore should be categorised as a step change component of operating expenditure, as described in section 5.3, rather than a trend component. This has no impact on the magnitude of total operating expenditure.

Notwithstanding this change in classification, we find that this proposed value from WaterNSW is reasonable.

5.2.2 Insurance premium increases

WaterNSW explains that:⁷³

In accordance with NSW Treasury Circular TC20-05 Mandatory Use of the Treasury Managed Fund (TMF) for All Government Insurance Requirements, WaterNSW is required to be a TMF member for its insurance requirements and is required to obtain cover for its insurable assets and liabilities through the TMF, managed by icare. This provides government agencies with access to cost effective insurance.

With regards to the proposed increase in insurance premiums payable under the TMF scheme, WaterNSW explains that:⁷⁴

- the provider of the TMF scheme, ie, icare, has advised WaterNSW of a nominal compound annual growth rate increase of 8.9 per annum between the 2024-25 and 2030-31 financial years; and

⁷⁰ IPART, *Water regulation handbook*, July 2023, p 42.

⁷¹ WaterNSW, *Attachment 8 | Base Trend Step operating expenditure*, September 2025, pp 6-7.

⁷² WaterNSW, *Attachment 8 | Base Trend Step operating expenditure*, September 2025, p 7.

⁷³ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, pp 7-8.

⁷⁴ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 8.

- this corresponds to a real compound annual growth rate of 6.6 per cent, using an assumed inflation rate of 2.1 per cent between the 2024-25 and 2030-31 financial years.

WaterNSW proposes total insurance premium increases of \$261,000 (\$FY26) over the 2026 to 2031 determination period.⁷⁵

As explained in section 2.4, WaterNSW has assumed inflation between the 2024-25 and 2030-31 financial years that far exceeds the 2.1 per cent annual rate used in this conversion. We understand that IPART has advised assumed inflation rates of 2.0 per cent for the 2024-25 financial year, 2.7 per cent for the 2025-26 financial year and 2.5 per cent for all future years. This implies an average inflation rate of 2.4 per cent between the 2024-25 and 2030-31 financial years.⁷⁶

The real compound annual growth rate of insurance premiums consistent with this 2.4 per cent inflation assumption is 6.3 per cent, ie, 4.5 per cent lower. However, this only results in only \$12,000 (\$FY26) in overstated insurance premium costs over the 2026 to 2031 determination period.

Considering the materiality of this adjustment, we do not recommend that this adjustment be applied to WaterNSW's proposed expenditure.

However, with regards to the justification of this increase in insurance premiums, we note that WaterNSW has proposed increased insurance premiums of seven per cent per annum in its regulatory proposal for its regional and bulk water network for 2025-2030,⁷⁷ which we understand to be based on the same information used to derive the estimates for the pipeline. The difference in the proposed average increases in these two regulatory proposals is explained by the:

- inclusion of the 2025-26 financial year in the regional and bulk water network proposal only; and
- inclusion of the 2030-31 financial year in the pipeline proposal only.

WaterNSW has provided us with the information explaining the changes in future insurance premiums under the TMF scheme, which provides a description and explanation of the current context of general increases in insurance premiums.

However, WaterNSW's regional and bulk water network proposal is still under assessment, so we recommend that the same determination of insurance premiums for the broader WaterNSW business be applied to the pipeline.

Accordingly, we find that WaterNSW's proposed increase in insurance premiums is reasonable.

5.2.3 Escalation of O&M contract payments for inflation

WaterNSW describes this trend component as:⁷⁸

A CPI rate of 2.7% was applied to escalate the 2024–25 dollar values to 2025–26. The amount included for this trend adjustment reflects that escalation.

We understand that WaterNSW has disaggregated the changes in O&M contract costs relative to those incurred in the base year, ie, the 2024-25 financial year, into two components, ie, those corresponding to:

- the annual escalation of contract costs for inflation, which are covered in the trend component; and
- the annual variation of contract costs for different activities.

⁷⁵ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 7.

⁷⁶ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 9.

⁷⁷ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated charges for WaterNSW Bulk Water Services from 1 July 2025*, September 2024, p 116.

⁷⁸ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 7.

We have reviewed WaterNSW's proposed O&M costs and confirm that the annual changes in these costs have been appropriately disaggregated into these two constituent components.

An alternate approach to that taken by WaterNSW would be to include the escalation of O&M contract costs in base year expenditure. That is, the approach taken by WaterNSW is only appropriate if the contribution of O&M contract costs to the base year expenditure does not include an inflation adjustment, otherwise these escalation costs would have been included in proposed operating expenditure twice. We have reviewed information provided to WaterNSW as to the derivation of base operating expenditure and confirm that this escalation component has been accounted for correctly in this derivation.

Accordingly, we find WaterNSW's proposed escalation of O&M costs as a trend component of operating expenditure to be reasonable.

5.2.4 Ongoing efficiency factor

WaterNSW proposed a one per cent annual compounding efficiency target across its operations in the regulatory proposal for its primary regulated business operations.⁷⁹ We recommend that IPART maintain the same efficiency factor across all WaterNSW business arms.

WaterNSW has noted that there is limited scope for an ongoing efficiency factor on certain components of its operating expenditure, ie, that O&M costs are:⁸⁰

...established by reference to long term contracts that have previously been reviewed by IPART

Accordingly, WaterNSW's proposed ongoing efficiency factor is applied to operating expenditure that supports SPV operations, ie, contract management costs and corporate overheads.⁸¹

WaterNSW's proposed efficiency savings over the 2026 to 2031 determination period are \$334,000 (\$FY26)⁸² which correspond to 5.06 per cent of total corporate overheads and contract management costs, ie, \$6,596,000 (\$FY26).

We understand that WaterNSW's proposed efficiency improvements are intended to commence in the 2024-25 financial year, ie, two years prior to the commencement of the upcoming determination period. We present a comparison of WaterNSW's proposed annual efficiency factor with those implied by WaterNSW's overarching strategy in table 5.2. We estimate that WaterNSW's proposed efficiency factor is consistent with a 0.98 per cent annual ongoing efficiency factor.

⁷⁹ WaterNSW, *Pricing proposal | Regulated charges for WaterNSW Bulk Water Services from 1 July 2025 | Attachment 9 | Efficiency program*, September 2024, p 4.

⁸⁰ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, pp 8-9.

⁸¹ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 8.

⁸² WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 8.

Table 5.2: Comparison of proposed and implied efficiency factors

Year	WaterNSW proposed efficiency factor	1% efficiency factor commenced in the 2024-25 financial year
2026-27 financial year	2.74%	3.03%
2027-28 financial year	3.91%	4.06%
2028-29 financial year	4.68%	5.10%
2029-30 financial year	5.69%	6.15%
2030-31 financial year	8.05%	7.21%
Aggregate for 2026 to 2031 determination period	5.06%	5.18%

Source: HoustonKemp analysis of information provided by WaterNSW,

We note that WaterNSW's proposed one per cent ongoing efficiency factor is higher than the 0.7 per cent efficiency factor determined by IPART for the 2022 to 2026 determination period.⁸³ Moreover, we note that IPART determined an ongoing efficiency adjustment of 0.9 per cent per annum for Hunter Water for its 2025 to 2030 determination period.⁸⁴

We find that WaterNSW's proposed ongoing efficiency factor is reasonable and realistic. Moreover, the opportunity to deliver efficiency improvements in the O&M contract should be contemplated as part of the next review and tendering process of this contract.

5.3 Step changes in operating expenditure

In the base-step-trend approach to forecasting operating expenditure, IPART states that:⁸⁵

The step is any forward-looking step change in the efficient level of recurrent controllable opex due to a particular event, such as changes to regulation or the method of delivering a service.

WaterNSW has proposed the following seven step components in its proposed operating expenditure for the 2026 to 2031 determination period, ie:⁸⁶

- corporate overheads;
- asset refurbishment costs;
- annual variations in the costs under the O&M contract;
- regulatory submission, reporting and implementation costs;
- SPV contract management costs;
- travel costs; and
- other operating expenditure.

We assess each of these proposed components of step operating expenditure in turn below.

We estimate the upper bound and lower bound of the step component of operating expenditure to be equal to WaterNSW's proposed value.

⁸³ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical report, November 2022, p 36.

⁸⁴ IPART, *Hunter Water prices 2025-2030 | Final Report*, June 2025, pp 39-40.

⁸⁵ IPART, *Water regulation handbook*, July 2023, p 42.

⁸⁶ WaterNSW, *Attachment 8 | Base Trend Step operating expenditure*, September 2025, pp 9-13.

5.3.1 Allocation of corporate overheads

WaterNSW proposes a 54 per cent increase in the allocation of corporate overheads relative to the current determination period, with the average annual allocation of corporate overheads increasing from \$778,000 (\$FY26) per year in the current determination to \$1,201,000 (\$FY26) in the upcoming determination.⁸⁷ This is the result of a proposed increase in the allocation of total corporate overheads allocated to the pipeline from 1.9 per cent in 2024-25 to an average of 2.4 per cent over the upcoming determination period.⁸⁸

WaterNSW's proposed corporate overhead cost allocation methodology

In its determination for the 2022 to 2026 determination period, IPART described its assessment of WaterNSW's proposed allocation of corporate overheads as:⁸⁹

...our decision is to set the Pipeline's efficient corporate overheads based on the approach and at a similar cost level outlined in the WaterNSW rural bulk water price review. This means using direct cost allocation and allocating a similar cost level for corporate overheads to the Pipeline.

It follows that a key consideration of IPART's previous assessment of WaterNSW's corporate overheads allocation mechanism relates to the use of a direct cost allocation methodology. We note that WaterNSW's proposed corporate overhead cost allocation methodology for the pipeline is:⁹⁰

...based on its share of direct operating expenditure, excluding energy costs as per the previous submission.

Put simply, WaterNSW's proposed allocation methodology for indirect (or shared) corporate overheads is to attribute these costs between its distinct business arms on the basis of the share of direct costs attributable to each of these business arms.

With respect to IPART's cost allocation guidelines,⁹¹ WaterNSW states that its proposed methodology aligns with IPART's principles of cost allocation, ie:⁹²

- direct operating expenditure is a measure that is readily observable;
- the use of directly attributable costs as an allocator for indirect/shared costs is a well-established approach with regulatory precedent;
- direct operating expenditure is subject to independent review by IPART as input into WaterNSW's revenue requirement; and
- it is reasonable to expect direct operating expenditure to be correlated to the cost drivers associated with indirect/shared costs.

We find that WaterNSW's proposed corporate overhead cost allocation methodology is reasonable and reflects IPART's principles and guidance for such a methodology.

⁸⁷ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, 30 September 2025, p 69.

⁸⁸ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 10.

⁸⁹ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical report, November 2022, p 28.

⁹⁰ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 10.

⁹¹ IPART, *Cost allocation guide*, March 2018, pp 11-15.

⁹² WaterNSW, *Attachment 7 | WaterNSW cost allocation manual*, September 2025, p 22.

Effect of WaterNSW's proposed corporate overhead cost allocation methodology

WaterNSW notes that its cost allocation methodology reflects the interactions between WaterNSW's business arms and is thereby:⁹³

...sensitive to the level of operating expenditure in the other WaterNSW Determinations (WAMC, Greater Sydney and the Rural Valleys).

By way of explanation, the portion of corporate overheads allocated to the pipeline has increased by around 25 per cent (1.9 per cent to 2.4 per cent) while the magnitude of corporate overheads has increased by around 54 per cent. This more than proportionate increase in costs allocated to the pipeline relative to the change in allocation indicates that:

- although WaterNSW's total corporate overheads have increased in aggregate;
- there has been some relative decline in direct costs attributed to other WaterNSW business arms; resulting in
- a relatively larger portion of these increased corporate overheads being allocated to the pipeline.

To reflect this interaction with other IPART regulatory determinations, WaterNSW explains that:⁹⁴

WaterNSW has not included any adjustment to our standard corporate allocation methodology to address any potential decision by IPART whereby WaterNSW should allocate corporate overhead costs on a different basis (i.e. instead of the current operating expenditure allocator) arising from the latest IPART Rural Valleys, Greater Sydney or WAMC decisions.

Any such adjustment could result in a change to the allocated costs for Broken Hill pipeline customers and would need to be accounted for in the 2026 Determination to ensure WaterNSW is not financially disadvantaged and remains 'whole'.

Given the interdependencies with other regulatory determinations, an assessment of the magnitude of proposed corporate overheads is outside the scope of this review. That is, we recommend that IPART assess WaterNSW's proposed cost allocation methodology alongside these other regulatory determinations.

