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BBI (DBCT) Management Pty Ltd

**Short Gain Submission
Modelling**

10 May 2007



**TABLE OF CONTENTS**

SECTION	Page No.
1. INTRODUCTION	1
2. SUMMARY MODELLING OUTPUTS	2
3. IDC MODEL	3
4. DEPRECIATION	5
5. ANNUAL REVENUE REQUIREMENT	6
6. REFERENCE TARIFF AND REVENUE CAP	6

APPENDICES

Appendix No.	Description
1	Memorandum from NERA



Short Gain Modelling Submission

1. INTRODUCTION

BBI (DBCT) Management Pty Ltd (**BBI DBCT**) has provided the following models and spreadsheets (in electronic form) to the Queensland Competition Authority (**QCA**):

- return on capital over the construction period calculation (also known as Interest During Construction or IDC) model;
- depreciation – estimated useful life calculation model;
- Annual Revenue Requirement (**ARR**) calculation model; and
- Revenue Cap and Reference Tariff calculation.

These models and spreadsheets form part of the Short Gain submission.

The main outputs from the models and spreadsheets are:

- the ARR to apply for 2006/07 financial year in relation to the short gain assets (the ARR to apply for the 2006/07 financial year relating to existing assets at 1 July 2006 has already been approved by the QCA);
- the ARR to apply for 2007/08 financial year in relation to the short gain assets (the ARR to apply for the 2007/08 financial year relating to existing assets at 1 July 2006 is the subject of a separate submission to the QCA dated 10 May 2007);
- the Revenue Cap to apply for the 2006/07 financial year on existing and short gain assets;
- the Revenue Cap to apply for the 2007/08 financial year on existing and short gain assets, assuming BBI DBCT's proposed ARR's to apply for the 2007/08 financial year for existing assets and short gain assets are approved by the QCA;
- the Reference Tariff to apply for the period from 1 July 2006 to 30 August 2006 (i.e. pre short gain expansion) and to apply from 1 September 2006 to 30 June 2007 (i.e. post short gain expansion); and
- the Reference Tariff to apply for the 2007/08 financial year on existing and short gain assets, assuming BBI DBCT's proposed ARR's to apply for the 2007/08 financial year for existing assets and short gain assets are approved by the QCA.



2. SUMMARY MODELLING OUTPUTS

In summary, BBI DBCT proposes the following (as derived from the models) apply for the 2006/07 financial year and the 2007/08 financial year and formally requests QCA approval in accordance with the approved Dalrymple Bay Coal Terminal (**DBCT**) Access Undertaking (**Access Undertaking**):

2006/07	\$
ARR applying to existing assets for the 12 month period from 1 July 2006 to 30 June 2007 (as approved by the QCA on 18 April 2007)	88,578,285
ARR proposed for short gain assets for the 10 month period from 1 September 2006 to 30 June 2007	2,199,493
Revenue Cap applying to existing assets for the 12 month period from 1 July 2006 to 30 June 2007	87,112,340
Revenue Cap proposed for short gain assets for the 10 month period from 1 September 2006 to 30 June 2007	2,163,092
Reference Tariff applying for the 2 month period from 1 July 2006 to 30 August 2006 (pre short gain)	1.4659
Reference Tariff proposed for the 10 month period from 1 September 2006 to 30 June 2007 (post short gain)	1.5096

2007/08	\$
ARR applying to existing assets for the 12 month period from 1 July 2007 to 30 June 2008 (subject to QCA approval of separate submission dated 10 May 2007)	89,138,229
ARR proposed for the short gain assets for the 12 month period from 1 July 2007 to 30 June 2008	2,673,332
Total (existing assets plus short gain assets) ARR proposed for the 12 month period from 1 July 2007 to 30 June 2008 (subject to QCA approval of separate submission dated 10 May 2007)	91,811,561
Total (existing assets plus short gain assets) Revenue Cap proposed for the 12 month period from 1 July 2007 to 30 June 2008 (subject to QCA approval of separate submission dated 10 May 2007)	90,313,819
Reference Tariff proposed for the 12 month period from 1 July 2007 to 30 June 2008 (subject to QCA approval of separate submission dated 10 May 2007)	1.4977



3. IDC MODEL

General Approach

Section 12.6(a) of the Access Undertaking states that:

*“In the event of a Capacity Expansion, costs incurred in the Capacity Expansion and approved by the QCA pursuant of Section 12.5 above, including construction related financing costs, **(which will include a return on capital over the construction period on the Capacity Expansion expenditure incurred)**, will be included in the regulated asset base upon which the ARR and Reference Tariff are determined. **The return on capital over the construction period to be included in the regulated asset base will be calculated at the WACC(2) rate.**”*

“WACC(2) rate” is defined by the Access Undertaking to mean a rate equivalent to the “Construction Period Risk Free Rate” plus 3.18%.

