



QR Access Undertaking (2005)
Submission to the Queensland Competition Authority
Voluntary Draft Amending Undertaking
October 2007



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ATTACHMENTS

- A. Inflation outlook and trends, prepared by Synergies
Economic Consulting

1. INTRODUCTION

1.1 BACKGROUND

In February 2007, Queensland Rail (QR) submitted to the Queensland Competition Authority (QCA) its 'Proposed Schedule F Amendment' in accordance with its obligations under Clause 3, Part B of Schedule F of QR's 2005 Access Undertaking (QR's Undertaking).

The submission set out QR's proposals for the amendment of Schedule F of QR's Undertaking and other consequential amendments with respect to the form of regulation to apply to coal-carrying Train Services on the Central Queensland Coal Region (CQCR).

On 19 April 2007, the QCA issued its Draft Decision on QR's Proposed Schedule F Amendment. The QCA's Final Decision was issued on 25 May 2007, together with a written notice to QR dated 25 May 2007 in accordance with Clause 3.9 of Part B of Schedule F.

QR complied with the QCA's written notice by submitting a revised Proposed Schedule F Amendment consistent with the Final Decision. On 29 June 2007, the QCA approved QR's revised Proposed Schedule F Amendment.

1.2 DRAFT REFERENCE TARIFF VARIATION

Subparagraph 3.3.1(b)(ii) of Part A of Schedule F requires QR to submit a Reference Tariff variation to the QCA within sixty (60) days after the end of each Year of the Term of QR's Undertaking. In respect of the 2006/07 year, the due date for submission of the variation was 29 August 2007.

Prior to this date, QR advised the QCA that the submission would be delayed slightly to allow for some additional work to be completed. In recognition of its responsibility for the delay and in good faith, QR provided to the QCA a draft copy of the submission.

Subsequent discussions with the QCA indicated that Schedule F precluded the QCA from considering one aspect of the draft submission, being a proposed alignment of System Allowable Revenue and Total Actual Revenue to correct the impact on the revenue cap calculations arising from the application of the Consumer Price Index (CPI).

Clause 3.2 of Part A provides that Reference Tariffs, and therefore Total Actual Revenues, will escalate in line with actual CPI. However, the financial model used to develop Reference Tariffs and System Allowable Revenues for coal carrying Train Services on the CQCR (the UT2 Reference Tariff model) provides for System Allowable Revenue to escalate in line with a forecast CPI of 2.5%. The result is a mis-alignment in the revenue cap calculations over the regulatory period between allowable revenues (defined by System Allowable Revenue) and actual revenues (defined by Total Actual Revenue).

When QR's original revenue cap proposals were being developed, this mis-alignment (being the sensitivity of the revenue cap calculations to the escalations) was not appreciated and accordingly this issue was not contemplated in QR's February 2007 submission. However, in developing the revenue cap calculations, QR identified that the actual CPI had escalated such that the effect of the mis-alignment was expected

to be material over the remainder of the current regulatory period. The NPV effect of this oversight for the 2006/07 year alone is estimated at around \$12 million.

One of QR's arguments for moving to a revenue cap approach was to ensure that volume risk was allocated to the parties in the supply chain who could most efficiently manage that risk. It was never the intention of QR or Customers that the revenue cap calculations should introduce additional risk relating to the difference between actual and forecast CPI. The outcome is also inconsistent with the original UT1 decision which provided that QR would not bear inflation risk under a price cap or a revenue cap.

Accordingly, QR had proposed in the draft submission that the issue be dealt with via an adjustment to the Reference Tariff variation. However, QR now believes that the best way to address this issue is by way of a voluntary draft amending undertaking (DAU) in accordance with Section 142 of the Queensland Competition Authority Act 1997.

In addition, QR believed that it would be unreasonable for the QCA to consider the Reference Tariff variation before a decision on the DAU is made, as the calculations supporting the variation rely upon System Allowable Revenue as defined in QR's Undertaking and which would be the subject of the proposed DAU.

On 14 September and in accordance with Subclause 3.3.3 of Part A, QR requested that the QCA grant an extension of time for submission of the Reference Tariff variation, to 30 November 2007. On 25 September a revised draft submission detailing the Reference Tariff variation was provided to the QCA for preliminary review, together with a number of detailed financial models prepared by QR in support of the submission.

On 28 September 2007 the QCA accepted QR's application for an extension to submit the Reference Tariff variation. QR notes the following comments in the QCA's letter dated 28 September:

In granting this extension, the Authority is mindful of the need for QR to submit the 2006-07 revenue cap adjustment in a timely manner. Accordingly, the Authority stresses the QR must provide all the information needed for the Authority to make its assessment of any proposed adjustment to reference tariffs, whether or not the proposed draft amending access undertaking is submitted or approved, by 30 November 2007.

In this regard, QR proposes to:

- Submit its proposed Reference Tariff variation for 2006/07 by 30 November on the assumption that the DAU is accepted; and
- Provide sufficient information in the submission to enable the QCA, if rejecting the variation under Subclause 3.3.9, to specify the amendments required to the variation on the assumption that the only amendment is based upon a rejection of the DAU. QR would then submit its revised Reference Tariff variation immediately following the QCA's decision on the variation.

1.3 KEY MESSAGES FROM THE DAU

QR's approach to the DAU is based on the following key principles:

