



Final Decision

**DBCT Management Draft Amending
Access Undertaking**

**Dalrymple Bay Coal Terminal Phase 1
Expansion – Actual Costs**

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Level 19, 12 Creek Street Brisbane Queensland 4000
GPO Box 2257 Brisbane Qld 4001
Telephone (07) 3222 0555
Facsimile (07) 3222 0599

general.enquiries@qca.org.au
www.qca.org.au

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PREAMBLE

This draft amending access undertaking (DAAU) sought to increase the reference tariff at the Dalrymple Bay Coal Terminal (DBCT) by \$0.03/tonne, based on the \$28 million difference between the actual cost (\$619 million) and the forecast cost (\$591 million) of the phase 1 expansion of the terminal from 60 to 68 million tonnes per annum (mtpa).

The Authority accepts that this expansion was conducted in a tight construction market. There was also an imperative that the expansion be completed in a timely manner.

These factors had a significant impact on how DBCT Management managed the expansion. In particular, very few of the contracts were able to be let on the basis of a competitive lump sum tender and, as a result, DBCT Management had to adopt a range of alternative contracting styles.

The Authority has reviewed each of the phase 1 contracts and accepts that DBCT Management had acted reasonably in seeking to contain expansion costs.

With respect to managing the contracts once let, the Authority accepts that DBCT Management sought to manage the phase 1 expansion works with a view to containing costs and minimising interruptions and delays.

The Authority also accepts that the non-tendered costs (e.g. DBCT Management's own costs) and the claim for additional finance costs are reasonable in the circumstances.

The Authority's review has also confirmed that DBCT Management has accurately converted the \$619 million in actual phase 1 expansion costs into increased regulated revenues and tariffs.

Accordingly, the Authority's decision is to accept that the actual costs of the phase 1 expansion of \$619 million be included the regulatory asset base and to approve, *inter alia*, an:

- (a) increase in the Annual Revenue Requirement (ARR) of \$2.42 million for the 2009-10 financial year;
- (b) increase the revenue cap of \$2.42 million for the 2009-10 financial year; and
- (c) increase in the reference tariff of \$0.03 for the 2009-10 financial year.

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GLOSSARY

ARR	Annual Revenue Requirement
Authority	Queensland Competition Authority
CF and S	Construction facilities and ancillary services
DAAU	Draft Amending Access Undertaking
DBCT, Terminal	Dalrymple Bay Coal Terminal
DBCT Management	BBI (DBCT) Management Pty Ltd
DORC	Depreciated Optimised Replacement Cost
EPCM	Engineering, Procurement and Construction Management
Holdings	DBCT Holdings Pty Ltd
IDC	Interest During Construction
Mtpa	million tonnes per annum
PSA	Port Services Agreement
QCA Act	Queensland Competition Authority Act 1997
RAB	Regulatory Asset Base
TCMP	Tender and Contract Management Process
TIC, reference tariff	Terminal Infrastructure Charge
Tph	tonnes per hour
the undertaking	DBCT 2006 Access Undertaking
WACC	Weighted Average Cost of Capital

1. INTRODUCTION

The Dalrymple Bay Coal Terminal has been expanded in three phases, phase 1 to 68 million tonnes per annum (mtpa) and phases 2/3 to 85 mtpa, at a combined capital cost of around \$1.45 billion.

To allow for the timely recovery of these expansion costs, the DBCT undertaking provides for a two-stage process to adjust regulated revenues and tariffs: first, based on the forecast expansion costs; and second, a revision based on the difference between forecast and actual expansion costs.

Following the commissioning of the phase 1 expansion works, the terminal infrastructure charge increased by \$0.5675/tonne on 1 April 2008 based on a forecast phase 1 expansion cost of \$590.5 million.

DBCT Management has now sought the Authority's approval for, inter alia, a further \$0.03/tonne increase in the terminal infrastructure charge based on an actual phase 1 expansion cost (\$619 million), which exceeds the forecast cost by \$28 million.

The Authority's consideration of the phase 1 actual cost DAAU is based on the assessment criteria in the Queensland Competition Authority Act 1997 (the QCA Act) and the submission prepared by DBCT Management. The Authority's consideration of this DAAU also draws on the Authority's on-going consideration of contract costs that is conducted in accordance with clause 12.5 of the 2006 DBCT access undertaking.

1.1 The Dalrymple Bay Coal Terminal

The Dalrymple Bay Coal Terminal (DBCT) is a coal export terminal located in central Queensland, 40 kilometres south of Mackay.

Since its commissioning, the terminal has been expanded as necessary to service growth in demand. The terminal has been recently expanded from 60 to 85 mtpa as part of the phase 1-3 expansions. The phase 1 expansion to 68 mtpa was commissioned in March 2008 and part of the phase 2/3 expansion to 72 mtpa was commissioned in December 2008, with the balance of the works commissioned in June 2009.

The phase 1 expansion works have primarily focussed on in-loading and stockyard upgrades, involving:

- (a) a new in-loading system – a new third in-loading station and associated in-loading conveyor to the stockyard;
- (b) increased stockyard capacity – new bunds, yard conveyors and yard machines as well as upgrading and relocating pre-existing stacking and reclaimer machines;
- (c) increased out-loading capacity – upgrades to shiploaders SL1 and SL2, increasing speed of out-loading conveyors to accommodate higher reclaim rates from new reclaimers and berth pocket dredging; and
- (d) engineering services – upgrades to site wide power supply, control and automation software, storage dams and stockyard dust suppression equipment.

1.2 The DBCT 2006 Access Undertaking

The service of the handling of coal at DBCT by the terminal operator has been declared under Part 5 of the QCA Act for the purposes of third party access.

While Part 5 of the QCA Act imposes broad obligations on an access provider, it also provides for the development, and the Authority's approval of, an access undertaking that outlines in more detail terms and conditions for access.

On 15 June 2006, the Authority published its decision approving DBCT Management's 2006 draft access undertaking that sets out a range of matters, including relating to terminal expansions.

In particular, clause 12.5 of the undertaking provides for the Authority to approve the scope of expansion works prior to the commencement of those works. In this regard, on 10 August 2006, the Authority accepted the scope of the phase 1 expansion as:

- (a) they were consistent with the 2005 Master Plan and related addendum that set out the way the terminal would be expanded to meet future user demand. The Master Plan had been approved by the owner of the terminal, DBCT Holdings Pty Ltd; and
- (b) DBCT Management demonstrated that users supported the expansion works. Indeed, the expansion was oversubscribed and the Authority also confirmed that no users had opposed the expansion.

Clause 12.5 also provided for the Authority to assess the prudence of expansion works as they were incurred, including in relation to scope, standard and costs and to approve changes in reference tariffs upon commissioning of the works.

1.3 Two-Stage Tariff Approval Process

Prior to the commissioning of the phase 1 expansion, the reference tariff did not reflect any forecast capital expenditure.

DBCT Management accepted that this was reasonable as its financing costs were being capitalised into the expansion cost. However, this arrangement ceased upon the commissioning of the phase 1 expansion.

Therefore, in order to address its cash flow issues, DBCT Management proposed a two-stage process to adjust tariffs; namely to amend the annual revenue requirement (ARR), revenue cap and reference tariff on the basis of a:

- (a) phase 1 forecast cost DAAU – submitted prior to commissioning to adjust tariffs on the basis of the forecast cost of the phase 1 expansion; and
- (b) phase 1 actual cost DAAU – submitted after commissioning to revise tariffs on the basis of the actual phase 1 expansion costs.

As both of these adjustments take effect from, or are backdated to, the first day of the month following commissioning of the expansion works, the arrangements also included an 'unders and overs' adjustment clause to ensure that DBCT Management and users would be neutral, on a net present value basis, with respect to any differences between the forecast and actual expansion costs.

Phase 1 forecast cost DAAU

On 17 October 2007, the Authority approved DBCT Management's phase 1 forecast cost DAAU to:¹

- (a) increase the ARR by \$20,191,169 to \$112,002,730;
- (b) increase the revenue cap by \$19,954,716 to \$110,268,535; and
- (c) increase the terminal infrastructure charge (TIC) from \$1.4977 to \$2.0652.

on the basis of a forecast \$590.5 million in capital expenditure for the phase 1 expansion.

In considering the phase 1 forecast cost DAAU, the Authority reviewed the robustness of the forecast costs but noted that a detailed assessment of the costs would occur as part of the phase 1 actual cost DAAU.

The Authority's principal consideration in approving the forecast cost DAAU was that the proposed unders and overs clause insulated DBCT Management and users from variations between forecast and actual costs and that the form and timing of any repayment would be transparent.

Phase 1 actual cost DAAU

On 1 October 2009, DBCT Management submitted a DAAU to amend the 2006 access undertaking to adjust the regulated revenues and tariffs for the actual costs of the phase 1 expansion.

DBCT Management's phase 1 actual cost DAAU seeks an increase, *inter alia*, in the:

- (a) ARR of \$2.42 million for the 2009-10 financial year;
- (b) revenue cap of \$2.42 million for the 2009-10 financial year; and
- (c) reference tariff of \$0.03 for the 2009-10 financial year.

on the basis that its actual phase 1 expansion costs (\$619 million) are \$28 million above forecast.

DBCT Management's submission to accept \$619 million in actual phase 1 expansion costs into the regulatory asset base is comprised of a number of elements, namely:

- (a) \$346.5 million in base contract costs – where the release of contract packages for the phase 1 expansion occurred in accordance with an Authority approved tender and contract management process (TCMP) (see Chapter 2);
- (b) \$83.8 million in post award expenditure – contract variations and escalations for the above awarded contract packages (see Chapter 3);
- (c) \$125.6 million in other costs – contracts not awarded in accordance with the TCMP, associated post award contract variations and escalations for these contracts and DBCT Management's own costs associated with phase 1 expenditure (see Chapter 4);

¹ These revenues and tariffs have been subsequently increased on the basis of the commissioning of the phase 2/3 expansion and annual CPI roll-forwards.

- (d) \$50.7 million in interest during construction (IDC) – the opportunity cost of phase 1 expenditure during the construction period (see Chapter 5); and
- (e) \$12.5 million in financing costs – the transactions costs of equity and debt financing for the phase 1 expansion (see Chapter 5).

1.4 The Authority's Considerations

Section 142 of the QCA Act requires the Authority to consider a DAAU submitted to it for the purpose of amending an approved access undertaking and either approve, or refuse to approve, that DAAU.

Section 138(2) of the QCA Act states that the Authority may approve a DAAU only if it considers appropriate to do so having regard to:

- (a) promoting the economically efficient operation of, use of, and investment in, infrastructure by which services are provided, with the effect of promoting competition in upstream and downstream markets;
- (b) the legitimate business interests of the owner or operator of the service;
- (c) the public interest;
- (d) the interests of people who may seek access to the service;
- (e) the effect of excluding existing assets for pricing purposes;
- (f) the pricing principles mentioned in section 168A of the QCA Act, including, among other things, that the price of access to a declared service should:
 - (i) generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to the service and include a return on investment;
 - (ii) allow for multi-part pricing and price discrimination when it aids efficiency; and
 - (iii) provide incentives to reduce costs or otherwise improve productivity; and
- (g) any other issues the Authority considers relevant.

In addition, the Authority is also guided by its consideration of phase 1 contract costs in accordance with clause 12.5 of the DBCT access undertaking. This is because the extent of DBCT Management's compliance with these requirements provides an insight into whether it has prudently incurred the expansion costs that now form part of the phase 1 actual cost DAAU. Flagstaff Consulting was engaged to provide technical assistance to the Authority in relation to these matters.

However, the Authority notes that its acceptance that aspects of the phase 1 actual costs DAAU have complied with the specific requirements for prudence in the undertaking does not imply that DBCT Management's DAAU necessarily satisfies the assessment criteria in the QCA Act.

The criteria for the approval of a DAAU in the QCA Act are much broader than the criteria in the undertaking for assessing capital expenditure. In addition, the DAAU seeks approval for costs which have not previously been submitted to the Authority, including interest during

construction, financing costs and, in particular, non-tendered costs, such as DBCT Management's own costs and those of Connell Hatch, its expansion project manager.

Moreover, while stakeholders have regularly discussed aspects of the expansion works with Authority staff, the undertaking did not provide a detailed process by which stakeholder comments were invited on specific expansion works as they were incurred.

This DAAU provided stakeholders with the opportunity to comment on all aspects of the phase 1 actual cost DAAU.

