Ref: 20181102JC:NL2

2 November 2018

Dr Peter J Boxall AO
Chairman
Independent Pricing and Regulatory Tribunal
Level 15, 2-24 Rawson Place
SYDNEY NSW 2000

Dear Mr Boxall

Essential Water submission on the IPART Issues Paper - *WaterNSW Murray River to Broken Hill Pipeline*

Essential Water appreciates the opportunity to provide comments in response to IPART's 25 September 2018 Issues Paper (Issues Paper) for the WaterNSW Murray River to Broken Hill Pipeline (the 'pipeline').

While the submission by WaterNSW for the pipeline is thorough and addresses all required elements of a regulatory proposal, there are a number of issues discussed in this submission where Essential Water believes warrant further consideration by IPART. These issues are summarised below and expanded on in Attachment 1:

- **Allocation of costs and risk –** The WaterNSW proposal appears to pass a disproportionate level of risk to Essential Water and our customers, largely by trying to mirror the underlying WaterNSW construction and operating and maintenance contracts for the pipeline. We encourage IPART to review whether this approach is consistent with the IPART's pricing principles, including the principle of efficient pricing and marginal cost.

  We also suggest that IPART and its technical consultant review the changes in the final design solution made by WaterNSW to ensure they were prudent and whether it is appropriate for the associated costs to be passed onto Essential Water and its customers.

- **Capital expenditure** – Approximately 80% of the proposed WaterNSW costs are capital related. Even though this is the vast majority of the proposed costs, Essential Water has limited ability to review the expenditures in detail. We support IPART's investigation into the prudence of these costs and look forward to having the opportunity to review the outcomes of IPART's expenditure review.

  In circumstances such as these where expenditure has already been incurred or is committed, we consider that it is an important feature of the regulatory framework for a regulated network to have the opportunity to recover its efficient costs. Therefore, we consider that the expenditure review methodology should be targetted to assess whether the decisions made by WaterNSW underpinning the investment were prudent and that all reasonable steps were taken to meet the Government's directions at lowest cost.

  On this basis, we suggest that IPART's expenditure review should be designed as a prudency, rather than a detailed efficiency, review that examines, amongst other things, the appropriateness of the final design solution.

- **Cost of electricity –** As the cost of electricity represents approximately one-half of the WaterNSW proposed operating expenditure, we support IPART's detailed assessment with the aid of an external technical expert. We have concerns over the following elements of the proposed electricity costs:
    - The demand charges appear high and contribute to the high proportion of 'fixed' charges proposed to be passed onto Essential Water;
    - To enable a thorough assessment of the proposed energy costs, we would need to have visibility of the energy consumption profile of each of WaterNSW's pumping stations at various station flow rates; and
    - We are not convinced of the need for an electricity cost pass through mechanism in the outer years of the determination. If, however, one is ultimately approved, we suggest that a materiality threshold is applied to minimise any administrative burden and to incentivise WaterNSW to obtain the lowest electricity costs for our customers. Any pass through mechanism for energy costs should also be reflected in a 'back-to-back' arrangement in the Essential Water submission so that we are similarly able to manage cost variations beyond our control.

- **Forecast consumption –** We note IPART's observations of the differences in the consumption forecasts between Essential Water and WaterNSW. Attachment 1 discusses the possible sources of these differences and notes that much of the difference can be explained by the use of 'average' daily consumption by Essential Water and 'peak' daily consumption by WaterNSW.

  These differences are not unreasonable, given that the WaterNSW looks to provide capacity to ensure water supply is available in Broken Hill without ongoing restrictions, while Essential Water forecasts customer consumption as a key input to the setting of distribution prices.

  It is critical that WaterNSW ensures sufficient water supply is available for Broken Hill customers. If less than peak season demand for the pipeline is assumed, then there is risk that WaterNSW will seek to connect other customers and townships, which could result in Broken Hill facing water restrictions on an ongoing basis.

- **Offtake customers** – The approach to pricing for offtake customers needs to satisfy a number of principles. This includes ensuring outturn prices reside between stand-alone and avoidable costs, incremental costs are allocated to the party that 'caused' (or 'impacted') the cost, and offtake customers contribute to the fixed costs of the pipeline to, amongst other things, avoid any perceptions of a 'free rider' effect. Ensuring that contributions to fixed costs flow through to prices in the 2019-23 regulatory period is also an important consideration.

  The approach to pricing for offtake customers needs to be transparent, repeatable and scalable. This is because the methodology adopted by IPART would apply not only to the three existing WaterNSW offtake customers, but also up to fourteen additional customers and may set expectations for pricing for offtake customers on the Essential Water network.

- **Corporate tax rates** – Recent changes to corporate tax rates have resulted in the corporate tax rate for businesses with less than $50 million revenue per year decreasing to 27.5% for the six years starting in 2018-19. This raises a question of whether the lower tax rate should apply to business units (such as the WaterNSW pipeline and the Essential Water business) or the higher tax rate that the tax paying entities (WaterNSW and Essential Energy) are subjected to.

  If IPART provides allowances in its notional revenue requirement for income taxes based on the lower corporate tax rate (27.5%), but the tax paying entity (Essential Water or WaterNSW) is taxed at the higher rate (30%), a shortfall is created that is funded by the business's shareholders.

We consider that the tax rate that applies to the tax paying entity should be applied. To do otherwise would be to institutionalise a framework that does not provide the opportunity a regulated business to recover its efficient costs, which may have longer term consequences on the incentives to invest.

If you would like to discuss this submission in more detail, please call me on (02) 6588 8333 or, alternatively, contact Ms. Natalie Lindsay, Manager Network Regulation, on 02 6589 8419.

Yours sincerely

John Cleland
Chief Executive Officer

Attachment

Essential Water response to IPART's list of issues for the WaterNSW Pipeline

October 2018

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Establishing appropriate cost shares

1. What matters should we take into account when considering the appropriate notional sharing of the efficient costs of the Pipeline?

IPART has outlined a framework for assessing the appropriate cost sharing framework that is reasonable and based on sound economic principles. IPART's framework consists of the following:

1. Preferably, the party that created the need to incur the cost (the 'impactor') should pay in the first instance. This is consistent with the well-established principle of 'causality', where the party that caused the cost should pay.
2. If that is not possible, the party that benefits (the beneficiary) should pay. Further, it is preferable for direct beneficiaries to pay, but if that is not possible then indirect beneficiaries should pay.
3. In cases where it is not feasible to charge either impactors or beneficiaries (for example, because of social welfare policy, public goods, externalities, or an administrative or legislative impracticality of charging), IPART suggests that the government (taxpayers) should pay.

