22 March 2013

Mr James Cox PSM
Chief Executive Officer and Full Time Member
Independent Pricing and Regulatory Tribunal of New South Wales
PO Box Q290
QVB Post Office NSW 1230

Dear Jim

**SUBMISSION ON REVIEW OF METHOD FOR DETERMINING THE WACC**

Hunter Water welcomes the review by IPART of the method for determining the weighted average cost of capital (WACC), as the current approach can impose risks on consumers and, potentially, unrewarded risks on utilities. The main focus of Hunter Water’s submission is from the perspective of consumers’ interests.

The methodology used to determine the WACC is a key component in setting consumer prices to meet the costs of a prudent and efficient model utility (a key regulatory objective) as the WACC has a major influence on the prices consumers pay for regulated services (and the returns utilities earn from providing these services).

If an appropriate WACC is not applied, the interests of consumers may not be met. That is, if the WACC is set too high then the objective of price regulation is not met because utilities are over-compensated for their costs. Conversely, if the WACC is set too low then the objective of price regulation is not met as utilities risk becoming financially unsustainable, particularly if the WACC does not cover their existing long-term and new or refinanced debt costs. Potentially, this could impact on future spending by utilities with flow-on effects for customer services.

With the volatility in interest rates since 2008, the current approach for determining the WACC has resulted in inconsistent consumer outcomes, with customers of different utilities having prices determined by quite different WACC assumptions, depending on the timing of the determination. This has occurred even when the price paths of the different utilities overlap by up to three years.

Hunter Water feels that long-term averages should be used in estimating the market-linked parameters in the WACC (that is, the use of long-term averages for the risk free rate, debt margin and market risk premium). This will not only ensure there is internal consistency within the capital asset pricing model (CAPM) but also will better reflect the capital costs that would be incurred by a model utility that should be recovered through customer prices.

I trust the views expressed in the attached submission assist IPART in developing a methodology for determining the WACC that appropriately deals with uncertainty and changing market conditions as they affect the regulated water utilities in NSW and that delivers consistent pricing outcomes for their customers.

Yours faithfully

KIM WOOD
Managing Director
HUNTER WATER CORPORATION

REVIEW OF METHOD FOR DETERMINING THE WACC

RESPONSE TO IPART DISCUSSION PAPER

MARCH 2013
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1 Executive Summary

Hunter Water welcomes IPART undertaking a review of the method for determining the WACC because the current approach imposes unwelcome risks on consumers, and unrewarded risks on utilities. That is, the Global Financial Crisis has highlighted the importance of a consistent and robust WACC methodology, and the dangers that financial market volatility can impose on consumer prices and utility financeability. Hunter Water is hopeful that the outcome of this review will help improve confidence in the WACC methodology and result in an approach that consistent with the broader principles of regulation, that is be “…transparent, predictable, consistently applied over time and between utilities, (and) no more complex than necessary”.1

The discussion paper starts by setting out the objectives of pricing regulation of utilities. It is Hunter Water’s belief that IPART’s current “on the day approach” to setting the WACC is inconsistent with consumer objectives. Under this approach, different consumer groups pay different utility costs, depending on the arbitrary timing of price determinations. This has important ramifications that deliver negative outcomes for consumers by allowing divergences to emerge between WACC allowances and WACC costs.

In addition, the current approach is too rigid for application to a four-year price path in that it fails to allow for market changes over (and within) a four-year price determination period. While IPART’s approach to the use of WACC in water utility price determinations may be consistent with other regulatory practice, Hunter Water believes the application of the WACC to NSW metropolitan water utilities also needs to be considered in the context of the rigidities imposed on utilities by the overall regulatory context in which they operate. As outlined throughout this paper, maintaining the current inflexible approach to the WACC derivation for regulated and constrained businesses poses real potential risks to their financial sustainability over a four-year price path and may also pose some real risks to consumers.

Due to the significant impact the WACC has on a utility’s revenue, if the WACC adopted by a regulator is too low then a utility may become financially unsustainable, be unable to service its debt costs and ultimately may be unable to provide services to its customers. Additionally, if a WACC is set too low in one price path which results in under-investment then the likelihood is that in the next regulatory period the catch-up in investment required (from projects deferred previously) will in turn create price volatility for consumers which is undesirable.

Hunter Water proposes that long-term averages should be used in estimating all the market-based parameters in the WACC (that is, the use of long-term averages for the risk free rate, debt margin and market risk premium) which will not only ensure there is internal consistency within the capital asset pricing model (CAPM) but will also accurately reflect the capital costs of a model utility. This approach will result in an appropriate WACC being adopted and ensure that consumer prices meet the costs of a prudent and efficient model utility.

In terms of the estimating the cost of debt, Hunter Water believes it is critical that an approximate parity is maintained between the allowed cost of debt and the actual cost of debt within the regulatory period (with the actual cost of debt being that which results from prudent, proven and efficient debt management practices). In order to achieve this, the cost of debt must be hedgeable.

Hunter Water proposes that a “trailing average approach” to setting debt cost parameters should be used. This approach would simplify the risks facing utilities and consumers. Debt WACC parameters and actual debt costs would be more closely aligned, avoiding both over-compensation and under-investment for consumers. Utilities would have significantly more certainty around regulatory allowances ahead of a future determination. And differences in the debt allowances awarded to different utilities would all but disappear. Further, because the prudent debt practice provides a natural hedge of actual debt costs to the allowed debt cost, it would finally remove the requirement for swap derivatives and hedge accounting practices.