1.5 The Authority's Public Consultation Process

On 1 October 2009, the Authority issued a notice of investigation into DBCT Management's DAAU. The Authority published DBCT Management's phase 1 actual cost DAAU and supporting information on the Authority's web site (www.qca.org.au) and invited submissions from interested parties by 28 October 2009.

No stakeholders responded to the invitation.

2. UP-TO-AWARD EXPENDITURE

At around \$347 million, just over a half of the cost of the phase 1 expansion is attributed to the awarded value of tendered contracts.

The Authority's assessment of the prudence of this expenditure has focussed on auditing DBCT Management's processes for tendering and awarding these contracts. In this regard, the Authority is satisfied that:

- (a) DBCT Management has materially complied with a pre-approved tender and contract management process that focuses on selecting contractors on a value for money basis;*
- (b) DBCT Management has selected a contracting approach that minimises contract costs by achieving an appropriate balance in the risk borne by DBCT Management and the contractor; and*
- (c) the standard of the works are reasonable in the circumstances (i.e. the contract works are not "gold-plated").*

Accordingly, the Authority accepts the base contract costs as prudent and their inclusion into the regulatory asset base.

2.1 Introduction

As provided for in the 2006 DBCT access undertaking, the Authority has assessed the prudence of the phase 1 contract award expenditure as it was incurred. The Authority's assessment has focussed on DBCT Management's compliance with a detailed procedure for tendering and awarding contracts that the Authority had approved at the commencement of the expansion works. The Authority has also reviewed the reasonableness of DBCT Management's decision making where DBCT Management was required to exercise a degree of discretion in awarding these contracts (e.g. a fixed price contract as against a schedule of rates).

This approach is in contrast to standard regulatory practice where the prudence of capital expenditure is reviewed at the end of the regulatory period.

The key aspects of the Authority's review has included whether:

- (a) DBCT Management has complied with the pre-approved TCMP (section 2.2);
- (b) DBCT Management chose a contracting approach that best suited the nature of the contract works and the circumstances that existed in the market at that time (section 2.3);
- (c) the standard of the works were appropriate — e.g. consistent with Australian Standards (section 2.4);
- (d) the contract terms were appropriate (section 2.5); and
- (e) there were other measures which extracted additional cost savings (section 2.6).

2.2 Processes to deliver value in awarded contracts

Tender and contract management process (TCMP)

As provided for in the 2006 DBCT access undertaking, DBCT Management compiled, and submitted for the Authority's approval, a detailed set of procedures to manage the tendering and awarding of the contracts for the 7x expansion of the terminal. Overall, the objective of these processes was to encourage suitable companies to bid for the relevant contract works and, consequently, achieve value for money.

DBCT Management compiled this TCMP based on its own contract management processes and on those of its engineering, procurement and construction management (EPCM) contractor, Connell Hatch.

The Authority approved the TCMP in August 2006 in accordance with clause 12.5(i)(1) of the 2006 DBCT undertaking. In doing so, the Authority noted that the TCMP:

- (a) was premised on a competitively bid lump sum contracting strategy, with the Authority to assess the justification for any deviations from this strategy (i.e. where "alternative delivery" strategies were adopted);
- (b) contained a process for mitigating conflicts of interest and collusion amongst tenderers – the TCMP requires all bidders to sign a statutory declaration stating they have no conflict of interest and also a declaration of compliance regarding collusion before their tender will be considered;
- (c) contained a series of detailed processes, procedures and forms for tendering, awarding and managing contracts that complied with ISO 9001 standard – for instance, the TCMP includes standard pro formas relating to conditions of tendering, forms of agreement, standard specifications and general conditions of contract which can be easily customised to suit project specific works and clearly specify the basis of payment;
- (d) required the standards and specifications for contract works to be developed in a pro forma which acts as check to ensure standards and specifications issued to tenderers were clear; and
- (e) contained a process for managing contracts before and after award with detailed procedures to be followed in the event of a variation.

In approving the TCMP, the Authority accepted that it was premised on a competitive lump sum tendering strategy, but also contained flexibility to deviate from this strategy if such an approach would generate better value for money. In this regard, the Authority accepted that, in some circumstances, the adoption of competitive lump sum tendering strategy could result in increased construction costs particularly where insufficient tenders were received, or tenderers priced into the base contract cost risks which may be better held by DBCT Management.

DBCT Management's views

DBCT Management noted that they complied with the TCMP in awarding contracts and this provided: a fair and competitive process for bidders; transparency to the contract tendering award process; an objective approach to vendor selection and a least cost outcome for the project. For instance, DBCT Management submitted that, *inter alia*, under the TCMP:

- (a) a prequalification process was conducted prior to contractors being invited to tender for each package to ensure that all tenderers had the required successful track record, access

to experienced resources and were financially sound before being allowed to bid on 7x project contract packages; and

- (b) tenderers were then assessed in accordance with the process contained in the TCMP and contracts awarded to the contractor offering the best evaluated tender for each package (DBCT Management sub: 21).

Assessments of the Independent External Auditor

The 2006 DBCT access undertaking provided for the Authority to not only approve a TCMP, it also provided for the Authority to approve the engagement of an independent external auditor to monitor DBCT Management's compliance with the TCMP. Concorde Corporation was appointed as this auditor in July 2006.

In this context, Concorde's role has been to advise whether DBCT Management had conducted the tendering process for the phase 1 contracts (i.e. the up-to-award process) in accordance with the approved TCMP.

To assess DBCT Management's procedural compliance with the TCMP, Concorde's audit plan involved identifying 142 individual checkpoints which were then consolidated into 14 broad audit points covering a range of policy and procedural documents, including that:

- (a) DBCT Management and Connell Hatch personnel had no conflicts of interest in any tenders;
- (b) appropriate procedures in the TCMP were followed by DBCT Management and Connell Hatch when raising a request for a tender and in the tender short-listing process;
- (c) correct processes were followed governing correspondence with tenderers; and
- (d) tenders were appropriately evaluated and awarded.

Concorde conducted detailed audits of the up-to-award process across all 50 of the phase 1 contract packages to determine whether DBCT Management had procedurally complied with the 14 audit points. These audits included reviewing whether:

- (a) the relevant documentation in conducting a tender and awarding a contract was generated;
- (b) Connell Hatch or DBCT Management personnel with the appropriate authority had signed the relevant documentation;
- (c) the relevant conflict of interest and anti-collusion forms had been signed; and
- (d) correspondence with tenderers occurred in the correct manner.

Across its audits, Concorde did not identify any significant or systemic non-compliances that impacted on the integrity of DBCT Management's tendering and award of phase 1 contracts. On this basis, Concorde confirmed that DBCT Management had materially complied with the relevant requirements in the TCMP.

Concorde did identify circumstances where DBCT Management had not generated the required documentation. However, Concorde concluded that these were minor matters and, given the nature of DBCT Management's processes and controls, this did not impact on Concorde's

decision to certify that DBCT Management had complied with the TCMP in all material respects. For instance:

- (a) The TCMP required DBCT Management to sign-off on the approved list of tenders identified by Connell Hatch from the pre-qualification process. This was to be done prior to Connell Hatch issuing tender documents. For a number of contract packages, including in-loading system 3 (IL3), rail receipt pit 3 and the supply/delivery of transformers, DBCT Management did not sign-off on the approved list of tenderers. Concorde formed the view that this non-compliance was not material on the basis that DBCT Management indicated that, while it had not signed the relevant document, it had agreed to the list of tenderers following extensive consultation with Connell Hatch.
- (b) The TCMP required DBCT Management to sign an advice to procurement (ATP) form for any actions, such as changes to design scope, which impact on pre-award pricing discussions with prospective tenders. For a number of contract packages, including IL3, design, supply and delivery of stackers and reclaimers, and the supply/delivery of switchrooms, DBCT Management did not sign the required form for these contract packages. Concorde considered DBCT Management's non-compliance was not material as DBCT Management had controls in place regarding the issuing of addendums. In particular, engineering changes were subject to an engineering approvals process with the necessary documentation prepared and checked prior to issue to tenderers. Concorde also noted that DBCT Management and Connell Hatch subsequently implemented a formal record of such changes.
- (c) The TCMP requires DBCT Management to sign an ATP form to initiate the award of the contract. For a number of contracts, including construction of bund 5A, construction of bund 6/seawall extension and the supply/delivery of transformers, DBCT Management did not sign the required forms. However, Concorde considered DBCT Management's non-compliance was not material as DBCT Management had signed off on the overlapping recommendation to award (RTA) form.

Authority's assessment

The Authority considers that the TCMP provided a rigorous and transparent process for the tendering and award of phase 1 contracts. In particular, it sought to ensure that a reasonable number of qualified companies were invited to tender with the preferred tenderer being selected on a value for money basis. The TCMP provided for DBCT Management to generate relevant documentation at each point of the tendering process which could then be scrutinised to ensure that DBCT Management had undertaken the tender in the necessary manner.

Relevantly, Concorde audited DBCT Management's compliance with the approved TCMP and has certified that DBCT Management has complied in all material respects with the TCMP. The Authority has reviewed all of Concorde's up-to-award audit reports and accepted that Concorde had a reasonable basis for accepting that DBCT Management was procedurally compliant with the TCMP.

On this basis, the Authority accepts that DBCT Management has complied with an approved tendering process that was designed to provide value for money in awarded phase 1 contracts.

2.3 Alternative delivery approaches to awarding contracts

In commencing the phase 1 expansion, DBCT Management had intended to let most of the contracts on the basis of a competitive lump sum tender and adopt alternative delivery strategies on an exception basis.

However, of the 50 phase 1 contracts, only 10 were lump sum competitively tendered, with the balance awarded under an alternative delivery approach. These alternative strategies included DBCT Management:

- (a) inviting less than three tenders to apply to tender;
- (b) adopting a non-lump sum contracting strategy (such as schedule of rates);
- (c) not selecting the lowest bid;
- (d) only receiving one bid; and
- (e) not receiving lump-sum bids or subsequently renegotiated a non lump-sum contracting strategy.

DBCT Management's views

DBCT Management advised that, while the TCMP provided for a core tendering strategy of competitive lump sum bids, such an approach was not always possible as:

... the prevailing circumstances during the time of committing the majority of Phase 1 contracts was one of spiralling cost increases, reduced number of bidders, limited contractor appetite for risk, and intense competition for construction resources between projects. This severely restricted the number of opportunities available for implementing the TCMP core delivery strategy of a minimum of three pre-qualified bidders competing for the same scope on a lump-sum basis. (DBCT Management sub: 41)

In these circumstances, DBCT Management stated that relying on an alternative delivery strategy on a case by case basis provided cost savings to the project.

For instance, DBCT Management noted the row 8 preparatory works contract involved, *inter alia*, removing material from the row 8 area and preparing suitable material to construct a new bund. In these circumstances, DBCT Management considered that a lump-sum approach to pricing this contract was not appropriate. In particular, DBCT Management was concerned that, prior to releasing the contract and commencing the works, it was difficult to estimate with a high degree of accuracy the amount of material that would have to be removed and prepared as the rock and soil was highly variable in quality and quantity.

Given this uncertainty, DBCT Management believed a lump sum tender would have resulted in a high risk premium being included in the contract price. To address this concern, DBCT Management stated that they structured the contract to attract competitive bids for hourly plant hire and labour rates, which also provided for more effective and flexible management of the works. DBCT Management argued that this alternative delivery strategy was appropriate to ensure the works were contracted on a cost effective basis with reduced risk, and with the contract being structured to attract competitive pricing in a tight market (DBCT Management sub: 41).

DBCT Management noted that, with the tendering and award of all phase 1 contract packages:

- (a) the independent external auditor has audited compliance with the TCMP and did not identify any instances of material non-compliance; and
- (b) the Authority has reviewed and approved of the use of alternative delivery strategies on a contract by contract basis.

Assessments by the Independent External Auditor

The TCMP provided for Concorde to determine whether DBCT Management complied with the appropriate processes in adopting an alternative delivery strategy. In particular, the audit process for the TCMP provided that, where a competitive lump sum tendering strategy was not adopted, Concorde would:

- (a) identify the relevant alternative delivery strategy adopted by DBCT Management; and
- (b) certify that DBCT Management had materially complied with the audit process only where the Authority had approved of the justification for the alternative delivery strategy.

Concorde has confirmed that it has identified, and the Authority has approved, the justification for, the relevant alternative delivery strategy in all cases where it was adopted.

