Draft Decision on the Queensland Transmission Network Revenue Cap

Response by
Queensland Treasury Corporation

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EXECUTIVE SUMMARY

Queensland Treasury Corporation ("QTC") has prepared this paper in response to the Draft Decision released by the Australian Competition and Consumer Commission (ACCC) on the Queensland Transmission Network Revenue Cap. QTC has responded to issues relating to the determination of the cost of capital. The key issues and recommendations identified in this document are as follows:

1. It is strongly recommended that a ten-year bond rate be used as a proxy for the risk-free rate, in preference to a five-year rate. This is consistent with the nature of these assets as a long-term investment perspective. Most importantly, the market risk premium has been estimated using 10 year bonds and the rate used as the risk free rate must have the same maturity. Further, nearly all prior regulatory decisions have used a ten-year rate, including the Transgrid decision.

2. There is limited market evidence available to confirm the most appropriate margin for the cost of debt. However, based on the evidence that is available, a range of 120 to 200 basis points (predicated on the use of a 10-year bond rate) would be considered more appropriate. The debt margin adopted should therefore be between 160 and 180 basis points. This is also more consistent with previous regulatory decisions, including the recent QCA decision which adopted a margin of 165 basis points for the Distribution Network Service Providers.

3. It is proposed that compensation should occur for those risks that either arise as a consequence of this regime, that are not captured in the WACC or are costly to manage by the business under this regime. These risks include:

   - ✓ The inability to implement an optimal interest rate risk management strategy that is appropriate for Powerlink and its business environment.
   - ✓ Recognition that derivative instruments such as swaps may need to be used to manage the unique consequences of this regime for the funding strategy and the utilisation of these instruments will impose an additional cost which cannot be recovered.
   - ✓ Uncertainty as to the actual timing of the decision. If a forty-day average is adopted, the date of commencement of this period is unknown. This will make the implementation of an appropriate strategy more problematic.
   - ✓ Risk of a significant change in the market environment between the actual risk-free rate reset and the start of the new regulatory period.
   - ✓ The inability to hedge the interest rate risk on new capital expenditure occurring over the next five and a half year period upfront.
   - ✓ Increased interest costs resulting from adverse movements in credit margins during the course of the regulatory cycle.

   Ideally, these risks should be compensated by an adjustment to the cashflows. If such an adjustment does not occur, the debt margin outlined in (2) should be increased to the upper end of the range (as the margins quoted above compensate for credit and liquidity risks and do not include additional compensation for the unique risks proposed above). If a 5-year rate is adopted

rather than a 5-year rate, additional risks are posed which would require a further commensurate increase in the compensation amount/margin.

4. The use of a forty-day average concentrates risk in too short a period, making the implementation of an appropriate interest rate risk management strategy for Powerlink difficult. Being unable to implement such an efficient strategy is inappropriate for a commercial business and does expose Powerlink to real risks and ultimately, a real cashflow impact that will flow through to shareholders. Allowing Powerlink to implement its optimal debt portfolio, on the other hand, will ultimately benefit customers (via efficiency gains) and shareholders.

   As well, using a short selection period runs the risk of sampling the market at a cyclical extreme that will lead to an unreasonable return on equity. For example in the last 2 years the risk free rate has varied between 4.9% to 7.3%. A risk free rate sampled at either extreme would lead to vastly different outcomes for stakeholders beyond actual variations in commercial fundamentals.

   Even if the market is perceived to be efficient in digesting new information, the volatility indicates it has a poor track record in predicting longer-term economic fundamentals. Unlike commercial businesses that can make adjustments through time, the return on investment is decided by a random 40-day period of time for the next five and a half years. While circumstances during this 40-day period may be favourable they may also be unrealistically unfavourable, leading to unreasonable returns to shareholders. This risk cannot be managed under the proposed regime.

   QTC proposes as an alternative the use of a longer-term moving average. The preferred approach involves the use of a five-year average of monthly closes. Under this approach, the risk-free rate input would be reset annually according to the most recent outcome for this average. This would mean that Powerlink is more likely to be able to given a more reasonable return on equity and could implement a more optimal debt management strategy that is appropriate for a commercial business funding assets with long-term economic lives.

5. It is proposed that an expected inflation premium of 2.5% be used, being the mid-point of the Reserve Bank's target range.

6. It is proposed that a market risk premium of 7% is more appropriate based on published research and given the absence of firm evidence regarding a downward trend in market risk premia in Australia.

7. It is proposed that a value for gamma of 40% is justified on the basis of recent Australian market evidence.

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1. INTRODUCTION

Queensland Treasury Corporation (QTC) is the corporate treasurer to the Queensland Public Sector. This involves the provision of funding and financial risk management services to public sector entities. The provision of financial risk management includes advising the State on the risks that it will face as shareholder of Queensland government owned corporations (GOCs), such as Powerlink.

QTC lodges this submission in its capacity as corporate treasurer for the State of Queensland. The concerns raised herein have also been addressed in submissions to the Queensland Competition Authority regarding the Draft Determination on Regulation of Electricity Distribution and Draft Decision on QR's Draft Undertaking. The issues raised in this submission concern the determination of the Weighted Average Cost of Capital (WACC).

In preparing aspects of this submission, QTC has sought the advice of Dr Steven Bishop. Dr Bishop is an academic and consultant with expertise and experience in estimating the cost of capital.

2. INVESTMENT INCENTIVES

The calculation of a regulated entity's cost of capital can impact significantly on its investment incentives.

The Productivity Commission and the Queensland Competition Authority (QCA) have noted that where a cost of capital does not provide an appropriate risk/return trade-off, it will ultimately discourage investment. The potential cost to society of under-investment as a result of an inappropriate risk/return profile will outweigh the benefits consumers may derive from the perceived elimination of all economic profits. In reality, the regulators are creating an economic loss for the regulated entities.