- That QR's February 2007 submission had been prepared following consultation with the Queensland Resources Council (QRC) and the QCA over a period of approximately 12 months. This consultation focused on the form of regulation to apply to address the allocation of volume risk.
- That the consultation did not focus on inflation risk. To date, QR has not accepted general inflation risk. Rather, CPI movements have traditionally been used to pass through estimated cost escalation to Customers in accordance with Clause 3.2 of Part A.
- That as System Allowable Revenues are based upon a forecast for inflation, rather than actual inflation, the Schedule F Amendment has caused the revenue cap calculations to be exposed to a degree of inflation risk, being the difference between actual quarterly CPI escalations which impact on Total Actual Revenues, and a forecast quarterly escalation equivalent to the 2.5% per annum, used to forecast System Allowable Revenues.
- That any difference between actual and forecast inflation will influence the quantum of the Revenue Adjustment Amount (i.e. the revenue cap adjustment) and distort the calculation of the under - or over - recovery of allowable revenues.
- That this impact was not anticipated by QR - or any of its stakeholders - during QR's development of its Proposed Schedule F Amendment.
- That subsequent to submission of the Proposed Schedule F Amendment, this oversight has been found to be material and asymmetric, in that the CPI movement prior to the QCA's approval of QR's revised Proposed Schedule F Amendment was significant and is unlikely to be recovered under any reasonable outlook for inflation.
- That the inflation risk that has arisen in the change to a revenue cap is an unintended consequence of QR's revenue cap proposals.
- That for the duration of the regulatory period, System Allowable Revenue should be adjusted on a quarterly basis by applying the CPI used to escalate Reference Tariffs. This will ensure that the System Allowable Revenue that is used to determine the Revenue Cap Adjustment is based on the same escalation assumption as Total Actual Revenue.
- That QR's proposed approach for the remainder of UT2 should be reviewed further as part of UT3, including re-visiting whether the CPI used to develop the UT2 Reference Tariffs remains appropriate for adjusting allowable and actual revenues for cost escalation.
- That QR's proposed approach is consistent with the approaches used in relation to the Dalrymple Bay Coal Terminal (DBCT) and by the Australian Energy Regulator (AER).

1.3 FORM OF SUBMISSION

This submission provides a detailed discussion of the mis-alignment of Total Actual Revenue and System Allowable Revenue. The submission covers a number of separate issues as summarised below.

- Section 2 sets out a discussion of inflation risk and issues associated with the mis-alignment between actual and forecast CPI, including an estimate of the quantum of QR's exposure over the remainder of UT2.
- Section 3 sets out a discussion of the drafting issues associated with QR's proposed correction of the mis-alignment.
- Section 4 sets out the calculation of the effect of the DAU on the proposed Revenue Adjustments for 2006/07 as set out in the revised draft submission provided to the QCA on 28 September 2007.
- Section 5 provides an extract of Schedule F of QR's Undertaking with QR's proposed drafting changes to correct the mis-alignment.

In addition, Attachment A provides a discussion of the volatility of historic inflation (which in turn affects the symmetry of any inflation risk) and the outlook for inflation over the remainder of UT2, prepared by Synergies Economic Consulting (Synergies).

In this submission:

- References to QR are in the context of QR's Below Rail activities which are regulated by QR's Undertaking;
- References to UT1, UT2 and UT3 are to QR's Access Undertakings effective 1 July 2001 and 1 July 2005, and QR's Access Undertaking which is due to commence on 1 July 2009, respectively;
- References to QR's Undertaking are to the UT2 document;
- References to "mines" are to coal mine owners as end customers pursuant to a haulage agreement with an Access Holder;
- All references to Clauses, Subclauses and Paragraphs are references to Clauses, Subclauses and Paragraphs in Schedule F of QR's Undertaking; and
- Terms used that are defined in QR's Undertaking have the meaning given in QR's Undertaking.

2. IMPACT OF INFLATION RISK ON THE FORM OF REGULATION

2.1 INTRODUCTION

In accordance with Clause 3.2 of Part A, each component of the Reference Tariff (excluding the QCA Levy) is automatically escalated for inflation at the beginning of each quarter. The escalation applied is based on the most recent All Groups CPI (Brisbane) published by the Australian Bureau of Statistics.

At the beginning of each regulatory period, allowable revenues are established for each CQCR system for the term of that regulatory period. The revenues are established by applying the forecast Reference Tariffs to the total forecast System Gross Tonne Kilometres (GTKs) for all coal-carrying Train Services in that system.

The allowable revenues underlying the UT2 Reference Tariff model have been developed on an after-tax basis. In order to determine the cash flow attributable to tax a forecast of the escalation of Reference Tariffs for inflation is required. Two commonly applied methodologies in establishing a forecast are as follows:

- Base the assumption on the mid-point of the target range for inflation as set by the Reserve Bank of Australia (RBA), which is 2.5% (the range being 2.0-3.0%); or
- Estimate inflationary expectations implied by the difference between nominal and indexed yields for Commonwealth Government bonds.¹

The UT2 Reference Tariff model is based on the first assumption.

2.2 INFLATION RISK UNDER A PRICE CAP APPROACH

Under a hybrid price cap approach, QR was protected from some degree of price escalation via the escalation of Reference Tariffs using the All Groups CPI. This does not mean that QR was protected from all price escalations. In particular, QR was not protected from escalations in prices for goods and services in the areas covered by the CQCR to the extent they vary from the All Groups CPI.

Forecasts for System Allowable Revenue were still produced based on an assumed forecast for inflation. However, QR's actual revenues were based on the quarterly escalation of Reference Tariffs for actual inflation. In other words, it was actual (not forecast) inflation that determined the actual revenue which QR was entitled to earn over the regulatory period.

2.3 INFLATION RISK UNDER A REVENUE CAP APPROACH

Under a revenue cap approach, the revenue which QR is entitled to earn is limited to the allowable revenues set for each CQCR system. In principle, to ensure the same degree of protection from inflation risk as under a price cap allowable revenues should escalate in line with the same factor that determines actual revenues (i.e. actual inflation).

¹ This is done using a 'Fisher' equation, which requires two inputs: nominal bond yields and indexed bond yields. Both yields are based on the relevant ten (10) year Commonwealth Government bond, as this is regarded as the best proxy for the long-term outlook for inflation.

Under the revised Proposed Schedule F Amendment approved by the QCA, System Allowable Revenue was adopted as the revenue cap, and was determined by reference to the allowable revenues in the UT2 Reference Tariff model (which in turn was based on a forecast for inflation set for the duration of the regulatory period).

However, the fact that a) Reference Tariffs are escalated quarterly by actual CPI and b) annual System Allowable Revenue forecasts are based on a forecast inflation rate (whether that be 2.5% or some other forecast) gives rise to inflation risk (associated with the error of this forecast) for not only QR, but also for Access Holders (and mines to the extent that the revenue cap adjustment is passed through via haulage agreements).

A summary of a number of current forecasts for inflation is provided in Attachment A. The summary indicates that expectations of inflation have, and will, remain towards the upper end of the Reserve Bank's target range of 2.0-3.0%, at least in the short to medium term.

