



Final Decision

**DBCT Management Draft Amending
Access Undertaking**

**Dalrymple Bay Coal Terminal Phase
2/3 Expansion – Actual Costs**

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PREAMBLE

This draft amending access undertaking (DAAU) has sought to increase the reference tariff at the Dalrymple Bay Coal Terminal (DBCT) by \$0.127/tonne, based on \$75.2 million in capital expenditure. This additional expenditure represents the difference between the actual cost (\$835.9 million) and the forecast cost (\$760.7 million) of the phase 2/3 expansion of the terminal from 68 to 85 million tonnes per annum (mtpa).

While the Authority has previously approved an increased tariff for the forecast cost of the phase 2/3 expansion, this decision represents the final major review of the actual costs of the expansion and for their approval for inclusion in the regulatory asset base.

The Authority has reviewed each of the phase 2/3 contracts and accepts that DBCT Management has acted reasonably in seeking to deliver the project on time and to contain expansion costs. However, this is not to say that the finalised costs of the expansion are not well in excess of the initial forecasts.

As with the phase 1 expansion, the Authority accepts that this expansion was conducted in a tight construction market of rising costs and high demand for labour. There was also an imperative that the project be completed in a timely manner, particularly for those works that were on the critical path.

These factors had a significant impact on how DBCT Management managed the expansion and contributed to higher than expected contract award values and cost over-runs.

DBCT Management relied on a range of contracting styles other than a competitive lump sum tender. It is apparent that DBCT Management did this with a view to maintaining the project's schedule and to achieve value for money. This was necessary as a lump sum tender might have left the contractor bearing significant construction risks or have been less attractive to them for other reasons. For example DBCT Management:

- (a) adopted a schedule of rates contract on some occasions where the scope of the work could not be clearly defined at the outset; and
- (b) invited less than three tenderers to apply to tender either where there was limited expertise in the supply of specialised equipment or where work was allocated to a contractor that was already on-site.

The Authority has reviewed each of the phase 2/3 contracts and has accepted that DBCT Management's actions enhanced competitive pressures between prospective tenders, helped manage contract risks and contained expansion costs.

Nevertheless, there were significant cost over-runs in some contracts.

The Authority found that many of the contract variations were due to design changes. This was often because contracts were let early, in order to meet a tight schedule, but at a time when the design work had not been fully completed. In other cases, the initial designs had to be revised due to geotechnical conditions. The Authority found that these variations often did not add to the construction costs because even if the designs had been completed earlier the costs would have been incurred, not as a variation, but as part of the contract's awarded value.

In other cases, cost over-runs occurred because of the need to conduct the works in a brownfields environment, where the expansion works needed to occur in the context of a functioning terminal and where construction issues could not be fully conceived while the terminal was operating.

Poor weather conditions also were also a factor, with the level of rainfall during the expansion significantly exceeding the average over previous years.

It was evident that the cost of the offshore works contract (i.e. jetty and berth 4) was particularly affected by a combination of a number of these factors that resulted in it being far more costly than the initial budget.

Nevertheless, it is also evident DBCT Management acted prudently to manage these costs and to limit construction 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 for a project of this size and complexity.

The Authority's review has also confirmed that DBCT Management has accurately converted the \$835.9 million in actual phase 2/3 expansion costs into increased regulated revenues and tariffs.

Accordingly, the Authority's decision is to accept that the actual costs of the phase 2/3 expansion of \$835.9 million be included the regulatory asset base and to approve, *inter alia*, an:

- (a) increase in the Annual Revenue Requirement (ARR) of \$10.7 million for the 2010-11 financial year;
- (b) increase the revenue cap of \$10.7 million for the 2010-11 financial year; and
- (c) increase in the reference tariff of \$0.127 for the 2010-11 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 (DBCT) 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 \$1.5 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.

The phase 2/3 expansion was commissioned in two steps, resulting in the terminal infrastructure charge increasing by:

- (a) \$0.262/tonne on 1 January 2009 based on a forecast costs of \$341 million; and*
- (b) \$0.073/tonne on 1 July 2009 based on forecast costs of \$419 million.*

DBCT Management has now sought the Authority's approval for a further increase of \$0.127/tonne based on the aggregate actual costs incurred on the phase 2/3 expansion (\$835.9 million), which exceeds the forecast cost by \$75.2 million.

1.1 The Dalrymple Bay Coal Terminal

The 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 2/3 expansion from 68 mtpa to 85 mtpa was commissioned in two steps. Step A relating to the onshore works and berth 4 was commissioned on 30 December 2008, while Step B relating to the remainder of the offshore works was commissioned on 30 June 2009.

The phase 2/3 expansion works involved:

- (a) stockyard – installing new bund 4A and stacker (ST4); additional yard conveyors R8 and S8; additional dust control measures; and modifying and rebuilding old stacker/reclaimer (SR3 as SR6) on bund 6 and completing row 8 development;
- (b) outloading – installing new outloading system (OL 3) to carry coal from stockyard to berths and installing a new surge bin 3 (SB3) and constructing new berth 4 and extending conveyor L17; and
- (c) site wide – upgrading the terminal's electrical power supply; extending the terminal operator's office space and warehousing; and providing control and automation software systems for the new and upgraded facilities.