The Productivity Commission noted the following:

> *"Access regulation is not itself without costs. Paramount among these is the potential for it to defer investment in essential infrastructure. Any such impacts on investment are a cause for concern. This is because the costs of failing to invest in essential infrastructure are likely to be larger than the costs of monopoly pricing of services it provides. Hence it is crucial that access regulation gives proper regard to incentives to invest."*[1]

The QCA observed:

> *"However, the Authority considers that in applying CAPM in a regulatory setting, regard must be had to the risks of allowing too low a rate of return in the sense that considerably more social harm could be caused by de-selecting*

[1] Productivity Commission, REVIEW OF NATIONAL ACCESS REGIME, Position Paper, March 2001, p.xii.

too low a rate of return (leading to no investment in the network) than one that is in the upper bound of a reasonable range."[2]

These arguments support the position that the regulator should adopt a conservative stance when attempting to eliminate economic profits and favour higher rather than lower estimates in developing regulated prices/revenue.

QTC believes that the Draft Decision on the Queensland Transmission Network Revenue Cap will understate the appropriate risk/return profile for Powerlink and act as an impediment to future investment.

3. COST OF CAPITAL

QTC will be raising concerns it has with the following components used in the calculation of the cost of capital:

- risk free rate;
- debt margin;
- inflation;
- market risk premium; and
- imputation.

3.1. RISK FREE RATE

The estimation of the risk free rate will impact on the returns that are available to equity providers and impact on the level of compensation the regulated entity will have available to meet its cost of debt funds.

The ACCC's Draft Decision on the Queensland Transmission Network Revenue Cap ("Decision") is proposing the use of a forty day average of five and ten year Commonwealth Government bond rates to interpolate a five and a half-year bond rate.

3.1.1. Five and Half-Year Bond Rate Maturity

The ACCC is proposing the use of a five and a half-year Commonwealth Bond rate. We believe that the ten-year Commonwealth Bond rate should be used based on the following arguments.

The first argument relates to the nature of the investment decision. Although the CAPM is a one period model, it is silent on the length of the period. Practically, it has been interpreted that the required rate of return relates to the investment horizon of the asset and the investment horizon of investors. Clearly, Powerlink's assets are long term and would be financed by long-term instruments. Consequently the required rate of return should reflect this long term. Additionally, utility financial securities are generally viewed as long term investments (not speculative). Consequently, since financial investors take a long-term view, it is appropriate that the required rate of

[2] Queensland Competition Authority Working Paper 4, ISSUES IN THE ESTIMATION OF QUEENSLAND RAIL'S BELOW RAIL COAL NETWORK EXPECTED RATE OF RETURN, p.41.

return take a long-term view. For these reasons, a ten-year bond yield is widely used in practice, given that this is the longest liquid risk-free rate benchmark available in the marketplace. Ideally a longer period would be used but the trading in longer term Commonwealth Bonds is quite thin relative to the ten-year bonds.

The second argument for using the ten-year Commonwealth Bond rate is that there must be consistency between the risk free rate and the estimation of the market risk premium. The estimation of the market risk premium is based on the stock market return less the ten-year Commonwealth Bond rate. For consistency, the maturity of the risk free rate must also be ten years. If a five-year rate is used to estimate the risk free rate, then the market risk premium must be increased accordingly.

The Decision advises that the five-year approach was used by the QCA in the recent Final Determination on Regulation of Electricity Distribution. QTC's understanding from the Final Determination is that a ten-year rate was used.[3] Whilst the QCA did discuss the alternative of a five-year rate in its determination, the ten-year rate was used in the final decision. This was for a number of reasons. Primarily, it was because of the need for consistency with the market risk premium, which has been traditionally calculated over a longer-term horizon (against a ten-year risk-free rate). If a five-year rate was adopted, they argued that the market risk premium would therefore need to be adjusted.

Lastly, the use of a ten-year rate is also consistent with most other regulatory decisions, including Transgrid.

QTC therefore strongly supports the use of the ten-year Commonwealth Bond rate.

We note that in the Decision, the ACCC appears to use the 15/2/2006 10% bond for interpolation to a five and half-year rate. If the ACCC does pursue the use of a five and half-year rate (as opposed to QTC's suggestion of the ten-year bond rate) and the application period starts in January 2002, then a more appropriate bond for interpolation is 15/11/2006 6.75% bond. If the sampling process begins in August 2001, then the rate interpolated should be five and half-years plus an extra 0.30 of a year to allow for the forward-implied shape of the yield curve.

3.1.2. Risk and Risk Allocation

Risks Inherent in the Rate-Setting Mechanism

It is understood that the ACCC is proposing to adopt a 40-day average of the 5-year Commonwealth Government bond rate. The 40-day period will precede the date of the final determination, which is currently unknown.

Once the WACC is set, there is no mechanism to review this as the key inputs change during the regulatory period. These inputs include an expected cost of debt. If there are adverse movements in interest rates during the course of the cycle (relative to the risk-free rate input set prior to the commencement of this cycle), there is a risk that

[3] QCA, "Final Determination on Regulation of Electricity Distribution", p.81.

these movements will see profitability squeezed as revenues cannot be increased to cover increased interest costs.

Understanding the nature of this risk requires breaking the cost of debt down into its key components, being:

(1) the risk-free rate; and
(2) the risk premium (this is addressed in Section 3.2).

Further, the risk-free rate consists of:

(1) a real rate; plus
(2) a premium for expected inflation.

Consideration therefore needs to be given as to who best should bear these risks and how they are rewarded under the regulatory regime.