At the date of the QCA's approval of QR's revised Proposed Schedule F Amendment, actual CPI movement over the relevant year had already differed from the expectation underpinning System Allowable Revenue. As discussed further in Section 4, the impact on the revenue cap calculations for the 2006/07 year of the 0.9% difference between Total Actual Revenue and System Allowable Revenue is around \$4 million per annum for each year remaining in the regulatory period (i.e. \$12 million).

As discussed further at Section 3, given the current outlook for inflation and compounding effect of any differences it is unlikely that this shortfall will be reduced over the remainder of the regulatory period.

In view of the above, the change in the form of regulation has unintentionally exposed QR to an element of inflation risk that it was not exposed to previously. This risk has arisen unintentionally as forecast System Allowable Revenue, which was initially established under an alternate form of regulation is based on a forecast CPI increase of 2.5% per annum, has been applied in the financial model for the revenue cap.

2.4 INFLATION RISK AND REGULATED FIRMS

Why tariffs are adjusted for inflation

As noted above, QR's Reference Tariffs are periodically adjusted for changes in actual CPI, which is consistent with the practice that is generally applied to regulated entities. The main reason this adjustment occurs is to protect the regulated firm from the risk of real price reductions over the course of the regulatory period. In a competitive market, firms would be able to adjust their prices in response to increases in the prices of their underlying inputs in order to maintain profitability.

The adjustment of regulated tariffs for inflation ensures that the constraints imposed by regulation do not expose the regulated entity to a risk that it could otherwise effectively manage if it operated in a competitive market. As noted by the Institute for Research into International Competitiveness:

A regulator seeks to emulate how price adjusts in a competitive market for the regulated firm, and indeed, must do so if it is to prevent the regulated firm from facing the risk of real price reductions in the face of inflation due to inflexible regulation.

However, a regulator does not adjust prices solely (or even primarily) to assist the regulated firm. From the perspective of the community at large if the price of regulated goods do not adjust with inflation, the prices of the regulated goods become cheaper relative to non-regulated goods, and hence the community as a whole will devote too many resources to the purchase of regulated goods, resulting in allocative inefficiencies.²

General inflation is an exogenous factor that cannot be influenced by the regulated entity. Accordingly, automatic adjustment for changes in general inflation is a part of regulatory practice.

Actual versus expected inflation

The most obvious exposure to inflation risk is where tariffs are not adjusted for inflation at all. However, inflation risk can also arise in at least two (2) other ways.

1. As indicated above, where the rate that is used to adjust tariffs for inflation differs from actual inflation. An alternative is to base increases on some forecast of CPI escalation, and then apply an ex-post adjustment at the end of the regulatory period for differences between the actual and forecast inflation.³
2. Where the measure of inflation used does not reflect the change in the costs of the firm's underlying inputs. Standard regulatory practice is to index prices based on the CPI. However, this may not be appropriately reflective of the input costs of a regulated business. This issue is considered further below.

Inflation risk and QR

Consistent with regulatory practice, QR does not bear the inflation risk associated with its revenues and this was clearly stipulated by the QCA in its Draft Decision in relation to QR's 2001 Undertaking:

Both price and revenue caps assign any risks associated with the regulated entity's costs (other than inflation), including the risk that costs decline in line with the X-factor, to the regulated organisation.⁴

This principle was not disputed by the QCA in its Final Decision.

In the development of QR's Proposed Schedule F Amendment there was no actual or perceived intention on QR's part that the change in the form of regulation should introduce an exposure to inflation risk, or that if such risk arose, it should be borne by QR. As highlighted above, inflation risk is an exogenous factor that cannot be controlled by QR.

As outlined previously, accepted regulatory practice is to allow regulated entities to adjust prices for actual CPI escalation in explicit recognition that the regulatory framework limits the ability of a regulated business to respond to this business risk in

² The Institute for Research into International Competitiveness (2003), Rail Access Regulation CPI-X Review, Report prepared for the Office of the Rail Access Regulator, Curtin Business School, p.2.

³ This alternative was recently considered by the UK's Office of the Rail Regulator, mainly because ex post adjustments for actual inflation give rise to budget uncertainty for Government. It has retained the use of an annual adjustment.

⁴ Queensland Competition Authority (2000), Draft Decision on QR's Undertaking: Volume 3 – Reference Tariffs, p.236.

the same way that an unregulated business would. This risk is not currently compensated by any other means, including the cost of capital.

2.5 EFFECT OF INFLATION RISK ON THE REFERENCE TARIFF VARIATION

2.5.1 General comments

The effect of the mis-alignment on the revenue cap calculations is that over (or under) recoveries of the revenue cap will be influenced not only by variations in coal volumes, but also by variations in actual CPI relative to the forecast rate. This means that:

- When actual CPI is less than the forecast rate, the revenue cap is overstated. Accordingly, even though coal volumes may be equivalent to forecast there will be a revenue under-recovery; and
- When actual CPI is greater than the forecast rate, the revenue cap is understated. Accordingly, even though coal volumes may be equivalent to forecast there will be a revenue over-recovery.

2.5.2 Escalations during UT2

As indicated above, discussions with the QRC on QR's Proposed Schedule F Amendment commenced in early 2006. At this time, the actual CPI escalation for the 2005/06 was 2.8% (refer quarterly escalation factors in the table below).

Quarter	Forecast CPI % change	Actual CPI % change	Variance
Sep 2005	0.62	0.81	(0.19)
Dec 2005	0.62	0.54	0.08
May 2006	0.62	0.60	0.02
Jun 2006	0.62	0.80	(0.18)
Annual 2006	2.50	2.77	(0.27)

Note: some slight discrepancies due to compounding and rounding.

However, subsequent to the submission the CPI escalation for the 2006/07 was found to be 3.4% (refer table below).

Quarter	Forecast CPI % change	Actual CPI % change	Variance
Sep 2006	0.62	0.92	(0.30)
Dec 2006	0.62	1.76	(1.14)
Mar 2007	0.62	0.83	(0.21)
Jun 2007	0.62	(0.13)	0.75
Annual 2007	2.50	3.42	(0.92)

To date and on the basis of the escalation provisions in Schedule F, the year-to-date variance is running at less than for 2006/07, but nevertheless is still greater than the forecast rate (refer table below).

Quarter	Forecast CPI % change	Actual CPI % change	Variance
Mar 2007	0.62	0.83	(0.21)
Jun 2007	0.62	(0.13)	0.75
Sep 2007	0.62	0.45	0.17
Dec 2007*	0.62	1.39	(0.77)
2008 year-to-date	2.50	2.54	(0.04)

*Note: the 'Dec 2007' escalation is represented by the movement in CPIs between the March and June quarters.