Notwithstanding the above, we find that the methodology proposed by WaterNSW, in the context of this review, is reasonable, abides by IPART's guidance and principles and is consistent with WaterNSW's most recent proposals for its bulk water services.

5.3.2 Asset refurbishment costs

WaterNSW has proposed total asset refurbishment costs equal to \$934,000 (\$FY26) over the 2026 to 2031 determination period.⁹⁵ This proposed value aligns with the component of asset replacement costs allocated to operating expenditure, ie, asset refurbishment, as presented in table 4.4.

Accordingly, we verify that WaterNSW's proposed capital expenditure for asset replacement and proposed operating expenditure for asset refurbishment:

- align with a common underlying asset management schedule;
- clearly segments these costs into distinct components; and
- does not double count any of these proposed costs between these capital and operating expenditure components.

⁹³ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 67.

⁹⁴ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 65-66.

⁹⁵ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 10.

As explained in section 4.2.2, we understand that these asset replacement cost forecasts reflect both:

- the most current requirements for asset performance and reliability considerations; and
- customer preferences.

Accordingly, we find WaterNSW's proposed asset refurbishment costs to be reasonable.

5.3.3 Annual variations in O&M contract costs

WaterNSW has proposed increases in payments made to the holder of the O&M contract relative to the base year over the 2026 to 2031 determination period equal to \$742,000 (\$FY26), with WaterNSW describing these additional costs as:⁹⁶

These increases are above CPI and reflect actual contract terms and operational needs.

Cost variation across the individual years relates to cyclic planned maintenance, with higher cost years representing major maintenance and overalls required at varying intervals, as opposed to each year.

First, we understand that the O&M contract for the pipeline was secured by competitive tender. Accordingly, we assume that the annual profile of O&M costs under this contract are likely to reflect the prudent and efficient costs of operating and maintaining the pipeline on behalf of WaterNSW. That is, the contract costs bid by the successful holder are expected to be:

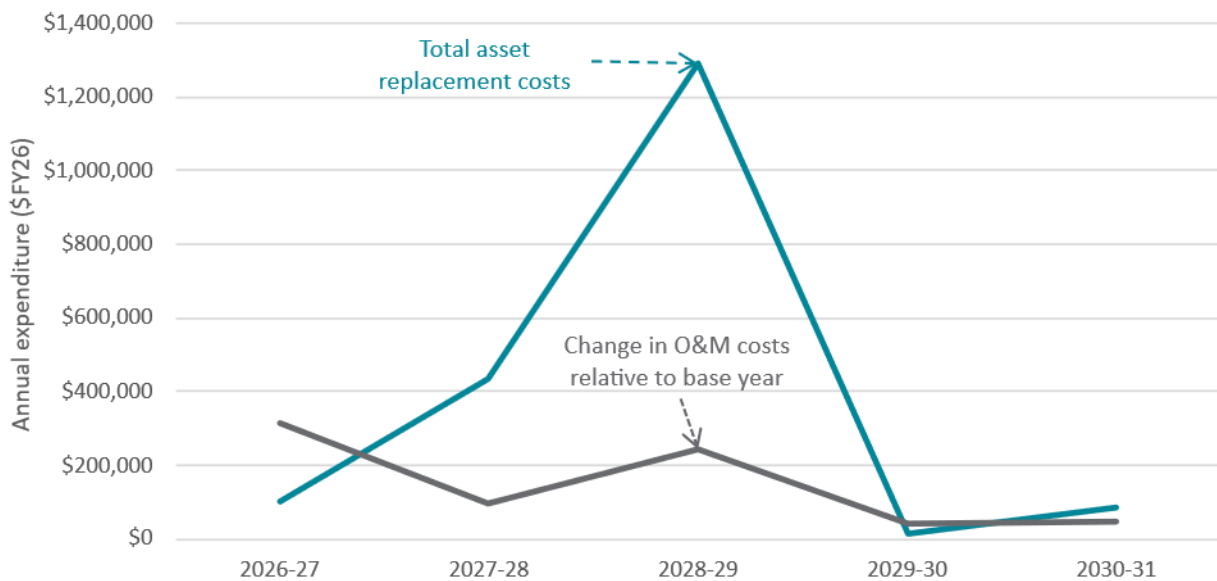
- sufficiently high to maintain the pipeline at the required standard; and
- sufficiently low to ensure the competitiveness of the proposed costs against other bidders.

As such, although O&M costs are significantly higher than in the current determination it is reasonable to assume that these costs reflect the prudent and efficient costs of operating the pipeline. Moreover, as discussed with asset replacement capital costs in section 4.2.2, the increase in O&M costs and asset replacement costs can be traced back to the life-cycle of the pipeline itself, ie, the assets that comprise the pipeline are, in effect, twice as old in the upcoming determination period relative to the current determination period.

In addition, we expect the profile of changes in O&M contract costs to be reasonably well correlated with changes in asset replacement costs, on account of the fact that both expenditure items are driven by the relative intensity of O&M activities at the pipeline. We present a comparison of the annual change in O&M contract costs, relative to the base year, and total asset replacement expenditure (ie, both capital and operating components as presented in in table 4.3) for the 2026 to 2031 determination period in figure 5.2.

⁹⁶ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 12.

Figure 5.2: Comparison of annual profile of asset replacement costs and O&M costs (\$FY26)



Source: HoustonKemp analysis of WaterNSW, Attachment 11 | Wentworth to Broken Hill pipeline asset management plan, September 2025, table 12, p 36; and WaterNSW, Attachment 8 | Base trend step operating expenditure, September 2025, p 10.

We see that with the exception of the first year of the upcoming determination period, the profile of proposed O&M costs and proposed asset replacement expenditure are reasonably aligned (ie, increase from year two to three, decline from year three to four and then steady between year four and five), demonstrating a degree of consistency between these two components of WaterNSW's expenditure proposal.

Accordingly, we find these proposed annual variations in O&M costs to be reasonable.

5.3.4 Regulatory submission, reporting and implementation costs

WaterNSW has proposed total regulatory submission, reporting and implementation costs equal to \$800,000 (\$FY26) over the 2026 to 2031 determination period, comprising:⁹⁷

- \$57,000 (\$FY26) each year in ongoing regulatory reporting and implementation costs, which is contained within the base year component of operating expenditure;
- \$57,000 (\$FY26) in additional regulatory reporting and implementation costs in the first year of the upcoming determination period to 'implement the new determination and establish new ongoing reporting requirements'; and
- \$456,000 (\$FY26) in years four and five of the upcoming determination period for the preparation of the next regulatory submission.

We find WaterNSW's proposed uplift in regulatory costs in the first year of the determination to be reasonable, particularly in light of the new 3Cs framework being applied for the first time to the pipeline in the upcoming determination period.

WaterNSW's actual expenditure to prepare this regulatory submission is expected to be \$532,300 (\$FY26),⁹⁸ with the proposed value for the next regulatory submission process reflecting a 14 per cent reduction in

⁹⁷ WaterNSW, Attachment 8 | Base trend step operating expenditure, September 2025, pp 10 and 12.

⁹⁸ Comprising \$277,000 (\$FY26) in the 2024-25 financial year and \$255,000 (\$FY26) in the 2025-26 financial year. See: WaterNSW, Attachment 8 | Base trend step operating expenditure, September 2025, p 12.

these costs. We find these proposed cost reductions to be reasonable due to their to substantial improvements relative to WaterNSW's actual incurred costs under the new 3Cs framework.

5.3.5 SPV contract management cost

WaterNSW has proposed a \$47,000 (\$FY26) reduction in SPV contract management costs over the 2026 to 2031 determination period, which WaterNSW describes as:⁹⁹

...separate from corporate overheads and cover SPV activities such as contract oversight direct costs, coordination with service providers (e.g. John Holland Trility JV), compliance, reporting, legal and internal administration.

These cost reductions relative to those incurred in the base year are related to, yet distinct from, the expenditure reductions proposed through the ongoing efficiency factor. That is, we understand that the proposed efficiency factor is to be applied to total SPV costs, being the combination of these contract management costs and corporate overheads, as described in section 5.3.1. As such, the ongoing efficiency factor is calculated on the cost base that includes these relative reductions associated with improved SPV contract management.

We find that these proposed reductions in SPV management costs relative to the base year are reasonable.

5.3.6 Travel costs

WaterNSW has proposed a \$4,000 (\$FY26) annual reduction in travel costs in each year of the 2026 to 2031 determination period.¹⁰⁰ We understand, from information provided by WaterNSW, that this represents an approximate 50 per cent reduction in travel costs relative to the base year.

We find this proposed reduction in operating expenditure relative to the base year to be reasonable.

5.3.7 Other operation and maintenance costs

WaterNSW has proposed a \$287,000 (\$FY26) reduction in other operating expenditure over the 2026 to 2031 determination period, which relates to the conclusion of a discrete tree planting and maintenance work package in the 2024-25 determination period.¹⁰¹

An alternate approach to address this reduction in costs would have been for WaterNSW to have removed these costs from its proposed base year expenditure. However, due to the annual variations in these costs WaterNSW has controlled for these cost reductions relative to the base year through this step change component.

In any case, we verify that these cost reductions have been addressed appropriately by WaterNSW and find this proposed reduction in operating expenditure relative to the base year to be reasonable.

5.4 Total operating expenditure

WaterNSW's proposed annual average operating expenditure over the 2026 to 2031 determination period is:

- 17 per cent higher than allowed operating expenditure (excluding energy costs) in the 2022 to 2026 determination period, or alternatively the allowance in the current determination period is 14 per cent lower than proposed in the upcoming determination period; and

⁹⁹ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 13.

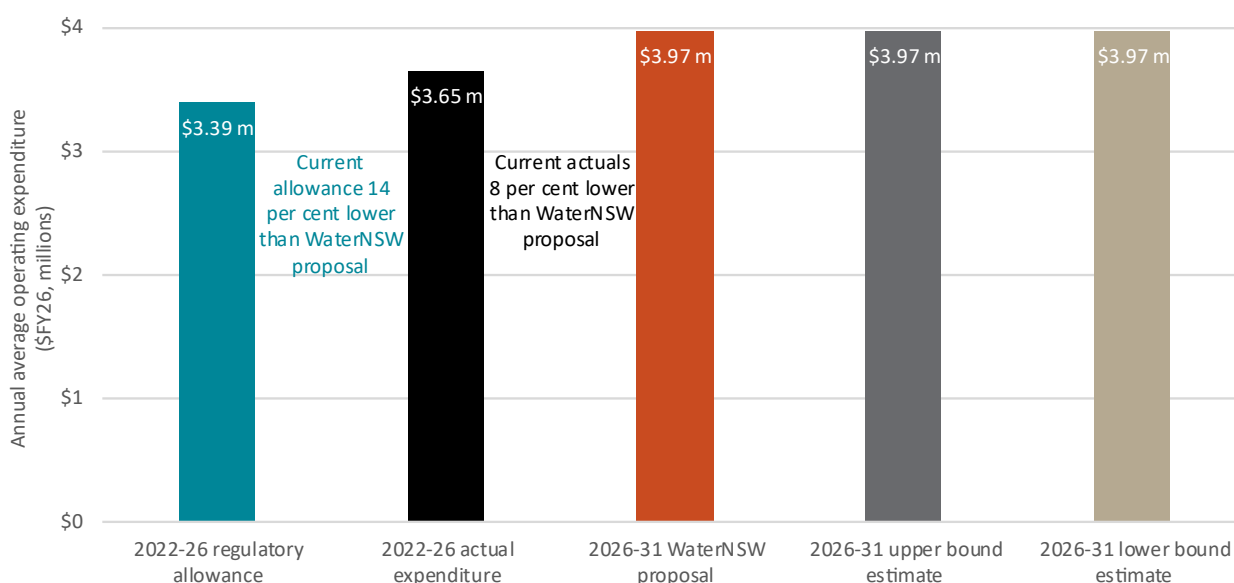
¹⁰⁰ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 10.

¹⁰¹ WaterNSW, *Attachment 8 | Base trend step operating expenditure*, September 2025, p 12.

- 8 per cent higher than actual expected operating expenditure (excluding energy costs) incurred in the current determination period, or alternatively actuals in the current determination period are 8 per cent lower than proposed in the upcoming determination period.

We present a comparison of WaterNSW's proposed operating expenditure, WaterNSW's current operating expenditure allowance and expected incurred operating expenditure in the current determination period, in terms of average annual expenditure, in figure 5.3.

Figure 5.3: Comparison of proposed operating expenditure, actual and allowed operating expenditure from the current determination period and our upper and lower bound estimates (\$FY26)



Source: HoustonKemp analysis of WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, September 2025, tables 6 and 18, pp 50 and 68.