Authority's assessment

The Authority accepts that a tight construction market existed throughout the period of the 7x project, in particular in the early stage of the project when the contracts were being tendered and let. It therefore has accepted that a more flexible tendering strategy than one based on competitive lump sum tenders was required to attract tenderers and achieve low contract prices. Nonetheless, the Authority has reviewed and accepted each occasion where a contract was tendered in accordance with an alternative delivery strategy. In forming its view, the Authority has had regard to the advice of its engineering consultants, Flagstaff, on whether the alternative delivery strategy was reasonable and appropriate.

The most common alternative delivery approaches adopted by DBCT Management for awarding the phase 1 contracts included:

- (a) approaching a limited number of tenderers or sole-sourcing;
- (b) not selecting the lowest tenderer; and
- (c) adopting a schedule of rates/dayworks approach to costs.

In some cases, DBCT Management approached a limited number of tenderers, or adopted a sole source contracting option, as there was a limited supply situation for the equipment they were seeking to acquire and install. For example, the Authority accepted sole-sourcing for a range of contracts in these circumstances, including:

- (a) *the design, supply and delivery of chutes* – the purpose of the chutes was to transfer coal between conveyors. The Authority accepted that no other potential suppliers had the necessary experience and track record to design and manufacture the chutes to the expansion's specifications and within the necessary timeframes;
- (b) *the design, supply and delivery of a wagon vibrator* – the purpose of the wagon vibrator was to improve the flow of coal by vibrating the wagon to remove sticky coal. The Authority accepted that the design of the wagon vibrator was a unique assembly developed specifically to suit Queensland Rail's coal wagons and the properties of coal handled by DBCT. It was also based on the proprietary knowledge of only one contractor; and
- (c) *the design, supply and delivery of a bucketwheel for reclaimer RL 2* – the bucketwheel was necessary as part of the conversion of stacker SR4 to RL2. The Authority accepted

that the bucketwheel should be of the same specifications as that previously procured for RL1 and therefore sourced from the same supplier.

In other cases, DBCT Management approached a limited number of tenderers or sole sourced from contractors that were already on site and had previously been selected under the TCMP. The Authority has accepted that such an approach could provide both contract specific and/or expansion-wide benefits, including commencing expansion works earlier and avoiding mobilisation costs if a new contractor had to be brought onto the site.

For example, the Authority accepted such an approach for:

- (a) *the construction of bund 6* – where bids were sought from two contractors already on site. The Authority accepted this approach and noted that it was not an unusual practice in an overheated market to establish a number of contractors on site and, subject to their performance, allow these contractors to compete with each other on new contracts without inviting additional contractors.
- (b) *inloading system 3 takeout works (structural/mechanical)* – these works were removed from the IL3 package and sole-sourced to another contractor who was at the time engaged in the supply of a major component of a reclaimer and upgrades to a stacker-reclaimer. The Authority accepted this approach, noting the contractor had relevant experience in shutdown works, spare capacity for the period of the shutdown works and relevant experience in other expansion work at the terminal.

Similarly, the Authority accepted that there were circumstances where it was appropriate not to select the lowest tenderer, for example:

- (a) *inloading system works* – the Authority accepted DBCT Management’s arguments that there were whole of project benefits in not selecting the lowest tenderer, in particular as the higher bidder was able to commence work at the site on the required date and had access to land outside the DBCT for pre-assembly of contract items; and
- (b) *design, supply and delivery of conveyor pulleys* – the Authority accepted that the lowest bidder did not have capability to undertake the terms of the contract, in part because the lowest bidder had deficiencies in safety practices at their workshop, did not have an accredited quality system and did not have a workshop capable of producing the quantity of conveyor pulleys to meet the required delivery dates.

In addition, the Authority concurred that a lump-sum approach was not appropriate in all circumstances, in particular, where the scope of the work was not able to be clearly defined at the outset. In these cases, the Authority accepted that a schedule of rates/day works approach to contracting could deliver a more cost-effective outcome as it reduced the extent to which the contractor priced risk into the contract. This approach was adopted for works including the supply and installation of control system upgrade works, the preparatory earthworks for row 8 and for site access works and auxiliary civil works.

For instance, in forming its view on row 8 earthworks, the Authority had regard to the fact that the natural material to be removed from the row 8 area was variable in quality and that it was difficult to determine what volumes would require blasting with explosives and what quantities could be removed with earthmoving machinery. In addition, direct labour costs (e.g. equipment operators, tradesmen, labourers and survey crew) were payable to the contractor at hourly rates, where these rates were the subject of competitive tenders submitted by three companies.

Similarly, for the auxiliary civil works, the Authority accepted the schedule of rates approach adopted as that there were a number of matters still to be resolved in relation to leases of land at

the site and the final engineering details of a number of aspects (including the roads, parking and lay-down areas).

In summary, the Authority notes that a competitive lump-sum approach would not have always generated the best project outcome for the phase 1 expansion given the overheated construction market at the time. In these circumstances, the Authority noted that DBCT Management adopted a range of alternative delivery strategies to attract suitable contractors, including sole sourcing or contracting on a non-lump sum basis.

The Authority has reviewed DBCT Management's adoption of alternative delivery strategies on a contract by contract basis and accepts that these strategies provided value for money at both the contract and project-wide level.

2.4 Appropriate standards and specifications

The 2006 DBCT undertaking provides that the standards and specifications of the phase 1 works must not involve any unnecessary works or contain design standards that exceed those necessary to comply with Section 12.1 of the Port Services Agreement (PSA) – the lease agreement with DBCT Holdings Pty Ltd for the terminal. Section 12.1 relates to general construction standards that DBCT Management must comply with in any expansion of the terminal.

These controls are in place to ensure that DBCT Management does not over-specify or “gold-plate” expansion works, when works of a lower standards would have been adequate to satisfy the requirements of the expansion.

DBCT Management's views

DBCT Management submitted that they have complied with the relevant PSA requirements as they developed a fit for purpose design review procedure in respect of the standard of the works. DBCT Management noted that this procedure required a review of all design elements for each package against the PSA requirements with a full justification provided for identified differences (DBCT Management sub: 40).

DBCT Management argued that the result was that:

[t]he standards and specifications were appropriate and fit for the required purpose, being no more than that required to reliably deliver their designed capacity for their intended lifespan, and no less than the minimum requirement of whatever industry, design, technical or regulatory standard or specification applied to the item being supplied or constructed, including site standards specified by the operator.(DBCT Management sub: 42)

Authority's assessment

In assessing the standards and specifications for the phase 1 expansion, the Authority examined the design standards of each contract package to ensure that works were not unnecessarily overdesigned or “gold-plated” and so exceeded the requirements in the PSA. In completing this task, the Authority was assisted by its technical consultant, Flagstaff.

In considering the phase 1 contracts, the Authority accepted that DBCT Management had generally used the same specifications as the pre-existing facility or that the standard of works was in line with general industry standards. For instance:

- (a) *new rail receipt pit* – the Authority accepted that the construction details were typical of what would be expected for this type of structure. In particular, Flagstaff noted that they

were consistent with existing rail receival pits and those found at other coal handling facilities; and

- (b) *supply and delivery of bund rail/conveyor pulleys* – the Authority accepted that the rail selected was consistent with rail used elsewhere in the stockyard. The Authority also reached a similar conclusion for the supply and delivery of conveyor idlers and pulleys, noting that the specifications were generally consistent with comparable mechanical engineering and material handling installations.

In other cases, DBCT Management was able to justify adopting different or upgraded standards and specifications for the new works. For instance:

- (a) *new bund 5A* – was designed with vertical concrete faces, rather than inclined sides (as is the case for the terminal’s existing bunds). The Authority accepted this design specification as, *inter alia*, it would allow a greater volume of coal to be stockpiled in Rows 6 and 7; and
- (b) *upgrades to shiploader SL1* – were undertaken to increase the travelling speed of the shiploader to reduce shiploading time. In this regard, the upgrades contained a range of features to improve shiploading time, including upgrades to existing electric motors, gearboxes and brakes to deliver improved speeds and throughput capacities and upgrades to electricity supply to deliver the necessary power for the new and upgraded drives.

The Authority notes that for, some contract packages, DBCT Management ordered “optionals”. However, the Authority accepts that these optionals were necessary and improved the operation of the terminal. For instance:

- (a) *inloading works* – the Authority accepted the inclusion of a number of ‘optional’ items as they, among other things, improved technology, safety and reliability. In particular, the installation of permanent overhead cranes within RRP3 improved operator safety and as the alternative (i.e. monorail) was not practical and the inclusion of stair access, rather than ladders, to all areas of RRP3 was also reasonable on the grounds of improved safety.
- (b) *new stackers and reclaimers* – the Authority accepted the choice of a hydraulic bucket-wheel drive as, *inter alia*, it is quieter than electric motor/gearbox drives, and that standardising the gearbox at the terminal simplifies future maintenance; and
- (c) *design, supply and delivery of conveyor belts* – the Authority accepted the choice of an optional belt rip detection system, given that it reduces the length of the rip and the associated coal spillage, belt replacement costs and conveyor downtime.

Based on its review, the Authority accepts that DBCT Management has not gold-plated the phase 1 expansion works. In many cases, DBCT Management adopted the same specifications as used in the existing facility or those consistent with general industry standards. Where DBCT Management adopted different standards or ordered optional specifications, these were done to improve terminal performance.

Given this, the Authority considers that the standards and specifications of the works were reasonable in the circumstances.

2.5 Appropriate contract terms

To ensure there was an appropriate allocation of risk between DBCT Management and contactors and to provide adequate controls for any contract variations, the 2006 DBCT access undertaking requires the terms for any awarded contract to be appropriate; in particular, that the:

- (a) contract terms do not materially adversely impact on a prudent balance between price and risk; and
- (b) the contract variation and escalation provisions accord with good commercial practice.

DBCT Management's views

DBCTM submitted that they developed specific internal processes that ensured the contract terms used for expansion works were appropriate and adequately considered risks.

For instance, DBCT Management advised that they implemented a risk review process as part of the up-to-award processes to identify the risks for each contract package and make appropriate provisions for variation (DBCT Management sub: 49).

Moreover, DBCT Management argued that:

[t]he contract terms were based on an industry standard set of General Conditions of Contract developed specifically for the project to reduce exposure to variations and provide uniformity across all contractors and suppliers engaged during the construction period. (DBCT Management sub: 42)

Authority's assessment

The Authority confirms that DBCT Management's expansion contracts are based on the project standard general conditions of contract which had been amended in response to feedback from the Authority and its technical consultant Flagstaff. In particular, DBCT Management accepted feedback to adjust its general terms and conditions of contract to better attract sufficient bidders.

The Authority notes that, for some contracts, DBCT Management did not adopt their standard contractual terms in their entirety, but rather aspects of these terms were renegotiated with the contractor. The Authority has reviewed and accepted these changes as reasonable for a range of reasons, including that the renegotiated contract better allocated certain risks to the party best able to manage the risk or as providing cost savings while not materially increasing the risk profile of the contract. For instance:

- (a) *upgrades to shiploader SL1* – the contract clarified that the indemnity provided by the contractor included an express acknowledgement that its liability is reduced to the extent to which DBCT Management contributes to any damage or loss. The Authority accepted that it was reasonable for DBCT Management to assume liability for risks that were within their control; and
- (b) *design, supply and delivery of chutes* – the contract included cyclones as a force majeure event. The Authority accepted that this would not materially adversely impact on the contract's balance between price and risk as the works were essentially performed offsite and the risk of cyclones only arises if the workshop was affected or transportation to site was delayed by cyclones (in which case other works at the site would be delayed).

While the Authority accepts that DBCT Management's general conditions of contract reflect good industry practice, it supports DBCT Management's flexibility in negotiating changes to these conditions in certain circumstances to better reallocate risk or to increase the attractiveness of works to potential bidders. The Authority has reviewed DBCT Management's key contractual terms for each package and accepts that they reflect a prudent balance between price and risk and represented good commercial practice.

2.6 Measures to extract additional savings

In addition to assessing the awarding of the contracts against the undertaking criteria, the Authority also notes that DBCT Management undertook a number of measures to extract additional savings during the contracting process for the 7x expansion.

For example, DBCT Management noted that they did not include the supply of conveyor components with the conveyor construction contracts as this could have delayed the completion of the project and may have resulted in higher costs given the price trends in the market at the time. Rather, DBCT Management separately purchased the components and provided it “free issue” to the construction contractors for installation (DBCT Management sub: 45).

Similarly, part of the phase 1 expansion involved dredging works for a new berth. However, DBCT Management submitted that, very early in the 7x project, it became aware that a suitable dredge was in the vicinity *en route* to another job. DBCT Management argued that this provided an opportunity for the works to be completed early and to save costs for mobilising another dredge at a later date. Given this, DBCT Management argued that, in taking advantage of this opportunity it realised significant value for project (DBCT Management sub: 45). Flagstaff has indicated to the Authority that this saving is likely to have been in the order of \$2 million.