2.5.3 Scenario analysis

QR has conducted scenario analysis to confirm the extent to which the total shortfall of the Revenue Adjustment Amounts is affected by the mis-alignment of CPI escalations over the remainder of the regulatory period. The scenarios tested are as follows:

1. 2006/07 escalations based on actual CPI, thereafter escalations in line with forecast CPI (i.e. actual equates to forecast).
2. 2006/07 escalations based on actual CPI, thereafter escalations at 3.0% per annum (i.e. at the top of the RBA's range).
3. 2006/07 escalation based on actual CPI, thereafter escalations at around 1.5% per annum which would effectively reduce the revenue shortfall to \$nil.

The results of the scenarios, including the net present value at QR's cost of capital (NPV), are summarised in the table below.

	2006/07 \$m	2007/08 \$m	2008/09 \$m	NPV \$m
Scenario 1	2.0	3.4	3.6	6.9
Scenario 2	2.0	4.6	7.0	10.3
Scenario 3	2.0	0.9	(3.3)	nil

In each case, it is assumed that the 2005/06 escalation is based on the forecast, rather than the actual, CPI and escalations are applied on an annual (rather than a quarterly) basis. If the actual CPI for 2005/06, 2006/07 and the first two quarters of 2007/08 were used and quarterly compounding is applied, the NPV of the total shortfall for Scenario 1 increases from \$6.9 million to \$12.3 million – for Scenario 2 the NPV of the total shortfall increases from \$10.3 million to \$14.2 million.

In this regard, the quarterly compounding represents the significant proportion of the difference, particularly where there is substantial volatility in the quarterly CPIs (as indicated in the table above for 2006/07, the lowest variation was minus 0.74% and the highest variation was 1.14% - a difference of nearly 2%. Further information on the volatility of historical quarterly CPI has been prepared by Synergies and is provided at Attachment A.

(Note that the shortfalls above are for the Revenue Adjustment Amounts per Clause 3B.1 of Part B. They are not the amounts applied to 2nd year System Allowable Revenues in accordance with Subclause 3B.3.1 and which are adjusted for QR's cost of capital. If the cost of capital is applied to the Revenue Adjustment Amounts

then the results above increase by around 40% due the effects of the compounding, particularly on the Revenue Adjustment Amount for 2006/07.)

The key messages from the analysis are that:

- The NPV effect for QR of the 2006/07 variation alone (i.e. for the period prior to the QCA's acceptance of QR's revised Proposed Schedule F Amendment) is between \$7 million and \$12 million.
- Substantial reductions in CPI relative to the forecast rate (around 1% below the mid-point of the RBA's target range) are required to reduce the NPV to \$nil.
- As discussed further at Attachment A, the likely escalation of the All Groups CPI (Brisbane), at least for the next year, is expected to be up to 0.5% above the mid-point of the RBA's target range. QR expects that if this trend continues through to the end of UT2, the NPV effect for QR of the mis-alignment will be between \$10 million and \$14 million.
- Quarterly compounding of the CPI has a substantial impact on the shortfall in the Revenue Adjustment Amounts, particularly when there is some volatility in the CPI. Given this impact, it is highly unlikely that the revenue shortfall for 2006/07 can be recovered on the basis of any reasonable outlook for CPI.

In view of the above, QR is satisfied that the financial impact on QR, particularly for the 2006/07 year, is both a material and asymmetric consequence of the mis-alignment of the CPI escalation of System Allowable Revenues and Total Actual Revenues.

2.6 QR's PROPOSAL

Remainder of UT2

As noted above, in order to correct the mis-alignment between actual and forecast CPI escalation, QR proposes that System Allowable Revenue and Total Actual Revenue be escalated on the same basis. Standard regulatory practice is to compensate regulated businesses based on changes in actual CPI, and this is currently the basis underpinning Total Actual Revenue (via Reference Tariffs). Accordingly, System Allowable Revenue also needs to be escalated for actual CPI.

As part of the Reference Tariff variation, QR proposes to revise the System Allowable Revenues to reflect the CPI escalation that is applied to Reference Tariffs (i.e. actual CPI). This revised System Allowable Revenue will then be applied to determine the annual Revenue Cap Adjustment and for the purpose of applying Subclause 2.2.6 of Part B.

QR's proposed approach is consistent with the approach used in relation to DBCT, whereby the Annual Revenue Requirement, which has been projected based on a forecast CPI escalation of 2.5% per annum, is updated annually using lagged CPI. It is also consistent with the approach used by the AER for electricity transmission businesses.

UT3

As noted above, a remaining source of inflation risk is the risk that the measure used to index Reference Tariffs (being the CPI) is an inappropriate measure of the changes in QR's underlying input costs. This risk has always existed for QR and is independent of the form of regulation.

The forecast CPI is linked to general retail price levels which, in turn, are based on goods generally purchased by households in Australian capital cities. This basket of goods is likely to differ significantly from the inputs used in QR's Below Rail business – not only in terms of the basket of goods and services but also the factors driving changes in relative price levels. It may therefore be more appropriate to consider constructing an index that is more representative of the underlying cost of its inputs and which provides QR with an appropriate incentive to outperform through efficiency gains.

The QCA considered this issue as part of the development of QR's 2001 Undertaking:

The inflator used in setting the incentive mechanism ideally should reflect, as closely as possible, the basket of goods and services used as inputs to the regulated business. There are several alternative indices to reflect these prices. Perhaps the best way of doing this is to use a specially constructed index that weights together the prices of inputs by their shares in industry costs.⁵

It was decided at the time to retain the use of the All Groups CPI (Brisbane) given an appropriate alternative measure could not be readily identified. However, the QCA proposed that the feasibility of developing a rail-specific inflator would be subsequently investigated. This was not considered during the development of the UT2 document, at least in relation to the CPI – X mechanism (the use of a construction index was examined in the context of re-valuing QR's Regulatory Asset Base).

In view of the above, it is recommended that the following issues be re-considered as part of the UT3 review:

- The alignment of actual revenues in line with allowable revenues (as discussed further below, this can be achieved not only through the escalation of System Allowable Revenues but also Reference Tariffs).
- The basis for escalating the aligned System Allowable Revenues and Total Actual Revenues.