The “Construction Period Risk Free Rate” is defined in the Access Undertaking as:

- *“the rate calculated by averaging the yield of the 10 year Commonwealth Government bond over the 20 Business Days preceding the earlier of:
(a) the first drawdown date on floating rate construction debt financing; or
(b) the interest rate set date on a fixed rate construction debt financing,
effected by DBCT Management in respect of a relevant Capacity Expansion.”*

The IDC model calculates the return on capital over the construction period in accordance with these basic principles.

Material Assumptions

The material assumptions on which the IDC model is based are detailed below:

- (1) The Short Gain capacity expansion was completed and handed over to the DBCT operator on 4 August 2006. In accordance with Schedule C, Part A, Section 4(g) and (h) of the Access Undertaking the value of the Short Gain capacity expansion is to be reflected in the ARR, Revenue Cap and Reference Tariff from 1 September 2006 (i.e. the first day of the month following the month in which the expansion was completed).
- (2) The increase in the ARR, Revenue Cap and Reference Tariffs resulting from the Short Gain capacity expansion will be backdated to 1 September 2006 in compliance with Schedule C, Part A, Section (4)(h) of the Access Undertaking.
- (3) BBI DBCT financed the Short Gain expansion from equity. Debt financing was not used. Accordingly, a “Construction Period Risk Free Rate” for setting the “WACC(2)” rate cannot be calculated in accordance with the definition contained in the Access Undertaking because there is no trigger point from which to calculate the interest rate. It is BBI DBCT’s understanding that in the absence of a prescribed definition, a regulator’s normal approach to calculating return on capital over the construction period would be to use the relevant regulatory WACC then prevailing. In the absence of specific guidance in the Access Undertaking on how to calculate the “Construction Period Risk Free Rate” (and ultimately the WACC to apply during the construction period), where debt



Short Gain Modelling

financing is not used, BBI DBCT proposes that the relevant regulatory WACC currently prevailing for DBCT of 9.02% (with the WACC formula also recognising compounding) apply.

- (4) Capital costs included in the IDC model reflect actual costs incurred and invoiced through to 31 March 2007 plus committed costs (ie incurred, but not yet invoiced). The model incorporates the timing of payment of these costs in developing the construction "S" curve.
- (5) It is assumed that payment of capital costs took place on the last day of the month in which invoices were received and that the return on capital over the construction period (or IDC) accrues from the first day of the following month through to 31 August 2006 (a return on capital will be earned as part of the DBCT ARR from 1 September 2006). For example, for invoices received in July 2005, it is assumed these were all paid on 31 July 2005 and IDC accrues from 1 August 2005 to 31 August 2006.
- (6) Capital costs incurred in or after August 2006 and committed costs (incurred but not yet invoiced) are assumed paid on 31 August 2006 and therefore no IDC is accrued in relation to these costs.
- (7) Although BBI DBCT financed 100% of the Short Gain capital cost with equity, a gearing ratio of 60% debt and 40% equity has been assumed in calculating the IDC. This reflects the gearing ratio adopted by the QCA in its Final Decision on the DBCT draft access undertaking, dated April 2005. It is BBI DBCT's understanding that it is normal regulatory practice to adopt the prevailing gearing ratio for investments in new assets (including calculation of IDC during the construction period) made during the regulatory period.
- (8) BBI DBCT has adopted an assumption that equity and debt are drawn down progressively (in parallel) to finance construction costs (i.e. neither equity nor debt funding is exhausted first rather both funding sources are utilized at the same time in a 60:40 ratio) as we understand this to be normal regulatory practice.
- (9) BBI DBCT understands that an allowance for debt related costs is included in the regulatory WACC. Accordingly, BBI DBCT has not claimed nor included in the IDC calculation costs relating to:
 - upfront financing fees (establishment fees);
 - commitment fees;
 - stamp duty;
 - debt Information Memorandum preparation costs (including consulting fees);
 - banks' engineer fees;
 - legal fees; and
 - other bank due diligence costs.
- (10) Given the relatively low capital cost associated with the Short Gain capacity expansion, BBI DBCT has adopted an assumption that equity would not need to be specifically raised to finance this particular expansion (in effect, it has been assumed that the Short Gain expansion has been financed from retained earnings). Accordingly, equity raising costs have not been claimed nor included in the IDC calculation.



4. DEPRECIATION

General Approach

Capital costs incurred on the Short Gain capacity expansion relate to three main assets:

- (1) Acquisition and Commissioning of new reclaimer RL1;
- (2) Shiploader SL3 upgrade; and
- (3) Refurbishment of Yard conveyor R1.