Essential Water supports the principles espoused by IPART and the application of IPART's proposed cost sharing arrangements. However, we note the importance of ensuring transparency should the NSW Government be required to contribute to the cost of the pipeline. Transparency of the costs borne by each party and any required government funding arrangements will ensure the efficient costs of the pipeline are visible (thereby promoting efficiency) and that the costs are recovered in the least distortionary manner.

As outlined in the separate submission by Essential Water to the IPART Issues Paper for our distribution network in Broken Hill, we consider the IPART approach is less transparent than our proposed 'NUOS' model that is the basis of network pricing in the National Electricity Market (NEM). Our proposed model is based on separate determinations for the transmission and distribution businesses (not dissimilar to the water framework in Broken Hill with the new pipeline) that are combined at the time of the annual pricing process – not at the time of each determination. We consider that IPART's proposed model is less transparent, particularly if Government funding is needed for the pipeline, and transfers an inappropriate and unreasonable level of risk to Essential Water.

We appreciate the complexity in determining the parties that are the 'impactors' and 'beneficiaries' as noted by IPART (such as in the case of a reduction in the evaporative loss of water from the Mendindee Lakes system and whether those reduced losses could generate water supply for other parts of the Murray Darling Basin) and note that our proposed 'NUOS' model better addresses these issues.

Length of determination, building block approach and form of regulation

2. How long should we set prices for in the 2019 Determination?

Essential Water supports the four-year determination period from 2019-20 to 2022-23 as proposed by WaterNSW. A four-year period mirrors that proposed by Essential Water in our 13 July 2018 submission on water pricing for Broken Hill and provides a reasonable balance between providing greater stability and predictability (and reduced regulatory burden) associated with a longer period with reducing forecasting risk and the timeliness of customers benefitting from any efficiency gains associated with a shorter period.

3. Do stakeholders support our use of a 'building block' approach to calculate WaterNSW's efficient costs and the revenue requirement for the pipeline? If not, what alternative method would be appropriate?

Essential Water supports the continued use by IPART of a 'building block' approach to calculate WaterNSW's efficient costs and the revenue requirement for the Pipeline.

Allowance for operating expenditure

4. Do WaterNSW's proposed energy costs for the 4-year period to 2022-23 represent prudent and efficient energy costs?

Given that proposed energy costs make up approximately one-half of the proposed operating expenditures, averaging approximately $2.5 million per annum ($2018-19), it is an area of focus for Essential Water and our customers to ensure the proposed costs are efficient and represent a reasonable allocation of risk between the parties.

We note that IPART intends on appointing an energy consultant to estimate the market-based benchmark prices and efficient benchmark volume of energy that IPART will use and input into setting the energy cost allowances. Without having seen the outcomes of the consultant's analysis, our comments are limited to a number of conceptual matters.

While we have not had visibility of the underlying analysis used by WaterNSW in the development of is electricity cost estimates, it appears that the a number of assumptions have been adopted that result a high level of costs and risks being passed to Essential Water under normal operating conditions. As an example, the proposed prices appear to be based on the highest level of demand being experienced on a business-as-usual basis.

To enable us to undertake a thorough assessment of the proposed energy costs, we would need to have visibility of the energy consumption profile of each of WaterNSW's pumping stations at various station flow rates.

Finally, as discussed in our response to Issue No. 16, we note that the WaterNSW final design solution removed photovoltaic (PV) generation from the WaterNSW pumping stations. It is unclear whether WaterNSW's decision to remove PV generation has resulted in the lowest electricity cost outcomes, and we suggest that IPART's technical consultants examine this issue accordingly.

5. How could an efficiency carryover mechanism apply to any savings generated by the Pipeline contractor?

All (or at least a portion) of any cost savings associated with the O&M contractor should, in theory, be passed through to Essential Water and its customers. We note that IPART is proposing to ask its energy expenditure consultant to review, amongst other things, the operating and maintenance costs agreed in the O&M contract.

While we do not offer an opinion on whether an efficiency carryover mechanism should apply to WaterNSW, we highlight that O&M costs represent approximately one-third ($6.4 million) of the proposed total operating costs over the period and as such are an important element of the determination.

Essential Water considers it entirely appropriate and necessary to ensure that only the efficient costs of operating and maintaining the pipeline are included in the determination and that WaterNSW has appropriate incentives in place to reduce its costs over the period. We look forward to having visibility of the IPART consultant's review findings.

6. Is there a case to manage WaterNSW's proposed energy costs through a cost pass-through mechanism?

WaterNSW has proposed to pass through the power supply agreement (PSA) prices negotiated by its contractor for 2019-20 and 2020-21 and then to set benchmark prices (as a placeholder) for 2021-22 and 2022-23. WaterNSW proposes to allow 2021-22 and 2022-23 prices to be automatically updated (and passed through) during the determination to reflect future PSAs entered into by the O&M contractor.

As a general principle, Essential Water supports the inclusion in the determination of electricity prices for 2019-20 and 2020-21 that have been based on a robust and transparent competitive tendering process. To the extent that IPART has satisfied itself that the costs obtained via the competitive tendering process are efficient, it would appear reasonable for the 2019-20 and 2020-21 prices to be included in the prices set for the determination.

We also consider that a forecast of prices for 2021-22 and 2022-23 should be included in the determination. However, we are not convinced that setting placeholder prices that are then adjusted for actual prices via a pass through mechanism is an appropriate mechanism for addressing electricity costs in the latter two years of the determination.

The appropriate sharing of risk between the parties suggests that some management of risk by each party is appropriate. It may be more appropriate for WaterNSW to manage its electricity costs directly rather than passing through all risk associated with electricity costs to Essential Water. Passing through all risk associated with electricity costs could provide a dis-incentive for WaterNSW to pursue the lowest electricity costs for customers and would introduce additional costs to customers as part of the regulatory framework.

In the alternative, if a pass-through of electricity costs is favoured by IPART in order to manage cost volatility, Essential Water suggests that this should only be undertaken if the costs are assessed as 'material'.

