22 February 2010

Queensland Competition Authority
GPO Box 2257
Brisbane QLD 4001

Dear Sirs

The Queensland Treasury Corporation (QTC) welcomes the opportunity to provide comments on the Queensland Competition Authority (the Authority) Draft Decision on Queensland Rail Network's (QRN) 2009 Draft Access Undertaking (UT3).

The primary issue we address is the Authority's proposal to change the term of the risk free interest rate and debt margin from 10 to 5 years. Comments have also been provided on the Authority's decision to not adopt QTC's alternative methodology for calculating the risk free interest rate and debt margin.

In summary, QTC strongly disagrees with the use of a 5 year term for the risk free interest rate and debt margin as it:

- greatly increases the level of refinancing risk faced by a regulated business as they are required to adopt a more concentrated debt portfolio to achieve consistency between the actual and regulated cost of debt,
- penalises a regulated business for managing refinancing risk by attempting to borrow for the longest tenor possible and using swaps to lock in a fixed interest rate for the regulatory term. A 5 year debt margin will under-compensate for the actual margin payable on longer term debt, and
- fails to satisfy the 'NPV=0' principle at the start of the regulatory period when known new capital outlays will be made during the regulatory period. When the yield curve is positive a 5 year spot interest rate will under-compensate for the true cost of capital.

A very strong regulatory precedent was recently set by the Australian Energy Regulator (AER) as a result of the review of the weighted average cost of capital (WACC) parameters for electricity transmission network service providers and distribution network service providers. The initial proposal to move to a 5 year term was ultimately rejected by the AER after receiving feedback from a wide range of interested parties.

A key point of difference with the AER's conclusion appears to be the greater level of importance placed by the Authority on satisfying the NPV=0 principle. Matching the term of the risk free interest rate and debt margin to the length of the regulatory period will not satisfy this principle. An explanation of why this is the case follows.

Failure to satisfy the NPV=0 Principle

The 5 year interest rate proposed by the Authority can only be applied to a cash flow profile with:

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- a single capital outlay today,
- equal interest receipts based on the initial capital outlay and today's 5 year spot interest rate, and
- a return of the initial capital outlay in 5 years time.

If the actual cash flow profile differs from the above and the yield curve is not flat, applying the 5 year spot rate will not meet the NPV=0 principle. Expressed differently, the internal rate of return (IRR) on the actual cash flow profile will not equal the 5 year spot interest rate.

A regulated business will have a different cash flow profile due to the capital outlays that will be made during the regulatory period. As these amounts are known at the beginning of the regulatory period it is possible to determine the IRR on the entire cash flow profile of the business over the next 5 years. In using a 5 year rate the Authority is implicitly assuming the new capital outlays will be funded based on the 5 year spot rate at the beginning of the regulatory period. This implies that the expected future spot rates equal the current 5 year spot rate.

Interest rate expectations are not relevant when calculating the IRR. At the start of each regulatory period a set of market determined, arbitrage-free implied forward interest rates exist for known capital outlays that will be made during the regulatory period. When the yield curve is positive the implied forward rates for a given maturity date will, by definition, be higher than the spot interest rate for the same maturity date. Therefore, the IRR on a cash flow profile with known future capital outlays *must be higher* than the 5 year spot rate. The example presented in Lally (2004)[1] assumes that all future capital outlays (if any) are made at exactly the same time as the reset of the WACC. This will not occur in practice.

Moving to a 5 year term will penalise a business for (quite rightly) locking in interest rates during the rate reset period on known future borrowings. The interest rates paid to do this must equal the implied forward interest rates. Arbitrage makes it impossible to lock in the spot rate on a future borrowing when the yield curve is not flat. The business will receive revenues based on the 5 year spot rate, yet the true cost of funding the underlying assets will exceed this rate. The NPV=0 principle will not be met.

These arguments also explain why a regulated business is not currently over-compensated by the full amount of the term premium between 5 and 10 year interest rates. Between January 2000 and 2010 the average term premium was 0.15% p.a. The average margin between the implied forward interest rates and the 5 year spot rate over the same period was 0.14% p.a. Depending on the size and timing of the new borrowings, part of the term premium will be offset by the extra interest costs paid to lock in interest rates on future borrowings. The extra interest costs are not the same as the debt raising costs (i.e. transaction costs) which are already compensated by an operating expenditure allowance.

Regarding the current size of the term premium the Authority states:

> *"However, on this occasion the difference between setting the risk free rate and debt margin on the basis of 10 year and 5 year bonds is material."*

The current margin between the average implied forward interest rate and the 5 year spot rate is similar to the current term premium (0.36% p.a compared to 0.35% p.a for the term premium).

[1] Lally, M. February 2004. The Cost of Capital for Regulated Entities: Report Prepared for the Queensland Competition Authority.

Using a 10 year risk free rate creates an offset between the additional interest costs paid to hedge the future borrowings and the term premium. A 5 year rate will guarantee under-compensation.