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 *Queensland Competition Authority Act 1997* (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 access undertaking that sets out a range of matters, including for 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 12 October 2006, the Authority accepted the scope of the phase 2/3 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

As for the phase 1 expansion, prior to the commissioning of the phase 2/3 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 2/3 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 2/3 forecast cost DAAU – submitted prior to commissioning to adjust tariffs on the basis of the forecast cost of the phase 2/3 expansion; and
- (b) phase 2/3 actual cost DAAU – submitted after commissioning to revise tariffs on the basis of the actual phase 2/3 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 2/3 forecast cost DAAU

On 20 November 2008, the Authority approved DBCT Management's phase 2/3 forecast cost DAAU to:¹

¹ These revenues and tariffs have been subsequently increased due to unrelated matters, including approval of the phase 1 actual cost draft amending access undertaking and annual CPI roll-forwards.

- (a) increase the ARR by \$63,203,746 to \$208,531,571;
- (b) increase the revenue cap by \$63,203,746 to \$208,531,571; and
- (c) increase the terminal infrastructure charge (TIC) from \$2.1185/tonne to \$2.4533/tonne.

on the basis of a forecast \$760.7 million in capital expenditure for the phase 2/3 expansion.

In considering the phase 2/3 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 2/3 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. In this regard, the unders and overs clause was consistent with that approved by the Authority in the context of the phase 1 actual cost decision.

Phase 2/3 actual cost DAAU

On 25 August 2010, 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 2/3 expansion.

DBCT Management's phase 2/3 actual cost DAAU seeks a further increase, *inter alia*, in the:

- (a) ARR of \$10.7 million for the 2010-11 financial year;
- (b) revenue cap of \$10.7 million for the 2010-11 financial year; and
- (c) reference tariff of \$0.127/tonne for the 2010-11 financial year,

on the basis that its actual phase 2/3 expansion costs (\$835.9 million) are \$75.2 million above forecast.

DBCT Management's submission for \$835.9 million in actual phase 2/3 expansion costs (across the two steps) be included into the regulatory asset base is comprised of a number of elements, namely:

- (a) \$455.6 million in base contract costs – where the release of contract packages for the phase 2/3 expansion occurred in accordance with an Authority approved tender and contract management process (TCMP) (see Chapter 2);
- (b) \$151.2 million in post award expenditure – contract variations and escalations for the above awarded contract packages (see Chapter 3);
- (c) \$136.0 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 2/3 expenditure (see Chapter 4);
- (d) \$76.3 million in interest during construction (IDC) – the opportunity cost of phase 2/3 expenditure during the construction period (see Chapter 5); and
- (e) \$16.9 million in financing costs – the transactions costs of equity and debt financing for the phase 2/3 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 2/3 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 2/3 actual cost DAAU. Flagstaff Consulting was engaged to provide technical assistance to the Authority in relation to these matters.

As for the phase 1 expansion, however, the Authority notes that its acceptance that aspects of the phase 2/3 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 approving 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 provides stakeholders with the opportunity to comment on all aspects of the phase 2/3 actual cost DAAU.

1.5 The Authority's Public Consultation Process

On 26 August 2010, the Authority issued a notice of investigation into DBCT Management's DAAU. The Authority published DBCT Management's phase 2/3 actual cost DAAU and supporting information on the Authority's website (www.qca.org.au) and invited submissions from interested parties by 16 September 2010.

No stakeholders responded to the invitation.

1.6 The Authority's Review

The Authority notes DBCT Management undertook the phase 2/3 expansion in a similar manner to the phase 1 expansion. In particular, DBCT Management adopted similar processes in awarding and managing contracts. DBCT Management has also sought to translate these costs into reference tariff changes based on the modelling methodology used for the phase 1 expansion. The Authority's review of DBCT Management's phase 2/3 DAAU in the following chapters therefore broadly mirrors its approach in considering the phase 1 actual cost DAAU.

2. UP-TO-AWARD EXPENDITURE

At around \$456 million, over a half of the cost of the phase 2/3 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 2/3 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 accepted that the TCMP 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.

Further information on the Authority's approval of the TCMP can be found in its Phase 1 Actual Cost Decision of December 2009.

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*, in accordance with 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: 20).

Assessments of the Independent External Auditor

The 2006 DBCT access undertaking provided for the Authority to not only approve a TCMP, but 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 2/3 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. These included confirming that DBCT Management and Connell Hatch personnel had no conflicts of interest in any tenders and that there were appropriate procedures in the TCMP for evaluating and awarding tenders.

Further information on Concorde's audit process can be found in the Authority's phase 1 actual cost decision of December 2009.

Concorde conducted detailed audits of the up-to-award process across all 20 of the phase 2/3 contract packages to determine whether DBCT Management had procedurally complied with the 14 audit points.

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 2/3 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, the TCMP requires DBCT Management to:

- (a) make the finalised contract available "as soon as practicable", after the draft contract is awarded – including time for the final reviews by DBCT Management and the contractor. Concorde noted that for a number of contract packages (e.g. construction of bund 4A, reclaiming of land for the surge bin and the design, supply and delivery of conveyor belts and drives) this final review process was delayed and, therefore, was non-compliant with the TCMP. In discussions with DBCT Management, Concorde accepted that there were good reasons for the delays and that DBCT Management was implementing processes to finalise contracts quickly; and
- (b) sign an advice to procurement form to initiate awarding the contract. For a number of contract packages (e.g. supply of berth 4, supply of berth 4A rail, supply of pulleys, reclaiming of land for the surge bin and OL3 offshore works), DBCT Management did not sign the required forms. Concorde concluded that this was not unreasonable as DBCT Management's sign-off was either not technically required or the overlapping recommendation to award form had been signed.