WaterNSW's explains the increase in proposed operating expenditure, relative to its current regulatory allowance, to be primarily driven by:¹⁰²

- a 124 per cent step change increase in annual average asset refurbishment costs, which we describe above to be the result of the planned asset replacement schedule as the pipeline approaches its tenth year of operation; and
- a 54 per cent step change increase in the allocation of corporate overheads, which is the outworkings of a process that is beyond the scope of this review.

As the primary drivers of the proposed increase in operating expenditure relative to the current regulatory allowance are step changes, it is difficult to benchmark this change in proposed operating expenditure against data such as the wage price index (WPI) and consumer price index (CPI). This is because these drivers of increased operating expenditure are unique to the pipeline, and so are unlikely to align with other sector and economy wide indicators.

As such, we do not recommend adjustments to WaterNSW's proposed total operating expenditure over the 2026 to 2031 determination period for both our upper bound and lower bound estimates (which are equal). We explain above that we have not found a reasonable justification to meaningfully distinguish between an

¹⁰² WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, 30 September 2025, p 53.

upper bound estimate and a lower bound estimate in our assessment of WaterNSW's proposed operating expenditure.



6. Energy costs assessment

In this section we present our assessment of WaterNSW's proposed costs of energy required to pump and transport water for the 2026 to 2031 regulatory period. In addition, we also present our assessment of WaterNSW's proposed application of the energy cost true-up mechanism for the current regulatory period and the proposed mechanism for the upcoming regulatory period.

WaterNSW engaged Frontier Economics (Frontier) to derive the benchmark energy costs presented in the regulatory proposal. The applied energy cost estimation methodology hinges on the estimates of forecast energy consumption and forecast energy prices, for which we present our assessment in turn below.

WaterNSW has proposed energy costs of \$9.98 million (\$FY26) over the 2026 to 2031 determination period which is:¹⁰³

- 24 per cent lower than benchmark efficient energy costs in the 2022 to 2026 determination period; and
- 12 per cent higher than actual expected energy costs incurred in the current determination period.

In our assessment of energy costs we present a single estimate for the benchmark unit energy price, reflecting the best estimate using the most up-to-date publicly available inputs. However, we present an upper and a lower bound as to our estimate of the annual energy consumption volume and the time profile of this energy consumption. Accordingly, the upper and lower bound estimates of efficient annual energy costs reflect differences in the assumed manner in which the pipeline meets its annual pumping requirement, rather than differences in the price of energy consumed to meet this pumping requirement.

We summarise the findings and recommendations of our review of WaterNSW's proposed energy costs in box 6.1.

Box 6.1: Summary of findings and recommendations – energy costs

- Frontier derived estimated energy costs for each year of the 2026 to 2031 regulatory period by:
 - > estimating the required profile of water pumping volume (ML) and energy consumption (MWh) to achieve the annual pumping volume, consistent with the historical operation and technical specification of the pipeline;
 - > deriving a unit energy price (\$/MWh) consistent with this energy consumption profile; and
 - > combining these two components to estimate annual energy costs.
- We find that the methodology proposed by Frontier to estimate energy consumption, unit energy prices and total energy costs is reasonable. However, we have:
 - > identified inconsistencies in how the methodology for estimating energy consumption values has been applied, with WaterNSW also identifying these inconsistencies and estimating that the effect of addressing them is of a similar magnitude to our own estimates; and
 - > updated the input data used in the estimation of unit energy prices for more recent publicly available data.
- We derive upper and lower bound estimates for energy consumption in which:

¹⁰³ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, 30 September 2025, pp 58-65 and 67-69.

- > the upper bound estimate is derived by addressing the inconsistencies in the application of the methodology, resulting in estimates that are, in aggregate, around two per cent higher than WaterNSW's proposed values; and
- > the lower bound estimate is derived by re-calibrating the variable energy consumption parameter (ie, the conversion of pumping volume to energy consumption) to align with more recent observed data, resulting in estimates that are, in aggregate, around 0.3 per cent lower than WaterNSW's proposed values.
- We also recommend a half-hourly profile of energy consumption that more closely aligns with recent historical data than proposed by WaterNSW. This has the effect of reducing load-weighted average wholesale prices and forecast network charges, by shifting energy consumption out of the peak period and into the off-peak period of the wholesale prices and network charges.
- We present a single estimate of efficient unit energy prices, reflecting input data updated to the end of the 2025 calendar year as compared to the end of the 2024-25 financial year for WaterNSW's proposed values. Relative to WaterNSW's proposed values, our estimated per unit energy prices are:
 - > between 5-9 per cent lower for wholesale energy costs;
 - > around 50 per cent lower for compliance with the large-scale renewable energy target (LRET);
 - > between 13-25 per cent higher for compliance with the NSW government energy savings scheme (ESS);
 - > 6.2 per cent lower for ancillary services costs;
 - > 0.1 per cent higher for market fees; and
 - > no different for all network charges and retail costs.
- We estimate energy costs to be:
 - > 3.84 per cent lower than WaterNSW's proposal in the lower bound estimate – which reflects the effect of updating inputs for more recent data; and
 - > 2.19 per cent lower than WaterNSW's proposal in the upper bound estimate – for which the delta with the lower bound estimate, ie, 1.65 per cent, reflects the effect of inconsistencies in WaterNSW's approach to estimating energy consumption.
- We find that WaterNSW's proposed energy cost true-up methodology and application for the 2022 to 2026 determination period is reasonable and recommend that IPART adopt the proposed annual adjustment factor of -\$123,803 (\$FY26) (ie, a reduction in WaterNSW's revenue). We also find that WaterNSW's proposed energy cost true-up methodology for the 2026 to 2031 determination period, which is the same as for the current period, is reasonable.

6.1 Assessment of forecast energy consumption

Frontier forecast annual energy consumption for each year of the 2026 to 2031 regulatory period by:¹⁰⁴

- estimating the annual pumping profile, ie, the half-hourly profile of transported water (measured in ML), consistent with the forecast annual volume of water pumped along the pipeline;
- converting the pumping volume to variable energy consumption (measured in MWh), using the pumping energy requirement value determined by IPART in its previous determination; with
- total forecast energy consumption calculated as the combination of fixed and variable energy consumption.

We assess forecast annual energy consumption with reference to these three distinct processes below.

¹⁰⁴ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, pp 6-7.

6.1.1 Forecast pumping profile

While the pipeline's energy requirement is relatively invariant to the time profile of water pumping, total energy costs are impacted by the timing of water pumping and energy consumption. As such, it is imperative to establish a reasonable forecast of the likely time profile of water pumping at the pipeline to meet its annual water volume requirements.

Frontier has derived a time profile for energy consumption each year of the 2026-31 determination period from the actual time profile of pipeline operations for the 2023-24 financial year, which was the last complete financial year for which data was available at the time of the analysis.¹⁰⁵ The purpose of this process was to obtain:¹⁰⁶

...an estimate of pumping in peak, shoulder and off-peak periods in each day of each year of the forecast period.

We understand that the peak, shoulder and off-peak periods relate to the electricity network tariff applied to the pipeline, as discussed in section 6.2.2.

WaterNSW has provided the time profile of pipeline operations, at a half-hour resolution from 1 July 2019 to 30 June 2025, inclusive. We compare the actual time profile of pipeline operations for the 2019-20 to 2024-25 financial years with the forecast time profile for the 2026-27 to 2030-31 financial years, as per Frontier's forecast methodology, in table 6.1.

Table 6.1: Proportion of annual energy consumption by period type, WaterNSW proposal

	Actual values						WaterNSW forecast values					
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
Off-peak	76.25%	83.90%	82.38%	92.90%	74.58%	70.95%	-	72.89%	72.91%	73.04%	73.03%	72.85%
Shoulder	23.37%	15.86%	17.27%	6.82%	25.22%	28.78%	-	25.38%	25.43%	25.30%	25.30%	25.39%
Peak	0.38%	0.24%	0.35%	0.29%	0.20%	0.27%	-	1.73%	1.66%	1.66%	1.67%	1.76%

Source: HoustonKemp analysis of information provided by WaterNSW; and Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, table 2, p 8.

We have developed an alternate methodology to derive the time profile of pipeline operations that:

- is based on actual pipeline operations for the 2024-25 financial year, for which complete data is now available; and
- more appropriately captures the relative intensity of water pumping and energy consumption during peak periods, in which operations at the pipeline are relatively more costly.

With regards to the use of 2024-25 financial year data, we note that the total volume of energy consumed aligns very closely with the forecast annual energy consumption for the 2026 to 2031 determination period. Specifically, forecast annual energy consumption is expected to increase from 6,495 MWh in the 2026-27 financial year to 6,502 MWh in the 2030-31 financial year,¹⁰⁷ increasing from 0.66 to 0.78 per cent of total actual energy consumption in the 2024-25 financial year (6,452 MWh). Accordingly, it is reasonable to base forecast pipeline operations on actual pipeline operations in the 2024-25 financial year.

We have derived a forecast of the time profile of water pumping and energy consumption at the pipeline by:

¹⁰⁵ Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, p 6.

¹⁰⁶ Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, p 7.

¹⁰⁷ Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, p 6.

- calculating the actual average half-hourly energy consumption during the peak, shoulder and off-peak periods for the 2024-25 financial year;
- assuming that average half-hourly energy consumption in the peak and off-peak periods for each year of the 2026 to 2031 determination period is the same as the observed values for the 2024-25 financial year;
- applying an uplift to the shoulder period to ensure consistency with the total annual water pumping and energy consumption forecasts for each year of the 2026 to 2031 determination period. This uplift involves a uniform increase to the average half-hourly energy consumption for shoulder periods; while also
- ensuring that maximum half-hourly energy consumption in the shoulder period does not exceed the technical capacity of the pipeline, ie, is below the maximum half-hourly value for off-peak periods.

We present the results of our proposed methodology in table 6.2.

Table 6.2: Proportion of annual energy consumption by period type, HoustonKemp estimates

	Actual values						HoustonKemp forecast values					
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
Off-peak	76.25%	83.90%	82.38%	92.90%	74.58%	70.95%	-	70.94%	71.01%	71.11%	71.09%	70.89%
Shoulder	23.37%	15.86%	17.27%	6.82%	25.22%	28.78%	-	28.60%	28.54%	28.44%	28.46%	28.65%
Peak	0.38%	0.24%	0.35%	0.29%	0.20%	0.27%	-	0.45%	0.45%	0.45%	0.45%	0.45%

Source: HoustonKemp analysis of information provided by WaterNSW.

We note that, relative to Frontier's proposed approach, our methodology results in a reallocation of energy consumption from the peak period to the off-peak period, which has the effect of reducing forecast:

- wholesale energy prices, by reducing the 'load premium' associated with the pipeline's energy consumption profile, ie, the correlation between energy consumption and high energy prices; and
- network charges, by shifting energy consumption out of the peak period and into the off-peak period of the network tariff.

In consultation with WaterNSW, we understand that the analysis used to underpin the forecast of annual energy consumption by period type, as presented in table 6.1, contains an error that overstates the relative consumption in the peak period. WaterNSW has confirmed that rectifying this error results in a forecast time profile of pipeline operations that is consistent with our values presented in table 6.2.

We present a range of efficient pumping profiles at the pipeline in which the:

- lower bound reflects the HoustonKemp methodology described above; and
- upper bound reflects the methodology presented by Frontier and adopted in WaterNSW's proposal.

We recommend that IPART adopt the lower bound estimate.

6.1.2 Relationship between water pumping and energy consumption

Energy consumption of the pipeline comprises two distinct components, ie:

- a fixed component, which reflects the pipeline's energy requirements that are independent of the volume of water pumped; and
- a variable component, which reflects the use of energy to pump water through the pipeline. This variable component is used to convert the pumping volume derived in section 6.1.1, measured in ML, to an energy consumption volume, measured in MWh.

In line with previous proposals and determinations, WaterNSW has presented the fixed component as a MWh per day value and the variable component as a MWh per ML value, and has proposed the same values from IPART's current determination.¹⁰⁸ These fixed and variable energy requirement values were determined by IPART through analysis of actual pumping and energy consumption data of the pipeline between 2019-20.¹⁰⁹

In our opinion, these values may be outdated and may not reflect the current performance and condition of the pipeline, potentially leading to misspecification of the forecast energy requirement relative to the forecast pumping requirement. However, the potential impact of this misspecification is ambiguous, ex ante, ie:

- deterioration of the pipeline over time may reduce the efficacy with which input (energy) is translated to output (water pumped), resulting in current estimates being too low relative to the true values; or conversely
- improvements in the transfer of energy to water pumping may have been realised over time, resulting in current estimates being too high relative to the true values.