It is understood that there is a mechanism to update inflation via an annual adjustment mechanism that flows through to the asset base, however it is not clear as to whether this will adequately compensate Powerlink for this risk. Even if inflation risk is compensated, Powerlink remains exposed to adverse movements in the real rate. The theoretical and practical consequences of this are discussed below.

Consequences of a Short Selection Period for the Management of Interest Rate Risk: Theoretical Perspective

The shortness of the selection period raises significant concerns in the management of interest rate risk, which will have adverse flow-on effects to Powerlink and it's shareholder. By setting the rate at the start of the cycle and within a very short timeframe, there is a risk that this sampling will occur during a period of cyclical extremes (or where other influences are prevailing), which can lead to an unfavourable return on equity for Powerlink and ultimately its shareholders. Furthermore, this makes the interest rate risk management task quite problematic.

As a consequence, theoretically the most appropriate risk management strategy for a regulated entity is to refinance the entire portfolio at the same time the risk-free rate is reset, seeking to 'lock in' the cost of debt for the term of the regulatory cycle. This will then achieve a better match between the actual cost of debt and 'allowable' cost of debt, hence minimising the risk that profitability will be squeezed by interest rate increases during the course of the cycle. This includes seeking to 'lock in' rates forward on any capital expenditure that is envisaged during the course of the cycle, else there is a risk that any borrowings raised at the time will be in a higher interest rate environment than the one prevailing during the reset period. Practically, such a strategy is not only potentially costly (and there is no mechanism under the current framework to recover such costs), it is difficult to implement as Powerlink will not be able to know with certainty the exact amounts and timing of its capital expenditure requirements for the next five and a half years.

This position has also been recognised in previous submissions. For example, in its submission to the ACCC in response to the Draft Statement of Principles for

Regulation of Transmission Revenues, GPU Powernet expressed concerns regarding the setting of WACC based on "current market outcomes" (even though a forty-day average is used) and how this potentially compromises effective risk management. They state:

> *"The use of a five-year risk free rate may force network owners to re-price their debt portfolios in five-year time "buckets". This is generally an inconsistent approach to managing financial liabilities given the long duration of the asset portfolio."*[4]

This submission poses the use of an average rate determined over a much longer time horizon. Even with a forty-day average they see the execution of an appropriate hedging strategy as difficult to achieve.

Citipower raised similar concerns in their submission to the Victorian Office of the Regulator General:

> *"The Distributors' cost of debt is reset each five years through the regulatory process, therefore to remain neutral to real interest rates, the Distributors' need to reset the real interest rate on their debt each five years. However, it is not necessary and certainly not prudent for the Distributors to have 100% of their debt maturing each five years. Given the long life of the assets and the regulatory regime supporting the cash flows generated by the assets, longer dated funding should be sought by the Distributors."*[5]

Their submission goes onto suggest that the debt margin added to the risk free rate should incorporate costs of having to convert longer term funding to a five-year exposure (which would be executed via the derivatives market).

According to this theoretical strategy, any debt not refinanced at the reset debt (or raised at historical rates) represents that portion of the portfolio that has been 'hedged' for the next period. However, if any of this debt has been raised in a higher interest rate environment than the one prevailing at the time of reset, the organisation could end up being penalised.

As will be discussed below, this theoretical solution will not necessarily be practically implemented for a number of reasons. Refinancing 100% of the portfolio on or around the risk-free rate reset date (which in any case is currently unknown) is not necessarily a prudent or appropriate strategy for businesses of this size and asset base (that is, with assets with such long-term economic lives). However, the current methodology gives no recognition to existing debt raised at historical interest rates. Further, this also fails to recognise any diversification that these businesses would seek to implement as part of prudent risk management.

[4] GPU PowerNet, "Comments on Proposed Regulatory Principles", 31 August, 1999, p. 33.
[5] Citipower, "2001 Distribution Price Review: Response to ORG Issues Paper", 8 June 1999, p. 55.

QTC would reject the proposition that the risk of changes in the real rate can be managed by using inflation-indexed bonds. This is for a number of reasons:

(1) This solution would require the issuance of an instrument with the same maturity profile as the term of the regulatory period. However, the market for these instruments is typically for longer-terms, hence the corporation would be exposed to refinancing risk at the end of the regulatory period. Further, the issuance of this single line of stock would deny the corporation any diversification benefits, which are part of prudent risk management.
(2) Indexation adjustments occur immediately with these instruments, however under this regime such adjustments appear to occur with a lag.
(3) The market for indexed bonds is still relatively illiquid in Australia and hence will involve an additional cost.

Consequences of a Short Selection Period for the Management of Interest Rate Risk: Practical Perspective

As noted above, if the most appropriate risk management strategy is to refinance the portfolio on or around the reset date, there are clear refinancing risks. That is, there are clear practical difficulties associated with attempting to execute a strategy successfully, where success is measured as the extent to which the actual cost of debt approximates the risk free rate (plus risk margin) selected on the reset date. These difficulties are exacerbated by the relatively small size of the Australian domestic market and the influence of structural changes or trends. Such difficulties can include:

- Market digestion difficulties. There is a relatively limited supply of appropriate bonds maturing close to regulatory reset dates, which can also lead to spikes in yields. Pressures on supply will potentially be exacerbated if there are a number of regulated entities on a similar cycle under both State and Commonwealth regimes. This is certainly a concern for QTC and this impact can also extend to all of QTC's customers who source funding from these parts of the QTC yield curve.