Authority's assessment

The Authority considers that the TCMP has provided a rigorous and transparent process for tendering and awarding phase 2/3 contracts. In particular, it established a process 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 2/3 contracts.

2.3 Alternative delivery approaches to awarding contracts

In commencing the phase 2/3 expansion, DBCT Management had intended to let most of the contracts on the basis of a competitive lump sum tender and to adopt alternate delivery strategies on an exception basis.

However, of the 20 phase 2/3 contracts, only six were lump sum competitively tendered, with the balance awarded under an alternate delivery approach (DBCT Management sub: 39). These alternate strategies included DBCT Management:

- (a) inviting less than three companies to apply to tender;
- (b) adopting a non-lump sum contracting strategy (such as schedule of rates); and
- (c) not selecting the lowest bid.

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 2/3 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: 39)

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

For instance, DBCT Management noted that the OL3 works involved reclaiming land from the bay and extending the seawall, to provide the necessary foundation for constructing the new Surge Bin and widening the jetty. DBCT Management said that while a lump sum approach to the pricing was appropriate, two major civil contractors were already present on site and it was considered disadvantageous to request further tenders. Accordingly, DBCT Management requested tenders only from these two contractors, in a deliberate alternate delivery strategy. The contract was subsequently awarded to the lowest bidder.

DBCT Management advised that this alternate delivery strategy was prudent as it leveraged the benefits of resources already mobilised to site, by eliminating the increased number of interfaces and disruption a third contractor would cause in the limited space available on site (DBCT Management sub: 39).

Overall, DBCT Management noted that, with the tendering and award of all phase 2/3 contract packages:

- (a) the independent external auditor has audited compliance with the TCMP; 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. It therefore has accepted that a more flexible tendering strategy than one based on competitive lump sum tenders was required to attract tenderers and to 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 2/3 contracts included:

- (a) approaching a limited number of tenderers or sole-sourcing; and
- (b) 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) *berth 4 rail* – where there was only one supplier worldwide able to supply the materials within the project's timeframes;
- (b) *bund 4A rail* – where it was sole-sourced from a supplier who won the tender for another contract (bund 5A and 6 rail) where they had demonstrated significant cost savings compared to competitors; and
- (c) *construction of bund 4A* – where it was sole-sourced to a particular contractor who had previously been engaged to construct the structurally similar bund 5A, and who had demonstrated their performance in terms of quality, reliability and deliverability.

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) *final site wide civil works* – where bids were sought from two contractors already on site. The Authority accepted this approach as both tenderers were fully capable, competent and competitive. This approach also eliminated mobilising and demobilising costs that another bidder would have included, and also leveraged off the experience developed by the existing contractors; and
- (b) *reclaiming land for surge bin* – bids were sought from two contractors already on site. As for the final site wide civil works, the Authority accepted that onsite contractors carried competitive advantages over other contractors in terms of mobilisation to site costs, current site knowledge and savings from shared overheads and site facilities with their existing contracts.

Similarly, the Authority accepted that there were circumstances where it was appropriate not to select the lowest tenderer. For example, for the supply and installation of OL3 onshore works, while the lowest tenderer on close of bids was not selected, the lowest tenderer was selected after a process was undertaken to equalise the submitted tenders. In addition, the lowest tenderer on close of bids was unable to meet the required delivery date.

Separately, 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 supplying and installing control system upgrades material preparation for excavating, preparing and stockpiling fill material, and reclaiming land for the surge bin.

For instance, the Authority noted that the control system upgrade works were to be used for all the expansion's structural, mechanical and electrical packages. However, in many cases, the system upgrade works related to developing software and programming code to communicate with components and equipment functions that may not yet have been designed or manufactured. The Authority accepted that a schedule of rates approach was appropriate for this type of systems development and integrations work and was consistent with similar practice at other terminals.

Similarly, the Authority accepted hourly rates for the material preparation contract. This approach provided maximum flexibility on how much, and the type of, each fill material that was to be produced and the ability to revise specifications, if necessary, to account for the characteristics of the found fill material, while providing the contractor no basis for contract variation claims.

In summary, the Authority notes that a competitive lump-sum approach would not have always generated the best project outcome for the phase 2/3 expansion given the project's tight timelines and 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.

Supply and installation of OL3 offshore works, including berth 4 and L17 extension

The largest phase 2/3 contract related to supplying and installing the OL3 offshore works which was awarded to the contractor for \$269 million. These works related to the supply of all equipment and materials to construct the new outloading system (OL) 3 offshore facilities and reflected marine and other structural, mechanical and electrical works associated with:

- (a) constructing conveyor L15A from surge bin 3 to the jetty abutment and foundations;
- (b) constructing conveyor L15 along the widened jetty from the jetty abutment to the existing wharf conveyors;
- (c) extending the conveyor L17 tail to facilitate the feed from the new conveyor L15;
- (d) widening the existing jetty including a second jetty roadway;

- (e) constructing substation 5B and replacing offshore transformers and switchgear;
- (f) replacing the offshore amenities building; and
- (g) all activities for pre-commissioning and load commissioning the systems.

DBCT Management's original tendering strategy was to proceed with two competitive bid lump sum contracts, namely for the jetty and another for the berth. However, during the design stages, DBCT Management identified a major risk of attracting competent contractors that were able to supply competitive prices for both contracts. This reflected the tight construction market at the time.

DBCT Management therefore tendered both aspects of the marine works into a single package to make the works more attractive to contractors. To avoid delays, the tender was also issued before the head and tail end of the jetty design was complete.