Finally, a 5 year term also violates the NPV=0 principle when the yield curve is inverse. In this scenario the IRR on the actual cash flow profile will be lower than the 5 year spot rate, leading to over-compensation. We make this point because the Authority appears to view over and under-compensation as a problem that is unique to the current use of a 10 year term:

> *"In the past, the Authority has estimated the risk-free rate, and the debt margin, with reference to the yield on the 10 year Commonwealth Government bond. At the same time, however, the Authority has questioned this approach on the basis that it will tend to over- or under-compensate the regulated business depending on the term structure of bond yields."*

As we have shown, using a 5 year spot interest rate will not overcome these problems. Accordingly, moving away from the current 10 year term cannot be justified based on the NPV=0 principle.

Moving to a 5 year term will significantly increase refinancing risk

The Authority correctly points out that regulated businesses manage refinancing risk by borrowing for average terms longer than the regulatory period and use interest rate swaps to lock in a fixed interest rate for the regulatory term. Moving to a 5 year term will penalise a business for pursuing this strategy because the debt margin will provide insufficient compensation for the actual margin paid on longer term borrowings. To avoid this problem the Authority suggests:

> *"Using borrowings which have a term that closely matches the regulatory term will avoid this mismatch, and potential risk, provided the costs of refinancing debt are adequately met."*

In following this suggestion a regulated business will significantly increase its refinancing risk by concentrating the maturity of its borrowings around the end of the regulatory period and holding these borrowings to maturity. This strategy is totally inconsistent with sound financial risk management principles. The disruptions and lack of liquidity experienced in the debt markets during the global financial crises support our claim. Any business with a large borrowing requirement should not have all its debts falling due on or around the same date, yet this is what the Authority recommends. Borrowings should also be refinanced well before the scheduled maturity date, however, this will now expose the business to the risk of refinancing at interest rates and/or debt margins that exceed those used in the regulated WACC. These risks can be better managed if a 10 year term is used.

While the choice of funding strategy is the responsibility of the business, the Authority does set an implied strategy though the choice of the term for the risk free rate and debt margin. The details of this strategy are clearly outlined in the above quote. Deviating from the implied strategy will impose an additional cost on the business for which no compensation is received. Following the strategy will expose the business to an unacceptably high level of refinancing risk. Although neither outcome is acceptable, the Authority will force a choice to be made if a 5 year risk free rate and debt margin are used.

Rejection of QTC's alternative rate setting methodology

In deciding to not adopt QTC's alternative methodology for calculating the risk free interest rate and debt margin the Authority claimed that:

> *"Second, the Authority considers that the 'cyclical averaging' is proposal deficient as it appears to favour simultaneously using a 10 year risk free rate with an assumed debt roll-over of 20% per year. However, a figure of 20% implies a 5 year term and therefore, a 5 year risk free rate and this is inconsistent with its proposal for a 10 year risk free rate."*

The Authority has commented on the choice of inputs, but provided no reasons for why the proposed cyclical averaging *methodology* is deficient. We have outlined the reasons for why a 10 year term is appropriate even when the regulatory term is 5 years.

The proposed methodology will deliver significant benefits to regulated businesses and consumers. Businesses will be able to recover the cost of debt by following a prudent and highly diversified debt funding strategy. Swaps will no longer be required to lock in an interest rate for the regulatory term. Transacting swaps on consecutive days over a short period of time will expose large borrowers to the risk of opportunistic pricing by other market participants. There may also be insufficient liquidity to accommodate the transactions in a cost-effective manner. Our proposal eliminates these risks.

Consumers will be protected from prices being set during a short term spike in interest rates and/or debt margins. If a rate reset had occurred at the height of the credit crises, prices would have been set based on a cost of debt that was higher than the cost of equity. Illogical outcomes such as this will not occur if the risk free rate and debt margin are partially updated each year. In light of these benefits we believe the proposed methodology should be reconsidered.

Concluding comments

QTC urges the Authority to maintain consistency with established regulatory precedent and continue using a 10 year term for the risk free interest rate and debt margin. A 5 year term will further encourage the use of a highly concentrated debt portfolio with an unacceptably high level of refinancing risk. The experiences of the last few years clearly show why this strategy should not be pursued. We believe the Authority's explicit endorsement of this strategy is inappropriate.

The NPV=0 principle will not be satisfied by matching the term of the risk free interest rate and debt margin with the regulatory term. When the slope of the yield curve is positive a 5 year spot interest rate cannot be applied to a cash flow profile that involves known future capital outlays. At the beginning of the regulatory period, it is the implied forward interest rates that should be applied to known future capital outlays to determine the true cost of capital. These rates will always be higher than the 5 year spot rate when the yield curve is positive, as it currently and normally is. As a consequence, applying a 5 year spot rate will lead to under-compensation for the regulated business. By continuing to use a 10 year rate, at least part of the term premium between 5 and 10 year interest rates will be offset by these incremental interest costs. A regulated business will not be over-compensated by the full amount of the term premium.

Finally, we request that the Authority reconsiders QTC's proposed methodology for calculating the risk free interest rate and debt margin. The sharp rise in interest rate volatility over the last few years highlights the risks associated with a full reset of the WACC parameters every 5 years. Our methodology is an effective and practical way of mitigating these risks and will benefit regulated businesses and consumers. Most importantly, the benefits flowing to each group will not come at the expense of the other.

Sincerely

Neil Castles
ACTING CHIEF EXECUTIVE OFFICER