In addition, expenditure was also incurred on project management and on other costs (eg enlivenment and feasibility studies and optimisation works). An allowance for return on capital during the construction period (IDC) has also been calculated.

All costs have been identified and direct costs allocated to the appropriate assets. Costs which cannot be identified as specific to a particular asset have been separately identified as project management costs, other costs or IDC.

Project Management costs, other costs and IDC have been allocated to each asset on the basis of the weighted average of the construction costs directly attributed to each asset. That is:

➤ Reclaimer RL1	67.95%
➤ Shiploader SL3 Upgrade	9.92%
➤ Yard Conveyor RL1	22.13%

Asset effective lives have been assessed for Reclaimer RL1 and the Shiploader SL3 upgrade, based on the effective lives adopted by the QCA for the same or similar equipment on its estimation of the DBCT Depreciated Optimised Replacement Cost ("DORC") as part of the DBCT DAU Decision dated April 2005, within the constraint of an assumed economic life of 50 years for the DBCT facility from 1 July 2004.

For Yard Conveyor RL1, the estimated useful life after refurbishment was assessed by BBI DBCT, refer Attachment 2, Appendix 17 of the Short Gain Submission.

The resultant estimated useful life for each asset is:

Reclaimer RL1	-	48 years
Shiploader SL3 Upgrade	-	47 years
Yard Conveyor RL Refurbishment	-	32 years

A scrap value of zero is proposed for these assets. This reflects BBI DBCT's experience with the collapsed RL1, where scrap proceeds effectively paid for removal of the equipment from the site.

Given the relative immaterial impact on the ARR, BBI DBCT has not, at this stage, reset the depreciation charge on the existing RL conveyor to 32 years nor adjusted the scrap value assumptions for existing assets. BBI DBCT proposes that any reassessment and associated useful life reset or scrap value adjustment be considered at the next regulatory reset



5. ANNUAL REVENUE REQUIREMENT

Appendix 1 to this Attachment includes a memorandum from NERA to BBI DBCT summarising the modelling and including further details of the modelling assumptions.

Included in the CD Rom provided with these submissions are:

- return on capital over the construction period calculation (also known as IDC) model;
- depreciation – estimated useful life calculation model;
- ARR calculation model.

6. REFERENCE TARIFF AND REVENUE CAP

The “Reference Tariff” (or TIC) has been calculated in accordance with Schedule C, Part A, Section 2 of the Access Undertaking. Our calculations of the “Revenue Cap” and “Reference Tariff” are included in the CD Rom provided with these submissions.



APPENDIX 1
Memorandum from NERA



Memo

To: **Jeff Pollock - Chief Operating Officer: Transport Infrastructure**
Date: 24 April 2007
From: Brendan Quach
Subject: **Short Gain Modelling**

Introduction

Babcock and Brown Infrastructure have asked NERA to model the annual revenue requirement for the short gain investments at the Dalrymple Bay Coal Terminal. NERA has calculated that the revenue requirements for 2006/07 and 2007/08 are as follows:

§ \$2.119 million in 2006/07; and

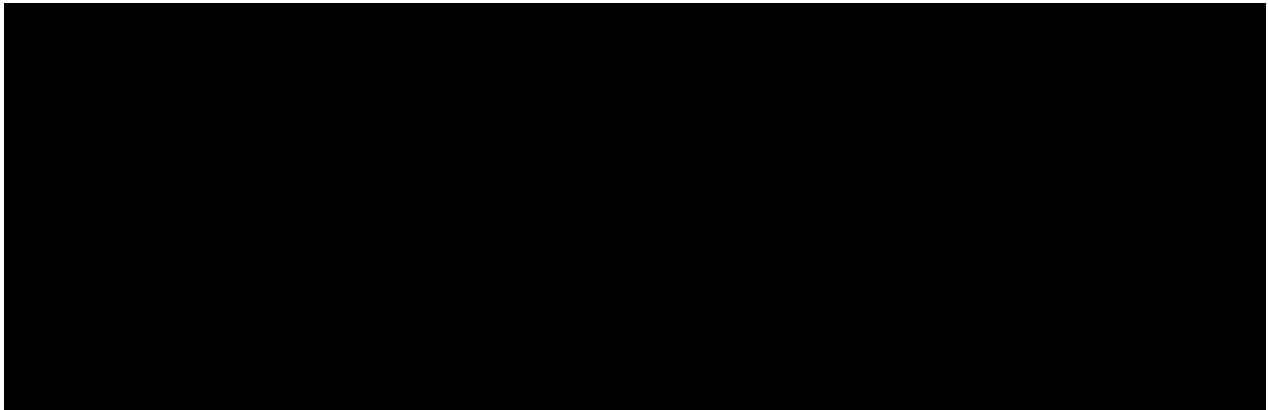
§ \$2.673 million in 2008/09

Attached to this memo is a spreadsheet that sets out the calculation of this revenue requirement. The remainder of this memo sets out the key assumptions underlying the revenue requirement.