While four major contractors were invited to bid for the work, DBCT Management only received two full priced bids. Both bids comprised part lump sum, part provisional quantities at fixed rates and part provision sums reflecting the variability in the completion of the design for elements of the works.

The two bids varied considerably in price and both were significantly higher than DBCT Management's internal estimate. Given this, DBCT Management obtained independent reviews to benchmark the lowest bidder's costs with DBCT Management's internal estimate. The independent estimator's price was similar to DBCT Management's estimate of the contract cost. DBCT Management also identified that the contractor had allowed slightly more labour hours to construct berth 4 than was needed to construct the existing berth 3.

The Authority accepts that while the lowest bid seemed expensive at the time, it was reasonable for DBCT Management to accept the lowest bid, rather than cancelling the bids and proceeding with a new negotiated contract. The Authority notes that this alternate strategy may not have achieved savings in the final costs given the lack of interest from other contractors during this period.

On this basis, the Authority accepted that the lowest bidder's tender as a competitive offer.

The Authority also reviewed the contract terms and accepted that they were designed to achieve value for money in the construction of the works.

For instance, the widened jetty was based on a single vertical pile design. In this case, the design had vertical loads only (i.e. compressions) in comparison to the existing jetty's raking piles which had both vertical loads and side loads as a result of the angle of the pile. The Authority recognised that vertical pile design would minimise construction costs as it reduced the number of piles required and the degree of drilling required for driving the piles into the sea bed.

Similarly, there were physical risks identified in this contract. In particular the effect of weather risks including possible rain, wind and wave action on construction. DBCT Management accepted a reduction in the contract lump sum in exchange for an additional contingency sum for possible wet weather claims. The Authority, considered that DBCT Management properly assessed the risks and the negotiated contract outcome had taken a prudent balance between price and risk.

Overall, the Authority accepted that DBCT Management proactively sought to maximise competitive tension in tendering the works and included contract terms and design

specifications to reduce the overall cost of the contract. On this basis, the Authority considers that the award value for the marine work contract was reasonable.

2.4 Appropriate standards and specifications

The 2006 DBCT undertaking provides that the standards and specifications of the phase 2/3 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 complied with the relevant PSA requirements as they developed a fit for purpose design review procedure for 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: 38).

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: 40)

Authority’s assessment

In assessing the standards and specifications for the phase 2/3 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 2/3 contracts, the Authority accepted that DBCT Management had generally used the same specifications as the pre-existing facility or that the standards of works were in line with general industry standards. For instance, for the control system upgrade works, the Authority accepted that the configuration of the schematic design and functional specifications were consistent with the existing systems at the terminal.

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

- (a) *construction of bund 4A* – 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; and
- (b) *design, supply and delivery of conveyor idlers* – conveyor idlers are the rollers on which the conveyors run. The Authority accepted that improvements in idler design and a

resulting reduction in idler failure meant the idlers were procured with an increased bearing life of 100,000 hours, instead of the usual 60,000 hours.

Based on its review, the Authority accepts that DBCT Management has not gold-plated the phase 2/3 expansion works. In many cases, DBCT Management adopted the same specifications used in the existing facility or were 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 contractors 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

DBCT Management 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: 47).

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: 40)

Authority's assessment

The Authority confirms that DBCT Management's expansion contracts are based on the 7x project's 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 provided cost savings while not materially increasing the risk profile of the contract. For instance:

- (a) *the OL3 onshore works* – the contract included a specific exclusion to the general requirement that subcontractors hold the same level of insurance as the contractor. The

Authority accepted that it was unreasonable to expect a small subcontractor undertaking small aspects of the works to hold the same level of insurance as a large contractor, with the exclusion involving minimal risk to the project; and

- (b) *construction of bund 4A* – the contract included contract terms that allowed the contractor to seek compensation for delays due to adverse weather extending beyond 10 days. The Authority accepted that such delays are an unmanageable risk.

While the Authority accepts that DBCT Management’s general conditions of contract reflected 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

As for the phase 1 expansion, the Authority notes that DBCT Management adopted measures that sought to reduce the overall costs of the expansion.

For instance, a contract was awarded for yard machines, namely stackers and stacker/reclaimers as part of the phase 1 expansion. This contract also included an option to purchase another stacker (ST4) for the phase 2/3 expansions. DBCT Management noted that this option provided flexibility in the event that the phase 2/3 expansion did not proceed.

DBCT Management noted that upon approval of the phase 2/3 expansion, the option to purchase ST4 was exercised and provided significant cost savings to the project as:

[p]ricing for yard machines rose dramatically in the interim, as evidenced by recent contracts for the provision of yard machines in another coal terminal expansion where cost escalation was in the order of 40% (DBCT Management sub: 48).

The Authority accepted that DBCT Management received value for money by exercising the option to purchase ST4. In particular, the Authority noted Flagstaff’s view that:

- (a) ST4 was identical to a previous stacker yet the option to purchase was exercised at a discount of around 7.5%;
- (b) the market for the supply of heavy duty materials handling equipment changed substantially during the 12 month period between award and DBCT Management’s exercising of this option, with prices increasing significantly; and
- (c) if the option had not been secured at the time of original award, the schedule for delivery would have been significantly longer.