2.7 Authority’s analysis and decision

DBCT Management proposes that \$346.5 million in awarded contract costs for the DBCT expansion be included in the DBCT regulatory asset base.

The Authority accepts that DBCT Management has delivered value for money in awarding contracts for the phase 1 expansion. In particular, the Authority considers DBCT Management has demonstrated the prudence of this expenditure by complying with the requirements of the access undertaking, including by adhering to an approved tendering process and by not “gold-plating” works.

At a broader level, DBCT Management has also undertaken actions to generate cost savings to users where possible.

Given this, the Authority accepts that the awarded contract expenditure of \$346.5 million is prudent and satisfies the requirements of s. 138(2) of the QCA Act relating to the approval of a DAAU.

3. POST-AWARD EXPENDITURE

DBCT Management has sought to include into its regulatory asset base around \$84 million in contract variations for the phase 1 expansion.

In considering the phase 1 contract variations, the Authority is satisfied that the contract variations:

- (a) were handled in accordance with the relevant contract terms and the TCMP, which collectively provide clear requirements for administering variations; and*
- (b) have been justified and were reasonable in the circumstances of the expansion.*

Accordingly, the Authority accepts the contract variation costs as prudent and their inclusion into the DBCT regulatory asset base.

3.1 Introduction

The phase 1 expansion was a complex engineering task that occurred within a brownfields environment, and contract variations were always inevitable. The Authority was concerned that, in the absence of a competitive environment:

- (a) DBCT Management might agree to variations; or
- (b) not be motivated to effectively manage the project and avoid unnecessary variations; and
- (c) seek to push their costs onto the users of the terminal.

The Authority was also concerned that the variations might be in excess of the rates agreed at the time the contract was awarded, as DBCT Management would be tied to the contractors performing the works so competitive pressures on costs would be reduced.

To ensure that DBCT Management acted prudently in accepting variations and escalations that were reasonably required, the DBCT Access Undertaking provided a comprehensive set of requirements in this regard.

In particular, the undertaking provided that contract variations claims must be appropriately generated, handled and processed in accordance with the relevant contractual provisions and the TCMP. The controls were designed so that only claims that were within the scope of the contractual provisions were accepted and that the correct procedural requirements were complied with in processing variations.

In doing so, the Authority was keen to ensure that the contracts were managed in line with processes that apply in more commercial environments.

However, in isolation, these provisions would not provide certainty that DBCT Management had complied with the necessary requirements. Similarly, DBCT Management's strict compliance with each specific requirement across all contract packages would have been impractical or unnecessarily costly.

Given this, the undertaking required that an independent external auditor certify that DBCT Management had complied with the TCMP in all *material* respects, including in relation to contract variations and escalations. The materiality requirement was important as it focussed on whether the integrity of DBCT Management's contract management processes remained intact, rather than on minor non-compliances.

However, compliance with best practice processes would not necessarily ensure that the associated costs were reasonably incurred. Moreover, the post-award audit process was necessarily rigid and was not designed to consider the variations in the context of the individual or expansion-wide works.

For instance, the Authority accepted that circumstances may have arisen where, notwithstanding material compliance with the relevant procedural requirements, DBCT Management should not have accepted either the quantum of the variation or even the variation itself. Alternatively, there may have been circumstances where even material compliance with the procedural requirements would have been impractical or costly and not in the interests of the project as a whole.

To address these matters, the undertaking provided that, irrespective of DBCT Management's compliance with the relevant procedural requirements, the Authority must accept that the contract variations were otherwise appropriate and reasonable. In this regard, the Authority considered whether the variations were necessary for both the individual works and the expansion as a whole. This review also considered whether DBCT Management's variations were appropriate, even if it was unable to demonstrate material compliance with the relevant procedural requirements. In forming its view on this matter, the Authority has had regard to Flagstaff's analysis on whether the contract variations were reasonable and justified in the circumstances of the specific works and the broader expansion.

Collectively, these requirements in the undertaking were designed to replicate best practice contract management processes that would otherwise apply in an unregulated commercial environment where success or failure in managing costs would impact directly on the party undertaking the expansions. In doing so, the intent of these requirements was to provide certainty to both access seekers and access holders that contract variations and escalations were prudently incurred.

In assessing DBCT Management's compliance with the requirements of the DBCT Access Undertaking, the Authority's review has focussed on whether:

- (a) DBCT Management has managed contract variations and escalations in accordance with the relevant contract provisions and the TCMP (section 3.2),
- (b) the contract variations were otherwise reasonable (section 3.3); and
- (c) additional measures adopted by DBCT Management were of benefit in controlling costs post-award (section 3.4).

3.2 Process to Manage Contract Variations

Requirements of the Undertaking

The undertaking provides a set of procedures for managing contract variations and/or escalations that occur post-award.

In particular, the undertaking provides that DBCT Management must demonstrate that contract variations and/or escalations have been handled in accordance with the relevant contract provisions and the post-award requirements of the approved TCMP. These processes are designed to ensure that variations are generated and administered in the appropriate manner.

DBCT Management is required to demonstrate compliance with these procedures through relevant documentary evidence which is then independently scrutinised by the independent external auditor.

DBCT Management's view

DBCT Management advised that they implemented specific processes to ensure that contract variations were appropriately handled. In particular, DBCT Management stated that:

each variation was subject to rigorous analysis ... to ensure that the variation was in accordance with the terms of the contract ... as well as being materially compliant with the TCMP. (DBCT Management sub: 49)

Moreover, DBCT Management submitted that the independent external auditor – Concorde Corporation – has certified that DBCT Management has complied in all material respects with the TCMP, including in relation to contract variations and escalations.

Assessment by the Independent External Auditor

As for the awarding of contracts, Concorde was engaged as the independent external auditor to monitor DBCT Management's procedural compliance with the TCMP and the relevant contract provisions regarding escalations and variations.

To assess DBCT Management's procedural compliance with respect to contract variations, Concorde consolidated the TCMP requirements into five audit points; these cover a number of procedural issues relating to the post-award management of contracts, namely that:

- (a) DBCT Management initiated variation or escalation payments with the relevant forms, which were appropriately signed;
- (b) appropriate justification was provided and documented to justify variation costs;
- (c) DBCT Management approved all variations and escalation payments before payments were issued;
- (d) DBCT Management formalised the variation or escalation payment by amending contract values to reflect variations; and
- (e) DBCT Management and Connell Hatch personnel appropriately closed out the contract with a close out report.

The five principal audit points reflected 25 more detailed steps. Concorde's audit principles required DBCT Management to demonstrate material compliance with the audit process for a variation where at least 20 of the 25 sub-audit points were complied with (i.e. an 80% test). Otherwise, Concorde would consider the variation to be materially non-compliant.

Concorde's 80% test was premised on its view that no individual audit checkpoint compliance was a pre-requisite for material compliance. This is because no particular documentary step was, in itself, essential for the integrity of the post-award process.

Concorde also adopted a sampling approach to review contract variations given the large number of variations expected to be assessed.

Concorde then conducted audits across all phase 1 post-award contract packages to determine whether DBCT Management had procedurally complied with the five audit points.

Concorde's audits did not identify any contract package where DBCT Management had failed to satisfy the 80% compliance threshold requirement. On this basis, Concorde confirmed that DBCT Management had materially complied with the TCMP, including in relation to contract variations and/or escalations.

Similar to the up-to-award process, Concorde did identify circumstances where DBCT Management had not generated the required documentation. However, Concorde concluded that these were minor matters and, given the nature of DBCT Management's processes and controls, did not impact on Concorde's decision to certify that DBCT Management had complied with the post-award requirements in all material respects. For instance:

- (a) The TCMP required DBCT Management's assigned package leader to sign an ATP form to place a contract package order and formally initiate a variation payment. For a number of contract packages, including the upgrade to conveyors and belt feeders, upgrades to a shiploader (SL2) and relocating and modifying a reclaimer (RL2), DBCT Management had not signed-off the relevant ATP form. However, Concorde considered DBCT Management's non-compliance was not material as, in most cases, the package leader (appointed by DBCT Management/Connell Hatch) had signed a Claims Assessment Form (CAF) which provides information on whether the variation arose from design errors.
- (b) The TCMP required the details of the proposed variation to an original contract to be retained in the approval documentation before starting work. For a number of contract packages including minor electrical site works, construction of site access roads and upgrades to a shiploader (SL1), the works were completed before the details of the variation were provided. Concorde considered DBCT Management's non-compliance non-material since in most cases the nature of the work required prompt action and the impact of such non-compliances was non-material compared to the benefits of expediting the works.
- (c) The TCMP required DBCT Management to sign and retain a request for approval for variation (RAV) form to formalise the variation or escalation payment. Concorde could not locate the relevant forms in the Connell Hatch procurement area for several contract packages, such as the commissioning of the stacker and stacker reclaimers and the transportable site buildings. However, Concorde advised that this was not a material matter since, in most instances, DBCT Management (rather than Connell Hatch) was holding the original RAVs.

Authority's assessment

The Authority notes that DBCT Management was required to ensure that contract variations and escalations were consistent with contract provisions that the Authority had previously reviewed and also with the TCMP. This provided a robust series of controls which constrained the scope to which contract variations could be sought as well as requiring that DBCT Management provide documentary evidence of the process followed in accepting a claim.

Concorde has audited DBCT Management's compliance with the approved post-award process and has certified that DBCT Management has complied in all material respects with the TCMP, including in respect of contract variations and escalations.

As undertaken for the up-to-award process, the Authority reviewed all of Concorde's post-award variation audit reports. Based on its review, the Authority accepted that Concorde had a reasonable basis for concluding that DBCT Management had materially complied with the relevant requirements.

On this basis, the Authority accepts that DBCT Management has complied with the appropriate post-award controls and procedures regarding contract variations and escalations.

3.3 Justification of Contract Variations

In addition to confirming that DBCT Management has complied with the appropriate processes for managing contract variations, the Authority has reviewed whether DBCT Management's contract variations were otherwise reasonable and justified in the circumstances of the expansion. In forming its view, the Authority has had regard to the advice of its technical consultant Flagstaff on the reasonableness of the contract variations.

The purpose of the Authority's review was to ensure that, even where DBCT Management had complied with the relevant procedural requirements, it was clear that the contract variations were necessary for individual works or for the expansion as a whole.

DBCT Management's view

DBCT Management has sought approval for around \$84 million in contract variations for the phase 1 expansion. These variations range from around \$100,000 for minor dredging works and small electrical supply contracts to \$33.3 million for the construction of the third in-loading system (IL3).

DBCT Management have maintained that they rigorously reviewed any submitted contract variations and that these variations were necessary as part of completing the expansion works. Relevantly, DBCT Management submitted that, in doing so, they complied with the requirements in the undertaking for determining the prudence of contract variations.

For instance, DBCT Management submitted that:

Each variation was subject to rigorous analysis by DBCTM to ensure that the variation was ... appropriately justified ... The documentation supporting the justification and approval by DBCTM of all variations (numbering in the order of 2,500) is available for review on request. (DBCT Management sub: 49)

In seeking to justify phase 1 contract variations, DBCT Management prepared an analysis of contract variations for each contract and the reasons why they occurred. DBCT Management's analysis indicated that they considered variations to be caused by a range of factors, including contract interface issues, design issues and bad weather. In some cases, the variations were within those expected at the time of award while, in other cases, provisions were not made for variations or variations exceeded that originally expected.

At a broader level, DBCT Management also submitted that it took due care to manage contract variations at all times to ensure a prudent balance was maintained between cost, schedule and minimising disruption to operating capacity during construction (DBCT Management sub: 49).

For instance, DBCT Management indicated that conversion of stacker reclaimer (SR) 4 to reclaimer (RL) 2 was intended to take place following the award and construction of the new stacker reclaimer SR4A. DBCT Management noted that these activities were scheduled in sequence to minimise disruption to terminal operations.

However, given the delays in awarding the contract to construct SR4A, DBCT Management implemented the conversion of SR4 to RL2 prior to construction of SR4A.

While this action resulted in disruptions to terminal operations, DBCT Management considered its actions prudent as it substantially reduced any delays in completing the expansion works.