Essential Water considers that a well functioning regulatory framework needs to ensure a reasonable sharing of risks and that a business should be able to recover its efficient costs. The inclusion of an effective cost pass through framework will improve the ability of water networks to invest in and operate their networks, while providing an appropriate allocation of risks between the business and its customers.

Essential Water therefore proposes that if a pass-through event for electricity costs is included in the determination, a materiality threshold should also be included, rather than the passing through all electricity cost risk as proposed by WaterNSW.

Essential Water has proposed a materiality threshold of 2.5% of the average annual smoothed revenue requirement as the appropriate test for assessing the materiality of Essential Water's proposed pass through events. A materiality threshold of between 1% of the average annual smoothed revenue requirement (common in a number of regulatory jurisdictions) and 2.5% (proposed by Essential Water to reflect the small size if its water business) would require electricity costs to vary between approximately $0.3 million and $0.8 million per year before a cost pass through event would be triggered. A materiality threshold in this range appears to be a reasonable balance of risk between WaterNSW and its customers to manage electricity cost variations.

If IPART incorporates an electricity cost pass-through event for WaterNSW, Essential Water requests that a similar 'back-to-back' pass through event should be incorporated in the Essential Water determination so that we are able to similarly manage the risks of electricity cost variations that are outside of our control for our water business.

7. Is WaterNSW's proposed expenditure on operation and maintenance of the Pipeline, under its operating and maintenance (O&M) contract terms, efficient?

We have not had sufficient visibility of the O&M contract costs to form an opinion on the efficiency of these costs. We note that IPART is proposing to ask its energy expenditure consultant to review the operating and maintenance costs agreed in the O&M contract. We encourage IPART and its consultant to assess whether these costs, and by extension whether the WaterNSW proposed expenditure on O&M, are efficient via the expenditure review.

8. Is WaterNSW's proposed expenditure on corporate overheads to operate the Pipeline efficient?

While on the surface, the WaterNSW proposed corporate overhead allocation of 10% does not appear unreasonable, we will need to rely on the review by IPART and its consultant in assessing whether these costs are efficient (e.g. should the corporate allocation rate for WaterNSW be 10% or another percentage?).

9. Is WaterNSW's proposed expenditure on special purpose vehicle (SPV) contract and audit costs to fulfill the statutory requirements efficient?

While we do not have visibility of the underlying SPV contract, the SPV 'audit' and 'contract' expenses' are not trivial, representing approximately 13% of the total proposed operating expenses (excluding electricity).

We encourage IPART and its consultant to assess whether these costs are efficient through the expenditure review given their materiality.

10. Are there other considerations we should take into account when determining the prudent and efficient costs of operating the Pipeline?

No comment.

Prudent and efficient capital expenditure

11. How should we assess the prudency and efficiency of WaterNSW's decisions on capital expenditure in light of the NSW Government's directions regarding the Pipeline?

Approximately 80% of the proposed WaterNSW costs are capital related. Even though this is the vast majority of the proposed costs, Essential Water has limited ability to review the expenditures in detail. We support IPART's investigation into the prudence of these costs and look forward to having the opportunity to review the outcomes of IPART's expenditure review.

We suggest that IPART reviews the proposed capital expenditure through a review by a technical consultant. We note that the vast majority of expenditures, approximately $445 million ($2018-19), will occur in the pre-commissioning phase of the pipeline during 2017-18 and 2018-19 prior to the commencement of the new regulatory period on 1 July 2019.

Under circumstances where the expenditure has already been incurred or committed, the appropriate review mechanism should be to assess whether the decisions made by WaterNSW at the time the time of investment were prudent.

We consider that an important feature of the regulatory framework is to ensure that a regulated network has the opportunity to recover its efficient costs. Therefore, we consider that the expenditure review methodology should be targetted to assess whether the decisions made by WaterNSW underpinning the investment were prudent and that all reasonable steps were taken to meet the Government's directions at lowest cost.

On this basis, we suggest that IPART's expenditure review should be designed as a prudency, rather than a detailed efficiency, review that takes into account the changes to the final design solution as discussed in our response to Issue No. 16.

We support IPART's proposed approach of asking its expert consultant to assess and provide advice on whether the capital investment strategy of the pipeline is prudent, including whether:

- The design of the pipeline and whole of life cycle planning, including assessment of capital and operating expenditure trade-offs, are best-practice and resulted in prudent and efficient investment decisions;
- The procurement processes by WaterNSW to engage the contractors who will design, build, operate and maintain the pipeline were effective in facilitating prudent and efficient investment decisions; and
- The final design solution removed many of the initial design requirements and transferred these to Essential Water leading to higher costs for the pipeline.

For the relatively small funds not yet committed in the post-commissioning phase (approximately $0.6 million ($2018-19)) and for expenditure for offtake customers, a more detailed bottom-up efficiency review by the technical consultant may be appropriate.

12. How did the NSW Government's directions impact on WaterNSW's scoping, design and running of the procurement process for the Pipeline?

Without firsthand knowledge of the detailed contractual arrangements and procurement activities undertaken by WaterNSW, it is likely that the NSW Government's requirements for WaterNSW to ensure the minimum targets set

in the NSW Infrastructure Skills Legacy Program and for Australian rolled steel to be substantially used in construction of the pipeline had some impact on the scoping, design and running of the procurement process.

We have concerns that the aim of the WaterNSW consultation process was not to follow the initial concept design; rather, it was to minimise capital expenditure, which has resulted in a small supply system that is dependent (amongst other things) on a large bulk water supply storage with significant losses (see our response to Issue No. 16) and high electricity costs.

Another example of where changes in scope may have led to increased costs is provided by IPART on page 33 of the Issues Paper where it noted that the final pipeline design proposed by the John Holland MPC Group Joint Venture suggested the use of a 711 millimeter (mm) diameter pipeline (as it had the lowest lifecycle cost), but that WaterNSW later selected a 762mm diameter pipeline as "a 711mm pipeline could not be constructed within the required timeline using predominantly Australian rolled steel, as detailed in the Government's Direction to WaterNSW". This larger pipeline presumably came with a higher cost, also due to the need for an additional pump station and an extra 26 kilometers (km) of electrical transmission line.

This raises the question as to which party (or parties) should fund any additional costs arising from the obligations placed on WaterNSW. It is paramount that a business has the ability to recover its efficient costs in order to have the incentive to continue to invest in infrastructure businesses, including recovering the costs of any imposed legal or regulatory obligations.