⁵ Queensland Competition Authority (2000), Draft Decision on QR's Undertaking: Chapter 16 – Incentive Regulation, p.240.

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3. DRAFTING ISSUES

3.1 SYSTEM ALLOWABLE REVENUE

System Allowable Revenue is defined under Clause 5.2 of Part A. The definition relates to AT₂₋₄ and the AT₅ component of Access Charges and includes:

- The values specified in Clauses 5.4, 6.4, 7.5 and 8.5 of Part B for each relevant Individual Coal System Infrastructure (as amended from time to time); less
- Deductions (if any) in connection with revenue QR was entitled to earn but did not earn due to QR's breach of an Access Agreement or negligence in the provision of Below Rail Services (provided that breach or negligence resulted in the non-provision of 10% or more of Train Services scheduled under affected Access Agreements for any month in the relevant Year).

The definition of System Allowable Revenue prevents either QR or the QCA from making CPI adjustments to System Allowable Revenue beyond those already comprised in the values specified in Clauses 5.4, 6.4, 7.5 and 8.5 of Part B.

3.2 TOTAL ACTUAL REVENUE

Total Actual Revenue is also defined under Clause 5.2 of Part A. The definition is expressed in respect of AT₂₋₄ and the AT₅ component of Access Charges and is, in each case, equivalent to the total revenue from the relevant Access Charge component that QR has actually earned over the relevant Year (whether or not actually collected).

The definition allows for adjustments in connection with Take or Pay amounts, Relinquishment Fees and transfer fees that QR is entitled to earn. As Total Actual Revenue is effectively actual revenue, the escalation of Reference Tariffs in accordance with Clause 3.2 of Part A is reflected in Total Actual Revenue.

3.3 CALCULATION OF THE REVENUE ADJUSTMENT AMOUNT

Paragraph 3.3.7(d) of Part A provides that the QCA will approve a proposed variation to Reference Tariffs in connection with the revenue cap adjustments if the variation is in accordance with Clause 3B of Part B (subject to any adjustments for an Increment or in relation to any relevant alleged breach or negligence by QR). QR must therefore prepare the Reference Tariff variation in accordance with Clause 3B.

However, the current process for determining the revenue cap adjustments has insufficient flexibility to make allowance for the mis-alignment between the CPI escalation forecast for System Allowable Revenues and the actual CPI escalation reflected in Total Actual Revenues.

To the extent that either QR or the QCA may have discretion in respect of calculations under Clause 3B of Part B, any such discretion does not extend to CPI adjustments for System Allowable Revenue or Total Actual Revenue or varying the express wording in QR's Undertaking. As discussed further below, for an alignment of the CPI escalation of both System Allowable Revenue and Total Actual Revenue to occur, amendments to QR's Undertaking are required.

3.4 ALTERNATIVE TREATMENTS

A range of drafting alternatives exists to correct the mis-alignment in CPI escalation.

Informal agreement between QR and the QCA

QR and the QCA could informally agree, without amending QR's Undertaking, on a process for addressing how CPI will be dealt with in relation to the revenue cap adjustments and then implement that process without amendments to QR's Undertaking. This option is **not** desirable as it:

- Involves a departure from the express terms of QR's Undertaking;
- Gives rise to a risk that an Access Holder (or its Customers) may challenge a Reference Tariff variation on the basis that the provisions in Schedule F have not been complied with; and
- Gives rise to uncertainty for QR in terms of both the operation of QR's Undertaking and its compliance.

This option is also inconsistent with the conclusions in Section 2.6 that an amendment to QR's Undertaking is required.

Deflation of Total Actual Revenue

Total Actual Revenue could be deflated to match the forecast CPI escalation used in System Allowable Revenue (i.e. at 2.5% per annum). Issues with this approach include the following:

- It does not readily account for the use of Total Actual Revenue in Subclause 2.2.6 of Part B and the need to then adjust the Take or Pay amounts QR would be entitled to earn from Access Agreements; and
- It ignores the fact that the calculation of System Allowable Revenue gives rise to the present difficulties and not the calculation of Total Actual Revenue, which is essentially an actual amount (as opposed to a forecast amount).

Inflate System Allowable Revenue in alignment with the actual CPI embodied in Total Actual Revenue

Rather than deflating Total Actual Revenue, System Allowable Revenue could be inflated to appropriately take account of actual CPI escalations for Reference Tariffs. This approach involves amending the definition of System Allowable Revenue to allow for an adjustment to cater for the difference between the CPI escalation of Reference Tariffs embodied in Total Actual Revenue and the forecast CPI escalation embodied in the amounts provided for under Clauses 5.4, 6.4, 7.5 and 8.5 of Part B.

QR would calculate such an adjustment when determining the System Allowable Revenues for each CQCR system, and would include the methodology and results for such an adjustment as part of the Reference Tariff variation.

The amendments needed to QR's Undertaking for this approach are relatively minimal, provided that the System Allowable Revenues in the UT2 Reference Tariff model are not amended.

Issues with this approach include the following:

- It involves a double (and potentially complex) handling of System Allowable Revenues for escalations in CPI; and
- It adversely affects the transparency of the current revenue cap adjustment process, which provides for the disclosure of System Allowable Revenues within Schedule F.

Amending System Allowable Revenue values to be CPI neutral

It is possible (although complex) to separate the CPI escalation component from the System Allowable Revenues in Clauses 5.4, 6.4, 7.5 and 8.5 of Part B. Those clauses could then be amended by replacing the existing System Allowable Revenues with CPI 'neutral' System Allowable Revenues which are then escalated in line with Reference Tariffs.

This approach:

- Is consistent with the revenue cap calculations under Subclause 2.2.6 of Part B;
- Should ensure a consistent CPI escalation methodology for System Allowable Revenue;
- Does not involve adjusting Total Actual Revenue or Take or Pay amounts to represent something other than actual amounts;
- Removes the need to assume a CPI escalation for System Allowable Revenues; and
- Is consistent with discussions between QR and the QCA regarding the adjustments which could be made to the revenue cap calculations (refer Section 4 below).

The main concerns with this approach are that the UT2 Reference Tariff model would need to be changed (this would result in the model being inconsistent with the QCA's own post-tax Reference Tariff model) and QR's Undertaking would require a greater number of amendments than the previous approach.