Similarly, DBCT Management advised that they took action to minimise the impact of the delay in the completion of rail receipt pit 3 (RRP3) to other projects by transferring some aspects of the IL 3 works to other contractors already on site. In particular, DBCT Management noted that:

... following the major delay in completion of RRP3 ... and in consideration of a number of other serious impacts to the project, DBCTM took drastic action to ... gain certainty of completion of Phase 1. On the basis of a prudent analysis, DBCTM determined that the best interest of the project and stakeholders would be served by transferring the critical IL1/IL2 shutdown/tie-in works ... to ... two new contracts, in so doing this ensured the Phase 1 works were completed in reasonable time. (DBCT Management sub: 44).

In conducting the transfer of scope of works from the original contract, DBCT Management also advised that there was no double counting in the transfer process, with the transfer of scope occurring as a negative variation to the original contract (DBCT Management sub: 51).

In summary, DBCT Management submitted that, given their actions in reviewing and managing contract variations and their compliance with the regulatory requirements in the undertaking, the contract variations are appropriate and should be accepted into the regulatory asset base.

Authority's assessment

In assessing the variations costs for the phase 1 expansion, the Authority has considered whether the incurred variations were appropriately justified by DBCT Management. In forming its view, the Authority had regard to Flagstaff's technical advice on these matters.

The Authority notes that the contract variations for the phase 1 expansion works were \$83.8 million or 24% of the award value for all contracts. This was broadly in line with DBCT Management's expected allowances for phase 1 contracts of 21% which formed part of the phase 1 expansion cost that was accepted by independent consultants, KBR, who were engaged by DBCT Management's financiers. Flagstaff also reviewed the appropriateness of the allowances for individual contracts in providing advice to the Authority on individual contract variations.

Across the phase 1 contracts, two key related contracts, namely the construction of RRP3/S11 tunnel and the in-loading system IL3 works, incurred variation costs amounting to around \$39 million, or variations of 37.4%, compared to that expected of 15.4%. The remaining phase 1 contracts incurred variations costs amounting to \$44.7 million, or variations of 18.7%, compared to that expected of 9.6%.

Contract package variations

The Authority notes that contract variations for construction contracts were significantly higher than for supply contracts. This generally reflected the greater complexity of construction contracts in contrast to supply items which, in many cases, could be purchased 'off the shelf'.

The Authority notes that the phase 1 contract variations occurred for a range of reasons, including:

- (a) the brownfields nature of the work;
- (b) design changes;
- (c) bad/unforeseen weather conditions; and
- (d) scope transfers between contracts.

The *brownfields nature* of the expansion meant that, in several contract packages, variation costs were incurred due to the significant interface of the works with terminal operations and other construction works. Flagstaff advised that the expected allowance for variations in such

contracts was dependent upon the level of interaction with existing terminal operations and other expansion works on-site.

For instance, in constructing site access roads and the relevant auxiliary works, DBCT Management incurred variation costs as it needed to relocate existing water mains, a major Telstra fibre optic line and communication installations. Flagstaff noted that the allowance for such variations should be at least 30% of the contract award value, since most of these civil works were to be conducted by large machinery that is expensive to use where access is difficult and/or work is interrupted to allow through traffic.

The final variation costs amounted to around 40% of the award value. In reviewing these costs, Flagstaff noted that relocating such installations was conducted by the relevant service authorities in-house and the costs charged to do this work by those authorities are traditionally higher than if done by another contractor. Flagstaff also advised that the work was necessary, that DBCT Management could not avoid the service authorities' charges, and therefore they were reasonably incurred.

Similarly, in an electrical site services contract, electrical and telephone services in the area of Row 8 were relocated to ensure the relevant electrical works could be completed in a timely manner and that suitable fill material could be extracted effectively for subsequent contracts. Though no allowance was made for this variation at the time of award, the Authority had regard to Flagstaff's advice that such service relocations are always necessary on a brownfields site and the costs would have been incurred in any event – either as part of the awarded price or as a variation. Accordingly, the Authority accepted the relevant variation costs incurred as reasonable since the work was completed at contract prices

Separately, the Authority notes that conversion of SR4 to RL2 involved works relating to an existing machine (SR4) operating at the terminal. Aside from impacts to existing terminal operations, the Authority accepts Flagstaff's advice that these works faced additional costs that would not have been borne at a greenfields site. These costs were related to design changes since the knowledge of the condition of parts to be rehabilitated was not known until the machine was stripped, adding to the risk of new parts being incompatible with existing components. On this basis, Flagstaff advised that an appropriate allowance for this risk would be around 25% of the contract award value due to the high proportion of the components that needed to be replaced and the condition of these existing parts.

Given the variation costs were around 20% of the award value, the Authority accepted these costs as reasonable. Additionally, the Authority accepts DBCT Management's actions in rescheduling these works before completion of the new stacker reclaimer SR4A as appropriate and in the best interests of the expansion.

On-going *design changes* were inevitable in certain contract packages, since not all aspects of design can be anticipated upfront and because of interfaces with other works. Flagstaff advised that the allowances for design changes were directly related to the level of design development at the time of award and the degree of interface with other works.

DBCT Management indicated that, in completing conveyor upgrades, designs had to be modified due to changes in the relevant Australian Standards leading to certain additional costs being incurred. Flagstaff noted that an allowance of 5% of the contract award value was appropriate for these upgrades, given the interface of these works with other contracts and the complexity of the electrical works involved.

It is noted that the actual variation costs due to design changes were around 12% of the award value and were incurred to ensure compliance with the revised Australian Standards. However, in reviewing these costs, Flagstaff advised that, if the change in standards was known at the

time of tender, the given costs would have been included in the contract award value. Accordingly, the Authority accepts Flagstaff's advice that the variation was unavoidable in the circumstances and, as the works were done under contract rates, the final costs were reasonable.

Similarly, a contract to upgrade the terminal's power systems also required upgrading electrical components for certain conveyors. However, it is noted that the relevant conveyor contracts had not been finalised at the time of awarding power systems upgrade contract. Accordingly, the Authority accepts that the completion of design development and award of the conveyor contract led to necessary design variations being incurred in the upgrade works. Flagstaff indicated that, although no allowance was provided in the contract for this variation, the final costs would have been incurred in any case and, at 5% of contract award value, these were considered reasonable. On this basis, the Authority accepted that the additional costs in the power systems upgrade contract were unavoidable and were prudently incurred by DBCT Management.

Adverse weather conditions also led to delays and variation costs being incurred in several contract packages. In particular, certain contract packages, including the shutdown works related to IL1/IL2, were severely impacted by the unforeseen flooding experienced in January 2008. The Authority accepted that, under the circumstances, the incurred additional costs were unavoidable and reasonably incurred.

Finally, the Authority notes there was *scope transfers* between certain contracts. In most contract packages, no specific allowances were provided for scope transfers at the time of award and generally variations were incurred to expedite the overall expansion works.

For instance, the supply and installation of hardware for anti-collision works was transferred from the original contract (commissioning of anti-collision system) to minimise any interface issues with subsequent contract works. As the costs involved in the scope transfer were within the allowance which was reviewed by Flagstaff, the Authority accepted that these costs were reasonable.

Separately, in conveyor upgrade works, moisture analysers on two conveyors were transferred from the environmental provisions for phase 2/3 of the expansion. DBCT Management indicated that these items were awarded as variations to existing contracts given the relatively low value of the environmental works and the relatively high cost of awarding separate packages. On this basis, the Authority accepted the relevant costs incurred were reasonable.

Relevantly, while scope transfers led to variations in contracts to which scope was transferred, these variations were offset by adjustments in the contracts from which scope was removed. In this regard, the processes dealing with all transfers of scope were followed adequately and there was no double counting of costs between contracts.

The Authority has reviewed DBCT Management's post-award contract variations for each phase 1 package and accepts that DBCT Management's contract variations were appropriately justified in the circumstances of the expansion.

In-loading System 3 and RRP3

While most phase 1 contracts incurred variations, construction contracts which interfaced with other contracts were particularly susceptible to cost-overruns. In this regard, the interlinked contracts for the construction of RRP3 and IL3 were a key cause of the incurred variation costs for the phase 1 expansion.

The RRP 3 works were necessary to conduct ground works and construct the third rail receival pit, dump station and the attached coal in-loading conveyor tunnel. This contract was on the

expansion project's critical path and was a pre-requisite to succeeding contracts, including the IL3 contract which was to be built largely on top of the pit.

For RRP3, Flagstaff considered that an allowance for variations of 20% to 25% was appropriate given the:

- (a) level of corroborating information from a previously completed dump station;
- (b) contract budget;
- (c) high quality contractor for this project; and
- (d) pressure on the contractor as this project was on the critical path.

The actual variation outcome of 35% exceeded that expected by Flagstaff.

A key reason for the level of variations was that the RRP3 contract was "fast-tracked" through the detailed design and documentation phase prior to tender as it was on the critical path.

In the circumstances, the Authority concluded that this fast-tracking was reasonable and in the best interests of the expansion project as a whole. Nevertheless, the Authority accepted that this meant that a significant additional degree of risk was taken on by the project and that this was matter of judgment. In this regard, the Authority noted Flagstaff's assessment that the decision to rely on geotechnical information from the adjacent dump station and not to conduct site-specific geo-technical investigations for the new dump station was, in hindsight, a higher risk than earlier perceived.

As it turned out, the geotechnical conditions for the new dump station differed from the adjacent dump station. This resulted in contract variations to cope with the actual ground conditions and to mitigate delays, which meant that the variations were in excess of that normally expected for a project of this type. For instance, variations were required for additional works caused by the unexpected nature of the ground to be excavated, namely ground stabilisation works, and increased labour costs to recover time delays.

Despite this, the Authority accepted that a majority of the variations (especially those incurred due to the unexpected ground conditions) would have been incurred as part of the award value of the contract (and not as variations) if extensive geo-technical investigations had been carried out prior to letting the contract. In this regard, the Authority had regard to Flagstaff's advice that:

- (a) if an independent and extensive geo-technical investigation had been initially undertaken; and
- (b) if the design had been completed in accordance with that investigation data prior to tender;

the cost of the unexpected ground conditions and consequent acceleration variations would have been roughly equivalent to an increase in the tendered prices.

In accepting variations for RRP3, the Authority also had regard to DBCT Management's actions in seeking to mitigate the impact of the RRP3 delays on other contracts. These actions included getting the contractor to undertake nightshift work and by providing earlier access to subsequent contracts than would have otherwise occurred (see Section 3.4).

However, notwithstanding DBCT Management's actions, the RRP3 delays impacted on other interfaced contracts, including the IL3 works, which required access to the pit.

For the IL3 contract, the Authority accepted Flagstaff's advice that an allowance for variations of 18% to 38% would normally be appropriate given the brownfields nature of the contract. However, while the actual variation outcome was 37.8%, this was in the context where a significant amount of the works was transferred from the IL3 contract to other contractors.

A key factor in the final cost for the IL3 works related to the delayed access to the pit. This was then compounded by other matters, including the quality of prefabricated materials.

Given these delays had occurred and the contractor had already incurred the full limit of the liquidated damages provided for in the contract, DBCT Management undertook a number of pro-active steps to limit the extent of further delays to the completion of the contract works and to the commissioning date of the phase 1 expansion.

In this regard, DBCT Management sought to minimise any further project wide delays by:

- (a) agreeing to work practices that accelerated the completion of the IL3 works; and
- (b) by removing certain works from the contract, namely the post completion works and the shutdown works for IL1/IL2.

The Authority accepts that these actions substantially reduced the delays in commissioning, though they occurred at a substantially higher cost than that envisaged in the original IL3 contract. Indeed, the transferred works were removed from the IL3 contract at a cost of \$6 million but completed by other contractors for a total cost of \$22 million.

In this regard, the Authority agreed that the additional costs arose, in part, because the scope of those works were originally underestimated and in part because the works were now scheduled in a manner that minimised further delays to the phase 1 project and interruptions to existing terminal operations. For instance, works that previously could have been done in and around inoperative machinery then had to be completed around operating equipment in confined spaces.

Overall, the Authority notes that, while the variation costs incurred in this contract were significant, it considers DBCT Management's actions as appropriate in limiting the delays to the commissioning of the phase 1 works. In this regard, it noted Flagstaff's advice that it would have been 'commercially irresponsible' to do otherwise.

3.4 Active measures to limit contract variations

The Authority also accepts that DBCT Management actively undertook innovative measures to minimise contract variations incurred.

For instance, DBCT Management submitted that it implemented an "Integrated Management Team" (IMT) approach to managing several key expansion contracts which were severely affected by staffing shortages, latent conditions, poor weather and delays in equipment delivery, and were unable to meet their contractual completion dates (DBCT Management sub: 63).