Moreover, in making its previous determination IPART stated that:¹¹⁰

We understand from WaterNSW that it would require further analysis to determine the appropriate fixed energy parameter.

We note that WaterNSW did not conduct analysis to derive an appropriate fixed energy component in the development of this proposal.

Accordingly, it is reasonable to conduct an assessment of WaterNSW's actual pumping and energy consumption for the pipeline to derive more recent, accurate estimates for the fixed and variable energy requirements of the pipeline.

WaterNSW provided information regarding the daily pumping volume and half-hourly energy consumption for the pipeline between 1 July 2019 to 30 June 2025. We have conducted linear regression analysis on this data (aggregated to the daily level) to estimate the fixed and variable energy consumption components. Specifically, we have estimated the following linear equation:

$$\text{daily energy consumption (MWh)} = \beta_0 + \beta_1 \times \text{daily water pumped (ML)}$$

The interpretation of this linear regression analysis is that:

- the intercept term, ie, β_0 , is the fixed energy consumption component (measured in MWh per day); while
- the slope term, ie, β_1 , is the variable energy consumption component (measured in MWh per ML).

We present the results of this linear regression analysis in table 6.3, in which we have conducted the analysis separately for each financial year.

¹⁰⁸ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, 30 September 2025, pp 60-61.

¹⁰⁹ CIE, *WaterNSW's Broken Hill Pipeline | Bulk water transport volume demand and energy review*, Final report, June 2022, pp 5-7; and CIE, *Review of WaterNSW's response to the Broken Hill Pipeline draft decision on energy issues*, Supplementary final report, pp 3-4.

¹¹⁰ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical paper, November 2022, p 31.

Table 6.3: Regression analysis estimates of fixed and variable energy consumption components

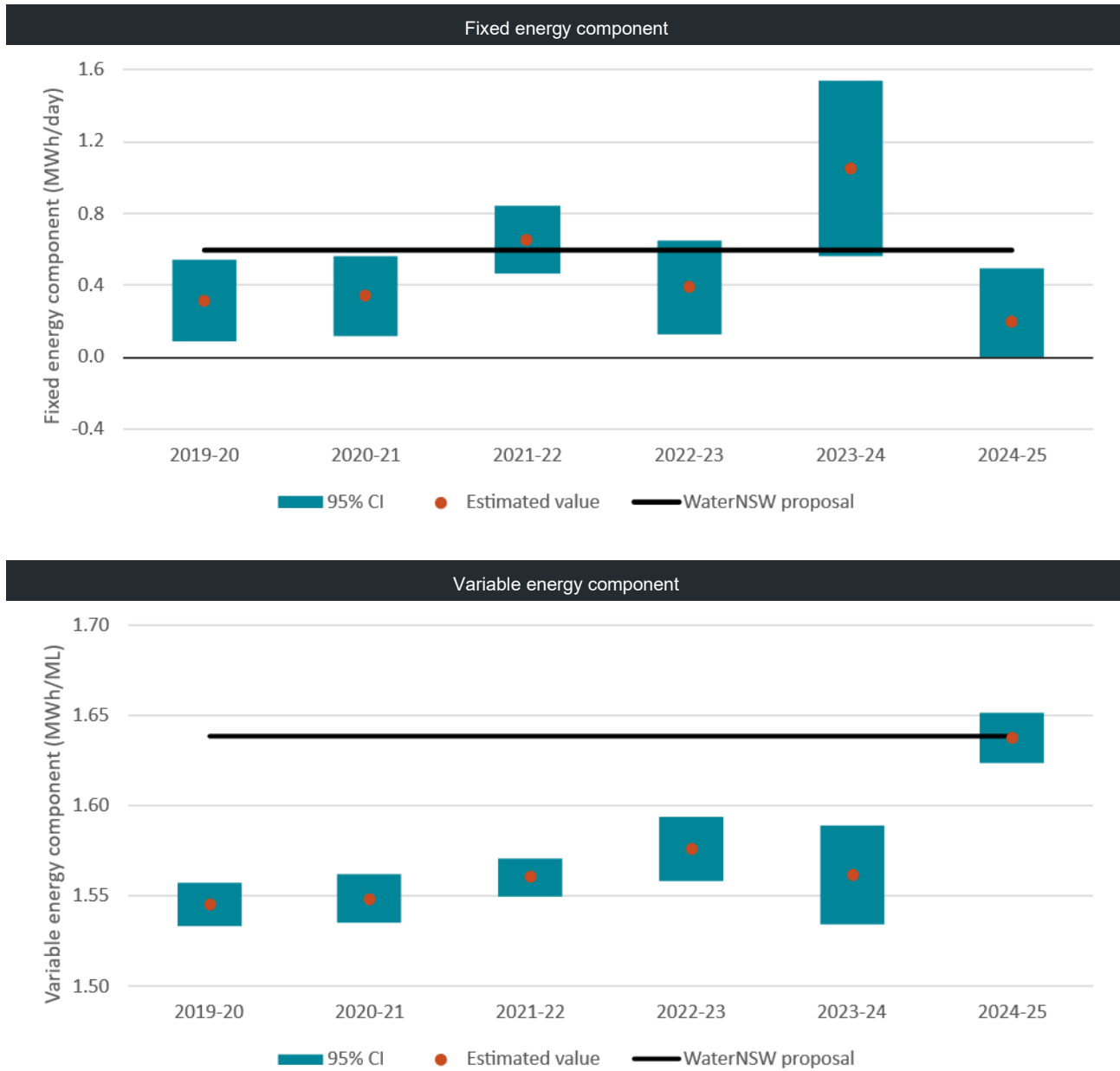
Variable	Value	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
β_0 Fixed energy component (MWh/day)	Estimated coefficient	0.318	0.341	0.652	0.391	1.052	0.204
	Standard error	0.117	0.113	0.097	0.132	0.247	0.126
	95% confidence interval	[0.087, 0.548]	[0.118, 0.563]	[0.462, 0.842]	[0.131, 0.651]	[0.566, 1.539]	[-0.043, 0.451]
β_1 Variable energy component (MWh/ML)	Estimated coefficient	1.545	1.548	1.560	1.576	1.562	1.638
	Standard error	0.006	0.007	0.006	0.009	0.014	0.007
	95% confidence interval	[1.533, 1.557]	[1.535, 1.561]	[1.55, 1.571]	[1.558, 1.595]	[1.534, 1.589]	[1.624, 1.651]

Source: HoustonKemp analysis of pumping and energy information provided by WaterNSW.

Figure 6.1 compares these estimated fixed and variable energy components with the values proposed by WaterNSW. We note that WaterNSW's proposed:

- fixed energy value is typically towards the upper end of the 95 per cent confidence interval of the estimated value, with the exception of the 2023-24 financial year for which the value is towards the bottom of the 95 per cent confidence interval; and
- variable energy value is typically above the 95 per cent confidence interval of the estimated value, with the exception of the 2024-25 financial year for which the estimated value and proposed value are very similar.

Figure 6.1: Comparison of estimated and proposed fixed and variable energy components



Source: HoustonKemp analysis of pumping and energy information provided by WaterNSW; and WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, 30 September 2025, p 61.

In our opinion, WaterNSW's proposed fixed energy component, while towards the upper range of estimated values using recent data, is likely to be a reasonable estimate of the true fixed energy requirement at the plant.

Notwithstanding the relationship between water pumping and energy consumption in the 2024-25 financial year, WaterNSW's operational data for the 2019-20 to 2023-24 financial years indicates that the pipeline was relatively more efficient at converting energy to pumped water than the current value determined by IPART. In our opinion, it may be suitable to balance these lower historical values against the relatively higher value from the most recent financial year, which may indicate degradation of the performance of the pipeline. Such

a balance would acknowledge that pipeline performance may have deteriorated, while providing an incentive for WaterNSW to bring the efficacy of the pipeline more in line with historical levels.

We adopt a lower bound estimate of:

- the fixed energy component proposed by WaterNSW, since this value is broadly consistent with the upper limit of the estimated value using actual data; and
- a variable energy component equal to 1.6000 MWh/ML, which is below the estimate derived from the linear regression analysis of the actual energy consumption and water pumping volume for the 2024-25 financial year but above the estimated value for the five preceding years.

We adopt WaterNSW's proposed values for both the fixed and variable energy components as the upper bound estimate.

We recommend IPART adopt the lower bound estimate.

A comparison of our recommendation with WaterNSW's proposed values is presented in table 6.4.

Table 6.4: Fixed and variable energy consumption

	All years of determination period
WaterNSW proposal	
Fixed energy consumption	0.6 MWh/day
Variable energy consumption	1.6391 MWh/ML
HoustonKemp estimate (upper bound)	
Fixed energy consumption	0.6 MWh/day
Variable energy consumption	1.6391 MWh/ML
HoustonKemp estimate (lower bound)	
Fixed energy consumption	0.6 MWh/day
Variable energy consumption	1.6000 MWh/ML

Source: WaterNSW, Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026, 30 September 2025, p 61.

6.1.3 Forecast energy consumption

Forecast energy consumption for each year of the 2026 to 2031 determination period is derived by:

- applying the fixed and variable energy components, as presented in section 6.1.2, to WaterNSW's forecast annual water pumping requirement, to calculate total annual fixed and variable energy consumption; and
- disaggregating this total energy consumption value into peak, shoulder and off-peak periods, using the factors derived in section 6.1.1.

We note that WaterNSW's estimate of total energy consumption each year does not align with the product of the variable energy component and the total annual volume of water pumped. In particular, WaterNSW's proposed total annual variable energy consumption implies a variable energy component of around 1.605 MWh/ML, which is approximately two per cent lower than the variable energy component that WaterNSW states to have used. Accordingly, our upper bound estimate – which is derived using a variable energy component of 1.6391 MWh/ML – is approximately two per cent higher than WaterNSW's proposed value. Moreover, due to this inconsistency in WaterNSW's approach, our lower bound estimate for total annual variable energy consumption – which is derived using a variable energy component of 1.6000 MWh/ML – is very similar to WaterNSW's proposed values.

We compare WaterNSW's proposed forecast energy consumption values with our range of energy consumption values in table 6.5. We recommend IPART adopt our lower bound estimate of forecast energy consumption at the pipeline.

Table 6.5: Forecast energy consumption, MWh per annum

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW proposal					
Total energy consumption	10,643.56	10,653.73	10,651.78	10,653.94	10,651.03
Variable energy consumption	10,424.56	10,434.13	10,432.78	10,434.94	10,432.03
Fixed energy consumption	219.00	219.60	219.00	219.00	219.00
Off-peak period consumption	7,758.12	7,767.54	7,779.82	7,780.44	7,759.67
Shoulder period consumption	2,701.79	2,709.66	2,695.31	2,695.78	2,703.98
Peak period consumption	183.65	176.53	176.65	177.73	187.37
HoustonKemp estimate (upper bound)					
Total energy consumption	10,865.12	10,869.00	10,870.20	10,873.64	10,876.92
Variable energy consumption	10,646.12	10,649.40	10,651.20	10,654.64	10,657.92
Fixed energy consumption	219.00	219.60	219.00	219.00	219.00
Off-peak period consumption	7,919.61	7,924.49	7,939.35	7,940.89	7,924.24
Shoulder period consumption	2,758.03	2,764.41	2,750.58	2,751.37	2,761.33
Peak period consumption	187.47	180.10	180.27	181.40	191.34
HoustonKemp estimate (lower bound)					
Total energy consumption	10,611.16	10,614.96	10,616.12	10,619.48	10,622.68
Variable energy consumption	10,392.16	10,395.36	10,397.12	10,400.48	10,403.68
Fixed energy consumption	219.00	219.60	219.00	219.00	219.00
Off-peak period consumption	7,527.93	7,537.41	7,548.93	7,549.79	7,530.81
Shoulder period consumption	3,035.23	3,029.39	3,019.38	3,021.88	3,043.84
Peak period consumption	48.00	48.16	47.81	47.81	48.02

Source: HoustonKemp analysis; and Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, table 2, p 8.
 Note: totals may not sum due to rounding.

We present our estimates for maximum half-hourly demand by period, for the purpose of calculating network costs, in table 6.6.

We have verified Frontier's proposed maximum demand values against actual half-hourly energy consumption data at the pipeline. We find maximum half-hourly demand during the 2024-25 financial year to be slightly above 1.82 MW. As such, we find WaterNSW's proposed values to be reasonable and apply these proposed values as both our upper bound and lower bound estimates for maximum demand.