In estimating the expected cost of equity, Hunter Water similarly proposes the use of long-term averages for both the risk free rate and the market risk premium.

The benefits of using long-term averages to consumers and regulated businesses alike are evidenced throughout the submission and Hunter Water is strongly of the opinion that it is only through the use of long-term averages that IPART can ensure that consumer interests are maintained.
2 Introduction

The broader principles of regulation include transparency, predictability and consistency. Price regulation of monopoly utilities is designed to avoid the opportunity for super-normal profits by the utilities. The key objective of regulatory pricing is to set consumer prices to meet the costs of a prudent and efficient model utility. The methodology used to determine the weighted average cost of capital (WACC) is of vital importance in achieving this objective as the WACC has a major influence on the prices consumers pay for regulated services (and the returns utilities earn from providing these services).

Importantly, the interests of consumers are only met when the utility’s costs on which prices are set match the costs of the efficient and prudent model utility:

- If prices are set too high, the objective of price regulation is not met because utilities are over-compensated for their costs.
- If prices are set too low, the objective of price regulation is not met as utilities will tend to under-invest in necessary capital infrastructure and/or may also become financially unsustainable. Over time, under-investment creates problems with intergenerational equity among consumers.

The scope of IPART’s review was to focus on the following four key issues:

1. How should the expected cost of debt be estimated?
2. How should the expected cost of equity be estimated?
3. How should a feasible WACC range be established?
4. How should the appropriate WACC value be selected?

In this paper, Hunter Water addresses each of the four key issues in turn.

3 How should the expected cost of debt be estimated?

Two considerations are raised by IPART with regard to estimating the expected cost of debt:

- the averaging period used for the risk-free rate and the debt margin, and
- the term to maturity used.

Hunter Water believes that if the method for setting the WACC is to be consistent with the broader principles of regulation (in particular predictability and consistency), then the expected cost of debt should be estimated using long-term averages for the risk-free rate and the debt margin. In particular, in order that fair outcomes are delivered to consumers, an approximate parity between the allowed cost of debt and the actual cost of debt within the regulatory period must be achieved. This requires that utilities are able to hedge to the regulatory debt allowance benchmark.

2,IPART, 2012, section 1.2
It is Hunter Water’s position that a ten-year maturity is an appropriate term to maturity based on the fact that long-lived assets are financed using long-term debt. Hunter Water does not see that matching the term to maturity of the risk-free rate to length of the determination period or the cash flows generated by the regulated assets provides any additional value compared to matching the term to maturity to the life of the assets.

Hunter Water has raised its preference for the use of long-term averages previously including in the Price Submission in September 2012.3

3.1 Current approach

The current rigid approach taken by IPART, which resets the debt allowance to the prevailing BBB/BBB+ debt market yield at the time of the determination produces two unwelcome consequences:

- Setting the debt allowance to the prevailing market yield forces utilities and consumers to bear financial risks. The current approach does not allow a utility to hedge the risk in the allowed debt cost, which results in the allowed and the actual debt costs diverging as, and when, financial markets change.

- As highlighted by the Productivity Commission4, similar utilities with price determinations months apart may achieve disparate revenue allowances. That is, financial market volatility is causing the current “on the day approach” to inflict inequity between utility owners and between customer groups.

With reference to the first consequence above, the rigidity of IPART’s current approach in the context of a regulated and constrained utility combined with the fact that the debt allowance is unhedgeable, poses significant financial risk to the utility and to consumers.

Deriving a WACC using market parameters for 20 or 40 days immediately prior to the determination cannot reasonably be expected to reflect market conditions for the subsequent four years of a price path. IPART’s view that a 40 day period will ensure “businesses can lock-in the regulatory cost of debt, while still providing a market-to-market cost of debt at the time of regulatory reset” is difficult to comprehend.5 As outlined below, a suite of regulatory requirements lock utilities into investment throughout the price path. It is impractical to lock in the cost of this debt to be incurred 1, 2, 3 and 4 years out at the time of regulatory reset. Hunter Water also disputes IPART’s position that this “…is consistent with the [debt] costs faced by a new entrant”6 New entrants, especially private sector new entrants, are unlikely to face the full suite of regulatory constraints discussed later and therefore can have more flexibility to change their medium-term capital and borrowing requirements to suit market conditions as they change.

For regulated water utilities like Hunter Water, it is difficult to consider the implications of WACC changes in the same theoretical context as that applying to a firm operating in a fully commercial market place. This is because the regulatory framework for the metropolitan water utilities in NSW constrains how these utilities can respond to changes in WACC. Regulatory rigidities, together with a

3 Hunter Water Corporation, 2012, Submission on prices to apply from 1 July 2013, Newcastle September.
5 IPART, 2013, Hunter Water Corporation. Prices for water, sewerage, stormwater drainage and other services from 1 July 2013 to 30 June 2017. Water - Draft Report, Sydney, March, Appendix E.5
6 IPART, 2013, Appendix E.5
WACC locked in for a multi-year price path, restrict a utility’s avenues to respond to changes in market conditions over the price path. Such restrictions would not apply to a less constrained firm operating in an efficient free market.