The relevant question for the determination is not whether the Government should have imposed additional obligations on WaterNSW when constructing the pipeline; rather it is whether WaterNSW was prudent in meeting these obligations and whether it is reasonable for Essential Water and our customers to fund the cost of these changes?

13. Is procuring the construction of the Pipeline through a design, build, operate and maintenance (DBOM) contract efficient?

In light of the requirement for WaterNSW to construct, operate and maintain a 270km pipeline within a relatively short period (approximately two years from the initial Government announcement to water flowing in the pipeline), it does not appear that the decision to adopt the DBOM model was imprudent. Whether the outturn costs are efficient is a matter to be assessed by IPART through its efficiency review, noting our comments on reviewing expenditure that is already incurred or committed as outlined in our response to Issue No. 11.

14. Did WaterNSW's tender and procurement process for the construction and operation of the Pipeline maximise the potential for competition amongst bidders and ensure prudent and efficient decisions were made?

No comment. To be assessed by IPART and IPART's consultant via the expenditure review.

15. How should we assess the market's response to WaterNSW's request for tender for the construction and operation of the Pipeline and the efficacy of WaterNSW's procurement processes?

No comment. To be assessed by IPART and IPART's consultant via the expenditure review.

16. Is the final design solution of the Pipeline optimal? Are there other factors we should take into account?

The final design solution removed many of the initial design requirements and transferred these to Essential Water. While this resulted in a lower overall cost of the pipeline to be funded by WaterNSW, it resulted in a number of 'consequential works' that were required to be completed by Essential Water and has arguably led to higher costs for the pipeline.

The design changed drastically from the concept design of a number of pumping stations direct to Broken Hill with:

- A much smaller pumping capacity system and introduction of a large Bulk Water Storage (BWS); and
- Removal of photovoltaic (PV) power generation from the WaterNSW pumping stations.

The introduction of two BWS dams of more than 700ML total capacity has introduced significant losses in storage evaporation (circa 400ML per annum) and water quality management requirements dependent on the contractor operating mixers and aerators.

Also, the two BWS dam liners will need to be replaced in future determination periods. With time there will be additional water losses as the liners fail prior to future replacement.

With the system peak pumping capacity of 27 megalitres per day (MLD) combined with:

- Upstream customers wishing to extract some of the pipeline capacity;
- Significant evaporation losses in the dams; and
- The aim of the operator to pump in the shoulder and off peak periods (to reduce pumping costs).

The BWS capacity management is critical to ensure Broken Hill can accommodate summer high demand periods of December to end March each year, unless during very unseasonably wet years. With global warming, and the need for the significant investment to secure Broken Hill's water supply, it is important that the system is capable of meeting Broken Hill's demand now and into the future.

Essential Water suggests that IPART's technical consultants form a view on the following matters:

- The reduction in pumping capacity versus capital and operating expenditure savings by introducing the bulk water storage, including the water losses and future liner replacement costs; and
- NPV savings of capital expenditures by not investing in PV compared with operating cost reductions that would have otherwise occurred in the '50% of opex electricity costs'. It is important to note that the PV energy production may have reduced the need to stop pumping along the pipeline to the BWS during peak energy tariffs during the middle of the day, as it would have provided low cost energy.

17. Is WaterNSW's proposed capital expenditure on the Pipeline and offtakes, including contract variations, distribution and contingency costs, efficient?

To be assessed by IPART and IPART's consultant via the expenditure review. Also please refer to our responses to Issues No. 11 to 16 above relating to the prudency of the costs of the pipeline and Issue No. 34 relating to the reasonableness of the proposed prices for offtake customers.

Return on assets, depreciation and tax liabilities

18. Do you agree with our preliminary position that a regulatory true-up in the following period is the appropriate method to account for changes in the cost of debt over the 2019 determination period?

No. Essential Water maintains that applying annual adjustments to the cost of debt through the annual price change process is more appropriate than a true-up in the following period.

Annual updates to the cost of debt (and resulting WACC) can either be passed through as part of the annual pricing changes to customers or can be trued-up in the next regulatory period, ensuring that both options are equivalent in present value terms (discounted by the WACC rate).

IPART has indicated that its preliminary position is to not adopt an annual update for the cost of debt, and instead apply a net present value (NPV) neutral true-up at the next determination, on the basis that it provides certainty to customers about their prices over the upcoming determination period.

In contrast, IPART suggests that if it applied an annual update, a large change in the cost of debt would flow through to customer prices in the following year of the determination period, unless additional side constraints were imposed in the determination.

Essential Water's preference is to apply the annual updates to the cost of debt as part of the annual price change process rather than an NPV-neutral true-up at the next determination, on the basis that:

- Applying annual updates to reflect changes in the cost debt is more likely to mitigate against price shocks for customers, as the alternative approach of aggregating the annual changes and applying the balance at the subsequent reset may institutionalise greater price volatility at the commencement of each determination period. The 2018 WACC methodology change to a trailing average cost of debt will also mute the impact of annual changes to customers; and
- Annual updates are already required to the annual price change process to give effect to actual measures of inflation, and an additional annual update for the cost of debt is a straightforward exercise (we note that the Essential Energy electricity business already applies annual updates to the cost of debt as part of its annual pricing process as part of implementing the AER's electricity determination, with the process being mechanistic and administratively simple).

We note that either approach should deliver the same revenue outcome in NPV terms, with the pricing outcomes dependent on actual movements in the cost of debt. Predicting future movements in the cost of debt is speculative and in theory the cost of debt could remain flat, increase or decrease in a consistent profile or could increase and decrease in a 'random walk'. If the cost of debt were to move in the same direction (increase or decrease) over one or more years during a regulatory period, the application of annual updates would minimise price shocks at the next determination relative to the NPV-neutral true-up.

Conversely, if the cost of debt were to move in a random manner (e.g. a combination of increases and decreases), then a true-up at the next determination would allow the annual changes in the cost of debt to potentially 'cancel out' over the regulatory period. In this scenario a regulatory true-up would minimise price volatility relative to annual updates.

The choice of applying an annual update or an NPV-neutral true-up to the cost of debt is therefore a decision between:

- Applying small annual price adjustments within a regulatory determination with the risk of moderate price shocks between regulatory periods; or
- Applying no annual adjustments within a regulatory determination period with the risk of potentially large price shocks between regulatory periods.