On other occasions, DBCT Management submitted that it engaged in the principal supply of particular components as this delivered better value for money (i.e. DBCT Management supplying to the construction contractor directly). DBCT Management used such an approach for acquiring certain components for the new conveyor systems, including idlers, belting, drives and pulleys. DBCT Management noted that this allowed greater control over:

- (a) pricing – the given components could be excluded from the pricing of the conveyor installation contracts, allowing the contractors to focus their procurement effort on areas of expertise, and allowing DBCT Management to gain pricing advantages with significantly increased quantities;

- (b) specification – the given approach ensured that only one supplier would provide the relevant items, significantly reducing the risk of variation in specifications; and
- (c) delivery time – many of these conveyor components had a long lead time due to the quantity required, bottlenecks in the supply chain for source materials, strong demand from other projects, and limited production facilities. Supplying these components separately allowed these items to be placed in the production queue at the earliest opportunity, so they would be ready on site well before they were required for installation (DBCT Management sub: 42).

The Authority has reviewed each principal supply contract and accepted Flagstaff’s view that the standard and specifications and processing for awarding of these items was appropriate. On this basis, it accepts that the principal supply items were reasonable and generated value for money in the expansions.

2.7 Authority’s analysis and decision

DBCT Management proposed that \$455.6 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 2/3 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 \$455.6 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 approval for around \$151.2 million in contract variations for the phase 2/3 expansion. In considering this claim, 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

As for the phase 1 expansion, the phase 2/3 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 variation claims must be appropriately generated, handled and processed in accordance with the relevant contractual provisions and the TCMP. 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.

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.

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.

Collectively, these requirements in the undertaking were designed to replicate best practice contract management processes that would otherwise apply in an unregulated competitive 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.

For further information on the Authority's approach to assessing contract variations, refer to its phase 1 actual cost decision of December 2009.

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: 47)

Moreover, DBCT Management submitted that the independent external auditor – Concorde Corporation – has audited variations for each awarded contract and certified that the post-award processes comply with the requirements of the TCMP, and no instances of material non-compliances were observed.

Assessment by the Independent External Auditor

As for the awarding of contracts, Concorde audited DBCT Management's procedural compliance with the TCMP and the relevant contract provisions regarding escalations and variations.

In doing so, Concorde consolidated the TCMP requirements into five audit points. These audit points cover a number of procedural issues relating to the post-award management of contracts, including whether DBCT Management approved all variations and escalation payments before payments were issued and whether contract close-out reports were appropriately completed.

The five principal audit points reflected 25 more detailed steps. Concorde's audit principles required DBCT Management to demonstrate material compliance with 80% of these detailed steps, otherwise, Concorde would consider the variation to be materially non-compliant. Concorde's 80% test reflected its view that 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 2/3 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 identified instances 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, the TCMP required:

- (a) DBCT Management's package leader to sign an advice to procurement (ATP) form to formally initiate a variation payment. Concorde noted that this form had not been signed for a number of contract packages (e.g. converting stacker reclaimer SR3 to stacker reclaimer SR6, final road works, structural works to form new bund 4A, supplying and installing conveyors R8 and S8, control system upgrades, supplying and constructing out-loading conveyor system (OL3) onshore works and supplying and constructing the marine works – i.e. berth 4 and OL3 offshore works). Concorde considered DBCT Management's non-compliance was not material as it was the result of an administrative error and, in all cases, the subordinate approvals had been signed.
- (b) details of the proposed variation to be included in the approval documentation. For several contract packages (e.g. structural works to form new bund 4A, supplying and installing conveyors R8 and S8 and supplying and constructing the marine works) the works were completed before the details of the variation were provided. Concorde considered DBCT Management's non-compliance was non-material as, in most cases, the direction to proceed with the variation work was inherent in the contract terms as a provisional item. In other cases the variation was caused by an engineer's direction, in line with the variation agreement, documented in an email that was subsequently provided to Concorde.

- (c) the project manager to approve the details of the proposed variations. However, for a single contract package (i.e. marine works), a delegate of the project manager approved the variations. Concorde indicated that such transfers in authority had occurred in many previous contract packages as well and were considered reasonable. In this instance, Concorde noted that the delegation of the project management role to the engineering manager was not recorded in the contract responsibility matrix, however it was documented in an email. As Concorde did not receive the email prior to completing this review it recorded the matter as a non-compliance. Overall, Concorde considered the delegation of the project management role was reasonable and the non-compliance was non-material.
- (d) the forms approving a variation to be retained in the procurement area. However, this was not done in the case of the out-loading (OL3) reclamation works. As this form was located elsewhere within DBCT Management's filing system, Concorde considered the non-compliance to be non-material.
- (e) DBCT Management's approval for a variation to accord with DBCT Management "limits of authority matrix". However, for the out-loading conveyor system (OL3) onshore works contract, the request for the variation form was not signed by the project director as required. Concorde concluded that the non-compliance was non-material as the variation was ultimately approved by the project director and paid in any event.

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 to limit the scope of contract variations as well as requiring DBCT Management to provide documentary evidence of the process followed in accepting a claim.

Concorde has audited, and 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 and that the non-compliances identified were non-material.

Accordingly, 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 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 \$151.2 million in contract variations for the phase 2/3 expansion. These variations range from around \$0.2 million for design and supply of conveyor contracts to \$97.5 million for the supply and construction of offshore works (berth 4 and OL3).

DBCT Management said 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 (in the order of 2,000) is available for review on request. (DBCT Management sub: 47)

In seeking to justify phase 2/3 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: 47).