Table 6.6: Estimated maximum demand, MW

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW proposal					
Off-peak period maximum half-hour demand	1.83	1.83	1.83	1.83	1.83
Shoulder period maximum half-hour demand	1.83	1.83	1.83	1.83	1.83
Peak period maximum half-hour demand	0.88	0.88	0.88	0.88	0.88
HoustonKemp estimate (upper bound)					
Off-peak period maximum half-hour demand	1.83	1.83	1.83	1.83	1.83
Shoulder period maximum half-hour demand	1.83	1.83	1.83	1.83	1.83
Peak period maximum half-hour demand	0.88	0.88	0.88	0.88	0.88
HoustonKemp estimate (lower bound)					
Off-peak period maximum half-hour demand	1.83	1.83	1.83	1.83	1.83
Shoulder period maximum half-hour demand	1.83	1.83	1.83	1.83	1.83
Peak period maximum half-hour demand	0.88	0.88	0.88	0.88	0.88

Source: HoustonKemp analysis; and Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, table 3, p 8.

6.2 Assessment of forecast energy prices

Energy prices, calculated on a per MWh consumed basis, comprise of the following components:

- wholesale costs;
- network costs;
- renewable energy policy costs;
- market fees and costs of ancillary services; and
- retail costs.

We present our assessment of each component of WaterNSW's energy costs in turn below.

6.2.1 Wholesale costs

Wholesale energy costs comprise the costs incurred in the provision of the pipeline's energy requirements from the National Electricity Market by a retailer (or by some other financially responsible market participant). These costs include:

- wholesale electricity purchase costs, being the cost of each unit of energy used at the pipeline;
- losses, to account for the difference between the volume of electricity input into the network by generators and that drawn from the network by the pipeline; and
- unaccounted for energy (UFE), covering the mismatch of settlement due to unaccounted for technical losses, estimation errors and commercial losses.

We present our assessment of each component of wholesale energy costs for WaterNSW in turn below.

Wholesale electricity purchase costs

We consider the approach taken by WaterNSW and Frontier to be reasonable, at a principled level.

However, WaterNSW's wholesale electricity purchase costs estimates can be updated for more recent ASX Energy base strip futures contract trading data. Consistent with the approach taken by Frontier, we derive

the 40-day average price – up to and including 23 December 2025 – which included trades for contracts covering the 2026-27, 2027-28 and 2028-29 financial years. We assumed that contract prices for the 2029-30 and 2030-31 financial years – for which there is no available trading data – are equal to those in the 2028-29 financial year in real terms, consistent with the approach taken by Frontier. We note that these prices will be updated for new data as part of the final determination process.

Further, we have noted that Frontier's calculation of the load premium relies on wholesale market price data from the 2024-25 financial year only. There is often discretion as to the choice of historical data used in the derivation of forecasts, with the choice typically made between:

- the most recent completed year, under the assumption that the most recent past is the most relevant period for the near future; and
- the most recent completed years, such as the last three or five years, in order to avoid any idiosyncrasies that may be present in the most recent year and not expected to perpetuate into future years.

We have tested the robustness of Frontier's approach to the calculation of the load premium by:

- obtaining observed wholesale electricity prices at the NSW regional reference node for the three most recent, completed calendar years, ie, the 2023, 2024 and 2025 calendar years;
- conducting 500 Monte Carlo simulations using these three years of input data to derive a wholesale electricity price profile for each financial year in the 2026 to 2031 determination period;¹¹¹
- deriving the load premium for each simulation in each year, being the ratio of the volume-weighted average annual price to the time-weighted average annual price. The volume-weighted average annual price is equal to the weighted average of the average price during peak, shoulder and off-peak periods, weighted by the proportion of consumption by the pipeline in each period, ie, the values presented in table 6.2; which
- results in a distribution of load premium estimates for each year.

From this distribution of annual load premium estimates, we derive a 90 per cent confidence interval that ranges between 74 per cent to 90 per cent. Our estimated load premium tends to be higher than that estimated by Frontier due to the differences in recent observed wholesale prices. In particular, the 2023 and 2025 calendar years display relatively lower price volatility compared to the 2024-25 financial year and the 2024 calendar year. Accordingly, price forecasts derived using these years (ie, our approach) are relatively 'flatter' when compared to those derived from more volatile price years (ie, Frontier's approach) and therefore tend to have a higher load premium.

However, because WaterNSW's estimates are within our estimated 95 per cent confidence interval, we find that WaterNSW's proposed load premium to be reasonable.

We present our estimate of annual wholesale electricity purchase costs in table 6.7, adopting the WaterNSW load premium and updated for most the recent contract prices.

¹¹¹ This Monte Carlo simulation constructs each future financial year by drawing the observed price profile for each day from the historical sample based on the quarter of the year and weekday/weekend distinction.

Table 6.7: Estimated wholesale electricity purchase costs (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW proposal					
Contract price (\$/MWh)	\$113.73	\$110.35	\$110.35	\$110.35	\$110.35
Spot price (\$/MWh)	\$108.31	\$105.10	\$105.10	\$105.10	\$105.10
Load premium	76.01%	75.93%	75.92%	75.93%	76.05%
Load-weighted price (\$/MWh)	\$82.33	\$79.81	\$79.79	\$79.81	\$79.93
Wholesale energy purchase cost	\$86.45	\$83.80	\$83.78	\$83.80	\$83.93
HoustonKemp estimate					
Contract price (\$/MWh)	\$108.11	\$104.88	\$101.36	\$101.36	\$101.36
Spot price (\$/MWh)	\$102.96	\$99.89	\$96.54	\$96.54	\$96.54
Load premium	76.01%	75.93%	75.92%	75.93%	76.05%
Load-weighted price (\$/MWh)	\$78.26	\$75.84	\$73.29	\$73.30	\$73.41
Wholesale energy purchase cost	\$82.17	\$79.64	\$76.95	\$76.96	\$77.09

Source: HoustonKemp analysis; and Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, table 4, p 10.

Energy losses

Frontier has estimated the contribution of energy losses to wholesale electricity prices by using the same methodology as in the previous determination:¹¹²

- deriving the total loss factor, which is equal to the product of:
 - > the distribution loss factor for high voltage lines on the Essential Energy network, as reported by AEMO;¹¹³ and
 - > the marginal loss factors, weighted across the Red Cliffs and Broken Hill connection points, as reported by AEMO;¹¹⁴
- deriving an estimate for network losses by multiplying the wholesale energy purchase cost, as estimated in section 6.2.1, by (total loss factor – 1).

In our opinion, this is a reasonable approach to estimating energy losses. We present our estimate of annual energy losses in table 6.8. We recommend the same total loss factor as proposed by WaterNSW, however our estimated total energy loss is different due to the differences in wholesale energy purchase costs as described in section 6.1.1.

¹¹² Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, pp 10-12.

¹¹³ See: AEMO, *Distribution loss factors for the 2025/26 financial year*, April 2025, p 20.

¹¹⁴ See: AEMO, *Marginal Loss Factors: Financial Year 2025-26*, December 2025, pp 21 and 31.

Table 6.8: Forecast energy losses and costs (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW proposal					
Distribution loss factor	1.0248	1.0248	1.0248	1.0248	1.0248
Marginal loss factor	0.9726	0.9726	0.9726	0.9726	0.9726
Total loss factor	0.9967	0.9967	0.9967	0.9967	0.9967
Wholesale energy purchase cost (\$/MWh)	\$86.45	\$83.80	\$83.78	\$83.80	\$83.93
Losses (\$/MWh)	-\$0.29	-\$0.28	-\$0.28	-\$0.28	-\$0.28
HoustonKemp estimate					
Distribution loss factor	1.0248	1.0248	1.0248	1.0248	1.0248
Marginal loss factor	0.9726	0.9726	0.9726	0.9726	0.9726
Total loss factor	0.9967	0.9967	0.9967	0.9967	0.9967
Wholesale energy purchase cost (\$/MWh)	\$82.17	\$79.64	\$76.95	\$76.96	\$77.09
Losses (\$/MWh)	-\$0.27	-\$0.26	-\$0.25	-\$0.25	-\$0.25

Source: HoustonKemp analysis; and Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, tables 4-7, pp 10-12.

Unaccounted for energy

Frontier has estimated unaccounted for energy (UFE) costs by:¹¹⁵

- obtaining UFE and ADME (aggregate metered energy demand controlled for the relevant DLF) data from AEMO, using the relevant profile area, ie, 'COUNTRYENERGY';
- filtering this data for the most recently completed two-year sample, ie, for the two years to 1 March 2025;
- calculating the ratio of UFE to ADME for each day in this two-year sample;
- taking the average of this daily ratio over the two-year sample, which is states is equal to ~2.61 per cent; and
- deriving the cost of UFE to be product of this ratio with the estimated wholesale electricity cost forecasts derived in table 6.7 for each year in the 2026 to 2031 determination period.

We have not been able to replicate the results of this analysis by Frontier.

However, we have performed the analysis using trading interval data from AEMO, for which data is available from 3 October 2021.¹¹⁶ Following the methodology described by Frontier, we derive a UFE to ADME ratio for the four complete calendar years for which we have data, ie, from 1 January 2022 to 31 December 2025, to be equal to 2.60%.

Accordingly, we find that the approach taken by Frontier to derive the UFE to ADME ratio is reasonable and recommend that IPART adopt this value and apply this to our recommended wholesale energy purchase cost to derive the annual UFE cost.

We present our estimate of annual UFE costs in table 6.9.

¹¹⁵ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 12.

¹¹⁶ AEMO, MMS database, SETLOCALAREAENERGY table, COUNTRYENERGY series.

Table 6.9: Forecast annual UFE costs (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW's proposal					
UFE to ADME ratio	2.61%	2.61%	2.61%	2.61%	2.61%
Wholesale energy purchase cost (\$/MWh)	\$86.45	\$83.80	\$83.78	\$83.80	\$83.93
UFE costs (\$/MWh)	\$2.25	\$2.18	\$2.18	\$2.18	\$2.19
HoustonKemp estimate					
UFE to ADME ratio	2.61%	2.61%	2.61%	2.61%	2.61%
Wholesale energy purchase cost (\$/MWh)	\$82.17	\$79.64	\$76.95	\$76.96	\$77.09
UFE costs (\$/MWh)	\$2.14	\$2.07	\$2.00	\$2.00	\$2.01

Source: HoustonKemp analysis; and Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, tables 4 and 8, pp 10 and 13.

6.2.2 Network costs

Frontier has estimated network costs by assuming that the pipeline is assigned to Essential Energy's BHND3AO network tariff,¹¹⁷ which is the:¹¹⁸

Default tariff for business premises whose consumption is connected to the HV Distribution System and metered at HV.

This approach is consistent with WaterNSW's previous proposal and was accepted by IPART for the current determination.¹¹⁹

Essential Energy does not publish forecasts of its network charges, however the AER does determine an X-factor in its regulated revenue determination, with the X-factor measuring the real rate of change in annual expected revenue from one year to the next.¹²⁰ Frontier has used Essential Energy's X-factors, which are available for the 2026-27, 2027-28 and 2028-29 financial years, to estimate the trajectory of network charges over WaterNSW's determination period. Where X-factors are not available, Frontier has assumed network charges remain constant in real terms.

We find that Frontier's approach for network costs is reasonable and recommend that IPART adopt these proposed values.

We present our estimate of annual network charges in table 6.10.

¹¹⁷ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 13.

¹¹⁸ Essential Energy, *Network Pricelist & Explanatory Notes | Effective 1 July 2025*, p 3.

¹¹⁹ CIE, *WaterNSW's Broken Hill Pipeline | Bulk water transport volume demand and energy review*, Final report, June 2022, pp 44-45.

¹²⁰ AER, *Essential Energy Electricity Distribution Determination 2024 to 2029 (1 July 2024 to 30 June 2029) | Attachment 1 Annual revenue requirement*, Final Decision, April 2024, p 2.