- Derivative costs. Given the limited supply of physical bonds, derivative instruments such as swaps may have to be used to achieve the same exposure. In this case of Powerlink, this will involve an additional cost given that funding in the physical market can generally be sourced more cost-effectively. GPU Powernet raised concerns regarding potential awareness of this strategy within the financial markets in their submission:

> *"The evidence from many of the privatisations in Victoria was that futures markets often rose (that is interest rates increasing) when the financial markets knew that a large hedge was to be placed. The network owners will therefore be at the mercy of the financial markets – a position that will dramatically increase their risk exposure."*[6]

[6] Ibid., p.34.

- Confidentiality. The date of risk free rate resets will become commercially sensitive information, although hedging activity of this magnitude will be difficult to execute undetected. Confidentiality is important as financial market participants can act to take advantage of the known refinancing task.

The final determination involves a retrospective calculation of the risk-free rate. The difficulty is, the refinancing task is *prospective*, that is, it must commence at the start of the 40-day reset period rather than the end. The date at which this will commence is unknown and if the final determination is to occur towards the end of September it is possible that this date has already passed. This means even if the intention was to implement this strategy, an optimal match in terms of the refinancing task can never be achieved.

Conclusion: Risks Remaining With the Use of a 40-Day Average

To summarise the discussion so far, notwithstanding the potential for compensation for changes in the inflation premium (although it is uncertain as to whether this compensation is adequate), Powerlink is still exposed to changes in the real rate. QTC is not of the view that the current market rate is an unbiased estimator of expected future short-term rates and hence they are exposed to the risk that the rate is sampled during a period of cyclical extreme or other sporadic influences (such as hedge fund activity).

Even if the market is perceived to be efficient in digesting new information, the volatility indicates it has a poor track record in predicting longer-term expected economic fundamentals. Unlike commercial businesses that can make adjustments to business strategies through time, the return on investment is decided by a random 40-day period of time for the next five and a half years. While circumstances during this 40-day period may be favourable they may also be unrealistically unfavourable, leading to unreasonable returns to shareholders. This risk cannot be managed under the proposed regime.

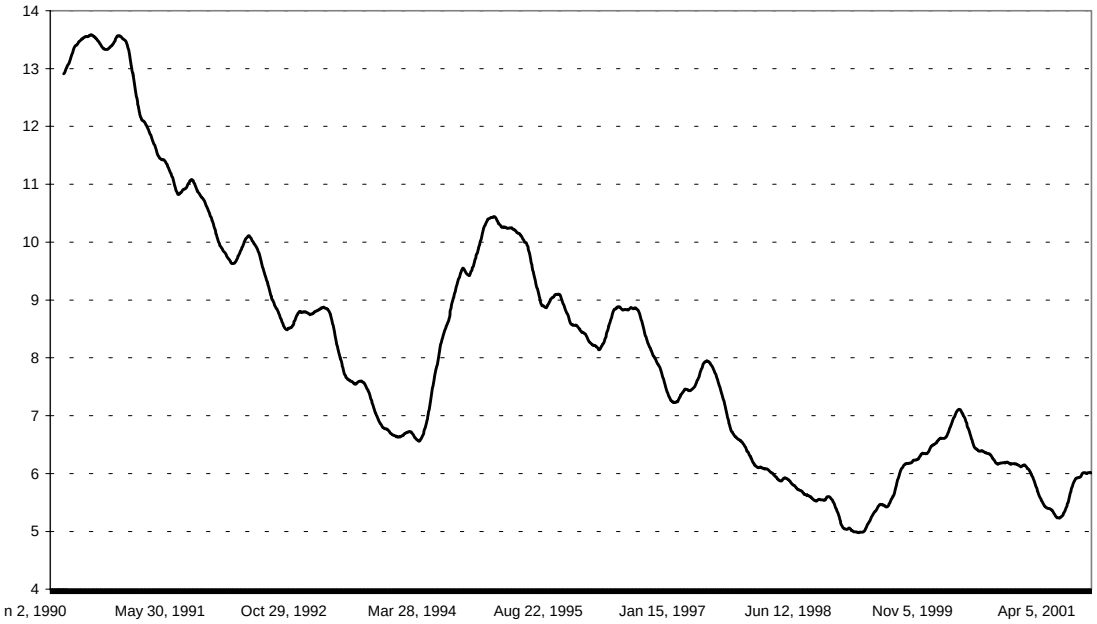
There are a number of potential influences on the real rate. Primarily, long bond yields are driven by market expectations. In an efficient market, long bond yields should be an unbiased estimator of expected future short-term rates plus any premium for rollover or liquidity risk. Whilst this may hold in the long run, QTC questions the practicalities of this assumption, at least in the short-run. The financial markets are subject to a range of influences, some of which are information based and others simply behavioural.

Whilst a general characteristic of financial markets, market uncertainty appears to have been particularly pronounced in recent times. The volatility exhibited could certainly be reflective of participants reacting to new information, however efficiency is also measured as the *speed* by which prices react to this information. In debt markets, it can take some time for this 'fair value' to be determined. Further, significant volatility can be observed on days where there are no information releases into the marketplace. Economic information releases also tend to occur with a 'lag' and markets can react to this news irrespective of whether or not there is a perception that this information had been already factored into prices. Prices are not necessarily

seen to therefore reflect information reflected in past prices, which is the minimum test of market efficiency.

There are a number of cyclical and structural influences which lead to short-term volatility in the ten year rate (refer Graph 1 below). This includes trends (which can be short-term in nature or the signal of long-term structural change) such as the activities of leveraged participants (such as the US hedge funds) and the redemption of debt by the US Government. The timing, influence and duration of such influences can be very difficult to predict and manage.