DBCT Management advised that they took action through an Integrated Management Team (IMT) approach to prevent any delay in completing the offshore works and project schedule. For instance, the IMT was able to resolve a dispute between a contractor and subcontractor with DBCT Management saying that:

... a dispute between the contractor and its electrical subcontractor relating to prolongation entitlement escalated to the stage where the subcontractor was not prepared to meet the project schedule, with the potential to cause major delays to completion of the offshore works. As a result of DBCTM's intervention, the dispute was resolved at a moderate cost and the delay was averted (DBCT Management sub: 50).

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 2/3 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 2/3 expansion works were \$151.2 million or 33% of the award value for all contracts. This was broadly in line with DBCT Management's expected allowances for phase 2/3 contracts of 32% which formed part of the phase 2/3 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.

The most significant phase 2/3 contract related to the offshore works which incurred \$97.5 million in submitted variations or variations of 36.2% compared to the expected 9%. The remaining phase 2/3 contracts incurred variations costs amounting to \$53.7 million, or variations of 28.8%, compared to that expected of 20%.

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, as for the phase 1 expansion, the phase 2/3 contract variations occurred for a range of reasons, including:

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

The brownfields nature of the expansion and the inter-related nature of some contracts 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. These variations increased with the size of the various works and the extent of their interaction with existing terminal operations and other expansion works on site, for instance:

- (a) *conveyors R8 and S8* – DBCT Management incurred a variation for blasting and painting existing bolts that was nearly double the expected allowance. The Authority accepted the variation as the work was necessary to satisfy the specifications for protecting the new structure and its connection to old structures. Flagstaff advised that on a brownfields site, the amount of rectification work is extremely difficult to quantify as access to assess the extent of the work required is restricted in an operating environment.
- (b) *conveyors R8 and S8* – the construction of both the head and tail ends of these conveyors on bund 4A (i.e. at the in-loading system and at the end of the bund respectively) interfaced with the work on IL3 as the scope for IL3 required the contractor to construct the transfers from new conveyor S13 (part of IL3) to both new conveyors R8 and S8. The contractor for bund 4A could not start the work on the tail end of these conveyors until this work was completed. Delays in completing the IL3 works meant that the bund 4A contractor received delayed access to the conveyor tail ends, leading to increased labour and associated site overhead costs. Flagstaff advised that these delays and associated costs were not unreasonable as they were time-related costs at tendered rates for the period that the works were delayed.
- (c) *supply of conveyor belts* – DBCT Management incurred a variation for additional qualified resources to supervise the belt splicing operation. The Authority accepted the variation as there was a possible conflict between the belt supplier and the company undertaking the belt splicing (joining the two ends of conveyor material after it has been run through the length of the conveyor so that it is a continuous belt) regarding any damage done during the belt slicing and pulling. Flagstaff advised that this action and

associated costs were not unreasonable as it reduced the risk of determining who was responsible for repairing any damage, and any consequent delays that could occur in resolving such issues.

On-going *design changes* were inevitable as 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 related to the level of design development at the time of award, the degree of interface with other works and the timing of award, for instance:

- (a) *converting stacker reclaimer SR3 to SR6* – certain designs (e.g. stiffening plates) were only finalised after the existing, operating equipment was dismantled as not all matters were apparent while the equipment was operating. Flagstaff advised that the variation costs due to design changes were unavoidable given the complexity of the works and as they were undertaken in an operating environment.
- (b) *supply of conveyor pulleys* – DBCT Management had intended to reuse pulleys from belt feeder BF 5 and BF 7, but after a detailed inspection it concluded that this equipment was not suitable for use in the new design. In accepting the subsequent variations, the Authority noted Flagstaff's advice that the additional cost in replacing unserviceable existing parts was not unusual on a brownfields site where inspection of existing machinery may not be physically possible during normal port operations and prior to original design. Flagstaff concluded that the procurement process for 7x type works necessarily involves placing equipment orders as early as possible, as construction delay and port operations delay costs are always higher than any additional costs in varying the order.
- (c) *conveyors R8 and S8* – additional work to that originally scoped was incurred due to a number of design changes (e.g. structural and mechanical work, water reticulation and electrical work). Flagstaff advised that the variation cost was reasonable as it fell within DBCT Management's estimated risk allowance which was based on the total volume of work to be completed and the stage of design development at the time of the tender and the 7x project team's assessment of the works at the time of tender.
- (d) *out-loading system (OL3) onshore works* – the detailed designs (e.g. structural, mechanical and electrical designs) were completed after the contract was awarded. DBCT Management had originally intended to complete the design prior to award but given the construction boom at that time, DBCT Management was unable to secure sufficient design engineers to meet the design schedule. While the additional costs could have been avoided if the design was completed prior to award, the Authority accepted that the DBCT Management acted prudently to complete the designs post tender to maintain the overall project schedule and to avoid potential delays. In this regard, the Authority had regard to Flagstaff's conclusion that the additional costs were minor relative to the potential costs related to a delayed project.

Adverse weather conditions led to delays and variation costs in several contract packages. For example, the bund 4A structural works incurred additional variations in relation to dry stockpiled fill material due to unseasonable wet weather. In accepting the variations, the Authority accepted that the additional costs were necessary as fill material had to be dry. Similarly, for the conversion of SR3 to SR6, wet weather conditions led to an increase in the equipment and labour requirements for the timely completion of the contract works. Flagstaff concluded that the cost overrun in schedule of rates allowances was beyond the control of DBCT Management and the contractor and that the additional work was priced at contract rates.

In addition, the out-loading system (OL3) onshore works incurred additional variations as a result of extensions of time. Flagstaff's said the variation costs were reasonable as an increased scope of works resulted in an extension of time that was exacerbated by additional inclement weather costs as the contract was pushed into a second "wet" season.