Table 6.10: Forecast network charges (\$FY26)

Charge	Units	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW's proposal						
X-factors		-2.85%	-2.85%	-2.85%	0%	0%
Network access charge	\$/day	\$26.27	\$27.01	\$27.78	\$27.78	\$27.78
Energy peak	\$/MWh	\$47.70	\$49.06	\$50.46	\$50.46	\$50.46
Energy shoulder	\$/MWh	\$38.73	\$39.83	\$40.97	\$40.97	\$40.97
Energy off-peak	\$/MWh	\$31.86	\$32.77	\$33.70	\$33.70	\$33.70
Demand peak	\$/kVA per month	\$11.59	\$11.92	\$12.26	\$12.26	\$12.26
Demand shoulder	\$/kVA per month	\$10.48	\$10.78	\$11.09	\$11.09	\$11.09
Demand off-peak	\$/kVA per month	\$3.14	\$3.23	\$3.32	\$3.32	\$3.32
HoustonKemp estimate						
X-factors		-2.85%	-2.85%	-2.85%	0%	0%
Network access charge	\$/day	\$26.27	\$27.01	\$27.78	\$27.78	\$27.78
Energy off peak	\$/MWh	\$47.70	\$49.06	\$50.46	\$50.46	\$50.46
Energy shoulder	\$/MWh	\$38.73	\$39.83	\$40.97	\$40.97	\$40.97
Energy peak	\$/MWh	\$31.86	\$32.77	\$33.70	\$33.70	\$33.70
Demand off peak	\$/kVA per month	\$11.59	\$11.92	\$12.26	\$12.26	\$12.26
Demand shoulder	\$/kVA per month	\$10.48	\$10.78	\$11.09	\$11.09	\$11.09
Demand peak	\$/kVA per month	\$3.14	\$3.23	\$3.32	\$3.32	\$3.32

Source: HoustonKemp analysis; and Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, tables 9-11, pp 13-14.

6.2.3 Environmental costs

Environmental costs include those incurred by an electricity retailer in complying with the relevant renewable energy policies applicable in NSW. The relevant renewable energy policies in this context include the:

- large-scale renewable energy target (LRET);
- small-scale renewable energy scheme (SRES); and
- NSW Energy Savings Scheme (ESS).

We present our assessment of each component of environmental costs for WaterNSW in turn below.

LRET compliance costs

Frontier has calculated the cost of complying with the LRET as the product of:¹²¹

- the portion of total energy consumption that liable entities, such as electricity retailers, must offset through the purchase of large-scale generation certificates (LGCs). This factor is known as the Renewable Power Percentage (RPP); and
- the price of these LGCs.

Frontier has taken the most recent RPP published by the administrator of the LRET scheme, ie, the Clean Energy Regulator, and assumed that this RPP value will remain constant throughout the 2026 to 2031 determination period. However, the LRET scheme is due to expire at the end of the 2030 calendar year,

¹²¹ Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, pp 14-15.

meaning that LGCs will only be required to be purchased for half of the 2030-31 financial year. Accordingly, Frontier assumes that the RPP is equal to half the level of all preceding years for the 2030-31 financial year.

However, the RPP has decreased significantly in recent years with the RPP for 2025, ie, 17.91 per cent, reducing from:¹²²

- 19.31 per cent in 2020, representing a reduction of 1.4 percentage points or 7.3 per cent; and
- 18.96 per cent in 2023, representing a reduction of 1.1 percentage points or 5.5 per cent.

The RPP has reduced by an average annualised rate of 1.5 per cent between 2020 and 2025.

However, it is difficult to project the precise level of the RPP a number of years into the future. As such, we find that WaterNSW's proposed approach of a constant RPP through the upcoming determination period to be reasonable, despite its observed decline in recent years.

Frontier has used trading data of LGC forward contracts to derive a 40-day weighted average LGC forward contract price.¹²³ We find this approach to be reasonable and have replicated this analysis using the same source of LGC trading data, ie, DemandManager, updated to 23 December 2025. We note that the trading price of LGC futures contracts decreased significantly in the later part of the 2025 calendar year, as per trading data from DemandManager.

We present our estimated costs of complying with the LRET scheme in table 6.11.

Table 6.11: Forecast costs of complying with the LRET scheme (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW's proposal					
Renewable Power Percentage	17.91%	17.91%	17.91%	17.91%	8.96%
Estimated LGC forward price (\$/MWh)	\$16.98	\$13.36	\$9.67	\$8.27	\$8.07
Cost of complying with LRET (\$/MWh)	\$3.04	\$2.39	\$1.73	\$1.48	\$0.72
HoustonKemp estimate					
Renewable Power Percentage	17.91%	17.91%	17.91%	17.91%	8.96%
Estimated LGC forward price (\$/MWh)	\$7.85	\$6.77	\$4.90	\$3.96	\$3.86
Cost of complying with LRET (\$/MWh)	\$1.41	\$1.21	\$0.88	\$0.71	\$0.35

Source: HoustonKemp analysis; and Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, tables 12-13, pp 14-16.

SRES compliance costs

Frontier has calculated the cost of complying with the SRES as the product of:¹²⁴

- the portion of total energy consumption that liable entities, such as electricity retailers, must offset through the purchase of small-scale technology certificates (STCs). This factor is known as the Small-scale Technology Percentage (STP); and
- the price of these STCs, which is guaranteed at \$40 (nominal) per certificate through the STC clearing house or at a uncapped price through the open market.¹²⁵

¹²² Clean Energy Regulator, *Renewable power percentage*, available at <https://cer.gov.au/schemes/renewable-energy-target/renewable-energy-target-liability-and-exemptions/renewable-power-percentage>, accessed 23 January 2026.

¹²³ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, pp 14-15.

¹²⁴ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, pp 16-17.

¹²⁵ Clean Energy Regulator, *Renewable energy certificates*, available at <https://cer.gov.au/markets/renewable-energy-certificates>, accessed 23 January 2026.

Frontier has taken the most recent STP published by the administrator of the SRES scheme, ie, the Clean Energy Regulator, which are non-finding forward estimates for the 2026 and 2027 calendar years of 11.79 per cent and 9.28 per cent, respectively.¹²⁶ Frontier has assumed that the STP value will remain constant for each year throughout the 2026 to 2031 determination period as the mid-point of the 2026 and 2027 estimated levels (ie, 10.54 per cent). However, the SRES scheme is due to expire at the end of the 2030 calendar year, meaning that STCs will only be required to be purchased for half of the 2030-31 financial year. Accordingly, Frontier assumes that the STP is equal to half the level of all preceding years for the 2030-31 financial year.

The STP has fluctuated significantly in recent years ranging between:

- 13.89 per cent in 2025;
- 21.26 per cent in 2024;
- 16.29 per cent in 2023;
- 27.26 per cent in 2022;
- 28.8 per cent in 2021; and
- 24.4 per cent in 2020.

Accordingly, it is difficult to project the precise level of the STP a number of years into the future. As such, we find that WaterNSW's proposed approach of a constant STP through the upcoming determination period to be reasonable, despite observed fluctuations in the STP in recent years.

With STCs always available at a price of \$40 (nominal) per certificate through the clearing house, we find it reasonable to assume this price in the analysis, as Frontier has done.

We present our estimated costs of complying with the SRES scheme is presented in table 6.12.

Table 6.12: Cost of complying with the SRES scheme (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW proposal					
Small-scale technology percentage	10.54%	10.54%	10.54%	10.54%	5.27%
STC clearing house price (\$/MWh)	\$39.02	\$38.07	\$37.14	\$36.24	\$35.35
Cost of complying with SRES (\$/MWh)	\$4.11	\$4.01	\$3.91	\$3.82	\$1.86
HoustonKemp estimate					
Small-scale technology percentage	10.54%	10.54%	10.54%	10.54%	5.27%
STC clearing house price (\$/MWh)	\$39.02	\$38.07	\$37.14	\$36.24	\$35.35
Cost of complying with SRES (\$/MWh)	\$4.11	\$4.01	\$3.91	\$3.82	\$1.86

Source: HoustonKemp analysis; and Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, tables 14-15, pp 16-17.

ESS compliance costs

Frontier has calculated the cost of complying with the ESS as the product of:¹²⁷

¹²⁶ Clean Energy Regulator, *Small-scale technology percentage*, available at <https://cer.gov.au/schemes/renewable-energy-target/renewable-energy-target-liability-and-exemptions/small-scale-technology-percentage>, accessed 23 January 2026.

¹²⁷ Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, pp 17-18.

- the annual ESS target, as reported by the NSW government and converted to a calendar year measure, which reflects the portion of electricity sales for which an Energy Savings Certificate (ESC) must be purchased and sold by liable entities, such as electricity retailers; and
- the price of these ESCs.

The NSW government has increased the ESS target by 0.5 percentage points each year, culminating in a target of 13 per cent in the 2030 calendar year and remaining constant each year thereafter.¹²⁸ Frontier has interpolated these calendar year targets to financial year values by taking the average of the two relevant calendar years for each financial year. We find this approach to be reasonable.

Frontier notes that the forward contract market for ESCs is thinly traded and so therefore uses the spot price as the relevant ESC price.¹²⁹ We agree that the use of the ESC spot price in this analysis is a reasonable approach and take the last traded price of an ESC traded in the 2025 calendar year as the relevant spot price, ie, \$23.00 (\$FY26) per certificate on 18 December 2025.¹³⁰

We present our estimated costs of complying with the ESS scheme in table 6.13. We note that we have not been able to verify the underlying calculations conducted by Frontier to derive the values presented in WaterNSW's proposal.

Table 6.13: Cost of complying with the ESS scheme (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW proposal					
ESS target	11.25%	11.75%	12.25%	12.75%	13.00%
ESC spot price (\$/MWh)	\$20.75	\$20.75	\$20.75	\$20.75	\$20.75
Cost of complying with ESS (\$/MWh)	\$2.28	\$2.32	\$2.36	\$2.40	\$2.38
HoustonKemp estimate					
ESS target	11.25%	11.75%	12.25%	12.75%	13.00%
ESC spot price (\$/MWh)	\$23.00	\$23.00	\$23.00	\$23.00	\$23.00
Cost of complying with ESS (\$/MWh)	\$2.59	\$2.70	\$2.82	\$2.93	\$2.99

Source: HoustonKemp analysis; and Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, tables 16-17, pp 17-18.

6.2.4 Market fees and ancillary services

Market fees

Frontier have calculated market fees as:¹³¹

- the combination of the following fees for market customers:
 - > NEM core benchmark fees;
 - > five-minute settlement and global settlement fees; and
 - > DER integration program fees; which
- comprise both:

¹²⁸ NSW Climate and Energy Action, *Energy Savings Scheme*, available at <https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/energy-security-safeguard/energy-savings-scheme>, accessed 23 January 2026.

¹²⁹ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 18.

¹³⁰ See: DemandManager, Certificate prices, available at https://www.demandmanager.com.au/graphs/new_prices.php, accessed 23 January 2026.

¹³¹ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, pp 18-19.

- > usage fees, charged on the basis of the volume of energy consumed by customers, ie, on a per MWh basis; and
- > fees charged per connection point, ie, National Meter Identifier (NMI), per week.

AEMO publishes these market fees, with Frontier presenting the most up-to-date values for these fees, ie, those in place for the 2025-26 financial year.¹³²

To convert both components of market fees to a common basis, ie, on a per MWh basis, Frontier has converted per connection point per week fees to a per MWh value by:

- deriving an annual fee by multiplying the per connection point per week fee by 52; and
- deriving a per MWh fee by dividing by annual energy consumption.

In the absence of evidence to suggest otherwise, Frontier proposed to maintain these fees at constant real values over the 2026 to 2031 determination period.¹³³

We find the approach taken by Frontier to be reasonable. We recommend that IPART adopt values using this methodology and to use our forecast of annual energy consumption to convert per connection charges to per MWh charges. We note that this makes only a very minute change to the estimates relative to WaterNSW's proposal.

We present our estimate of annual market fees in table 6.14.

Table 6.14: Estimated market fees (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW's proposal					
Total usage fees (\$/MWh)	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
Total per connection fees (\$/MWh)	\$0.0006	\$0.0006	\$0.0006	\$0.0006	\$0.0006
HoustonKemp estimate					
Total usage fees (\$/MWh)	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
Total per connection fees (\$/MWh)	\$0.0006	\$0.0006	\$0.0006	\$0.0006	\$0.0006

Source: HoustonKemp analysis; and Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, tables 19-20, p 19.

Ancillary services costs

Frontier has estimated ancillary services costs by taking the seven-year average of reported ancillary services recovery costs published by AEMO and holding this cost constant in real terms over the determination period, which is consistent with the methodology adopted by IPART in previous determinations.¹³⁴

At the time that Frontier conducted this analysis, the most recent seven years of completed data was from the 2018-19 financial year to the 2024-25 financial year, inclusive. New information regarding the recovery of ancillary services costs has been published by AEMO since Frontier has conducted its analysis, ie, for the

¹³² See: AEMO, *Budget and fees FY26*, March 2025, pp 44-46.

¹³³ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 19.

¹³⁴ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 20.

entirety of the 2025 calendar year. We have estimated the average ancillary services costs recovery rates for the seven most recent completed calendar years using this AEMO data.¹³⁵

We find that Frontier's approach is reasonable. We recommend that IPART adopt values using the same methodology, but with the most up-to-date data.