Graph 1: Commonwealth 10 Year Bond Yield (40 Day Moving Average)
1990 – 2001



To manage this risk under the ACCC's current proposal, the business would have to refinance its complete portfolio in the 40 days preceding the date of the final determination. This is a difficult task to practically implement. Further, it is inappropriate for a business of this size, which:

(1) has long term assets;
(2) should be seeking some diversification across the yield curve;
(3) will have existing debt raised at historical rates.

The use of a 40-day average is certainly preferred to the use of a shorter-term measure (such as a 20-day average or a rate on the day). However, as discussed above, QTC does not consider that the use of this short-term average is appropriate, nor does it completely remove the risk of 'perturbations' or shocks influencing the risk-free rate outcome.

If Powerlink was not operating in a regulated environment, it would implement a significantly different strategy. Depending on the businesses' risk management objectives, it would seek to build a portfolio profile which recognised the long-term nature of the assets. Further, a degree of diversification is always considered prudent for any business, particularly one with such a sizeable portfolio.

The nature of this regime therefore requires the regulated business to adopt a significantly different strategy to what would be adopted by an unregulated business operating in a commercial environment. This can also give rise to additional (uncompensated) costs to the extent that the business seeks to hedge some of these risks. This is discussed under Section 3.2 below.

Whilst the ACCC has proposed to compensate for changes in inflation as an uncontrollable risk (although it is not completely clear as to the extent of this compensation), it is not proposing to compensate for the other uncontrollable risks that remain, particularly changes in the real rate.

Recommended Alternative

The optimal long-term solution would be a mechanism which allows the WACC to be adjusted where significant interest rate shocks occur. This would:

(1) virtually eliminate the risk of a risk-free rate being set (and fixed for the next five and half years) during a period where cyclical extremes and/or other influences could see an adverse rate outcome achieved; and
(2) enable an optimal funding strategy appropriate for a business of this size and nature to implemented.

As a medium-term solution, QTC's proposed alternative is the use of a longer-term moving average. A longer-term moving average would increase the sample size (to smooth cyclical and other influences). This would involve using a long-term[7] average of monthly closes and updating the risk-free rate input annually according to the most recent outcome for this average. For example, a five-year average (reset annually) would mean that each year, one fifth of the interest rate risk will be set (as represented by the risk free rate) for each of the proceeding five years. This means that every year the entity would allow 20% of debt to mature while refinancing 20% at a maturity of five years (maintaining a spread of maturities every year to five years).

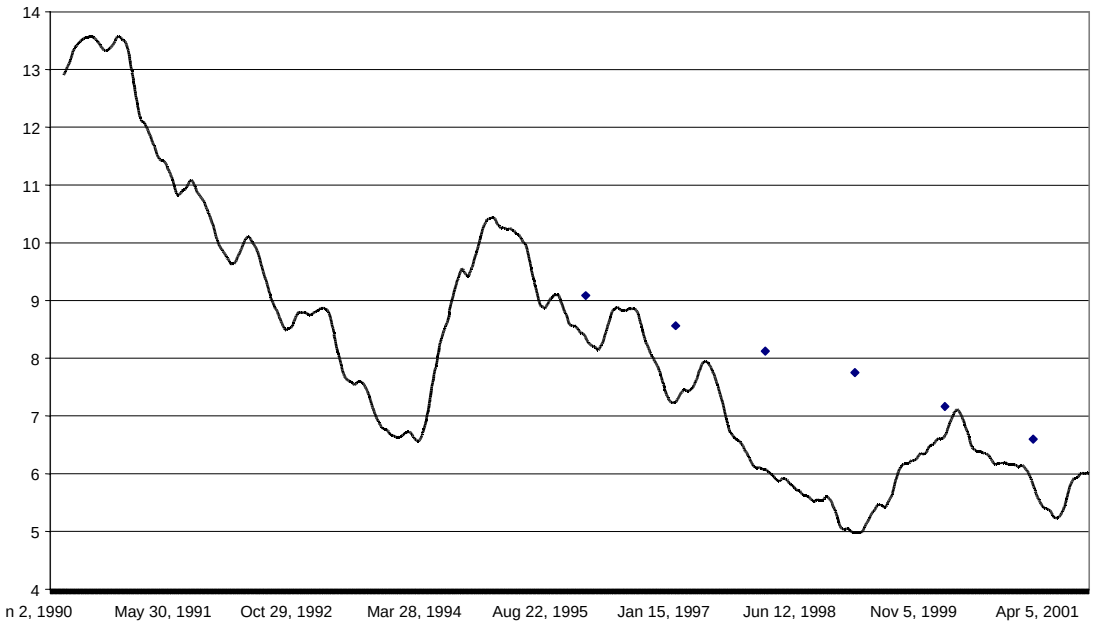
This is the strategy that a commercial organisation would ideally do, that is, spreading the refinancing task and the consequent sampling of interest rates to smooth cyclical effects. The interest rate risk management strategy would therefore involve a gradual increase in the weighted average term of debt, rather than a significant jump once every five years. This would also mean that a spread of debt maturities would be appropriate, allowing the achievement of diversification objectives (which would be sought by any corporation running portfolios of this magnitude).

[7] It needs to be sufficiently long to incorporate a full economic cycle but not too long to incorporate redundant structural circumstances.

If the risk-free rate input is updated it would need to flow through to both the cost of debt and equity. This should also be of benefit from a cost of equity perspective as it assists in managing the risk of an inappropriate rate outcome deterring productive investment.

Graph 2 below compares a forty-day moving average of the ten-year Commonwealth Government Bond to a five-year average. This clearly shows that the longer-term average follows the same structural trend, however is much smoother, essentially removing all short-term cyclical volatility.

Graph 2 – Ten Year Commonwealth Bond (40 Day Moving Average & 5 Year Average) 1990-2001



The optimal term of the average and the practical application of annually changing the risk free rate input would need to be discussed further. QTC would like the opportunity to discuss this with the ACCC.