DBCT Management advised that the IMT process involved creating multi-party improvement teams within contracts comprised of DBCT Management, Connell Hatch, DBCT Pty Ltd and the contractors associated with a specific set of works (DBCT Management sub: 63).

DBCT Management also advised that their IMT process used an external facilitator to encourage a positive relationships and a positive approach to problem solving and external consultants were engaged to assist with project planning and scheduling capability.

DBCT Management noted that:

This process ensured that issues and disagreements were dealt with quickly, or elevated to senior management for resolution to avoid protracted disputes, and the associated disruption and deterioration in relationships with contractors. (DBCT Management sub: 50)

The Authority notes that, while an IMT approach has the potential to incur some additional expenses, there are significant benefits with an integrated approach to planning and problem solving between DBCT Management and contractors. This is particularly relevant where key contracts interface with each other.

For example, the Authority notes that DBCT Management formed an IMT with the relevant contractors for the rail receipt pit RRP3 and the in-loading system works. As the in-loading system works were largely undertaken above the pit, the timing of these works were therefore partially dependant on access to the pit. In this regard, Flagstaff supported the formation of the IMT as it was an “exemplar” of good practice and pro-active management because, *inter alia*, it:

- (a) allowed safe and early access to the incomplete RRP3 site which had previously been not permissible for succeeding contractors;
- (b) allowed co-operative planning and sharing between the IL3 and RRP3 contractors; and
- (c) was crucial in creating and maintaining trust between DBCT Management and the RRP3 contractor and allowed it to accelerate its works thereby minimising any delay to the succeeding contracts and the project more broadly.

3.5 Authority’s analysis and decision

DBCT Management proposed that \$83.8 million in contract variations and escalations across around 50 phase 1 contracts be included in the DBCT regulatory asset base.

In considering these costs, the Authority accepts that DBCT Management has complied with the approved policies and procedures for managing post-award variations for the phase 1 expansion.

In addition, the Authority accepts that DBCT Management’s contract variations were reasonable and justified in the circumstances of the expansion. Many variations were unavoidable, such as those relating to unforeseen weather conditions, while other variations were of the type that would be expected with an expansion of this scale and complexity, such as those due to design changes and interface with terminal operations.

At a broader level, DBCT Management has also demonstrated a proactive approach to limiting contract variations to benefit the overall 7x expansion project.

The Authority acknowledges that, in some circumstances, DBCT Management did incur additional costs due to difficulties with some works. However, DBCT Management has demonstrated that its actions were justified in expediting the expansion works, which was of benefit to terminal users.

Given this, the Authority accepts that the contract variation costs of \$83.8 million are prudent and satisfy the requirements of s. 138(2) of the QCA Act relating to the approval of a DAAU.

4. OTHER COSTS

DBCT Management has sought approval for \$126 million in other costs that largely consist of its own costs and those of its EPCM contractor, Connell Hatch.

The Authority has assessed the prudence of this expenditure and is satisfied that the:

- (a) scope of the works is consistent with the terminal master plan and was necessary to support the expansion;*
- (b) standards and specifications do not involve any unnecessary works or services; and*
- (c) costs incurred were reasonable, with a sound budget setting process in place and overruns justified.*

Accordingly, the Authority accepts the other costs as prudent and their inclusion into the regulatory asset base.

4.1 Introduction

Unlike award and contract variation expenditure, the Authority has not progressively reviewed the prudence of DBCT Management's *other costs*. Rather, the undertaking provides for the Authority to review the scope, standard and costs of *other cost* expenditure after they have been incurred.

DBCT Management classified its *other costs* expenditure into four distinct categories:

- (a) EPCM services;
- (b) owner's costs (owner's team salaries, construction support, health and safety initiatives, travel, office costs);
- (c) construction facilities & services (CF&S); and
- (d) non-TCMP permanent works (see Table 1).

Prior to DBCT Management's submission of this DAAU, the Authority engaged Flagstaff to provide advice on the technical aspects of DBCT Management's *other costs* expenditure. While Flagstaff considered all aspects of *other costs*, their focus was on EPCM and owners costs as they formed over 90% of total *other costs*.

Flagstaff prepared a draft report that was available on the Authority's website for stakeholder comment. Following the close of submissions, Flagstaff finalised their report which the Authority took into account in forming its view on the submitted *other costs*.

4.2 Scope of Works

DBCT Management's Proposal

EPCM costs

DBCT Management adopted an EPCM structure to manage the expansions. Under this approach, DBCT Management appointed engineering and construction joint venture Connell

Hatch as the EPCM managing engineer, to design, engineer, construct and manage the phase 1 expansion.

DBCT Management advised that it considered alternative mechanisms to manage the expansions as a whole, including an engineer, procure, and construct (EPC) delivery approach – where a contractor is generally paid a fixed lump sum price to deliver a complete facility. Under an EPC approach, the contractor assumes the risk for completing the facility.

DBCT Management submitted that an EPCM model was preferred to the EPC strategy as:

- (a) the brownfields nature of the expansions, with the high level of operation interfaces, meant EPC contracting was neither economically feasible nor practical;
- (b) at the time the project commenced, the design was insufficiently progressed to allow a single EPC contract; and
- (c) in the market at that time, no single contractor had the resources to undertake a project of this magnitude on a fixed price basis.

In addition, DBCT Management noted that the EPCM approach provided the benefits of:

- (a) a reasonable level of direct control over outcomes and ability to manage most of the risk, including transferring risk through the contracting strategy to contractors;
- (b) allowing the design and scope to evolve under owner control; and
- (c) enabling flexibility in scope and schedule, allowing best-for-project decision making.

DBCT Management also noted that the EPCM approach was endorsed by an independent technical consultant. In this regard, as part of its financing arrangements for the phase 1 expansion, DBCT Management engaged Kellogg, Brown & Root Pty Ltd (KBR) to provide potential financiers with independent advice on cost estimates, including the adequacy of the major components of *other costs* including EPCM services and owner's costs. KBR endorsed the EPCM approach in August 2006 as part of their project strategy report, with KBR concluding that:

Our overall feedback is that the quality of the EPCM contract is good and that we are comfortable that it is in accordance with standard industry practice.(DBCT Management sub: 58)

DBCT Management did not competitively tender for an EPCM contractor, but rather sole-sourced Connell Hatch to undertake the works. DBCT Management justified this on the basis that Connell Hatch provided:

- (a) integrated engineering (supplied by Connell Wagner) and procurement and construction management (supplied by Hatch Associates);
- (b) key personnel who were permanent employees and less prone to being poached in the market at the time;
- (c) ability, experience and expertise in the delivery of major projects with access to past designs and documentation, allowing for more economical engineering; and
- (d) commercial benefits, given the long term nature of the contract and the long-standing relationship between Connell Hatch and the terminal owners (DBCT Management sub: 58).

DBCT Management submitted that these factors, in conjunction with the relatively low-risk EPCM strategy, made the Connell Hatch EPCM contract the most prudent option to conduct the expansion.

Owner's costs

Owner's costs are DBCT Management's governance costs for the project. The major costs within this category were:

- (a) management team costs, including salaries and expenses for the team dedicated to the project;
- (b) project insurance costs, including essential premiums for insurance of contract works, delayed start up, public liability and marine transit;
- (c) mandatory charges including portable long service leave levies, land leases, environmental approvals, auditors and legal support;
- (d) specialised consultants required to provide technical advice, including KBR; and
- (e) essential construction support services such as site surveys, construction accommodation underwriting and services to the project provided by the operator, such as input to design, site security and commissioning support (DBCT Management sub: 56).

DBCT Management considered that these costs were essential for the prudent management of the expansion and to ensure that the capital expenditure was reasonable and in compliance with all regulatory requirements.

CF&S and non-TCMP permanent works

DBCT Management submitted that CF&S were necessary ancillary services provided to all contractors on site, including cleaning and waste collection, first aid, site vehicles (for the EPCM team) and various consumables required in the running of a fit-for-purpose site office.

In addition, DBCT Management advised that it incurred expenditure on permanent works as part of the expansion, which were not let in accordance with the approved TCMP. DBCT Management submitted that such non-TCMP contracts were directly associated with the construction of assets including minor works for stacker/reclaimer relocations and minor mechanical work (DBCT Management sub: 52, 56).

Consultant's Assessment

In reviewing the scope of *other cost* expenditure, Flagstaff assessed the need for the various types of expenditure as well as their consistency with the terminal's master plan.

Flagstaff concluded that DBCT Management's various cost categories were a reasonable list of the types of costs that should be incurred in an expansion of this type.

In respect of the scope of project delivery costs, Flagstaff advised that DBCT Management adopted a detailed evaluation matrix to analyse the different options for an appropriate project delivery model and, on this basis, accepted an EPCM approach as the best blend of owner control, managed risk, owner knowledge, operational input and flexibility of execution.

In this regard, Flagstaff concluded that the EPCM structure was appropriate as, *inter alia*:

- (a) it was a recognised industry structure which is regularly used for a project of the scale of the phase 1-3 expansion;
- (b) the scope and responsibilities of the EPCM contractor were well documented at the commencement of the project; and
- (c) a single designer provided a consistent approach to design details which is appropriate for an integrated facility such as DBCT.

In addition, Flagstaff supported the sole-sourcing of the EPCM contract to Connell Hatch as good industry practice, noting that:

- (a) Connell Hatch had undertaken the initial engineering works prior to final commitment of the project and were involved in the engineering for previous expansions of DBCT;
- (b) a number of engineering groups could separately offer port and coal handling expertise but few, if any, would match Connell Hatch's combined expertise and experience in Queensland for completing similar projects; and
- (c) Connell Hatch's experience both on the site and undertaking the "pre-commitment" engineering could reasonably be expected to result in lower engineering costs compared with other engineering groups.

Flagstaff also considered that the remaining *other costs* services were a necessary ancillary part of delivering the expansion works. For instance, Flagstaff noted that DBCT Management's decision to provide project-wide insurance (incurred as owner's costs) rather than requiring each contractor to provide insurance was prudent as, *inter alia*, interface problems with claims could affect multiple contracts and risk effective cover.

On this basis, Flagstaff considered that the scope of *other costs* services were appropriate.

In respect of *other costs* permanent works, Flagstaff noted that they related to:

- (a) minor works for stacker/reclaimer relocations;
- (b) minor mechanical works;
- (c) miscellaneous minor orders;
- (d) water management system 1 (WM1) piping material; and
- (e) capital spares.

Based on Flagstaff's own assessment and its discussions with DBCT Management, Flagstaff has advised that the scope of these works is consistent with the terminal's master plan.

Authority's Analysis and Final Decision

The Authority accepts Flagstaff's view that an EPCM arrangement was appropriate. The Authority also considers that, while there may have been merit in competitively tendering the EPCM contract, there is adequate justification for the sole-sourcing of Connell Hatch to undertake this role.

The Authority also noted that the scope of the *other costs* works were a necessary part of supporting and delivering the expansion.

Given these factors, the Authority accepts the scope of the *other costs* expenditure.

4.3 Standards and specifications of the Other Costs

DBCT Management's Proposal

DBCT Management submitted that the extent of *other cost* works were appropriate and satisfied the requirements in the DBCT access undertaking. In particular, DBCT Management argued that the standard of the non-TCMP works were not excessive nor contained design standards exceeding those necessary to comply with general construction standards in the PSA (clause 12.1) (DBCT Management sub: 57).

DBCT Management noted that the PSA standards do not strictly apply to *other costs* services (CF&S, owner's costs and EPCM) which comprised the majority of *other costs*, as no design standards applied to these services.

However, DBCT Management submitted that they were carried out cost effectively and with a high degree of professionalism in accordance with the requirements of the PSA.

Consultant's Assessment

Flagstaff considered that *other costs* services in excess of the standards required could be defined as services which, if not used, would not have negatively affected risk management or the actual outcome of the project in terms of time, cost or quality.

Flagstaff considered the standard of *other costs* expenditure broadly at the expansion-wide level and in terms of the specific categories of *other costs*. Flagstaff's considerations were supported by a range of site visits to the terminal and briefings from DBCT Management and Connell Hatch personnel as well as discussions with on-site contractors over the period the expansion works were being undertaken.

Flagstaff confirmed that the groups, categories and subcategories of *other costs* were a reasonable description of the services required to deliver the phase 1 expansion. In this regard, Flagstaff accepted that the EPCM cost sub-categories reflected the particular detailed contract adopted for the expansion and did not include any cost categories that would not normally be found within an EPCM contract.