We present our estimate of annual ancillary services fees in table 6.15.

Table 6.15: Estimated ancillary services fees (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW proposal					
Ancillary service fees (\$/MWh)	\$0.38	\$0.38	\$0.38	\$0.38	\$0.38
HoustonKemp estimate					
Ancillary service fees (\$/MWh)	\$0.36	\$0.36	\$0.36	\$0.36	\$0.36

Source: HoustonKemp analysis; and Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, table 21, p 20.

6.2.5 Retail operating cost and margin

Reflecting the relatively limited publicly available data on retail operating costs and margin, Frontier has proposed to apply the same allowance for retail operating costs and margin as determined by IPART in the current period, ie:¹³⁶

- retail operating costs of \$2,418.43 (real financial year 2021-22 dollars) per year, updated for inflation, ie, \$2,788.55 (\$FY26) per year; and
- a retail margin of 6.04 per cent in each year, calculated as 5.7 per cent of total energy costs inclusive of the retail margin.

We note that in making the determination of retail operating costs in the current determination, IPART's consultant noted that this estimate was based on WaterNSW's own spreadsheet modelling.¹³⁷ We find it reasonable to assume that this value has remained the same, in real terms, since the previous determination. This implicitly assumes that the operating costs of an efficient retailer has not escalated, in real terms, since the previous determination.

We also note that a retail margin of 6.04 per cent, as proposed by WaterNSW, aligns with the assumed residential retail margin by the AER in the determination of the default market offer (DMO) in 2025-26, ie, six per cent.¹³⁸ We find it reasonable to assume this value for the pipeline.

¹³⁵ AEMO, NEMWEB, 'Ancillary Service Payments' table, AS_RECOVERY_SUMMARY, RECOVERY_RATE_ACE and RECOVERY_RATE_CUSTOMER series.

¹³⁶ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 20.

¹³⁷ CIE, *WaterNSW's Broken Hill Pipeline | Bulk water transport volume demand and energy review*, Final report, June 2022, p 53.

¹³⁸ AER, *2025-26 Default market prices | Final determination*, May 2025, p 71.

6.3 Assessment of forecast energy costs

We present the collation of our energy price estimates from section 6.2, in per unit terms, in table 6.16.

Table 6.16: Estimated forecast unit energy price (\$FY26)

	Units	2026-27	2027-28	2028-29	2029-30	2030-31
Wholesale energy costs						
Wholesale energy purchase costs	\$/MWh	\$82.17	\$79.64	\$76.95	\$76.96	\$77.09
Losses	\$/MWh	-\$0.27	-\$0.26	-\$0.25	-\$0.25	-\$0.25
Unaccounted for energy	\$/MWh	\$2.14	\$2.07	\$2.00	\$2.00	\$2.01
Renewable energy policy costs						
LRET compliance costs	\$/MWh	\$1.41	\$1.21	\$0.88	\$0.71	\$0.35
SRES compliance costs	\$/MWh	\$4.11	\$4.01	\$3.91	\$3.82	\$1.86
ESS compliance costs	\$/MWh	\$2.59	\$2.70	\$2.82	\$2.93	\$2.99
Market fees and ancillary services costs						
Market fees	\$/MWh	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
Ancillary services costs	\$/MWh	\$0.36	\$0.36	\$0.36	\$0.36	\$0.36
Network charges						
Network access charge	\$/day	\$26.27	\$27.01	\$27.78	\$27.78	\$27.78
Energy peak	\$/MWh	\$47.70	\$49.06	\$50.46	\$50.46	\$50.46
Energy shoulder	\$/MWh	\$38.73	\$39.83	\$40.97	\$40.97	\$40.97
Energy off-peak	\$/MWh	\$31.86	\$32.77	\$33.70	\$33.70	\$33.70
Demand peak	\$/kVA/month	\$11.59	\$11.92	\$12.26	\$12.26	\$12.26
Demand shoulder	\$/kVA/month	\$10.48	\$10.78	\$11.09	\$11.09	\$11.09
Demand off-peak	\$/kVA/month	\$3.14	\$3.23	\$3.32	\$3.32	\$3.32
Retail operating cost and margin						
Retail operating costs	\$/year	\$2,788.55	\$2,788.55	\$2,788.55	\$2,788.55	\$2,788.55
Retail margin	%	6.04%	6.04%	6.04%	6.04%	6.04%

Source: HoustonKemp analysis.

We present the comparison of our energy price estimates from table 6.16 with WaterNSW's proposed values in table 6.17.

Table 6.17: Difference in estimated and proposed forecast unit energy prices (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
Wholesale energy costs					
Wholesale energy purchase costs	-4.94%	-4.97%	-8.15%	-8.16%	-8.15%
Losses	-6.53%	-6.18%	-9.34%	-9.33%	-9.19%
Unaccounted for energy	-4.94%	-4.97%	-8.15%	-8.16%	-8.15%
Renewable energy policy costs					
LRET compliance costs	-53.73%	-49.30%	-49.26%	-52.11%	-51.98%
SRES compliance costs	0.00%	0.00%	0.00%	0.00%	0.00%
ESS compliance costs	13.49%	16.49%	19.39%	22.19%	25.63%
Market fees and ancillary services costs					
Market fees	0.10%	0.10%	0.10%	0.10%	0.10%
Ancillary services costs	-6.20%	-6.20%	-6.20%	-6.20%	-6.20%
Network charges					
Network access charge	0.00%	0.00%	0.00%	0.00%	0.00%
Energy peak	0.00%	0.00%	0.00%	0.00%	0.00%
Energy shoulder	0.00%	0.00%	0.00%	0.00%	0.00%
Energy off-peak	0.00%	0.00%	0.00%	0.00%	0.00%
Demand peak	0.00%	0.00%	0.00%	0.00%	0.00%
Demand shoulder	0.00%	0.00%	0.00%	0.00%	0.00%
Demand off-peak	0.00%	0.00%	0.00%	0.00%	0.00%
Retail operating cost and margin					
Retail operating costs	0.00%	0.00%	0.00%	0.00%	0.00%
Retail margin	0.00%	0.00%	0.00%	0.00%	0.00%

Source: HoustonKemp analysis.

Total energy costs are derived by taking the product of the unit energy prices presented in table 6.16 and the relevant forecast energy consumption volumes presented in section 6.1.3.

Table 6.18 presents WaterNSW's proposed energy costs for the 2026 to 2031 determination period, as derived by Frontier.

Table 6.18: WaterNSW proposed energy costs (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
Wholesale energy costs					
Wholesale energy purchase costs	\$920,145	\$892,745	\$892,432	\$892,755	\$893,933
Losses	-\$3,042	-\$2,951	-\$2,950	-\$2,951	-\$2,955
Unaccounted for energy	\$23,991	\$23,277	\$23,269	\$23,277	\$23,308
Renewable energy policy costs					
LRET compliance costs	\$32,269	\$25,407	\$18,384	\$15,722	\$7,667
SRES compliance costs	\$43,613	\$42,590	\$41,544	\$40,539	\$19,770
ESS compliance costs	\$24,160	\$24,642	\$25,059	\$25,451	\$25,310
Market fees and ancillary services costs					
Market fees	\$4,254	\$4,258	\$4,257	\$4,258	\$4,257
Ancillary services costs	\$4,031	\$4,034	\$4,034	\$4,035	\$4,033
Network charges					
Network access charge	\$9,587	\$9,887	\$10,141	\$10,141	\$10,141
Energy peak	\$8,761	\$8,661	\$8,914	\$8,968	\$9,455
Energy shoulder	\$104,644	\$107,937	\$110,423	\$110,442	\$110,778
Energy off-peak	\$247,203	\$254,551	\$262,214	\$262,235	\$261,535
Demand peak	\$135,327	\$136,755	\$140,875	\$141,282	\$144,543
Demand shoulder	\$256,128	\$263,421	\$270,923	\$270,923	\$270,923
Demand off-peak	\$76,645	\$78,828	\$81,073	\$81,073	\$81,073
Retail operating cost and margin					
Retail operating costs	\$2,789	\$2,789	\$2,789	\$2,789	\$2,789
Retail margin	\$114,186	\$113,361	\$114,360	\$114,213	\$112,740
Total costs					
Total energy costs	\$2,004,690	\$1,990,192	\$2,007,740	\$2,005,150	\$1,979,299
Costs per MWh	\$188.35	\$186.81	\$188.49	\$188.21	\$185.83

Source: Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, table 23, p 23.

We present our upper bound estimate for energy costs in table 6.19. We have derived our upper bound estimate by taking the product of:

- our estimated unit energy prices – as presented in table 6.16; and
- our proposed upper bound energy consumption volumes – as presented in section 6.1.3.

Table 6.19: Upper bound HoustonKemp proposed energy costs (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
Wholesale energy costs					
Wholesale energy purchase costs	\$892,825	\$865,569	\$836,505	\$836,880	\$838,455
Losses	-\$2,945	-\$2,855	-\$2,759	-\$2,761	-\$2,766
Unaccounted for energy	\$23,238	\$22,517	\$21,766	\$21,771	\$21,879
Renewable energy policy costs					
LRET compliance costs	\$15,284	\$13,169	\$9,542	\$7,707	\$3,761
SRES compliance costs	\$44,656	\$43,585	\$42,502	\$41,537	\$20,231
ESS compliance costs	\$28,113	\$29,373	\$30,627	\$31,887	\$32,522
Market fees and ancillary services costs					
Market fees	\$4,357	\$4,358	\$4,359	\$4,360	\$4,362
Ancillary services costs	\$3,873	\$3,874	\$3,875	\$3,876	\$3,877
Network charges					
Network access charge	\$9,587	\$9,887	\$10,141	\$10,141	\$10,141
Energy peak	\$8,942	\$8,836	\$9,097	\$9,153	\$9,655
Energy shoulder	\$106,819	\$110,106	\$112,691	\$112,724	\$113,132
Energy off-peak	\$252,319	\$259,686	\$267,556	\$267,608	\$267,047
Demand peak	\$135,327	\$136,755	\$140,875	\$141,282	\$144,543
Demand shoulder	\$256,128	\$263,421	\$270,923	\$270,923	\$270,923
Demand off-peak	\$76,645	\$78,828	\$81,073	\$81,073	\$81,073
Retail operating cost and margin					
Retail operating costs	\$2,789	\$2,789	\$2,789	\$2,789	\$2,789
Retail margin	\$112,221	\$111,734	\$111,230	\$111,193	\$110,026
Total costs					
Total energy costs	\$1,970,177	\$1,961,632	\$1,952,791	\$1,952,143	\$1,931,648
Costs per MWh	\$181.33	\$180.48	\$179.65	\$179.53	\$177.59

Source: HoustonKemp analysis.

We present our lower bound estimate for energy costs in table 6.20. We have derived our upper bound estimate by taking the product of:

- our estimated unit energy prices – as presented in table 6.16; and
- our proposed lower bound energy consumption volumes – as presented in section 6.1.3.

We recommend that IPART adopt the lower bound estimates for energy costs in the 2026 to 2031 determination period.

Table 6.20: Lower bound HoustonKemp estimated energy costs (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
Wholesale energy costs					
Wholesale energy purchase costs	\$871,956	\$845,338	\$816,952	\$817,319	\$818,857
Losses	-\$2,876	-\$2,788	-\$2,695	-\$2,696	-\$2,701
Unaccounted for energy	\$22,695	\$21,991	\$21,258	\$21,262	\$21,367
Renewable energy policy costs					
LRET compliance costs	\$14,927	\$12,861	\$9,319	\$7,527	\$3,673
SRES compliance costs	\$43,612	\$42,566	\$41,509	\$40,566	\$19,758
ESS compliance costs	\$27,456	\$28,687	\$29,911	\$31,142	\$31,762
Market fees and ancillary services costs					
Market fees	\$4,255	\$4,257	\$4,257	\$4,258	\$4,260
Ancillary services costs	\$3,782	\$3,784	\$3,784	\$3,785	\$3,786
Network charges					
Network access charge	\$9,587	\$9,887	\$10,141	\$10,141	\$10,141
Energy peak	\$2,290	\$2,363	\$2,412	\$2,413	\$2,423
Energy shoulder	\$117,554	\$120,661	\$123,704	\$123,806	\$124,706
Energy off-peak	\$239,840	\$247,001	\$254,399	\$254,428	\$253,788
Demand peak	\$135,327	\$136,755	\$140,875	\$141,282	\$144,543
Demand shoulder	\$256,128	\$263,421	\$270,923	\$270,923	\$270,923
Demand off-peak	\$76,645	\$78,828	\$81,073	\$81,073	\$81,073
Retail operating cost and margin					
Retail operating costs	\$2,789	\$2,789	\$2,789	\$2,789	\$2,789
Retail margin	\$110,288	\$109,831	\$109,361	\$109,325	\$108,185
Total costs					
Total energy costs	\$1,936,255	\$1,928,231	\$1,919,972	\$1,919,343	\$1,899,333
Costs per MWh	\$182.47	\$181.65	\$180.85	\$180.74	\$178.80

Source: HoustonKemp analysis.