3.5 PREFERRED SOLUTION

QR proposes that a 'minimalist approach' be taken for amendments to QR's Undertaking to address the present CPI issue.

- For the remainder of UT2, amending QR's Undertaking to allow the escalation of System Allowable Revenues consistent with the actual CPI applied to Total Actual Revenues; and
- For UT3, considering new drafting aligning the escalation provisions for System Allowable Revenues and Total Actual Revenues generally.

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4. EFFECT ON THE REVENUE CAP ADJUSTMENT

As indicated previously, QR proposes to make adjustments to the UT2 Reference Tariff model to align the escalation of System Allowable Revenue with Total Actual Revenue.

This alignment would be effected by adjusting the 'check sheet' supporting the UT2 Reference Tariff model, and it is from this sheet that a 'smoothed' System Allowable Revenue was derived for the purposes of QR's February 2007 revenue cap submission. The revenue stream was originally smoothed based on a forecast CPI of 2.5% per annum, compounded quarterly.

However as noted at Section 2.5 above, actual CPI escalation in the 2006/07 year was around 1% higher than the forecast CPI. Accordingly, the tracking of actual revenue (as defined by Total Actual Revenue) did not match the allowable revenues (as defined by System Allowable Revenue). This mis-alignment is due entirely to the difference between the actual and forecast CPI.

An adjustment has been made in this 'check sheet' to allow it to switch between actual and forecast CPI. Since Total Actual Revenue is based on Reference Tariffs that are compounded at actual CPI from the date to which Reference Tariffs are backdated (i.e. 1 July 2005), the adjustment is made from the start of the current regulatory period i.e. for 2005/06. This adjustment allows the System Allowable Revenues to increase in-line with the actual revenue collected (i.e. to compare 'apples with apples').

Correcting this difference for 2006/07 would result in an increase in total System Allowable Revenues for 2006/07 alone (and hence the Reference Tariff Variation for 2008/09) of around \$4 million.⁶

The System Allowable Revenues per Clauses 5.5, 6.5, 7.5 and 8.5 and the amended System Allowable Revenues are set out below.

System	System Allowable Revenue per Schedule F \$000	Revised System Allowable Revenue \$000	Increase \$000
AT ₂₋₄			
Blackwater	126,860	128,288	1,428
Goonyella	116,284	117,616	1,332
Moura	28,440	28,766	326
Newlands	23,308	23,575	267
Total AT ₂₋₄	294,892	298,245	3,353
AT ₅			
Blackwater	24,842	25,127	285
Goonyella	35,903	36,315	411
Total AT ₅	60,746	61,442	696
Total	355,637	359,686	4,049

⁶ As this amount reflects quarterly compounding and the actual CPI for the 2005/06 year, it is substantially greater than the impact for 2006/07 as set out in the scenario analysis at Section 2.5 above.

If approved by the QCA, the revised System Allowable Revenues would be incorporated in the Reference Tariff variation for 2006/07, which would then be applied to the AT₃, AT₄ and AT₅ Reference Tariff components for the 2008/09 year.

5. PROPOSED SCHEDULE F AMENDMENTS

5.1 INTRODUCTION

Based on the discussion at Section 3 above, the amendments to Part A of Schedule F are proposed below (additional text underlined).

5.2 SYSTEM ALLOWABLE REVENUE (Clause 5.2)

“*System Allowable Revenue*” means:

- (i) for AT₂₋₄ in relation to an Individual Coal System Infrastructure, the total revenue from AT₂₋₄ arising from all Access Agreements in relation to that Individual Coal System Infrastructure that QR is entitled to earn over the relevant Year, as specified in Clauses 5.4, 6.4, 7.5 and 8.5 of Part B (as amended from time to time) subject to a CPI adjustment; and
- (ii) for the AT₅ component of Access Charges for either the Blackwater System or the Goonyella System, the total revenue from the AT₅ component of Access Charges arising from all Access Agreements in relation to that Individual Coal System Infrastructure that QR is entitled to earn over the relevant Year, as specified in Clauses 5.4 and 6.4 of Part B (as amended from time to time) subject to a CPI adjustment,

less

- (iii) for:
 - paragraph (i) of this definition any revenue from AT₂₋₄; or
 - paragraph (ii) of this definition any revenue from the AT₅ component of Access Charges,

that (subject to Subclauses 3.3.7A to 3.3.7C) the QCA reasonably determines that QR would have otherwise been entitled to earn under all Access Agreements in relation to that Individual Coal System Infrastructure during the relevant Year, but which QR was not entitled to earn due to its own breach of an Access Agreement or negligence in the provision of Below Rail Services, provided that if that breach or negligence resulted in the non-provision of less than 10% of the total number of Train Services scheduled under an affected Access Agreement for any month during the relevant Year then no deduction will be made for revenue that QR was not entitled to earn under that Access Agreement in connection with that breach or negligence.

The CPI adjustment referred to in paragraphs (i) and (ii) is intended to adjust the amounts specified in Clauses 5.4, 6.4, 7.5 and 8.5 of Part B respectively (as amended from time to time) by adjusting the CPI escalation used in calculating those amounts to be equivalent to the actual CPI escalation of Reference Tariffs for the applicable period.

5.3 VARIATION OF REFERENCE TARIFFS (Subclause 3.3.7)

3.3.7 Where QR submits a variation of a Reference Tariff in accordance with Subparagraph 3.3.1(b)(ii):

- (a) the variation must:
 - (i) nominate the Reference Tariff to be varied;
 - (ii) include details of the methodology, data and assumptions used to vary the Reference Tariff [and to make any CPI adjustment for the purposes of paragraphs \(i\) or \(ii\) of the definition of System Allowable Revenue in Clause 5.2 of Part A](#); and
 - (iii) include details of and reasons for any amount used in preparing that variation in lieu of an Increment having been determined by the QCA;
- (b) the QCA may, to the extent it considers it appropriate to do so:
 - (i) publish details of QR's proposed variation of the relevant Reference Tariff; and
 - (ii) invite and consider comments from stakeholders regarding the proposed variation,

(including in relation to any Increment sought by QR, or any deduction that should be made from System Allowable Revenue under subparagraph (iii) of the definition in Clause 5.2 of Part A). To the extent that stakeholders provide comments, QR must be given a reasonable period in which to provide a response to those comments to the QCA;
- (c) the QCA may adjust the variation but only to the extent that:
 - (i) the QCA has made a determination under Subparagraph 3B.2.1(b) of Part B in relation to an Increment; or
 - (ii) the QCA has made a determination regarding a deduction from System Allowable Revenue under subparagraph (iii) of the definition in Clause 5.2 of Part A; and
- (d) the QCA will approve the proposed variation of the Reference Tariff if the QCA is satisfied that the variation of the Reference Tariff is in accordance with Clause 3B of Part B and subject to any adjustment under Paragraph 3.3.7(c).