Alternatively, if the ACCC is of the view that the WACC should remain constant throughout the regulatory cycle, a mechanism could be introduced whereby Powerlink is compensated for adverse movements in the real rate via a cashflow adjustment. This is consistent with compensation for changes in inflation as an uncontrollable risk. The potential compensation amount has not been estimated for the purposes of this submission, however QTC would be pleased to examine this if the ACCC requires.

3.2. COST OF DEBT

The cost of debt is calculated as a margin above the nominal risk free rate.

3.2.1. Risks

There are a number of debt risks inherent in the ACCC's framework, for which the regulated entity is not compensated, some of which have been discussed in the previous section but are reiterated here for completeness. These risks are either a consequence of the framework itself or are existing risks exacerbated by the inability of the regulated entity to implement an appropriate risk management strategy. The regulatory framework is therefore changing the regulated entity's behavioural response to debt risk.

The new and exacerbated debt risks include:

- The regulated entity needs knowledge of the dates prior to the commencement of the forty-day averaging period. Without this information, the regulated entity will not be able to implement an appropriate hedging strategy. Our understanding of current practice is that this average will be determined retrospectively from a date to be determined by the regulator. For this determination, it is possible that the forty-day period has already commenced. There is a cost to Powerlink for which they should be compensated if they are not able to be implement a prudent hedging strategy.
- Hedging strategies necessary as a result of the regulatory framework may impact on market capacity. As a result, refinancing strategies may have to be implemented using derivatives such as swaps. There is a cost involved for which the regulated entity should be compensated.
- A regulated entity that has implemented a practical risk management strategy would have a portion of their debt 'hedged' prior to the reset date (ie. 100% of the debt portfolio will not be re-financed at the reset date and the business will therefore be carrying historical debt over this date). Powerlink should be compensated if the debt strategy is appropriate for the organisation. The cost should be allowed in the calculation of the regulatory price/revenue.
- The implementation of a five-year rate as a proxy for the risk-free rate will penalise the regulated entity where the debt portfolio includes longer-term debt, as the debt is most likely to be carrying a higher yield. This cost differential is not recognised under the current regulatory framework. The regulated entity should be compensated for these costs.

Other debt risks that may arise during the course of the regulatory period include:

- There is likely to be a difference between the time of the final determination and the time Powerlink re-finances. During this time debt rates could move adversely, imposing a cost for which there is no compensation.
- Powerlink will have to borrow for future capital expenditure over the regulated period. The debt requirement cannot be determined at the reset date and hence cannot be hedged at the reset date (that is, debt can not be raised and 'locked in' at the same time as the risk-free rate is reset). The cost involved in financing capital

expenditure should be compensated, however the cost can not be recovered under the current regulatory framework.

- Credit margins will move over such a long-term horizon as the regulated period. If the credit spread for Powerlink increases, then it will incur higher interest costs.[8] A further risk is that Powerlink could suffer a credit rating downgrade. If this occurs, its credit margin could increase significantly. The current framework does not provide compensation to Powerlink for bearing these risks.

3.2.2. Compensation

All the debt risks identified above should be compensated through either the cost of capital or the cash flows.

Most of the debt risks identified above are unsystematic risks. The CAPM argues that you should only compensate for systematic risks, hence you should not adjust the cost of capital for these debt risks (in theory). It is however appropriate to compensate for these risks and (in theory) this should occur in the cashflows. The cost of bearing the debt risks or insuring against these risks should be reflected in the regulated price/revenue (and could flow through via an adjustment to operating costs).

For example, prudent management would insure property against damage (ie. fire). Insurance costs are a legitimate business expense although they cover unsystematic risks. If the business did not insure then investors would ultimately be required to cover the cost of any property loss. Consequently, investors would treat the probability of the event times the value of the loss as a negative cashflow when estimating the overall expected cash flow from the business.

It is QTC's view that the regulated entity should be compensated for bearing these unsystematic risks. Without compensation, the regulated entity will not achieve their cost of capital – the difference being the expected cost of the unsystematic risks (that is, the regulated entity will make an economic loss).

3.2.3. Debt Margin Range

The ACCC is proposing a 120 basis point margin, which is the mid-point of the range assumed by the regulator to be the benchmarked industry-wide cost of debt (80 to 160 basis points).

The proposed debt margin is significantly lower than debt margins allowed by other regulators (for example, the QCA determined that a margin of 165 basis points was appropriate in their determination on Regulation of Electricity Distribution). This highlights the subjectivity in determining an appropriate long-term debt margin given the lack of market evidence, that is, there is a lack of issuance activity by lower rated corporations in the Australian market. Southcorp (rated BBB+) issued debt at a margin of 167 basis points. QTC believes that an appropriate range would be 120 to 200 basis points (assuming ten-year funding) for Powerlink given its notional credit

[8] This cost is a real cost to Powerlink as it pays a competitive neutrality fee based on the difference between its 'stand-alone' cost of debt and the cost of debt based on the Queensland Government's AAA rating. This fee is reassessed quarterly based on current market spread conditions and is payable each quarter.