It is our view that, on balance, applying annual updates to the cost of debt is preferable to applying an NPV-neutral true-up at the next determination as it is more likely to mitigate against the risk of large price shocks (up or down) between regulatory periods.

19. What comparable industries should we consider to establish the proxy companies we use to estimate the beta in this review?

As noted by IPART, for a listed firm it is possible to measure the equity beta directly, by calculating the historic correlation (or covariance) between the firm's returns and the returns to the stock market overall. However, most of the businesses IPART regulates, including WaterNSW and Essential Water, are not listed.

Therefore, to estimate the equity beta, IPART selects a group of listed companies that face similar risks to the regulated firm (or industry) as proxies. For each company in this group, IPART estimates the equity beta using market model regression and derives an asset beta (i.e., de-levered beta) using its gearing ratio.

We support the continued use of IPART's current methodology and process for calculating the WACC as outlined in IPART's February 2018 'Review of our WACC method'. Specifically, with respect to the equity beta, we support IPART's standard approach to:

- Use a broad selection of proxy companies, excluding thinly traded stocks;
- Amend its proxy selection process to make it more transparent, predictable and replicable for stakeholders;
- Publish its criteria for proxy selection, and its list of comparator companies that meet its criteria at the start of the relevant review; and
- Give stakeholders the opportunity to propose additional comparable industries that meet IPART's criteria, but not individual stocks.

In order to maximise the statistical significance and stability of the beta estimate, applying the largest sample of firms where robust data is available is desirable.

However, Essential Water considers that IPART should only change its approach to deriving the equity beta if there is compelling evidence that suggesting that the new data would result in statistically superior results. The calculation of equity betas is not stable over time, and therefore caution should be applied when moving away from established practices.

20. Is WaterNSW's proposed allowance for regulatory depreciation, including the assumptions (eg. asset values, asset lives and treatment of offtake assets) underpinning this allowance reasonable?

Yes. The proposed approach by WaterNSW for depreciating pipeline assets using a prime cost (i.e. straight-line) methodology and applying a useful life assumption for existing and new depreciating assets appears reasonable.

We note that as part of this review, IPART will consider the standard and remaining lives for assets in the RAB and appropriate asset lives for forecast capital expenditure.

Our thoughts as they apply to regulatory depreciation of the WaterNSW offtake customer assets are included in our response to Issue No. 35.

21. Should we take the variable corporate tax rates into consideration in our review of the Pipeline's tax allowance?

Essential Water considers that it is appropriate to use the corporate tax rate of 30% when calculating the tax allowance.

According to the Australian Taxation Office (ATO):

> *On 1 September 2016, the Government introduced Treasury Laws Amendment (Enterprise Tax Plan) Bill 2016 that proposed to reduce the corporate tax rate for corporate entities that are carrying on a business and have an aggregated turnover of less than $25 million for the 2017–18 income year and less than $50 million for the 2018–19 income year – known as base rate entities. This Bill received Royal Assent on 19 May 2017.*
>
> *…*
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> *On 18 October 2017, the Government introduced the Treasury Laws Amendment (Enterprise Tax Plan Base Rate Entities) Bill 2017. Under this Bill, only corporate entities who meet the aggregated turnover threshold and have no more than 80% base rate entity passive income will be eligible for the lower corporate tax rate. The date of effect will be from the 2017–18 income year. This Bill received Royal Assent on 31 August 2018.*

It is clear from the above ATO communication that from 31 August 2018 the proposed corporate tax rates for corporate entities became law. The following table outlines the 'base rate entity' changes and timeframes:

Table 1: Corporate tax rates – base rate entities changes and timeframes

Year	Aggregate turnover threshold	Base rate entity tax rate under the aggregate turnover threshold	All other corporate entities
2017-18	$25m	27.5%	30.0%
2018-19 to 2023-24	$50m	27.5%	30.0%
2024-25	$50m	27.0%	30.0%
2025-26	$50m	26.0%	30.0%
2026-27	$50m	25.0%	30.0%

The relevant question therefore appears to whether WaterNSW is a 'base rate entity' and whether the new lower corporate tax rates apply.

For context, government-owned businesses are not subject to Federal income tax. However, in order to comply with National Competition Policy, which was adopted by Commonwealth, State and Territory governments in 1995, government-owned businesses must pay Commonwealth tax equivalents.

Essential Energy is a State Owned Corporation that is subject to the national Tax Equivalent Regime (TER) whereby taxes are paid to the NSW Government according to the same rules applying to other corporations.

Essential Water is not a tax paying entity, as it is an operating business unit of Essential Energy. Therefore, the tax rate that Essential Energy (as the tax paying entity) would pay is the rate applicable to all other corporate entities as outlined in Table 1 above (i.e. 30%).

If IPART provides allowances in its notional revenue requirement for income taxes based on the base rate entity (BRE) tax rates as outlined in Table 1 (i.e. 27.5% in each year of the regulatory period), but the tax paying entity (WaterNSW in this case) is taxed at 30%, there is a shortfall created that is funded by the entity's shareholders.

On this basis we consider that the tax rate that applies to the tax paying entity should be applied. We note that providing a tax allowance that is below the tax payable from the tax paying entity would institutionalise an approach whereby the regulated network would not be able to recover its efficient costs. This may have longer term impacts on the incentives for network businesses to invest in infrastructure assets.

It may also create a (perverse) incentive to adopt a business or legal structure to target revenues less than $50 million per year in order to minimise the tax loss created (between the tax allowance provided for in regulated revenues and the tax payable by the tax paying entity) rather than to pursue an efficient business structure targeting efficient economies of scale and scope that would put downward pressure on water prices over time.

22. For the Pipeline, should we use the same business unit level for determining the tax rate as we do for determining the WACC (ie, the NRR of the Pipeline rather than the NRR of the broader WaterNSW business), or are there reasons to move away from applying this approach?

We suggest that IPART should not use the same business unit level for determining the tax rate as for determining the WACC.

The tax rate used should be the legislated rate for the tax paying entity (WaterNSW in this case), noting that the same approach should apply to Essential Water, where the corporate tax rate for the tax paying entity (Essential Energy) should be applied. The WACC can be determined at the business unit level (i.e. the pipeline for WaterNSW or, in the case or our water business, the Essential Water level). See response to Issue No. 21.