These regulatory constraints include:

- Locked-in price paths with set revenue prices for a number of years (usually four)
- Revenue smoothing at the price determination, often resulting in the target WACC not being achieved until final year of price path (under NPV smooth or glide path smooth models)
- IPART determined efficient capital spending allowances for the price path – locking in annual capital spending over the price path.
- IPART determined efficient operating allowances for the price path – locking in the maximum annual operating spend over the price path.
- IPART determination of the regulatory asset base (RAB) roll forward including ex-post reductions and ex-ante additions to the RAB.
- Annual public reporting of any variations from the allowed capital and operating expenditure on which current revenue prices are based with the implication that any departure from the IPART allowances is undesirable.
- IPART-determined operating licence performance standards (ie output performance standards) which must be met each year.
- External regulatory performance standards (eg wastewater discharge licences and obligations under water access licences) that must be met on a continual basis and can include performance improvement requirements. These and operating licence requirements can effectively lock-in the need for large proportions of the capital investment program.

In combination, these constraints mean that, unlike a free market firm, it is virtually impossible for the metropolitan water utilities to respond to changes in market conditions and protect their profitability by reducing or expanding their investment program and borrowings.

The metropolitan water utilities cannot readily respond to low WACC decisions such as the 2013 draft decisions if market conditions change over the ensuing price path. As outlined above, the suite of regulatory requirements makes it difficult to reduce the need for new borrowing by deferring or cancelling the efficient capital investments allowed by IPART at the price determination. The highly regulated environment in which the utilities operate means any such change in expenditure also puts meeting a suite of output obligations and services to customers at risk.

Setting a WACC based on short-term market rates is likely to lead to a situation where the WACC is out of kilter with market rates prevailing in the later years of the price path and higher borrowing costs (interest and guarantee fees) the utility is forced to accept in order to meet its comprehensive suite of regulatory requirements. Such a situation threatens the annual assessment of the financial sustainability of the business which, in turn, further increases borrowing costs and leads to further deterioration in financial sustainability and returns to the equity holders.

### 3.1.1 Hedgeability

In terms of hedgeability, the hybrid nature of the current debt benchmark makes it impossible to hedge. The hybrid nature can be explained with reference to the four dimensions of risk that exist in
all debt (funding risk, debt margin risk, risk-free rate risk and inflation risk). For 10-year fixed nominal debt, all four risks align to the 10-year funding life but the mechanism that sets the regulatory debt allowance is a hybrid benchmark:

**Funding risk** – the term of the debt. In the regulatory model, funding life is set to 5 years, this is not reflective of the long life of the utility’s assets.

**Debt margin (DRP) risk** – the compensation to the lender for the risk of default and the risk of illiquidity. The DRP allowance resets to the market-observed BBB/BBB+ debt margin at every determination (usually 4 years).

**Risk-free rate (RFR) risk** – the risk-free (government) funding rate, but before inflation is considered. The RFR also resets to the market-observed Commonwealth 5-year bond rate at every 4 year determination.

**Inflation risk** – the compensation to the lender for inflation. In the regulatory debt allowance, inflation resets every year. The hedging of inflation risk is not discussed in this paper.

The second consequence of disparate revenue allowances noted above is evidenced in Figure 1 which shows the disparity between Hunter Water’s WACC outcomes and other IPART-regulated businesses despite significantly overlapping determination periods. Figure 1 clearly shows that currently, the month in which the price decision is made plays a crucial role in the outcome of prices for the subsequent four years. Hunter Water believes this is contrary to the expectations of consumers and regulated businesses in relation to price and revenue stability. It could be argued that under the current approach the WACC outcome is somewhat of a lottery and that financial market volatility is causing the 20-day or 40-day averaging approach to inflict inequity between utility owners and between customer groups.

**Figure 1 Comparison of WACC outcomes 2009-2018**

If the expected cost of debt was estimated using long-term averages for the debt margin and the risk-free rate as opposed to the “on the day approach” then the disparity highlighted by Figure 1 would not occur.

Source: Hunter Water
3.2 Proposed approach

So that a fair outcome can be provided to consumers, an approximate parity must be maintained between the allowed cost of debt and the actual cost of debt *within* the regulatory period (with the actual cost of debt being that which results from *prudent*, *proven* and *efficient* debt management practices).

Currently, the WACC is set in a way to exactly match the *ex ante* capital costs of a prudent and efficient utility (the NPV=0 principle). The NPV=0 principle is *necessary but not sufficient* to meet the regulatory objectives of consumers. Hunter Water proposes a second principle that satisfies the regulatory pricing objective. This test could be called the BPS=0 test (zero basis-point sensitivity test, or hedgeability test). Providing a benchmark that can be matched by a prudent and efficient utility treasury manager ensures that consumers do not over-compensate efficient utilities’ capital costs, and that consumers are not confronted with inter-generational equity issues.

A common argument from regulators is that debt allowances and debt costs will converge *over the long run*. In some cases, this long-term convergence is not achieved or distorted as a result of changing revenue smoothing practices from one determination to the next.