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

Examples of scope transfer variations include:

- (a) *bund 4A structural works* – incurred additional contract variations due to the transfer, from other contracts of miscellaneous additional scope items. This included the southern end drainage works and storm cradles for stacker reclaimers SR3A and SR4A (i.e. to secure the yard machines in high winds). The Authority accepted that these scope transfers and their related costs were reasonable as the scope of works were competitively tendered among two contractors on site. In forming its view, the Authority had regard to Flagstaff's view that the transfer in scope from other contracts assisted in progressing the 7x expansion without impacting the completion of the structural works to form bund 4A. Accordingly, the Authority accepted as reasonable the scope transfers and their related costs.
- (b) *outloading system (OL3) reclamation works* – included additional scope for the jetty abutment (concrete foundations for the widening of the jetty), which was transferred from the marine works scope prior to award. The Authority notes that while it is possible that the marine works contractor could have been slightly cheaper, it was prudent for the reclamation works contractor to do the work as they provided a defined price for the works. In addition, the Authority accepted Flagstaff's view that the contractor had the appropriate personnel on site and there was a time advantage to completing the works early.
- (c) *roadworks contract* – included additional scope for installing stormwater drains for row 8 – this work was transferred from the row 8 civil works contract. The Authority accepted that these scope transfers and the related costs were reasonable, in part as Flagstaff accepted that the works had to be completed before the above ground components of the stockpile area were constructed. For this reason, the Authority considered that it was reasonable to complete these works expeditiously to avoid any completion delays. The Authority also accepted Flagstaff's view that there were synergies between the two contracts which resulted in a cost saving. Given this, the Authority accepted the scope transfers and their related costs as reasonable.

The Authority has reviewed DBCT Management's post-award contract variations for each phase 2/3 package and accepts that DBCT Management's contract variations were appropriately justified in the circumstances of the expansion.

Supply and installation of OL3 offshore works, including berth 4 and L17 extension

While most phase 2/3 contracts incurred variations, the marine works contract was particularly susceptible to cost escalations due to its exposure to adverse weather conditions and the complexity of the works given their interaction with existing facilities and other construction works. This latter factor was particularly relevant because of the time pressures for completing,

and therefore starting, this aspect of the phase 2/3 works. As a result, designs for elements of the marine works were not fully completed at the time the works were tendered. As these elements of the works proved more complex than initially contemplated, the initial allowances for the marine works package were ultimately shown to be inadequate.

Given the differences in the extent to which detailed designs for elements of the marine works were completed at the time of tender, DBCT Management awarded the contract on the basis of:

- (a) *berth 4* – largely fixed price lump sum;
- (b) *OL3 offshore (i.e. jetty)* – provisional quantities and fixed rates, whereby DBCT Management provided the quantities but they were subject to change and the contractor supplied the rates provided that the quantities remained within -5% and +10%; and
- (c) *OL3 head and tail end* – largely provisional sums reflecting an estimate provided by DBCT Management and included in the tender price, but the contractor had no responsibility for this estimate, with a small component provisional quantities and fixed rates.

Flagstaff assessed DBCT Management’s allowance, of around 10%, in three parts, namely:

- (a) a fully designed component – reflecting changes to berth 4, ground conditions for piling and costs to mitigate interference with port operations. Flagstaff noted that the allowance of 2% of the award value of the fully designed works was a historically low allowance for reasonably complex marine works;
- (b) a partially designed component – an allowance of 45% of the award value of the partially designed works (namely electrical and design changes to the OL3 head and tail end) was included to provide for converting the provisional sum to a lump sum. Flagstaff said that an allowance of 45% was more than reasonable but that any allowance of this nature was totally dependent on the level of confidence in the quantities and rates used to develop the provisional sums.
- (c) a total project component – including adverse weather, owner caused delays and miscellaneous variations. Flagstaff noted that the allowance of 2.6% of the award value for these matters was historically low for a large complex marine contract.

The actual variation outcome of around 36% was significantly higher than DBCT Management’s allowance of 10%, with the key reason for the difference relating to the greater complexity and cost of the partially completed designs.

In considering the variations on the marine works contract, the Authority accepted that it was reasonable for DBCT Management to tender the contract prior to fully completing the design work as this was in the best interests of the expansion project as a whole even though it added to the project’s risk. The Authority accepted that this contract was on the project’s critical path and any delay in tendering these works would have significantly extended the expansion completion date.

Moreover, the extent of the over-run in contract variation costs was due to the inadequacy of the original allowance than to any mismanagement of the project. For instance, variations were required due to the underestimation of scope, complexity and quantity of the works related to the design changes for the jetty head and tail end. In particular, these variations reflected:

- (a) the finalisation of the design of the works and revisions to the construction methodology post-award;

- (b) the variable nature of the geotechnical conditions impacting on the driving lengths of the piles at the jetty end, namely, additional pile lengths required where the seabed was soft; and
- (c) an increase in steelwork and concrete tonnages as well as steelwork complexity, including at the transfer towers.

Indeed, the Authority accepted that there was no evidence to suggest that the final design and scope was other than proper, competent and appropriate. In this regard, the Authority gave regard to Flagstaff advice that if the design had been completed at time of tender, the cost of the increased scope and complexities would have largely been equivalent to the increase in the tendered contract prices and schedule.