23. Should we use 30% as the default tax rate, and if the Pipeline's NRR is, on average over the determination period, below the threshold then use the lower tax rate in recalculating the tax allowance for the whole of the review period?

See response to Issue No. 21 above, where we support the use of the 30% tax rate. If IPART decides that the lower corporate tax rate is to be applied to WaterNSW pipeline (as well as Essential Water), both of which have annual revenue requirements well below $50m, this step would appear to be superfluous.

24. Is WaterNSW's proposed allowance for tax, including the assumptions (eg. asset values, depreciation method and gearing ratio) underpinning this allowance, reasonable?

Yes. WaterNSW's proposed allowance for tax and the underpinning assumptions appear reasonable.

Forecast water sales and customer numbers

25. What would account for differences in demand forecasts between WaterNSW for its Pipeline and Essential Water to its customers in Broken Hill and surrounding townships?

We note IPART's concerns over the apparent differences in forecast consumption in the WaterNSW and Essential Water forecasts. Some of the difference can be explained through the use of the 'bottom-up' forecasts applied by Essential Water and the 'top-down' forecasts applied by WaterNSW.

However, the majority of the volume difference may be explained by the approach to forecasting demand and consumption (appropriately) taken by each organisation.

Essential Water's consumption forecasts are based on 'average' daily consumption, which is an appropriate basis for forecasting volumes for pricing purposes for a water reticulation network. Our annual consumption forecasts equate to average usage of approximately 14 ML per day (consistent with our 2017-18 volumes, noting that previously reported daily demands in the AIR / SIR are multi-year averages), with forecast volumes roughly in line with historic volumes (see Figure 8.2 in the IPART Issues Paper). We maintain that the forecasts by Essential Water for setting water prices are appropriate.

However, we also note that over the twelve month period to 30 June 2018, which was a dry year, volumes pumped by Essential Water excluding Mendindee and Sunset Strip was 6.7 Gigalitres (GL), which was considerably higher than the annual amount consumed by our customers. The volumes pumped include the following:

- Consumption by customers;
- Losses; and
- Volumes pumped into storage but not consumed during the year.

Given that the primary water supply over the determination period transfers from the Menindee Lakes Scheme to the Wentworth to Broken Hill pipeline, we would expect that WaterNSW would forecast the water to be supplied by the pipeline to be higher than the 'average' daily usage forecast by Essential Water for its customers and represent forecasts that are closer to the 'peak' daily usage.

It is critical that WaterNSW ensures sufficient water supply is available for Broken Hill customers. If less than peak season demand for the pipeline is assumed, then there is risk that WaterNSW will seek to connect other customers and townships, which could result in Broken Hill facing water restrictions every summer.

26. Is WaterNSW's approach to forecasting water demand reasonable?

See response to Issue No. 25 above. We note that IPART has engaged a consultant to test the reasonableness of the forecasts provided by WaterNSW.

27. Is WaterNSW's projection of increasing water demand in Broken Hill over the 2019 determination period reasonable?

We maintain that, in light of reducing population forecasts in the Broken Hill region, the Essential Water forecasts are reasonable.

28. Is the number of offtake customers likely to change significantly over the 2019 determination period?

The number of offtake customers over the period will be a direct consequence of whether the drought continues and whether the pricing for offtake customers is cost-reflective. As discussed in our response to Issue No. 34 below, it is important to ensure pricing for offtake customers is efficient so that it does not encourage uneconomic connection if prices are set below marginal cost.

Prices

29. Do you agree that we should set maximum prices in line with the principles of cost- reflective pricing? Are there any other factors we should consider?

Essential Water supports the continued use of price caps as the form of control for the pipeline.

In defining 'cost-reflective' pricing, IPART suggests the following:

- Prices only recover sufficient revenue to cover the prudent and efficient costs of delivering the monopoly services.
- Price structures match cost structures, whereby:
    - Usage charges reference an appropriate estimate of marginal cost (e.g., the additional cost of supplying an additional unit of pipeline transportation services), and
    - Fixed service charges recover the remaining costs.
- Customers imposing similar costs on the system pay similar prices.

Essential Water supports the components underpinning IPART's approach to cost reflectivity as outlined above, and in particular we draw attention to the principle of 'efficient pricing' (referred to as 'marginal cost' pricing above). The principle of efficient pricing is important to ensure the prices do not provide an incentive to over- or under-consume based on whether the variable charges are below or above marginal cost.

Water is a scarce product with some price elasticity, and therefore sending signals to over- or under-consume can have significant implications for the community. This can have important implications on short term water supply and the need to invest in water infrastructure based on the long-term efficient costs of the system.

We encourage IPART to review whether the proposed prices have had regard to efficient pricing and the role of marginal cost.

Essential Water observes that the prices proposed by WaterNSW do not appear to be based on principles of 'efficient pricing' (including marginal cost). Rather, they appear focussed exclusively on recovering the costs and mirroring the structure of their underlying contracts for the pipeline. This would also appear to pass through all volume risk to Essential Water and our customers.

The proposed approach appears to turn the current maximum price cap into a revenue cap by stealth – that is, by setting very high fixed charges and with very little revenue to be recovered through marginal (i.e. variable) costs. We do not support this approach.

While we support the principle that WaterNSW is able to recover its efficient costs, we consider that there are important economic signals that need to be incorporated in the WaterNSW proposed prices.

The extent to which WaterNSW has engaged customers in the development of its proposed pricing structures is also unclear. We consider customer engagement to be an important element in the price-setting process, and it is not clear from the WaterNSW submission the extent to which it has sought customer feedback (including the feedback of Essential Water) in developing the proposed pricing structures.

Therefore, before it approves the WaterNSW pricing structures, IPART is encouraged to assess how, or if, the principle of efficient costs has been considered and how customer feedback has been assessed by WaterNSW in developing its proposed pricing structures.

30. Are WaterNSW's proposed prices for Essential Water reasonable?

It appears that the WaterNSW approach to prices for Essential Water is to mirror the costs in the WaterNSW O&M contract. From this perspective, we question whether the appropriate starting point has been selected. That is, and as outlined in our response to Issue No. 29 above, the WaterNSW approach to establishing its pricing structures does not appear to accord with the principles of efficient pricing.

While this does not a priori mean that the outturn prices are unreasonable, it does suggest that IPART should take a closer look at the basis of the pricing structures to satisfy itself that the proposed prices are consistent with the principles for cost-reflectivity and efficient pricing as discussed above.