But from the perspective of consumers, *time variation matters*. That is, when debt allowances and debt costs deviate, consumers are either paying too much or are not getting access to necessary capex. The task of removing time variation is the reason why hedging takes place. Removing time variation aligns debt allowances and debt costs *in all market conditions*. Providing the opportunity to hedge ensures consumers do not over-compensate utilities, nor are they starved of necessary capex.

As noted above, the hybrid nature of the current debt benchmark makes it *impossible to hedge*. That is, there is no way that a utility debt manager can match the *risk profile* of the allowance benchmark. Consequently, when rates move (either the debt margin or risk-free rates), it creates a divergence between allowed debt costs and actual debt costs.

Because utilities can’t hedge the risk of the debt allowance benchmark, it means that they carry *uncompensated risk*. That is, equity holders bear large financial risks due to the inherent volatility of interest rates and inflation.

There are two so-called “portfolio approaches” that satisfy the principle of hedgeability. They are:

- the trailing average approach – debt allowances are set to 10-year averages of the 10-year debt margin and the 10-year risk-free rate. Each year within the regulatory period, the debt margin and risk-free rate are updated for the most recent observation of 10-year average.

- A “hybrid portfolio approach” – the risk-free rate is set to short-term observation of the five year swap rate. The debt margin is set to the 10-year trailing average of the 10-year margin of debt over the 10-year swap rate (this approach was proposed by some utilities as part of the AEMC’s review of economic regulation of network service providers).

3.2.1 The trailing average approach

The trailing average approach is Hunter Water’s preferred approach.

The trailing average approach is based on a BBB/BBB+ rated model utility that can achieve debt funding out to 10 years. The *prudent* model utility will manage debts so that there is a smooth profile of debt over the forward decade, and 10% of the portfolio needs to be refinanced each year. Each year, the 10% of the portfolio that matures is entirely refinanced to the 10-year tenor, thereby maintaining the smooth financing profile. And because the model utility is always funding all its debts
to 10 years, the cost of the debt portfolio will be the 10-year (historical) average of the 10-year BBB/BBB+ cost of debt. Finally, although all debts are initially raised as 10-year debt, the average residual life of debt will be five years.

**Figure 2: Model utility debt maturity profile**

![Model Utility Debt Refinancing Profile](image)

*Source: NSW Treasury Corporation*

In setting the debt cost allowance, the regulator would simply take the 10-year historical average of the 10-year tenor BBB/BBB+ debt cost. It also requires the regulator to annually update the 10-year historical average to ensure that allowances and costs remain aligned within the regulatory period.7 But because the averages are over such long periods, the year-to-year updates might change the debt allowance by, at most, 0.25%, even in volatile market conditions.

Figure 3 on the following page models the effect that the trailing average approach would have had on year-to-year debt cost allowances.

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7 The BPS=0 test being proposed here requires a *trailing* average approach where the regulator annually updates the debt allowance. The alternative *historical* average approach, where the regulator sets the debt allowance only once at the beginning of the determination period from long-term historical averages, would not achieve BPS=0.
Figure 3: Trailing average approach modelled Debt Margin allowance compared to the actual Hunter Water Corporation Debt Margin allowance.

Source: NSW Treasury Corporation

Not surprisingly, this approach is the proven mainstay of debt management practices around the world. Those debt managers that previously financed to short funding lives have tended to be convinced (or liquidated) by the GFC. After the GFC, there is wide acceptance that interest rate and inflation risks can be painful, but they are unlikely to cause the utility to become abruptly insolvent. Debt managers are significantly more likely to accept interest rate risk and cost consequences than funding risk consequences.

An example of a non-regulated infrastructure company’s debt maturity profile is provided in Figure 4. Sydney Airport’s debt portfolio is shown below as at 30 June 2012 with a total portfolio of $6bn and an average maturity of 8.0 years.

Figure 4 Sydney Airport Debt Maturity Profile

Source: Sydney Airport
Figure 4 is evidence that a non-regulated infrastructure company manages its debt to a longer term to maturity than 2.5 years.

On efficiency grounds, the trailing average approach to setting debt cost allowances would simplify the risks facing utilities and consumers. Debt allowances and actual debt costs would move in sync, avoiding both over-compensation and under-investment for consumers. Utilities would have significantly more certainty around regulatory allowances ahead of a future determination and, particularly, when preparing submissions to IPART. Given the importance of the WACC and its influence on the return on the RAB, this would substantially contribute to greater consistency between utility submissions and ultimate determinations.

Further, differences in the debt allowances awarded to different utilities would all but disappear. In addition, because the prudent debt practice provides a natural hedge of actual debt costs to the allowed debt cost, it would finally remove the requirement for swap derivatives and hedge accounting practices.

Hunter Water strongly supports the use of a trailing average approach. The trailing average benchmark would:

- Mimic the approach of a prudent, proven and efficient debt manager.
- Achieve both NPV=0 (allowance for efficient debt costs on an ex ante basis) and BPS=0 (hedgeability within the regulatory period).
- Align debt allowances to the market costs of debt over the regulatory cycle, regardless of movements in financial markets.
- Provide debt allowances no higher or lower than the current debt model over the long term.
- Reduce the volatility in utility prices.
- Remove utilities’ need to rely on swap derivatives.
- Not be based on arbitrary regulatory practice, such as the length of the regulatory period.
- Avoid hedge accounting issues that result from swap derivatives.