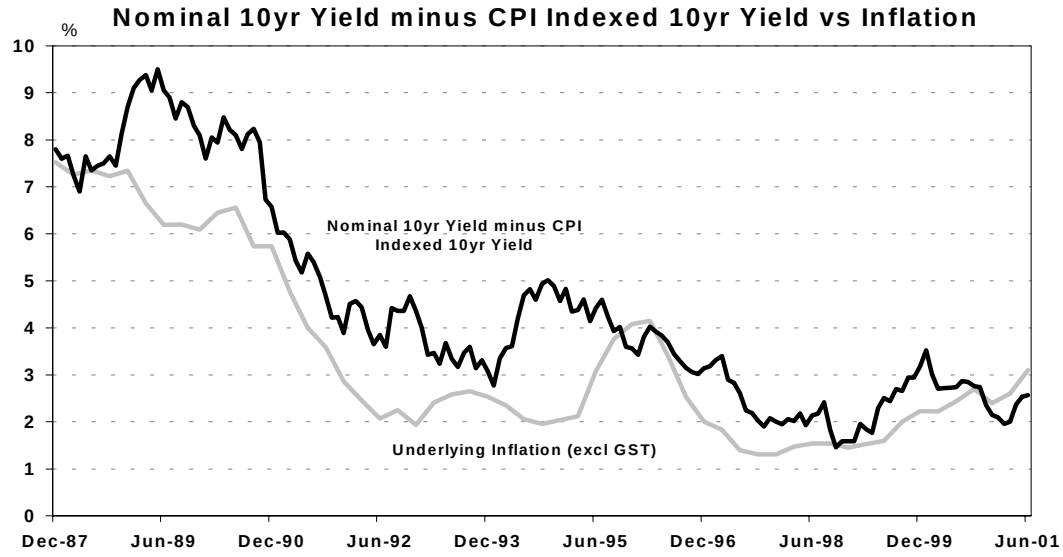
rating and the available evidence. Given this range, a debt margin of 160 to 180 basis points would seem more appropriate.

It should be noted that this margin compensates for credit and liquidity risks only (which are standard to all market participants). If a cashflow adjustment does not occur to compensate for the unique risks faced by Powerlink as a consequence of this regime (as outlined above), the margin should be increased to at least the upper end of this range. If a 5-year rate is adopted by the ACCC in the final determination, this risk premium should be increased given the additional risks/difficulties that this is seen to introduce (based on arguments presented in Section 3.1.1).

3.3. INFLATION

The ACCC is proposing the use of an expected inflation parameter that is derived from the difference between the Commonwealth Government bond rate and the Capital Indexed bond rate for the same maturity. It is understood that inflation risk is essentially passed through to consumers via an annual adjustment to the revenue cap based on the difference between actual and forecast inflation.

The bond market is becoming better at 'forecasting' inflation than it has been in the past, but it is still not perfect. Earlier in the 1990s, there was a general scepticism in the market that the Reserve Bank could or would keep inflation low and stable as promised. That scepticism has waned now given that a relatively low inflationary environment has prevailed, and accordingly, the bond market's expectations are lining up more closely with actual inflation in more recent times (refer chart below). Notwithstanding this, the chart shows that the bond market's expectations have on average, potentially overstated underlying inflation. Over the course of the 1990s, taking the mid-point of the Reserve Bank's target band for inflation (ie 2.5%) as an inflation expectation would have actually been a better forecast of inflation than that provided by the bond market inflation expectation series.



Going forward, the bond market expectations may perform better than in the past given the inflation management credibility that the Reserve Bank has earned in the

bond market's eyes, although they may do no better than the 2.5% average forecast that worked well during the 1990s. The only advantage to the bond market expectations is that there is likely to be more profile in the inflation projections based on the movement of the economic cycle. Nonetheless, this profile is expected to cycle around an average of 2.5%.

On balance, it is therefore recommended that the mid-point of the Reserve Bank's target band for inflation should continue to be used (ie 2.5%), given that this continues to serve as the best longer-term proxy for expected inflation.

3.4. MARKET RISK PREMIUM

The ACCC argues that the market risk premium range is between 5% and 7% and is proposing to adopt the mid-point of this range, being 6%.

There remains much contention regarding the choice of the market risk premium. The Australian empirical evidence over a long time period ranges between 6% and 8%. The 6% - 8% empirical range was presented and affirmed by the QCA.[9]

There has been some debate as to whether the market risk premium has trended downwards in recent years. We do not believe that there is sufficient empirical evidence to support the alleged decline over recent years in the Australian market. Most arguments for the decline in Australia are speculatively inferred from the behaviour of the market risk premium in other countries.

A recent paper provides some evidence that Australia has not behaved in the same manner as other countries. Dimson, Marsh and Staunton examined the market risk premia for twelve developed countries (including Australia) from 1900 to 2000.[10] The average market risk premium calculated for Australia relative to long-term bonds was 7.6%. The average for the twelve developed countries was lower than for Australia. The paper suggests that the premium may be lower in the future as a result of expected lower volatility in the equity markets, with the exception of Australia.

The paper also compares the historical risk premium over the first and second half of the century. Here they noted a general decline, however again with the exception of Australia. The paper further cites a survey of 226 financial economists, where they were asked to estimate the arithmetic risk premium. The result was a thirty-year market risk premium of 7%.

Supporting our concern about inferring a decline in the market risk premium from other countries is the fact that investors have a substantial home bias in their investments. Consequently potential benefits from international diversification are not fully realised.

> *"It is a well-established finding that investors are not as well diversified internationally as the theory suggests they should be. For example in 1996,*

[9] See a summary in Queensland Competition Authority Working Paper 4, Issues in the Estimation of Queensland Rail's Below Rail Coal Network Expected Rate of Return Table 8

[10] Dimson, Marsh and Staunton, "Twelve Centuries of Capital Market Returns", BUSINESS STRATEGY REVIEW, 2000, Vol 11, Issue 2.