31. Should WaterNSW be exposed to some of the costs of shutdown and standby events, if it can influence the duration (and hence cost) of those events?

Yes. It is important that WaterNSW is exposed to some of the costs of shutdown and standby events, given WaterNSW can influence the duration and costs of these events.

WaterNSW may shut down the pipeline for many failure mode and major maintenance events including:

- Loss of SCADA;
- Power failure – we note that the power line between Broken Hill and Wentworth has previously been out of service for more than a week in recent times due to a storm and it is not inconceivable that this could happen to the pipeline;
- Pumping Station failure Internal flooding with pipe / fitting failure;
- Failure of critical control point sensor or supply (e.g. discharge pressure, flow rate, loss of pipeline flow and potentially other examples when the functional specification is finalised);
- Damage to the pipeline placing it out of service for up to 2 days;
- Damage to an air valve creating major flooding and loss of supply;
- Damage to scour valve creating major flooding and loss of supply;
- A potential algae bloom in the WaterNSW bulk water storage could require the pipeline to be offline for an extended period;
- Over time, the pipeline will commence failing and may be potentially out of service for lengthy periods during times of peak demand; and
- Routine maintenance, including 'pigging' that would require the pipeline to be offline for 2-3 days at a time.

We consider it would be reasonable for the asset owner to recover an availability fee (as Essential Water does with vacant blocks where water and sewer assets are available at the curb). However, if the pipeline is shut down due to a fault of WaterNSW, then shutdown and start-up costs should not apply to Essential Water.

If the shutdown is caused by Essential Water in requesting the service be shut down, then it is not unreasonable that WaterNSW should recover the standby / shutdown / start-up costs.

32. Should prices to Essential Water recover all of the fixed operating and maintenance costs that WaterNSW will be exposed to over the determination period?

As highlighted in the Issues Paper, it would appear that at least a portion of the costs for the installation of the three offtakes (for offtake customers) would have increased the costs above what would be reasonably required to supply Essential Water. As such, we would expect that Essential Water's customers in Broken Hill would not be asked to subsidise offtake customers if this is the case.

As a principle, Essential Water considers that our customers should not be charged for any of the costs associated with supplying offtake customers. This includes any incremental costs for the connection expenditures, any ongoing operating and maintenance costs and any additional capacity that was incorporated into the design of the pipeline to supply offtake customers.

In addition, as discussed in our response to Issue No. 31, WaterNSW should be exposed to some of the costs of shutdown and standby events, given WaterNSW can influence the duration and costs of these events.

We support IPART's investigation into whether the proposed level and allocation of costs by WaterNSW to Essential Water is consistent with IPART's pricing principles.

33. Could setting variable charges to encourage use of the Pipeline have any unintended consequences?

While once popular in utility pricing, block tariffs have recently fallen out of favour with economic regulators and often replaced with a single variable charge. Essential Energy has experienced this in its recent electricity distribution determination with the Australian Energy Regulator (AER) where its 'declining block tariff' (DBT) was varied to a single rate tariff. In its 2014 water determination, IPART removed the second tier of Essential Water's IBT (which was in place to encourage water conservation) in favour of a single rate tariff for water usage.

In moving away from block tariffs to a single rate tariffs, regulators have often cited weak economic and or environmental rationale. For instance, when moving from a two-tiered IBT to a flat tariff for water usage for Essential Water customers, IPART stated the following (see 2014 IPART Determination, page 110):

For water utilities, a 2-part tariff is generally considered an efficient price structure where it comprises a single water usage price (set at the marginal cost of supply) and a fixed charge (set to recover the remaining revenue requirement). [Emphasis added]

When replacing Essential Energy's declining block tariff with a flat tariff for its electricity distribution network in 2017, the AER stated the following:

We consider a flat tariff will better promote the pricing principles compared to a declining block tariff. Stakeholders supported the replacement of the declining block tariffs with flat tariffs for this tariff structure statement period. Opposition to the NSW distributors' declining block tariffs was the issue we received the most vocal feedback on from stakeholders through our consultations.

Flat tariffs spread the recovery of residual costs equally across users in proportion to their consumption, whereas the declining block tariff structure allocates more of the recovery of residual costs to the lower consumption blocks. Given the lack of evidence regarding elasticity, as we noted in the draft decision, we consider the flat tariff structure better reflects the network providers' efficient costs than a declining block tariff. Flat tariffs also better enable customers to mitigate the impact of changes through their usage decisions than a declining block tariff structure, where more costs are recovered through the first consumption block.

In addition to the economic rationale noted by IPART and the AER above for moving away from block tariffs, setting a declining block tariff (DBT) to encourage greater usage of a scarce resource to promote greater utilisation of the pipeline may run counter to environmental concerns over water usage in times of drought and water security concerns.

It is also possible, and indeed likely, that the mismatch between charging Essential Water according to a variable charge scale, while charging offtake customers at a single point on the scale, could result in Essential Water and our customers paying a disproportionately high price to cross-subsidise a lower price for offtake customers to encourage higher take-up rates. If this is the case, we do not consider that the proposed charging arrangements provide a reasonable sharing of risk.

For these reasons, we consider that the adoption of a declining block tariff for the pipeline may result in unintended economic and environmental consequences.

34. Are WaterNSW's proposed prices for offtake customers reasonable?

As a minimum, the prices for offtake customers need to reflect the incremental costs for their initial connection and ongoing supply. As a maximum, prices for offtake customers should not exceed the stand-alone costs for the customers. To ensure that the customers of the Broken Hill community are not subsidising the offtake customers, some contribution towards the fixed costs of the pipeline would seem appropriate.

As canvassed on Page 55 of the Issues Paper, the charges to Essential Water should not include the costs for capacity provided to supply offtake customers.

Essential Water considers that the pricing arrangements for offtake customers should be based on the following principles:

- Directly attributable costs (such as an increase in capacity of the pipeline to supply offtake customers) should be charged directly to offtake customers and not to other pipeline customers, including Essential Water;

- Offtake customers should be charged any initial and ongoing incremental costs associated with their connection to the pipeline;
- Prices for offtake customers should be between the avoidable and standalone costs of supplying these customers; and
- To avoid any perceptions of a 'free rider' effect of using the pipeline, offtake customers should contribute to the fixed costs of the pipeline.