If the trailing average approach is selected, the issue of transition is an important consideration. That is, a transition from the current approach to a trailing average approach should continue to ensure that consumers pay no more (and no less) than the costs of a prudent and efficient model utility. The important issue of incumbent-newcomer parity should be addressed within the transition framework.

### 3.2.2 Hybrid portfolio approach

The “hybrid portfolio approach” is a proposal that mimics the operation of some regulated utility debt managers under the current “on the day” approach. It can only be implemented by implementing swap derivatives over the entire debt portfolio and while many non-regulated debt managers make use of swap derivatives to manage interest rate risk, it would be extremely unusual for any interest rate swap portfolio to match the entire debt portfolio. It is Hunter Water’s belief that the hybrid approach is unproven, not efficient (as there is no evidence in the non-regulated sector) and imprudent (for example excessive reliance on swap markets at a time when execution costs are rising and liquidity is
potentially falling\(^8\)). Due to the fact that this approach is *unproven, not efficient* and potentially *imprudent*, it is Hunter Water’s position that the hybrid portfolio approach is not a viable option.

### 4 How should the cost of equity be estimated?

The cost of equity is the return required by investors to reward them for investing in the utility. The cost of equity comprises a market risk premium (MRP) associated with the systematic (non-diversifiable) risk arising from the utility as well as the nominal risk-free rate.

#### 4.1 What model should be used?

The capital asset pricing model (CAPM) currently used by IPART is the standard approach for estimating the cost of equity and Hunter Water agrees with the continued use of the CAPM.

As with any approach, the CAPM has its limitations however, as evidenced by IPART in Table 4.1 of its review paper\(^9\), regulators throughout Australia and around the world use CAPM in determining the appropriate cost of equity.

Due to the short-comings that exist with the CAPM and to assist in the robustness and reliability of the estimates, Hunter Water believes that it is appropriate for IPART to, at a minimum, undertake a “sense-check” of the cost of equity produced by the CAPM against alternative approaches - consistent with the approach taken by Ofwat and Ofgem in the United Kingdom.

Hunter Water agrees that a series of cross-checks on the cost of equity estimate would be appropriate provided IPART is transparent on how they were used, how much weight was ascribed to them and any other considerations that may have had an impact on the final decision.

#### 4.2 How should the MRP and risk-free rate be determined?

Until the most recent price determinations (and as is common practice), in estimating the cost of equity, the MRP has been determined with reference to long-term historic data and the risk-free rate has been estimated using an “on the day approach” based on observed yields on Commonwealth Government bonds over the 20 trading days immediately prior to a decision.\(^10\)

Figure 5 outlines historical experience of the five-year Australian Government Bond rate, in comparison with the risk-free rate used by IPART in setting the WACC range for price determinations. Each coloured line represents the period covered by the WACC for a number of recent IPART price determinations. The risk-free rate was determined using either the 20 or 40 day average of the current Australian Bond Rate. Determinations until 2010 were based on the ten year government bond rate.

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\(^9\) IPART, 2012, Table 4.1

\(^10\) IPART has adopted a 40-day averaging period for the draft water determinations in 2013 in line with the proposal in its December 2012 discussion paper (IPART, 2012).
As Figure 5 shows, volatility in short-term market rates has led to large variances between the risk-free rate used in setting the WACC, even though pricing determinations overlap for a number of years. The timing of when a utility has prices set can either under or over compensate for the risks that the utility faces. The red line representing the 40-day averaging period is highly volatile, and therefore is not appropriate to apply to a long-term, capital-intensive regulatory environment.

A clear example of this can be seen when comparing the risk-free rate of 6.1% set for Sydney Water in July 2008, falling to 4.6% for the Hunter Water determination in July 2009, only to increase to 5.8% a year later for Country Energy in July 2010. This volatility and relationship to overlapping determination periods (price paths) was illustrated earlier in Figure 1.

It is Hunter Water’s position that in order to ensure the internal consistency of the CAPM and to accurately reflect the capital costs of a model utility, long-term estimates should be used for all WACC parameters rather than the current approach which allows varying time horizons for the various parameters. Given Hunter Water’s preference for the use of long-term averages for the cost of debt, it is also its preference to use long-term averages for both the risk-free rate and the MRP for the estimation of the cost of equity. This approach will ensure that consumers do not over-compensate utilities for capital expenses when WACC allowances are too high and that inter-generation equity issues do not occur if WACC allowances are too low.

IPART indicates that, while it proposes to continue to estimate the MRP based on historic data with a risk-free rate based on short-term averages, and will include consideration of the cost of equity using long-term averages for both the risk-free rate and MRP, it considers that there also should be regard to an estimate of the cost of equity based on current estimates of the MRP. Hunter Water does not support this approach.
While Hunter Water agrees that a regulator should be allowed to exercise some discretion in certain situations, the choice of whether to use short-term or long-term averages for the MRP is not one of the areas Hunter Water believes that discretion can be applied.

5 How should a feasible WACC range be established?

How, or even if, a feasible WACC range can be established is dependent upon the methodology selected for the parameters in the WACC. While the alternative models proposed all satisfy the NPV=0 principle, it is only the use of long-term averages for all WACC parameters, and specifically the use of long-term trailing averages for the cost of debt, that will allow for hedgeability.