Attachment A - Inflation outlook and trends

This Attachment has two parts. The first part provides a general overview of inflation expectations in the short to medium term in Australia. This can be used to inform an assessment of whether deviations from the 2.5% inflation forecast are likely for the remainder of this regulatory period. The second part examines the general volatility of inflation through time.

A.1 Inflation outlook

The following table summarises market forecasts of inflation in the short to medium term (that is, over the next twelve months). It presents findings from the Reserve Bank of Australia (RBA), the Federal and State Treasuries, a number of major banks and business surveys.

Table A.1 Inflation outlook

Source	Outlook	Comments
RBA <i>Statement of Monetary Policy August 2007</i>	Expects CPI and underlying inflation to be 3% over the year to June 2008, and reduce to between 2.5% and 3% to June 2009.	Underlying inflation is currently running around 2.75%. Modest increase in the outlook for growth in the medium term (increasing to 4.25% to June 2008), with domestic demand growing a little above the trend. Unemployment is expected to remain low.
Commonwealth Treasury <i>Budget Paper No. 1 – Budget Strategy and Outlook 2007-08</i>	Inflation to be 2.75% over the year ending June 2008.	Expect continued increase in rents and housing prices, which together account for around 13% of the CPI. Low water allocations in the Murray Darling Basin will place pressure on food prices. These impacts will be moderated by the downward trend in the price of certain tradeable items, such as clothing, footwear and computers.
Queensland Treasury <i>Queensland State Budget Papers: Budget Paper 2 – Budget Strategy and Outlook</i>	Inflation to be 2.75% over the year ending June 2008.	Actual inflation has been running around 3%. The expected tapering of inflation to 2.75% is mainly driven by an assumed return to normal seasonal conditions for fruit growers and an increase in labour productivity growth (which will restrain growth in production costs).
Commonwealth Bank <i>Commsec – Weekly Economic Signpost as at 8 October 2007</i>	Inflation to be 2.5% 2007-08 (headline).	Consumer sentiment moderating.
Westpac <i>Westpac Market Insights – Australia, New Zealand the G3 August 2007</i>	Inflation to return to the upper end of the RBA's target band in December quarter 2007 and March quarter 2008.	Inflation will revert to upper end of band as subdued results from earlier in year 'drop out' of the measure. This is because of broad-based price pressures evident in June quarter 2007 as well as July inflation gauge produced by the Melbourne Institute.
ANZ <i>ANZ Economic Outlook, September</i>	Inflation to rise to 2.7% in 2008 and 2.8% in 2009.	Benign inflation observed recently is based on muted tradeable inflation (that is, goods and services that are sensitive to international price pressures), which in turn has been driven by the appreciating domestic currency. On the other hand, non-tradeable inflation (which

Source	Outlook	Comments
<i>Quarter 2007</i>		is mainly determined by domestic price pressures) has accelerated well above the RBA's target band. With economic growth expected to lift in 2008, these domestic pressures are expected to increase further. Depreciation of the Australian dollar will put some pressure on tradeable inflation.
National Australia Bank <i>Australian Outlook – July 2007</i>	Inflation to reach close to 3% by beginning of 2008, moderating to 2.6% by end of 2008.	Core inflation has not slowed as much as originally thought. Pressures on inflation based on expected strong growth, tight labour markets and evidence of widening margins.
St George <i>Economic Outlook – September 2007</i>	Inflation to increase to 3% by the March quarter of 2008, moderating to 2.3% in the June quarter.	-
Surveys		
National Australia Bank Monthly Business Survey – August 2007	Confidence is down, but still robust. Purchase cost inflation has fallen slightly recently while retail prices have remained stable.	
ACCI – Westpac Survey of Industrial Trends September Quarter 2007	Predicts a strong rise in average selling prices in December quarter 2007. Predictions of increases have consistently exceeded actual outcomes in the last three years. There has been significant increases in average unit costs (doubling in September quarter 2007) however this is expected to moderate in the December quarter 2007.	
Dun & Bradstreet Survey of National Business Expectations September 2007	Expectations for selling prices are up 4% from previous quarter.	

The overall conclusion appears to be an expectation that inflation will be in the upper end of the RBA's target band in the coming twelve months. Queensland Treasury's forecast for Queensland is 2.75% for the year ended June 2008. Given the significant growth experienced in Queensland (especially when compared to states other than Western Australia), it is reasonable to expect that inflation in this state should remain at or above the national average.

A.2 Inflation trends

A.2.1 Historical patterns

The RBA has made a public commitment to use monetary policy to maintain the CPI within a target range of 2% and 3% per annum in the medium term. This has been in place since 1993, although the first formal statement of this was made in the *Statement of Conduct on Monetary Policy*, which was issued in August 1996.

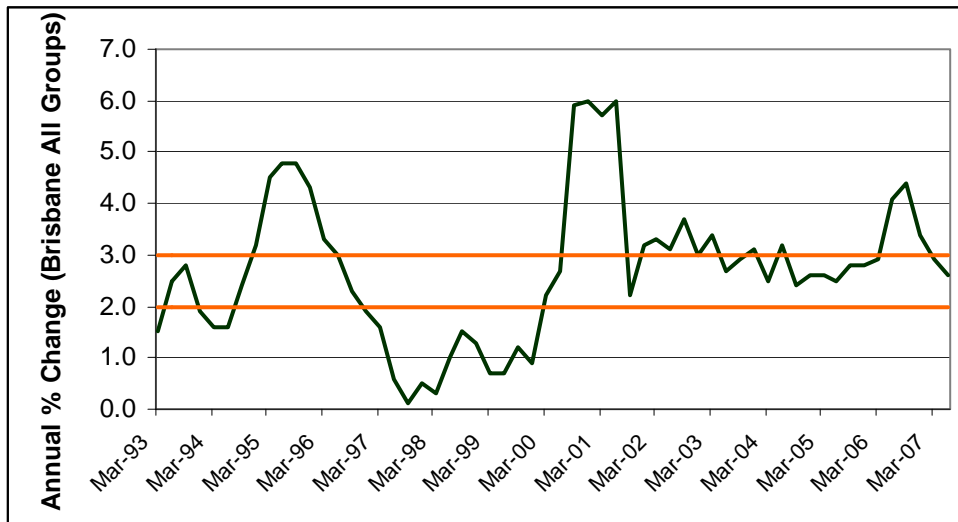
It is therefore worthwhile to examine:

- the extent to which actual CPI has remained within this band; and

- volatility within the band, particularly relative to the mid-point of 2.5%, which is the assumption that is currently used to forecast QR's System Allowable Revenues.