By adhering to the above principles, a charging regime for offtake customers can be established that is cost-reflective (thereby encouraging efficient connection and greater utilisation of the pipeline) and that makes other users of the pipeline better off (or at least indifferent) through the contribution towards the recovery of fixed costs.

The WaterNSW proposal is to install additional offtakes over the 2019-23 period at either the annual charge ($13,500 including an annuity for the capital costs plus a contribution to fixed capital costs and a minimum variable cost for 10ML of water) or an upfront capital charge of $77,319 (plus the variable cost for 10ML of water).

While the approach to pricing for offtake customers does not seem unreasonable, it raises the following questions:

- How does IPART ensure that the costs for offtake customers are separated (or ring-fenced) from the costs allocated to Essential Water for charging purposes?
- Do the proposed prices meet IPART's pricing principles?
- Is it reasonable (or efficient) for upstream customers to be charged on a flat rate supply fee when Essential Water is charged on a variable rate charge, presumably in order to encourage greater number of upstream customers over time?
- How does the contribution towards fixed capital costs for any additional offtake customers flow through to lower prices for other pipeline customers within and between regulatory periods? This is particularly the case given that WaterNSW discusses the potential for offtake customer numbers to increase from 3 to 14 once the pipeline is operational and a mechanism to ensure contributions towards fixed costs are applied to Essential Water's prices (perhaps through the annual pricing process) is required.

Essential Water notes that the application of the pricing arrangements for WaterNSW may have potential implications for the charging arrangements for offtake customers on our network. As such, the offtake customer pricing arrangements need to be transparent, repeatable and scalable as additional offtake customers consider connection.

We also note our response to Issue No. 16, regarding the limited system supply capacity of 27 MLD and significant losses in bulk water supply along with the inability to provide peak demand supply to Broken Hill without the drawing down this supply.

In order to ensure that supply to Broken Hill is not compromised, IPART should consider whether it is reasonable to cap the total supply to the upstream customers and to align the variable cost component to that applied to Essential Water.

35. In particular, is WaterNSW's proposed annuity approach for recovering the incremental capital expenditure associated with offtakes reasonable? Are there other approaches we should consider? Should offtake customers contribute more to the fixed capacity costs of the Pipeline?

See our response to Issue 34 above. It is unclear whether the proposed annuity approach delivers pricing outcomes that are more consistent with IPART's pricing principles than the application of IPART's standard building block methodology (including any assessment of appropriate regulatory lives). We note that IPART will consider this matter as part of its review.

36. Should we allow unregulated pricing agreements between WaterNSW and offtake customers? Why or why not?

As a general proposition, network businesses and their customers should be encouraged to enter into negotiated pricing agreements. On the basis that the parties are sufficiently sophisticated to negotiate pricing arrangements and that there is sufficient information available to all parties, negotiated outcomes can be an efficient and effective component of the price setting framework.

While on the surface negotiated pricing outcomes appear attractive and, in theory, can result in lower regulatory costs, there are a number of practical considerations that make their widespread use problematic. These include:

- The relative information asymmetry between the parties;
- The need for a regulatory 'backstop' price or condition of access or, in the case of a commercial negotiation, the need for access to commercial arbitration;
- The need for pricing principles to guide the negotiations and or to provide guidance for the arbitrator in the case of a dispute; and
- The relative lack of contract negotiation capabilities within the parties.

The greater the scope of negotiations to address issues beyond purely price (e.g. service standards and other terms and conditions of access), the more complex the negotiations can become.

It would appear that there are negotiated pricing arrangements already in place with the two WaterNSW offtake customers - IPART will need to assess whether the agreements represent fair and reasonable outcomes to all affected parties (noting there is nothing to suggest otherwise).

We do not have sufficient information on the cost of the third offtake customer's supply as part of a land purchase agreement swap to determine whether this was efficient. We note that IPART has indicated it will investigate the efficiency of these costs and as part of its review.

Given the impact that offtake customers' connections may have on other users of the pipeline (and in particular recovering incremental costs and contributions towards fixed costs of the pipeline), it is important that the outcomes of such negotiations are transparent.

Finally, while it may just be semantics, it is unclear whether negotiated pricing arrangements should be considered purely 'unregulated' as the charges may include a contribution towards the fixed costs of the network that impacts other users. Perhaps 'negotiated network service' is a more accurate description.

In any case, as negotiated pricing agreements have the potential to impact other users of the network, it is appropriate that there is a framework underpinning the negotiations to ensure the outcomes are fair and reasonable to all affected parties. Our response to Issue No. 37 provides a suggested framework for negotiated pricing arrangements.

37. If we do allow unregulated pricing agreements should there be any restrictions on these agreements?

As indicated in our response to Issue No. 36 above, there is value in ensuring a framework is in place to underpin negotiated pricing arrangements to ensure the outcomes are fair and reasonable to all affected parties.

One possible framework for negotiations is based on the access regime for non-scheme pipelines under the National Gas Rules and the National Gas Law (noting that the gas framework applies to overall access and not solely the negotiation of pricing arrangements between the parties).

Notwithstanding, the gas framework consists of the following features:

- Pricing principles that are consistent with the outcomes of a workably competitive market to guide price setting and to provide reasonable assurance that any network access pricing dispute will be successfully and cost-effectively determined;
- The requirement for a network service provider to establish, maintain and publish reference tariffs and standard access terms as a starting point for negotiations;

- Commercial negotiation as the principal vehicle for establishing access agreements, including applicant specific pricing; and
- Clear and binding arbitration to be administered by IPART should negotiations reach an impasse.

The extent to which the above elements would be required as part of a negotiated pricing is debatable; however, it is clear that some form of reference price and access to some form of arbitration is required in case of an impasse.

As a minimum, Essential Water would expect that a negotiation framework for offtake customers would be voluntary and that a set of pricing principles setting upper and lower price boundaries (e.g. based on standalone and avoidable cost) would need to be established to ensure the negotiated outcomes are fair and reasonable to all affected parties, including other users of the pipeline.

From a practical perspective, once IPART approves a charge for offtake customers as part of this determination (whether this is the WaterNSW proposed annuity approach or a charge based on some other methodology) this would likely set the bar for future pricing negotiations. It is difficult to envision that customers would have an incentive to agree to a charge that is higher than the price set by IPART (or for WaterNSW to agree to a charge that is lower).

In any case, while an optional negotiated pricing framework should be encouraged, expectations of its widespread use should be tempered.