If the long-term trailing average approach is taken then there is no need to choose a feasible range for the WACC.

If IPART were to select other options for estimating the cost of debt and cost of equity, Hunter Water believes that IPART then has the discretion to broaden the range of WACC outcomes. This is possible because, unlike other regulators, IPART’s WACC methodology is not defined in legislation, regulations or orders. A broader range for the WACC may allow for a more relevant WACC to be determined for utilities that are already constrained in their ability to adjust their price path expenditure in response to future changes in market conditions, particularly to changes in the cost of debt.

IPART already publishes long-term WACC parameters at each determination. These parameters could extend the range considered by IPART in its judgement on an appropriate WACC point estimate. A broader range considered in establishing the point estimate would recognise that, if market conditions change over the four year price path, a WACC determined on short-term parameters alone may (in a rising market) threaten the financial sustainability of a utility over the price path or (in a falling market) incentivise inefficient or unnecessary investment decisions.

As would be the case in any exercise of “judgement” by a regulator, the outcome and the reasoning applied must be transparent, based on data or evidence and must consider all possible implications of the decision. Hunter Water’s concerns relate to the accountability of the regulator and are similar to those expressed in SP AusNet’s submission to the AEMC, “… improved confidence in the outcomes from the rate of return framework is necessary, and would be aided by requiring departures to be properly explained, by stating reasons, including assessment of relative merits, and providing evidence in support.”

In addition, if discretion is used, utilities must still be able to calculate, with some degree of certainty, an estimate of the WACC that would be applied under the guidelines underpinning the methodology.

Hunter Water is also concerned that IPART has noted its intention to use either the issues paper or draft report as the mechanism for communicating to a utility that they are proposing to adopt an alternative approach in establishing the WACC range. In the current process, the issues paper is released less than three months prior to the date for lodgement of a submission by a utility and, given the requirement by IPART to have the price submission and annual information return reviewed by an independent external party for quality assurance, this would not provide a utility with adequate time to respond to the revised approach. In price submission years, Hunter Water commences its revenue and price modelling at the beginning of the calendar year so as price submission intentions can be

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11 See, for example, the “Long-long” parameters in Table E.1, IPART, 2013.
12 SP AusNet, 2012, Draft Rule Determinations: Economic Regulation of Network Services, October
13 IPART, 2012, page 72
included in the forward years covered in its Statement of Corporate Intent. By the time the price review issues paper is released this modelling is well advanced and close to lock down. If the intention was only made clear at the time of issuing a draft determination report, utilities would have no capacity to incorporate the changes in price modelling.

6 How should the appropriate WACC value be selected?

As discussed in Section 5, if the long-term trailing average approach is taken then an appropriate WACC value will be achieved. The WACC outcome would provide regulatory stability, certainty and predictability. In addition, and most importantly, the appropriate WACC will ensure that the objective of price regulation is achieved whereby consumers pay no more (and no less) than the costs of a prudent and efficient model utility.

Because decisions on WACC can influence more than half of the IPART-determined revenue requirement of a utility, the impact of an inappropriately selected WACC has significant consequences for both the consumer and the regulated business.
Appendix 1 - Addressing specific questions in the IPART discussion paper

This section uses the discussion framework in the body of the paper to address the specific questions raised in the IPART’s December 2012 discussion paper.14

1. Should we set the WACC for an efficient firm that faces similar economic risks to the regulated business and is a new entrant?

The WACC allowance should be set to reflect the efficient financing costs of an infrastructure firm with similar economic risks. The question of new entrants should be accommodated as a transitional WACC allowance that would reflect differences between establishing and maintaining the portfolio that best meets the primary objectives set by the interest of consumers. That is, the debt allowance benchmark should be NPV neutral and allow hedgeability as the necessary and sufficient conditions to satisfy the consumer objective.

A transitional WACC allowance for new entrants acknowledges that new entrants (in particular from the private sector), are unlikely to face the full suite of regulatory constraints of an established utility and therefore can have more flexibility (than regulated public utilities) to change their medium-term capital and borrowing requirements to suit market conditions as they change.15

2. What is the appropriate averaging period for the cost of debt?

For hedgeability to occur, the averaging period must reflect the tenor of the debt being issued. Given the empirical evidence that shows new debt issuance for Australian non-regulated infrastructure businesses is around ten years, the efficient cost of debt is the ten-year average of the ten-year rate.

3. If a long-term average is used for the cost of debt, should it be adjusted annually?

For hedgeability to occur, the cost of debt must be adjusted annually. If there is no annual adjustment, the result will necessarily be a gradual, unwelcome and significant divergence between debt allowance and debt costs over the regulatory period. As discussed earlier, divergences between debt allowances and debt costs will always be detrimental to consumers.

4. If a short-term averaging period is used, are 40 days sufficient to address the practicality concern in regard to risk management strategies?

There are several reasons why consumer interests are threatened by short-term averaging periods. Short-term averaging periods will create divergences between debt allowances and debt costs. Either consumers over-compensate utilities for debt costs, or utilities under-invest in necessary infrastructure which creates inter-generational equity issues.

Consumers’ utility costs will always be more volatile under short-term averaging. Consumer groups have repeatedly highlighted concerns with volatile energy prices.