Figure A.1 shows the Brisbane All Groups CPI since the beginning of 1993 relative to the target 2% to 3% band.

Figure A.1 Brisbane All Groups CPI (Annual % Change from Previous Year)



Data source: Australian Bureau of Statistics

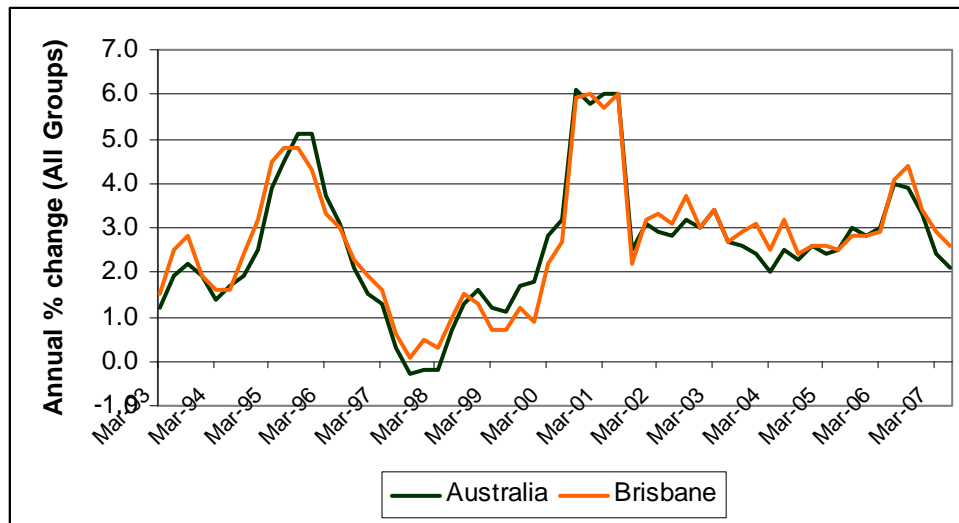
The average CPI over this period is 2.7%. The standard deviation, or average dispersion from this average, is 1.4%.

This shows that the CPI has frequently moved outside of the RBA's target range, and has done so in 37 of the 58 quarters. The average deviation from the 2.5% mid-point of the target range is +0.22%. The actual CPI has been above this mid-point in 33 of the 58 quarters, and below in only 22 quarters.

This shows that the CPI is not only volatile, but historically is more likely to have been above 2.5% than below. As such, it cannot be concluded that deviations above and below the 2.5% mid-point will 'cancel each other out' over time.

It is also useful to compare the Brisbane (All Groups) CPI with the national average (which is a weighted average of the eight capital cities). This is shown in Figure A.2.

Figure 2 All Groups CPI – Brisbane and Australia (annual % Change from Previous Year)



Data source: Australian Bureau of Statistics

As expected, the Brisbane CPI has closely tracked the national average. On average, the Brisbane CPI has been 0.11% above the CPI for Australia over this period.

A.2.2 Predicting inflation through time

It is often thought that inflation follows a random walk, in other words, past inflation cannot be used to predict future inflation. Ricketts and Rose (1995) examined inflation data in the G-7 countries and found that patterns were best described as a random walk during periods of high and rising inflation.¹ In other times, the pattern was best described as an autoregressive process (this is where inflation is modelled as a lag on itself). This means that the impact of a change in inflation can be observed over several periods. The analysis also found that higher volatility is generally observed in periods of high inflation, which is consistent with the findings of other studies.

Another way of examining the behaviour of inflation is to evaluate the performance of inflation forecasting models. A commonly used method to forecast inflation (at least historically) has been the Phillips curve, which is an econometric approach based on an assumed relationship between inflation and the level of capacity utilisation in the economy (or the 'output gap'). Robinson et al compared the performance of alternative inflation forecasting models and found that the Phillips curve method performed relatively poorly compared to a random walk model and autoregressive models.²

¹ N. Ricketts & D. Rose (1995), Inflation, Learning and Monetary Policy Regimes in G-7 Economies, Bank of Canada Working Paper 95-6.

² T. Robinson, A. Stone & M. van Zyl (2003), The Real-Time Forecasting Performance of Phillips Curves", RBA Research Discussion Paper 2003-12.

Ricketts and Rose also concluded that inflationary expectations will tend to be influenced by the perceived probability of a regime change (for example, a change in the policy in relation to inflation targeting). Evans and Wachtel observed that uncertainty about the inflation process contributes to the overall degree of inflation uncertainty, which can also create a sizeable ex post bias in long-term inflation forecasts.³ While there is a postulated link between inflation uncertainty and economic activity this link is not clear. However, this study found that inflation uncertainty can influence economic behaviour, particularly in relation to any medium-term uncertainty surrounding the inflation regime (that is, within two to three years).

The issues surrounding the behaviour of inflation through time are clearly complex and have only been briefly touched on here. What this does highlight is that inflation is highly uncertain and unpredictable, which presents significant difficulties for inflation forecasting.

In particular, if an inflation forecast is to be based on the mid-point of the RBA's target range (2.5%), it cannot be assumed that actual deviations around this mid-point will be symmetric. While the RBA has made a commitment to maintain the CPI within a 2% to 3% band, this does not imply that on average through time, it is targeting, or will achieve, an outcome within the mid-point of this range.

³ M. Evans & P. Wachtel (1993), "Inflation Regimes and Sources of Inflation Uncertainty", *Journal of Money, Credit and Banking*, Vol.25, No.3, pp.475-511.