Short Gain Capital Expenditure

On the information provided to NERA by Babcock and Brown Infrastructure, expenditure on the short gain as at 1 September 2006 was \$33.296 million. This capital expenditure information has been inputted into the revenue model on the following basis:

Table 1
Short Gain Capital Expenditure



Note that *Other SG expenditure* and capitalised interest have been allocated to each asset category on the basis of the weighted average of the construction cost of each asset category. That is:

- § New equipment is 67.9 per cent of the total construction cost;
- § Upgrade equipment is 9.9 per cent of the total construction cost; and
- § Refurbished equipment is 22.1 per cent of the total construction cost.

Weighted Average Cost of Capital (WACC)

The WACC applied to the short gain is as follows:

Table 2
WACC Parameters

Parameter	Value
Nominal Risk Free Rate	5.85%
Real Risk Free Rate	2.37%
Inflation Rate	3.40%
Cost of Debt Margin over rf	1.30%
Nominal pre-tax cost of debt	7.15%
Real pre-tax cost of debt	3.63%
Market Risk Premium	6.00%
Corporate Tax Rate	30.00%
Proportion of Franking Credits attributed value by shareholders	50.00%
LT Proportion of Debt Funding	60.00%
Equity Beta (uses Te)	1.000
Post-tax nom return on equity(pre-imp)	11.85%
Post-tax real return on equity(pre-imp)	8.17%
Nominal Vanilla WACC	9.03%
Real Vanilla WACC	5.45%

The WACC parameters are consistent with parameters applied in the DBCT final decision, with the exception of the risk free and inflation rates.

These parameters have been updated for current market conditions and reflect the mathematical average of the indicative mid market rates on 10 year Commonwealth nominal and indexed bonds in the 20 days prior to 1 September 2006. Note that to calculate a 10 year rate NERA has interpolated on a straight line basis the two Commonwealth Government bonds closest to the 10 year term and which also straddle the 10 year expiry date. NERA has also annualised the nominal and indexed bond yields using a compounding interest formula.

Year 1 Calculation (1 September 2006 to 30 June 2007)

As the short gain was commissioned during the 2006/07 year - ie, on the 1 September 2006 - NERA has apportioned the return *on* and *of* capital to reflect that the short gain assets were only operational for 303 of the 365 days of the regulatory year.

NERA has applied a compounding formula to account for the partial year. As a result the WACC for the 2006/07 year was calculated on the basis of the following formula:

$$WACC_1 = (1 + NomWACC)^{\frac{303}{365}} - 1$$

That is:

$$\begin{aligned} WACC_1 &= (1 + 9.03\%)^{\frac{303}{365}} - 1 \\ &= 7.44\% \end{aligned}$$

Furthermore, required depreciation in the 2006/07 year was calculated by multiplying the annual depreciation requirement by 83 per cent (ie, 303 divided by 365).

Accounting for Intra Year Cash Flows

In calculating the required revenues for the short gain NERA has been asked to make a number of adjustments to the return *on* and *of* capital revenue building blocks to remove the benefit to DBCT of the timing of intra year cash flows.

NERA has been asked to assume that:

- § revenues are received half way through the regulatory year;
- § the return *on* capital revenue requirement occurs at the end of the financial year;
- § the return *of* capital revenue requirement occurs at the end of the financial year; and
- § indexation occurs at the end of the financial year.

To recognise the end of year revenue requirements of the return *on* and *of* capital and indexation building blocks, NERA has multiplied each of the revenue building blocks by:

$$\frac{1}{(1 + NomWACC)^{\frac{1}{2}}}$$

Note that in the first year (ie, 2006/07) NERA's calculation recognises that the building blocks need only be discounted for 151.5 days, ie:

$$\frac{1}{(1 + NomWACC)^{151.5/365}}$$

CPI Adjustment for 2006/07

To calculate the short gain revenue requirement for 2007/08 the model must be updated for outturn inflation in 2006/07. Outturn inflation for 2006/07 was calculated using the following formula:

$$Inf_{06/07} = \frac{CPI_{Mar07} - CPI_{Mar06}}{CPI_{Mar06}}$$

That is:

$$2.44\% = \frac{155.6 - 151.9}{151.9}$$

The use of March to March CPI data is consistent with approach adopted by the QCA to calculate annual inflation for the rest of DBCT's regulated assets.

To account for the partial year this inflation figure has been adjusted by the same formula that was used to calculate annual revenues, ie:

$$Inf_{partyear} = (1 + Inf_{06/07})^{303/365} - 1$$

That is:

$$2.02\% = (1 + 2.44\%)^{303/365} - 1$$