Short-term averaging requires utility treasury managers to hedge risks within the short averaging period to match the debt benchmark. Debt and swap derivatives markets provide limited liquidity for some borrowers. If those borrowers choose to hedge to the averaging period, the reaction of financial market yields would push consumer prices higher.

14 IPART, 2012
15 See discussion of regulatory constraints on the existing public utilities in section 3.1 of this submission.
5. **Are there merits in the hybrid approach (Section 3.5.4)?**

The proposed hybrid approach relies heavily on swap derivative markets. The debt benchmark is the 10-year cost of BBB debt, minus the 10-year swap rate, plus the 5-year swap rate. That is, there are two swap derivatives for every dollar of debt.

Many utility treasury managers use swap derivative markets to hedge their exposures within the averaging period, as considered by Lally. Swap derivative markets are undergoing significant regulatory changes. Those changes are very uncertain and necessarily difficult for the regulator to estimate in the debt benchmark. The regulator would also need to be certain that liquidity will not reduce further as a result of derivative market regulatory changes.

The extensive use of swap derivatives in the debt allowance benchmark is at odds with the demonstrated (that is, efficient) best practice of non-regulated infrastructure providers. Also, price volatility will reflect movements in the spot rate for 5-year swap yields rather than volatility in the total cost of debt. If (as empirical evidence suggests) the Debt Margin is negatively correlated to swap yields, consumer price volatility will turn out to be *higher than the current approach*.

6. **What is the appropriate term to maturity to use for the cost of debt calculation?**

Contrary to the position taken by IPART in 2010 to use a five year term to maturity, Hunter Water’s position is that a ten-year maturity is more appropriate because its long-lived assets are financed using long-term debt. Hunter Water does not see that matching the term to maturity of the risk-free rate to the regulatory period or to cash flows generated by the regulated assets provides any additional value as opposed to matching the term to maturity to the life of the assets.

There is strong empirical evidence that non-regulated infrastructure companies issue debt to at least ten years (delivering a residual term to maturity of five years). This is especially the case since the Global Financial Crisis (GFC). The strong emphasis on managing refinancing risk in the post-GFC world makes the five-year initial term to funding unsupported by empirical evidence and prudent practice.

7. **What alternative models, if any, should we use to estimate the cost of equity as a cross check for an industry sector or the overall market?**

Hunter Water has no issue with the continuation of the use of the capital asset pricing model (CAPM) to estimate the cost of equity. However, similar to the approaches taken by the regulators in the United Kingdom, Hunter Water would also be amenable to using alternative models as a cross check for the CAPM model results. Hunter Water has no preference as to which alternative models could be used.

8. **How should we estimate a current market-implied measure of the expected market risk premium?**

Like all WACC estimates, to accurately reflect the capital costs of the model utility, the MRP should be estimated using long-term averages. The use of long-term averages ensures that consumers do not

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17 See IPART, 2013 Appendix E.5.1 where IPART states “It has been our policy since 2011 to match the length of the regulatory period to the term assumption”
over-compensate utilities for capital expenses. Anything other than long-term averages allows utilities to generate super-normal profits when WACC allowances are too high, and impose inter-generational equity costs on consumers in periods when WACC allowances are too low.

9. Should we use a long-term average (for example 10 years) to estimate the risk-free rate to be consistent with the long term averaging period used for the market risk premium estimate?

In the interests of consumers, and for reasons consistent with the approach to the debt allowance benchmark, all equity allowance parameters should be estimated using long-term averages.

10. What model, or models, should be used in estimating the range for the WACC, and why?

The use of alternative models to estimate a range for the WACC allowance pre-supposes that the alternatives are equally qualified to meet the primary objective of pricing regulation.

Pricing regulation for monopoly utilities is designed to avoid the opportunity for super-normal profits by the utilities. The alternative WACC models being proposed all satisfy the NPV=0 test. As shown in the body of this submission, NPV=0 is necessary but not sufficient to avoid the opportunity for super-normal profits. The sufficiency test is satisfied by what we have called BPS=0, or hedgeability. That is, providing a benchmark that can be matched by a prudent and efficient utility treasury manager ensures that consumers do not over-compensate efficient utilities for their capital costs, and that consumers are not confronted with intergenerational equity issues.

The only model that satisfies the necessary and sufficient conditions for the consumer objectives to be met is the so-called “long-long” approach, updated annually for changes to the trailing average of the Debt Margin and the Risk-free Rate (for both debt and equity).

11. Which of the Scenarios in Section 5.3 do you prefer and why?

Hunter Water has a strong preference for Scenario 1, the long-term average data for risk-free rate, debt margin and market risk premium. Scenarios 2 and 3 cannot provide assurances to consumers that intergenerational equity will be met, or that utilities might be over-compensated for capital costs in certain market conditions.

In its December 2012 Discussion Paper, IPART comments that a relevant factors to the approach chosen are the expectations of customers and regulated businesses and asks the question “Do customers (or business managers/owners) expect that prices (or revenues) for the next 4 to 5 years will depend significantly on the month in which the price decision is made?”