Flagstaff did not undertake a detailed review of the remaining *other costs* works as they comprise a relatively small proportion (6.5%) of total *other costs*. However, on the basis of DBCT Management's responses to specific queries, Flagstaff accepted that the standards and specifications of the *other costs* works did not exceed the PSA requirements.

More broadly, Flagstaff made a range of observations about the management of the phase 1 expansion, including that:

- (a) its site visits identified that the overall quality of the technical and commercial administration and management of the different contract packages was to a good standard;
- (b) DBCT Management and Connell Hatch were able to respond, develop strategies and implement those strategies to improve the performance of poorly performing contractors;

- (c) the delay in completing the expansions was well within industry norms and would have been considerably longer without DBCT Management’s proactive management of poorly performing contractors; and
- (d) there was no apparent over-manning or provision of unnecessary services, resources or works.

Given the above, Flagstaff concluded that the standard of *other costs* did not reflect unnecessary resource expenditures or works.

Authority’s Analysis

The Authority accepts that the *other costs* were appropriate to deliver the expansion. Relevantly, the Authority had regard to Flagstaff’s analysis that EPCM costs, the largest category of *other costs*, did not include expenditure that would not normally be found within an EPCM contract.

The Authority also accepts that *other costs* expenditure relating to the overall management of the phase 1 expansion was appropriate and there was no apparent over-manning or provision of unnecessary services, resources or works.

Given these factors, the Authority accepts the standard of the *other costs* expenditure.

4.4 Reasonableness of incurred Other Costs

DBCT Management’s Proposal

DBCT Management noted that phase 1 *other cost* expenditure was \$125.6 million across the 4 major categories (see Table 4.1).

Table 4.1: Cost Performance of Other Costs

<i>Description</i>	<i>Budget (\$million)</i>	<i>Actual costs (\$million)</i>	<i>Cost-overruns (\$million)</i>
EPCM costs	\$81	\$91.1	\$10.15
Owner’s costs	\$28.3	\$26.2	-\$2.03
CF&S	\$4	\$3.3	-\$0.77
Non-TCMP physical works	\$3.3	\$4.9	\$1.62
Total	\$116.6	\$125.6	\$8.97

Overall, *other costs* comprised 23% of phase 1’s construction costs (excluding financing and IDC costs). DBCT Management indicated that there was an overrun of 7.7%, which indicated that its *other costs* management measures were effective as the majority of *other costs* were impacted by the six-month delay in completing the phase 1 expansion.

On this basis, DBCT Management submitted that its *other cost* expenditure was reasonable.

DBCT Management's submission focussed on the EPCM and owner's costs as they were the most significant component of *other costs* (i.e. over 90%). These are discussed in more detail below.

EPCM costs

DBCT Management noted that EPCM costs were around 21% of phase 1's direct costs (i.e. contract award values, variation costs and direct non-TCMP contract costs). In this regard, DBCT Management noted that KBR advised that these costs '[appear] to be consistent with some similar major projects' (DBCT Management sub: 61).

However, DBCT Management submitted that EPCM costs should be considered in the context of the entire 7x project since the entire design component for the project was included in phase 1 rather than split across phases. On this basis, DBCT Management noted that the EPCM costs for both phases represented 17% of total direct costs for the 7x project which falls on the lower end of a benchmark range (assessed by KBR) of 14% to 30% for major infrastructure projects.

DBCT Management considered that factors driving these costs included:

- (a) difficult market conditions;
- (b) a high brownfields component of the work; and
- (c) rigorous compliance requirements and full range of services provided from design to commissioning.

DBCT Management submitted that these factors were partially offset by the scale of the project, the relatively low technical complexity, the EPCM manager's familiarity with the terminal and effective resource management.

DBCT Management advised that, in the face of delays to complete the project, the competition for skilled resources and the ongoing escalation of pricing for professional engineering services, there was considerable difficulty maintaining a reasonable level of cost while retaining a strong core of skilled EPCM personnel. DBCT Management indicated that the strategies it implemented to address this included:

- (a) focusing on cooperation and maintaining good working relationships with EPCM personnel;
- (b) co-locating and integrating DBCT Management as part of the composite project team;
- (c) regularly reviewing the EPCM staffing plan; and
- (d) establishing a cost-reimbursable EPCM contract that allowed for a reasonable return and limited risk.

In this regard, DBCT Management noted that KBR accepted the EPCM costs as reasonable, highlighting KBR's view in its project strategy report that:

...KBR confirms its view that the EPCM delivery strategy adopted is a sensible compromise between the requirements of the parties for cost efficient and flexible delivery, and with the final cost having the maximum practical level of certainty. (DBCT Management sub: 61)

Owner's Costs

DBCT Management indicated that owner's costs were incurred by the owner's team in managing and coordinating the project, and were essential for project delivery. DBCT Management noted that these costs were based on the organisational chart for the project and related staffing plan.

In support of their owner's cost expenditure, DBCT Management submitted that costs such as project insurance and statutory requirements (of which portable long service leave, land leases and independent external auditor costs are the most significant component) were mandatory or involved DBCT Management exercising limited discretion.

Overall, DBCT Management submitted that incurred owner's costs amounted to around 6% of total project costs, and was below the budget estimate.

Unlike EPCM costs, DBCT Management noted that there is no industry benchmark for owner's costs due to the sensitive nature of such costs and the high degree of variability in owner involvement. While DBCT Management considered that these factors consequently make a valid comparison of owner's costs quite difficult, it referred to KBR's assessment of the owner's cost estimate where KBR noted that:

The build up of the Owner's Costs estimate was reasonably detailed to separately identify staffing costs, external consultants and other project overheads and expenses. These have been reviewed on a historical relationship to the direct works, as well as sanity checks of the total elemental values contained in the estimate. Our review finding is that the Owner's Cost component of the estimate appears adequate and consistent with industry standards. (DBCT Management sub: 62)

DBCT Management advised that, given the relatively high level of non-discretionary costs, the good performance in relation to the budget and the circumstances of the project, owner's costs were maintained at a reasonable level in relation to the overall expansion.

Consultant's Assessment

Flagstaff assessed the reasonableness of *other costs* expenditure by reviewing:

- (a) the broad budget-setting process for the phase 1 expansion, which included the development of the phase 1 *other costs* budget; and
- (b) the justification for budget over-runs.

Based on its review, Flagstaff concluded that DBCT Management's *other costs* expenditure was reasonable.

Budget-setting process

Flagstaff noted that a good budget-setting process includes the owner:

- (a) producing a series of budgets during the development of the project, typically during the pre-feasibility and feasibility study stage and immediately prior to project commitment; and
- (b) subjecting the budget to an external independent review prior to project commitment.

Flagstaff accepted that DBCT Management undertook such a process in preparing the phase 1 expansion budget.

In particular, KBR reviewed the forecast expansion costs on behalf of the project's financiers and concluded that the estimate was in line with industry practice. Flagstaff also noted that, as part of this process, KBR reviewed and accepted the detailed estimate build-up for EPCM and owners costs, analysed the historical relationship of *other costs* to the costs of the direct works and reviewed these costs against, *inter alia*, industry standards.

Flagstaff separately reviewed DBCT Management's budget-setting process for individual *other costs* items and considered that the budget-setting process was consistent with good industry practice.

For instance, Flagstaff advised that the budget for EPCM services, the largest cost category within *other costs*, was developed for the entire 7x project based on detailed organisation structure and a fully developed staffing plan. Further, consistent with prudent budgeting practice, the relevant budget costs were estimated based on the signed EPCM agreement with Connell Hatch.

Similarly, Flagstaff noted that, within the owner's costs category, team salaries and expenses were developed by establishing an organisation chart for the owner's team and then utilising a staffing plan over the duration of the project. The estimated salaries were based on market conditions with provisions for travel and other expenses estimated once the staffing plan was agreed. Flagstaff considered that the budgeting process for this item reflected a structured budget-setting process consistent with good industry practice.

Given a review of the overarching budget-setting process as well as a review of the process by which budgets were set for specific *other cost* items, Flagstaff's concluded that the budget for *other costs* was reasonable and considered that costs incurred that are equal to or less than the budget were accepted as reasonable.

On this basis, Flagstaff's analysis focussed on the reasonableness of *other cost* over-runs against budget.

Cost over-runs

Given that EPCM costs was the only major category not broadly within budget (see Table 4.1), Flagstaff considered EPCM over-runs in greater detail.

Flagstaff accepted that most of the design work for phase 2/3 was completed during the planning for phase 1 and, therefore, the EPCM costs could not be disaggregated between the separate phases. Accordingly, Flagstaff undertook a high level review of the EPCM costs for the entire 7x project to determine the reasonableness of the EPCM costs related to the phase 1 expansion.

Flagstaff advised that EPCM cost over-runs were, *inter alia*, due to the need to comply with code requirements and manage several poorly performing contracts.

For instance, Flagstaff noted DBCT Management's advice that additional works were involved to comply with the new plant code standard that came into effect on 1 April 2005, and imposed a much broader range of obligations on designers, owners and operators at an additional cost.

DBCT Management submitted that the scope of this item was not sufficiently developed for it to be included in the initial budget.

Flagstaff accepted DBCT Management's reasoning and advised that additional work was necessary to comply with the standards of the new plant code and therefore, the corresponding additional costs were not unreasonable.

Similarly, Flagstaff noted that DBCT Management incurred cost overruns due to the additional expenditure of managing several delayed contract packages. This included an increase in the EPCM contractor's contract management and time-related costs for project management, construction management, disbursement and travel and ancillary expenses. Flagstaff considered that this additional expenditure helped minimise adverse contractor performance which can have flow-over costs to other areas of the project.

Flagstaff accepted that, while all the engineering cost over-runs did not appear to be strictly justified on the basis of the extra services required, they were reasonable in terms of the expansion as a whole. In this regard, Flagstaff advised that it had closely monitored the performance of the EPCM contract, DBCT Management's management style and monthly reports and there was no evidence of the EPCM contractor unreasonably incurring costs.

More broadly, Flagstaff had regard to DBCT Management's benchmarking information which compared the EPCM costs at DBCT with other relevant projects. This benchmarking information sought to demonstrate that total estimated EPCM costs for the phase 1-3 expansion at approximately 17% of total direct costs, was within the costs incurred for a range of comparable projects.

Flagstaff accepted DBCT Management's comparison as reasonable and noted that the EPCM costs could have been expected to have been at the higher end of the benchmarking data (14%-30% of direct costs) given the large number of contracts procured by the EPCM manager and the additional costs associated with managing the delayed contracts. Accordingly, Flagstaff concluded that the EPCM costs were reasonable when compared to similar costs incurred in other relevant projects.

Given the above, Flagstaff accepted that the quantum of actual *other costs* incurred for the phase 1 expansion was reasonable.

Authority's Analysis

The Authority notes that DBCT Management's budget for *other costs* was reviewed by independent consultants engaged on behalf of its financiers as part of a broader review of the forecast costs of the phase 1 expansion. The Authority further notes that, aside from EPCM services, the remaining *other costs* categories were broadly within budget.

In regards to the EPCM costs, the Authority had regard to Flagstaff's conclusions that the additional EPCM expenditure on particular contracts reduced the adverse flow-on impacts to other contracts and provided whole of expansion benefits. Accordingly, the Authority accepts that the relevant cost over-runs were justified.

Given these factors, the Authority accepts the reasonableness of the cost outcome for *other costs* expenditure.

4.5 Authority's analysis and decision

DBCT Management proposes that \$125.6 million in *other costs* incurred in the DBCT expansion be included in the DBCT regulatory asset base.

The Authority accepts this expenditure was a necessary part of supporting and delivering the expansion. In this regard, the Authority notes that DBCT Management has sufficiently demonstrated the need for the various types of *other costs* expenditure and that there was no over-manning or provision of unnecessary services or works. The Authority also accepts that

the expenditure was reasonably incurred given the budgeting process for these costs were rigorous and any over-runs were justifiable.

Given this, the Authority accepts that the *other costs* expenditure of \$125.6 million is prudent and satisfies the requirements of s. 138(2) of the QCA Act relating to the approval of a DAAU.

5. FUNDING COSTS AND REVENUE MODELLING

In addition to \$555.8 million in construction costs, DBCT Management has sought approval for funding costs of:

- (a) \$12.5 million in financing costs; and*
- (b) \$50.7 million in interest during construction (IDC).*

The Authority accepts these costs as reasonable given the size and duration of the expansion works.

The Authority has also established that, based on \$618.96 million in actual expansion costs, DBCT Management has accurately calculated its proposed increases in the terminal's regulated revenues and tariff.