We provide a summary – aggregated by energy cost component – and comparison of our upper and lower bound energy cost estimates with WaterNSW's proposed values in table 6.21. As stated above, we recommend that IPART adopt our lower bound estimate for energy costs.

Table 6.21: Proposed and estimated energy costs by aggregate component (\$FY26)

	2026-27	2027-28	2028-29	2029-30	2030-31
WaterNSW proposal					
Wholesale energy costs	\$941,094	\$913,070	\$912,751	\$913,081	\$914,286
Renewable energy policy costs	\$100,042	\$92,639	\$84,987	\$81,712	\$52,747
Market fees and ancillary services costs	\$8,284	\$8,292	\$8,291	\$8,293	\$8,290
Renewable energy policy costs	\$838,295	\$860,041	\$884,562	\$885,064	\$888,447
Retail operating cost and margin	\$116,975	\$116,149	\$117,149	\$117,001	\$115,529
Total energy costs	\$2,004,690	\$1,990,192	\$2,007,740	\$2,005,150	\$1,979,299
HoustonKemp estimate (upper bound)					
Wholesale energy costs	\$913,118	\$885,231	\$855,512	\$855,890	\$857,568
Renewable energy policy costs	\$88,053	\$86,127	\$82,671	\$81,132	\$56,514
Market fees and ancillary services costs	\$8,230	\$8,233	\$8,234	\$8,236	\$8,239
Renewable energy policy costs	\$845,767	\$867,519	\$892,356	\$892,904	\$896,513
Retail operating cost and margin	\$115,009	\$114,522	\$114,019	\$113,982	\$112,815
Total energy costs	\$1,970,177	\$1,961,632	\$1,952,791	\$1,952,143	\$1,931,648
HoustonKemp estimate (lower bound)					
Wholesale energy costs	\$891,775	\$864,541	\$835,515	\$835,884	\$837,523
Renewable energy policy costs	\$85,995	\$84,114	\$80,739	\$79,235	\$55,193
Market fees and ancillary services costs	\$8,037	\$8,040	\$8,041	\$8,044	\$8,046
Renewable energy policy costs	\$837,371	\$858,916	\$883,527	\$884,066	\$887,597
Retail operating cost and margin	\$113,077	\$112,620	\$112,149	\$112,114	\$110,974
Total energy costs	\$1,936,255	\$1,928,231	\$1,919,972	\$1,919,343	\$1,899,333

Source: HoustonKemp analysis; and Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, table 23, p 23.

We present a comparison of the total energy costs over the determination period in table 6.22, alongside the difference between the upper and lower bound estimates relative to WaterNSW's proposal. The similarity between our upper and lower bound estimates indicates that:

- our proposed changes to WaterNSW's estimated energy consumption volumes, ie, the difference between the upper and lower bound estimates, has a relatively smaller effect on total energy costs (ie, around 1.65 per cent); while
- updates to WaterNSW's proposed values for more up-to-date data, ie, the difference between our upper bound estimate and WaterNSW's proposed values, has a relatively large effect on total energy costs (ie, around 2.19 per cent).

Table 6.22: Total determination period proposed and estimated energy costs (\$FY26)

	Total costs over determination period	Change relative to WaterNSW proposal
WaterNSW proposal		
Wholesale energy costs	\$4,594,282	
Renewable energy policy costs	\$412,127	
Market fees and ancillary services costs	\$41,451	
Renewable energy policy costs	\$4,356,409	
Retail operating cost and margin	\$582,803	
Total energy costs	\$9,987,071	
HoustonKemp estimate (upper bound)		
Wholesale energy costs	\$4,367,319	-4.94%
Renewable energy policy costs	\$394,497	-4.28%
Market fees and ancillary services costs	\$41,171	-0.67%
Renewable energy policy costs	\$4,395,058	0.89%
Retail operating cost and margin	\$570,347	-2.14%
Total energy costs	\$9,768,392	-2.19%
HoustonKemp estimate (lower bound)		
Wholesale energy costs	\$4,265,239	-7.16%
Renewable energy policy costs	\$385,276	-6.52%
Market fees and ancillary services costs	\$40,208	-3.00%
Renewable energy policy costs	\$4,351,477	-0.11%
Retail operating cost and margin	\$560,934	-3.75%
Total energy costs	\$9,603,134	-3.84%

Source: HoustonKemp analysis; and Frontier, WaterNSW Broken Hill Pipeline – Energy costs, 15 July 2025, table 23, p 23.

6.4 Proposed true-up of energy costs

We have been asked to assess WaterNSW's proposed energy cost true-up for both the:

- 2022 to 2026 determination period; and
- 2026 to 2031 determination period.

We present our assessment of each proposal in turn below.

6.4.1 Proposed energy cost true-up for the current determination period

In its final determination for the 2022 to 2026 determination period, IPART stated that there is merit to an energy cost true-up mechanism that appropriately balances risks between WaterNSW and its customers.¹³⁹

In arriving at this conclusion, IPART comments on its assessment of WaterNSW's proposed true-up for energy costs, ie:¹⁴⁰

We applied cost-pass through principles in our assessment of WaterNSW's original proposed energy true-up by WaterNSW. We consider these principles support the proposal because:

- There is a trigger event. WaterNSW proposed to pass on changes in energy costs due to movements in wholesale and network energy prices to customers at the next price review.
- We can assess the impact on efficient cost at the next price review.
- The impact on efficient cost can be material.
- WaterNSW cannot influence the likelihood of the trigger event or the changes in efficient cost. This is because wholesale and network energy prices are determined either by the market or other independent regulators/authorities.
- The true-up is symmetric and applies equally to cost increases and decreases.
- The true-up would support more cost-reflective prices.

IPART explains that the components of energy prices that should be included in an energy cost true-up mechanism include those that are:¹⁴¹

- material;
- potentially volatile in the current market environment; and
- largely outside of WaterNSW's control.

Conversely, IPART explains that the components of energy prices that should not be included in an energy cost true-up mechanism include those that are:¹⁴²

- highly uncertain; and
- cannot be forecast upfront for inclusion as part of WaterNSW's revenue requirements.

As a result, IPART indicated that an energy cost true-up mechanism that reflects changes in the wholesale and network components of the allowed energy price is appropriate.¹⁴³

WaterNSW has proposed an energy cost true-up mechanism that includes the wholesale, network and renewable energy policy (ie, environmental costs) cost components of the benchmark energy price.¹⁴⁴ WaterNSW's proposal differs from IPART's determination, which included the wholesale and network cost components but did not include renewable energy policy costs. WaterNSW has justified the inclusion of renewable energy policy costs as:¹⁴⁵

¹³⁹ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical paper, November 2022, pp 39-40.

¹⁴⁰ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical paper, November 2022, p 38.

¹⁴¹ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical paper, November 2022, p 39.

¹⁴² IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical paper, November 2022, p 39.

¹⁴³ IPART, *Review of WaterNSW's prices for the Murray River to Broken Hill Pipeline*, Final technical paper, November 2022, p 39.

¹⁴⁴ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, pp 27-28.

¹⁴⁵ Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, pp 27-28.

- there is a trigger event, ie, changes in movements in the price of these renewable energy certificates can be passed onto consumers;
- the effect of these price changes on efficient energy costs can be assessed after the fact;
- the impact of these price changes on efficient energy costs can be material;
- WaterNSW are a price taker for these renewable energy certificates;
- the true-up is symmetric for both price increases and price decreases; and
- a true-up inclusive of environmental costs support more cost-reflective prices.

We find that WaterNSW's proposed approach of including environmental costs into the energy cost true-up is reasonable. In particular, we find that renewable energy policy costs are:

- material, ie, environmental costs accounted for between 13-14 per cent of estimated annual efficient benchmark energy costs¹⁴⁶ and nine per cent of actual energy costs¹⁴⁷ in the 2022 to 2026 determination period;
- potentially volatile in the current market environment, ie, renewable certificate prices can change significantly over a reasonable short period of time, as evidenced by the change in LGC prices in the time between WaterNSW's proposal and our assessment presented in section 6.2.3; and
- largely outside of WaterNSW's control, ie, renewable certificate prices are set in an open market and the volume of certificates required to be purchased is determined by a government authority, such as the Clean Energy Regulator or the NSW government.

As such, we recommend that IPART adopt WaterNSW's proposed energy cost true-up.

The appropriate value for the energy cost true-up under WaterNSW's proposed approach is derived by:¹⁴⁸

- recalculating, ie, 'backcasting', the energy cost allowance for each year of the 2022 to 2026 determination using energy volumes consistent with the determination but updated outturn market prices for:
 - > wholesale electricity market contracts;
 - > the network tariff applied to the pipeline; and
 - > trading prices and required trading volumes of renewable energy certificates;
- calculating total annual energy cost under/over-recovery by taking the difference between this backcast energy cost and the determined energy cost, in real financial year 2021-22 dollars, ie, the dollar values used at the time the current determination was made; and
- converting this total under/over-recovery to \$FY26 values and adjusting for the time value of money, ie, to control for the difference in when the costs were incurred and when the under/over-recovery is true-up.

¹⁴⁶ CIE, *WaterNSW's Broken Hill Pipeline | Bulk water transport volume demand and energy review*, Final report, June 2022, pp 13-14.

¹⁴⁷ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 48.

¹⁴⁸ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 46-49; and Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, pp 26-30.

WaterNSW's estimates that the benchmark estimate of efficient energy costs was higher than the outturn benchmark efficient energy costs by \$496,110 (real financial year 2021-22 dollars) over the 2022 to 2026 determination period.¹⁴⁹ This value is then:¹⁵⁰

- adjusted for inflation, ie, \$571,810 (\$FY26), using actual inflation figures to June 2025 and IPART inflation assumptions for the year to June 2026; and
- adjusted for the time value of money, ie, converted to a present value, using the placeholder weighted average cost of capital (WACC) value of 3.1 per cent as a discount rate.

Finally, WaterNSW proposes to smooth the true-up of this over-recovery by spreading it evenly across all years of the upcoming determination period in a manner that is neutral in present value terms, resulting in an annual revenue adjustment of \$128,083 (\$FY26) for each year of the 2026 to 2031 determination period.¹⁵¹

We note that proposed total energy cost true-up adjustments over the 2026 to 2031 determination period of \$640,415 (\$FY26) is around 0.1 per cent of WaterNSW's proposed total notional revenue requirement during the determination period, ie, \$138,480,000.¹⁵²

We have reviewed the calculations provided by WaterNSW to derive this estimate of the energy cost true-up and obtain an annual revenue adjustment amount that differs from WaterNSW's estimate by around one per cent.¹⁵³ As such, we have verified the calculations underpinning WaterNSW's proposed energy cost true-up.

6.4.2 Proposed energy cost true-up for the upcoming determination period

WaterNSW proposes to adopt the same approach to the energy cost true-up in the 2026 to 2031 determination period as in the 2022 to 2026 determination period.¹⁵⁴

We outline our justification as to why WaterNSW's proposed energy cost true-up for the 2022 to 2026 determination period is reasonable in section 6.4.1.

For these same reasons, we find that WaterNSW's proposed energy cost true-up mechanism for the 2026 to 2031 determination period is also reasonable.

¹⁴⁹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 48-49.

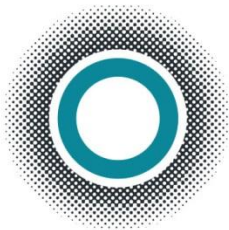
¹⁵⁰ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, pp 48-49.

¹⁵¹ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 49; and Frontier, *WaterNSW Broken Hill Pipeline – Energy costs*, 15 July 2025, p 30.

¹⁵² WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 13.

¹⁵³ The derivation of the energy cost true-up value is conducted in Attachment 10 to WaterNSW's proposal, which has been provided to us for the purposes of this review by WaterNSW.

¹⁵⁴ WaterNSW, *Pricing proposal to the Independent Pricing and Regulatory Tribunal | Regulated prices for the Wentworth to Broken Hill Pipeline from 1 July 2026*, September 2025, p 49.



HOUSTONKEMP

Economists

Sydney

Level 40
161 Castlereagh Street
Sydney NSW 2000

Phone: +61 2 8880 4800