The simple answer to this question is “No”. As shown previously in Figure 1 of this submission, the current approach clearly results in disparate outcomes for similar utilities purely based on the timing of when the prices are set with a number of four year price paths overlapping for a three year period but with a spread of almost 1% between the real pre-tax WACCs adopted by IPART. If Scenario 1 had been used then, the situation represented in Figure 1 and Figure 5 where there are large differences in WACC outcomes for similar utilities, would be avoided.

The only other option presented in Section 5.3 that potentially has some merit (although it is not preferred by Hunter Water) is Scenario 3. The main concern of Hunter Water’s with regard to Scenario 3 is the framework surrounding the use of discretion by a regulator. Hunter Water’s concerns relate to the accountability of the regulator and are similar to those expressed by SP AusNet

18 IPART, 2012, page 77
in a submission to the AEMC “… improved confidence in the outcomes from the rate of return framework is necessary, and would be aided by requiring departures to be properly explained, by stating reasons, including assessment of relative merits, and providing evidence in support”\(^{19}\).

Hunter Water believes that if the discretion of the regulator is increased then a change is required to the regulatory regime in New South Wales such that a review or appeal process is implemented - similar to the Limited Merits Review Regime in the electricity sector whereby parties may apply for review of a decision on the grounds of error of fact, incorrect exercise of discretion, or unreasonableness of the decision. The introduction of an appeal or review mechanism was a recommendation of the NSW Commission of Audit chaired by David Gonski AC for the NSW Government\(^{20}\).

12. If we continue using Scenario 5 (our current methodology, Section 5.3), should we also have regard to the midpoint of the WACC range estimated using current data for all parameters (including the market risk premium) as a reference point?

No. Given Hunter Water’s strong aversion to using short-term estimates of WACC parameters, Hunter Water would caution IPART from introducing further short-term estimates. The volatility of such short-term estimates is clearly evidenced in Table 5.2 of IPART’s 2012 Discussion Paper, where the ranges of the five scenarios are compared. Scenario 5 (based on data as at 15 November 2012) has a real post-tax WACC range of 3.2-4.6% with a mid-point of 3.9%. Less than eight weeks later, the WACC range as at 8 January 2013 (and applied for Gosford / Wyong and Hunter Water) on the same calculation basis is 2.9-4.2% with a mid-point of 3.5%.

This clearly shows the volatility of the use of the current methodology – even if some reference is made to long-term averages by selecting the top of the range. This volatility and unpredictability would only be increased if further short-term estimates were introduced.

13. How can the exercise of discretion in selecting the WACC value from within the feasible range be structured to increase predictability and certainty while still ensuring that our primary objective for setting the WACC can be achieved?

Given our strong preference for the exclusive use of long-term estimates, the issue of WACC ranges does not arise. Long-term estimates create certainty of prices for consumers and utilities alike. Long-term estimates also avoid the inequity between incumbents and their consumers around the different (arbitrary) timing of regulatory determinations. WACC allowances for new industry entrants can be easily transitioned to ensure the same consumer objectives are met. Avoiding WACC ranges would serve to increase transparency, predictability and certainty for all stakeholders. In short, there is no trade-off between “choosing the highest quality WACC estimate and reducing uncertainty”.

\(^{19}\) SP AusNet, 2012

14. If we establish a framework to guide the exercise of this discretion, what should be included?

Hunter Water’s concerns relate to the accountability of the regulator and are similar to those expressed by SP AusNet’s submission to the AEMC, and quoted earlier in response to question 11.

To provide balance against the exercise of discretion, Hunter Water believes that a review or appeal process is necessary. The appeal process would operate similarly to the Limited Merits Review Regime in the electricity sector, whereby parties may apply for review of a decision on the grounds of error of fact, incorrect exercise of discretion, or unreasonableness of the decision.

15. What other information should be used in determining the WACC? How can this best be integrated into decision making?

To ensure the robustness of the framework, it will be important to corroborate the WACC allowance results. IPART is currently reviewing the issue of a financeability test. IPART’s intention appears to be to create a short-term financing mechanism in the event of financial market failure. Hunter Water has argued that the financeability test would be more useful as a cross-check on the WACC proposal.

The financeability test would estimate the model utility’s credit rating based on a 60% notional leverage and the proposed WACC allowance. If the WACC allowance is insufficient for the model utility to maintain a BBB/BBB+ credit rating, it would provide strong evidence that the WACC proposal is too low.

The maintenance of a stable investment grade credit rating is in the best interests of consumers. The ratings agencies use credit ratings as a precise percentage estimate of the likelihood of default within any given period. The credit rating is a conceptually similar (but more precise) approach to that used by engineers that are required to rate the likelihood of a dam wall failure. The investment-grade credit rating is an important assurance to consumers that the potential turmoil associated with utility default is prudently managed.

16. Should we use the midpoint of the estimated cost of debt in calculating the tax expense?

Hunter Water is of the position when calculating tax expense for use in the tax building block that actual debt costs of the utility should be used as was stated in the 2012 Price submission21.

If IPART were to continue to use the estimated cost of debt then Hunter Water believes that any departure from a midpoint assumption used for determining the WACC, should also be used for the cost of debt when determining the allowance for tax expense. This would promote internal consistency in assumptions. Additionally, the estimated cost of debt used should be based on long-term averages as expressed throughout this paper.

21 Hunter Water Corporation, 2012