US investors held 90% of the value of their stock portfolio in US stocks, even though US stocks represented less than half of the world market capitalisation of stocks. And such a home bias exists in all foreign countries for which statistics on ownership are available."[11]

It should be noted that any component of return attributable to imputation tax credits is not included in published measures of stock market returns. Consequently, the measured market risk premium may decline. However, it would be wrong to infer that the decline in measured market risk premium was actually a decline in the investor's expected market risk premium. The estimation of expected market risk premium should include the return attributable to imputation tax credits.

As there is no definitive evidence of the market risk premium having reduced in Australia, it is recommended that the mid-point of the 6% to 8% range be used, namely 7%. This approach is consistent with the premise that the ACCC should remain conservative in the estimation of the cost of capital, especially given the empirical evidence available for the market risk premium.

3.5. IMPUTATION

The ACCC is proposing a gamma of 50%.

QTC is of the view that the value of the imputation tax credits is in the range of zero to 50%. This position has been influenced by Australian research based in drop-off studies, taxation statistics and more recent research based on the futures market.[12] Whilst the former two sources have led to regulatory authorities accepting a value of 50% for gamma, recent research placed a value of imputation credits at zero for their sample of large firms with overseas shareholders and at 25% for the average Australian company.

Reference is made to a recent article from the Australian Financial Review[13] that highlights there is a changing emphasis for Australian companies away from higher dividend payout ratios towards capital gains. We realise that further research is required in this area, but it is a market indication that investors are placing less value on dividends and therefore the value of imputation credits.

The Draft Decision notes that the value ascribed to gamma should not be decreased because some franking tax credits are retained in the firm. QTC disagrees that investors' benefit from the value of retained franking tax credits (ie. through an increase in the value of the firm). Firstly, the firm may reduce its dividend payout and therefore distribution of retained franking credits in the future and secondly the value that may be ascribed to the franking credits is diminished. There is a cost to investors

[11] Rene Stulz, "Globalisation, Corporate Finance, and the Cost of Capital", JOURNAL OF APPLIED CORPORATE FINANCE, Fall 1999, p.23. Data on Home Bias is from L.Tesar and I. Werner, "The Internationalisation of Securities Markets Since the 1987 Crash" in BROOKINGS-WHARTON PAPERS IN FINANCIAL SERVICES, 1998, pp.281-349.

[12] Cannavan, Finn and Gray, "The value of Dividend Imputation Tax Credits", Unpublished Paper attached to Queensland Rail's Submission to the QCA.

[13] J.Whyte, "Dividends Are Out and Capital Growth In", in THE AUSTRALIAN FINANCIAL REVIEW, 24 August 2001, p.27.

by the firm retaining franking credits. Investors cannot use the franking tax credits unless they receive franked dividends. Therefore, retained franking credits diminish in value by the investor's cost of capital. Consequently, retention of franking credits leads to a decline in their value and hence, gamma should be adjusted downwards.

QTC believes that a gamma of 40% best reflects the likely value of imputation credits over the regulatory period (although lower could be potentially justified based on most recent evidence).

4. CONCLUSION

To summarise, QTC is raising the following issues with the Decision:

1. The ten-year bond rate should be used as a proxy for the risk-free rate in preference to a five and a half-year rate. This is consistent with the nature of these assets and a longer-term investment perspective. It is also consistent with past regulatory decisions.

2. The use of a 40-day average still concentrates risk in too short a timeframe, exposing Powerlink to the risk of being locked into an unnecessarily high cost of debt WACC input if the cyclical or other influences are present during this period. This also makes the implementation of an appropriate interest rate risk management strategy for Powerlink extremely difficult. Being unable to implement such a strategy does expose Powerlink to real risks and ultimately, a real cashflow impact.

   QTC proposes as an alternative the use of a longer-term moving average. The preferred approach involves the use of a five-year average of monthly closes. Under this approach, the risk-free rate input would be reset annually according to the most recent outcome for this average. This would mean that Powerlink could implement a more optimal debt management strategy that is appropriate for a commercial business funding assets with long-term economic lives.

3. It is proposed that compensation should occur via a cashflow adjustment for those risks that either arise as a consequence of this regime, that are not captured in the WACC or are costly to manage by the business under this regime. If this does not occur, the debt margin should be increased above the level proposed below as this compensates for credit and liquidity risks only. These risks include:

   - ✓ The inability to implement an optimal interest rate risk management strategy that is appropriate for Powerlink and its business environment.
   - ✓ Recognition that derivative instruments such as swaps may need to be used to manage the unique consequences of this regime for the funding strategy and the utilisation of these instruments will impose an additional cost which cannot be recovered.
   - ✓ Uncertainty as to the actual timing of the decision. If a forty-day average is adopted, the date of commencement of this period is unknown. This will make the implementation of an appropriate strategy more problematic.

- ✓ Risk of a significant change in the market environment between the actual risk-free rate reset and the start of the new regulatory period.
- ✓ The inability to hedge the interest rate risk on new capital expenditure occurring over the next five and a half year period upfront.
- ✓ Increased interest costs resulting from adverse movements in credit margins during the course of the regulatory cycle.

4. A debt margin of 160 to 180 basis points (presuming a ten-year rate) would be more appropriate given previous regulatory decisions and the limited market evidence available for debt of this term issued by firms with similar credit ratings.

5. An expected inflation premium of 2.5% should be used, being the mid-point of the Reserve Bank's target range.

6. A market risk premium of 7% is more appropriate, given the absence of firm evidence regarding the downward trend in market risk premia in Australia.

7. A gamma of 40% should be used that reflects the latest empirical and market evidence on the value of imputation credits.

To encourage investment, the ACCC needs to cognisant of the fact that erring towards a higher cost of capital for the investor will provide long-term benefits to society, whereas short-term attempts to erode economic profits will be detrimental to society.

We would be pleased to have the opportunity to work with the ACCC to resolve the issues we have raised.