5.1 The Building Blocks approach

The Authority employs a nominal, post-tax 'building blocks' financial model to assess whether proposed revenues and prices are sufficient to ensure that DBCT Management is able to cover its costs and earn an adequate return on capital invested. The model's principal building blocks include:

- (a) return on capital – a rate of return on assets, including capital expenditure, that compensates investors for the opportunity cost of their investment, taking into account the risks involved;
- (b) return of capital – an allowance for depreciation of the assets that compensates investors for their loss in value over time;
- (c) operating expenditure – an allowance for efficient operating and administrative costs required to provide the regulated service; and
- (d) tax payable – an allowance for the expected tax liability arising from the revenue.

In applying the building blocks model to assess the proposed ARR for the phase 1 expansion, the Authority notes that DBCT Management is not seeking to increase its existing operating cost allowance.

Moreover, DBCT Management's proposed allowance for tax payable is based on the same approach applied by the Authority in its April 2005 decision (i.e. a benchmark statutory corporate tax rate of 30% and a 'gamma' of 0.50 for the value of dividend imputation credits).

The other major components of the building block model are discussed in more detail below. In this regard, DBCT Management's proposed ARR is based on:

- (a) \$555.8 million in construction costs; and
- (b) \$63.2 million financing and IDC costs.

As the construction costs were discussed in detail in chapters 2 to 4 of this decision, they will not be discussed in this chapter. However, DBCT Management's claims regarding financing and IDC costs are discussed in turn below.

Financing costs

DBCT Management advised that the phase 1 expansion costs represented a significant proportion of the asset base and could not be financed from operating cash-flows of the business. On this basis, DBCT Management proposed an allowance of \$12.5 million for the transaction costs incurred in securing funding from capital markets for debt and equity finance for phase 1 of the expansion.

DBCT Management indicated that it estimated this allowance by applying:

- (a) the regulatory (benchmark) debt/equity ratio (in the case of DBCT, 60% debt and 40% equity) to the expenditure;
- (b) an up-front debt raising fee of 1% to the phase 1 benchmark debt requirement; and
- (c) an up-front equity raising fee of 3.55% to the phase 1 benchmark equity requirement (DBCT Management sub: 72).

Authority's Analysis and Decision

The Authority notes that DBCT Management's proposed allowance for equity and debt raising fees of 3.55% and 1% respectively is consistent with the approach that the Authority accepted as part of the initial DORC valuation of DBCT.

While it has been a common regulatory practice for such costs to be included in initial DORC valuations, the Authority and other Australian regulators have not generally included such allowances in respect of incremental capital expenditure. In general, this has been because it has been accepted that the cash flows from existing operations are generally sufficient to fund incremental capital expenditure requirements, but not the original construction of a facility.

One exception to this was the Australian Energy Regulator's (AER) June 2007 final decision on Powerlink's electricity transmission network. In its decision, the AER accepted that Powerlink's existing cash flows would be insufficient to fund its proposed capital expenditure program and provided Powerlink with an allowance of 3% for equity raising costs (debt raising costs were not sought).²

As the phase 1 expansion represents such a significant proportion of the existing DBCT asset base (i.e. around 70%), the Authority accepted that DBCT Management's claim had some merit.

As a result, the Authority undertook its own assessment of DBCT Management's internal cash flow analysis to determine whether or not DBCT Management could finance the phase 1 expansion from its existing cash flows. This analysis was based on, *inter alia*:

- (a) the benchmark regulatory cash flows;
- (b) a benchmark dividend policy; and
- (c) the timing and magnitude of DBCT Management's other funding requirements (e.g. the short gain and phase 2-3 expansions of 55-59 mtpa and 68-85 mtpa respectively, and non-expansion capital expenditure commitments).

The Authority then adjusted downward DBCT Management's external financing requirement accordingly. In calculating the financing costs necessary to fund this residual requirement, the

² AER, Decision, Powerlink Queensland, Transmission Network revenue cap, 2007-08 to 2011-2012, p. 99.

Authority applied benchmark project financing cost assumptions relating to up-front equity and debt raising costs, as well as other potential transaction costs, including commitment fees and stamp duty on debt mortgage documents.

Based on this approach, the Authority's estimate of a financing cost allowance is not materially different to the allowance proposed by DBCT Management.

On this basis, the Authority accepts that the financing cost allowance sought for the expansion works is reasonable.

Interest During Construction

DBCT Management has proposed an allowance of \$50.7 million for IDC, noting that the undertaking provides for construction-related financing costs:

... which will include a return on capital over the construction period on the phase 1 expenditure incurred. (DBCT Management, sub: 72)

DBCT Management noted that the rate of return on capital applying to the construction period is the WACC (2) rate. Consistent with the requirements of the undertaking, this is set at 3.18% plus the construction period risk free rate, which is calculated by averaging the yield of 10 year Commonwealth bonds over the 20 business days preceding the first drawdown date on construction debt financing (i.e. 12 December 2006). Accordingly, WACC(2) was calculated at 8.83%.

Authority's Analysis and Decision

The Authority was able to establish that, in estimating IDC, DBCT Management complied with the requirements in the 2006 access undertaking and sound modelling practices, namely:

- (a) applying the appropriate rate of return during the construction period of 8.83%;
- (b) applying the regulatory (benchmark) debt / equity ratio (in the case of DBCT, 60% debt and 40% equity) to the expenditure;
- (c) the model incorporates the actual month of payment of contract costs and *other costs* in the construction cost cash-flow;
- (d) payment of capital costs took place on the last day of the month in which invoices were paid, and the return on capital over the construction period (i.e. IDC) accrues from the first day of the following month through to completion of the expansion;
- (e) financing costs have been included as part of the capital cost base to which IDC applies; and
- (f) the IDC component for capital costs incurred after the completion date of the phase 1 expansion are discounted using the rate of return applying to the capacity expansion.

Accordingly, the Authority accepts DBCT Management's IDC costs of \$50.7 million as reasonable.

Return on Capital

The Authority's June 2006 decision provided for a WACC of 9.02% based on a risk-free rate of 5.84% and a WACC margin above the risk-free rate of 3.18%. The undertaking provides for

recalculating the WACC on capital expenditure (not the existing asset base) on the basis of the risk-free rate applying on the first day of the month immediately following the commissioning of the expansion.

The return on capital component of DBCT Management's proposed ARR is based on a WACC of 9.58%, comprised of a WACC margin of 3.18% and a risk-free rate of 6.40%, with the latter reflecting the average daily yield of 10-year Commonwealth nominal bond rates over the 20 days preceding the actual commissioning of the phase 1 expansion on 3 March 2008 (DBCT Management sub. appx. 9:7).

Authority's Analysis and Decision

The Authority has reviewed DBCT Management's proposal and has confirmed that DBCT Management has calculated the WACC correctly and applied it in an appropriate manner to determine the return on capital.

Return of Capital

The return of capital component of DBCT Management's proposed ARR is \$3.71 million for the 2007-08 financial year and \$14.96 million for the 2008-09 financial year. These estimates of depreciation were based on DBCT Management's assessment of asset lives that took into account:

- (a) the productive equipment life assessment for each asset determined in a manner consistent with the original assets;
- (b) the economic life of the terminal, assumed to equal 50 years from the commencement of the original access undertaking on 1 July 2004, that is, ending on 30 June 2054;
- (c) for assets with effective lives greater than 50 years, the remaining life was truncated to 46.2 years, being the number of years from the first day of the month following commissioning of phase 1, to the end of the economic life of the terminal;
- (d) each new asset of the phase 1 expansion was allocated an equipment type developed for use with the original assets, and since neither the basis for the effective life assessment or the type of assets commissioned in phase 1 expansion has changed, it was assumed that the same asset lives would apply; and
- (e) a scrap value of zero was proposed for all assets, reflecting DBCT Management's experience where scrap proceeds of the collapsed RL1 were only sufficient to compensate its removal costs (DBCT Management, sub: 73).

Authority's Analysis and Decision

The Authority has reviewed DBCT Management's proposal and determined that it is consistent with the Authority's approach to depreciation in its DBCT April 2005 decision.

5.2 Annual Revenue Requirement, Revenue Cap and Pricing

The Authority had previously approved the forecast costs of the phase 1 expansion leading to an increase in the regulated revenues and tariffs following the commissioning of the expansion. The Authority's current assessment of the actual costs related to the phase 1 expansion will lead to amendments to these tariffs, which were subsequently rolled forward in 2007-08 and 2008-09.

DBCT Management's proposal

Based on \$618.96 million of phase 1 actual costs expenditure, and the modelling methodology summarised in section 5.1, DBCT Management has sought approval for a revision to the forecasted revenues (applying from 1 April 2008) as shown in Table 5.1.

Table 5.1: Phase 1 expansion Annual Revenue Requirement

<i>ARR Building Block</i>	<i>2007-08 (\$000)</i>	<i>2008-09 (\$000)</i>	<i>2009-10 (\$000)</i>
Return on Capital	14,175.21	57,282.6	57,255.6
Inflationary Gain	(5,349.3)	(21,154.9)	(21,143.7)
Return of Capital	3,711.1	14,959.8	15,323.9
Tax Payable	489.9	2,223	2350.6
Imputation credits	(244.9)	(1,111.5)	(1,175.3)
Raw ARR – actual costs	12,781.9	52,199	52,611
Raw ARR – forecast costs	12,114.7	49,783.9	50,191.6

As the ARR for the actual costs related to the phase 1 expansion, when approved, becomes effective from 1 April 2008, DBCT Management adjusted downwards its proposed building blocks for the return on capital, return of capital and tax payable for 2007-08 to reflect the fact that the expansion generates revenue for only 3 months of the 2007-08 financial year.

In contrast, the building blocks for the 2008-09 and 2009-10 financial years reflect a full financial year's revenue requirement.³

Authority's Analysis and Decision

The Authority has assessed DBCT Management's proposal and concluded that DBCT Management's underlying ARR modelling assumptions and calculations are consistent with an appropriate building blocks methodology. In undertaking this review, the Authority has also confirmed that DBCT Management has appropriately revised the forecasted ARR, Revenue Cap and TIC estimates based on the actual costs incurred for the expansion (see Table 5.2).

³ The 2008-09 and 2009-10 ARR and building blocks exclude the costs associated with the phase 2/3 expansion (step A and B) and the annual CPI adjustment.

Table 5.2: Revised Pricing

<i>Estimates</i>	<i>2007-08 (1 April – 30 June 2008)</i>	<i>2008-09 (1 July – 31 December 2008)</i>	<i>2008-09 (1 January – 30 June 2009)⁴</i>	<i>2009-10 (1 July – 30 June 2010)⁵</i>
	(\$)	(\$)	(\$)	(\$)
Aggregate ARR	35,734,830	73,152,178	86,916,599	210,218,593
Aggregate Revenue Cap ⁶	35,208,697	73,152,178	86,916,599	210,218,593
Difference from forecast cost Aggregate Revenue Cap	657,413	1,207,561	1,207,561	2,419,461
Aggregate TIC	2.1045	2.1541	2.4144	2.4931
Difference from forecast cost TIC	0.0393	0.0356	0.0336	0.0287

On this basis, the Authority accepts the proposed amendments to the ARR and TICs, namely,

- (a) for the 2007-08 financial year:
 - (i) increase the ARR by \$667,238 to \$35,734,830 (from 1 April 2008);
 - (ii) increase the revenue cap by \$657,413 to \$35,208,697 (from 1 April 2008); and
 - (iii) increase the reference tariff by \$0.0393/tonne to \$2.1045/tonne, effective 1 April 2008.
- (b) for the 2008-09 financial year:
 - (i) increase the ARR and revenue cap by \$1,207,561 to \$73,152,178, effective 1 July 2008 and by \$1,207,561 to \$86,916,599, effective 1 January 2009;
 - (ii) increase the reference tariff by \$0.0356 to \$2.1541/tonne, effective 1 July 2008 and by \$0.0336 to \$2.4144/tonne, effective 1 January 2009;
- (c) for the 2009-10 financial year:
 - (i) increase the ARR and revenue cap by \$2,419,461 to \$210,218,593; and
 - (ii) increase the reference tariff by \$0.0287/tonne to \$2.4931/tonne.

⁴ The aggregate ARR and Revenue Cap reflects the forecast costs related to the phase 2/3 expansion step A, commissioned on 30 December 2008

⁵ The aggregate ARR and Revenue Cap reflects the forecast costs related to the phase 2/3 expansion step B, commissioned on 30 June 2009.

⁶ The aggregate Revenue Cap is equivalent to the aggregate ARR beginning 1 July 2008, with the expiry of the contract relating to non-reference tonnage.