Further, the Authority accepted that these works were necessary and tendering on the basis of partially completed designs ensured the project was completed earlier than it would have been otherwise. Early completion of the works reduced the disruptive impact of the expansion on terminal operations and provided additional flexibility in managing throughput given the expanded capacity. In this regard, the Authority had noted that terminal throughput increased by over 20% in the three months immediately following completion of the expansion compared to the three months prior to the completion of the expansions (there was no significant adverse weather which may have impacted throughput during this period).

Also, with the benefit of hindsight, the allowance for weather related variations (\$4 million) also proved to be inadequate as there was significant wet weather in 2008 that resulted in major flooding in and around Mackay. There was also a near miss Category 5 cyclone in 2009 which resulted in a closure of the coal terminal at the time of construction. These events contributed to contract variations of over \$18 million. While adverse weather was a risk that neither party could control, the Authority concluded that DBCT Management's management of variations, (including by accepting weather risks on a cost-reimbursable rather than as a fixed lump sum basis) was prudent and resulted in savings to the project's costs.

In closing out the contract, the parties disagreed on the final contract value. DBCT Management initially sought to negotiate a settlement to the dispute. DBCT Management ultimately reached a final settlement with the contractor which, in part, reflected DBCT Management's assessment of what they might be required to pay if the matter went to dispute and their desire to avoid a protracted legal dispute,. The Authority has reviewed the process for reaching this settlement and considers it to be a reasonable commercial settlement in the circumstances.

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 2/3 works and thereby, providing additional flexibility in managing throughput.

3.4 Active measures to limit contract variations

As for the phase 1 expansion, the Authority also accepts that DBCT Management actively undertook innovative measures to minimise contract variations incurred, in particular, through its IMT approach to managing several key expansion contracts (i.e. the relocation and upgrade of SR3, supply and installation of conveyors R8 and S8 and the OL3 onshore and offshore works).

DBCT Management said that the IMT process involved creating multi-party improvement teams within contracts comprised of DBCT Management, Connell Hatch, DBCT Pty Ltd and the relevant contractor (DBCT Management sub: 64).

DBCT Management said that this approach benefited both specific works and the expansion project as a whole. In particular, DBCT Management said that for the offshore works, the IMT:

- (a) provided an ongoing focus for cost reduction initiatives;
- (b) improved shutdown performance; and
- (c) prevented major cost and schedule impacts, including by providing flexibility for DBCT Management to intervene to address performance issues of subcontractors.

For instance, DBCT Management advised that when drilling the tension anchors in the seabed for the jetty piling, the drilling subcontractor had difficulty with particular geotechnical issues that adversely affected the progress of the works. DBCT Management submitted that in the best interests of the project, they identified another driller who was better equipped and skilled to address the issues. DBCT Management then instructed the offshore works contractor to subcontract the works to the new driller which, DBCT Management said, significantly improved the progress of the drilling works.

The Authority accepts that the IMT was successful in limiting contract variations. In this regard, the Authority notes Flagstaff's view that DBCT Management's proactive intervention reflected prudent management to maintain schedule and avoid consequential delays costs.

The Authority accepts that such actions enabled a more timely mobilisation of dependant contractors, providing cost savings to the project as a whole.

3.5 Authority's analysis and decision

DBCT Management proposed that \$151.2 million in contract variations and escalations across around 19 phase 2/3 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 2/3 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 \$151.2 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 \$136.0 million in “other costs” for the 7x expansion.

These “other costs” relate to activities and services necessary to support a major expansion of an operating terminal and includes DBCT Management’s own project management costs, the costs of engaging specialist engineering firm (Connell Hatch) as the expansion project manager, temporary project management offices and project insurances.

The Authority has accepted DBCT Management’s “other costs” claim as reasonable. In forming this view, the Authority notes that the claim consisted of the range of activities and services normally associated with an expansion and that the overall claim was at the lower end of a reasonable range for costs of this type for a project of this type. In addition, while these costs experienced a significant over-run relative to the initial budget, this over-run was consistent with the longer time taken to complete the expansion than initially expected.

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

4.1 Introduction

Other costs were incurred across the three phases of the 7x expansion such that the cost categories and DBCT Management’s management of these costs for the various stages are comparable. Accordingly, the Authority’s review of the phase 2/3 *other costs* is similar to its assessment of the phase 1 *other costs*. In particular, as provided for in the undertaking, the Authority has reviewed the scope, standard and costs of *other cost* expenditure after they were 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 4.1),

that are consistent with the classification approved for phase 1.

To determine the appropriateness of the *other costs* incurred for the 7x expansion, the Authority engaged Flagstaff Consulting to provide advice on the technical aspects of DBCT Management’s *other costs* expenditure. Flagstaff’s methodology for reviewing the phase 2/3 *other costs* was similar to its methodology in reviewing the phase 1 *other costs*

4.2 Scope of Works

DBCT Management’s Proposal

EPCM costs

DBCT Management adopted an EPCM structure to manage the 7x project. 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 entire project including the phase 2/3 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: 57).

DBCT Management submitted that these factors, in conjunction with the relatively low-risk EPCM strategy, made the Connell Hatch EPCM contract the most prudent way to manage 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 monitoring and rehabilitation, auditors and legal support;
- (d) specialized 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: 54).

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), electrical works 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 was 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, minor structural, mechanical and electrical work (DBCT Management sub: 55)

Consultant's Assessment

Flagstaff's review of the scope of *other cost* expenditure included assessing 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 had previously accepted DBCT Management's use of the EPCM approach to managing the expansions in the context of reviewing phase 1 *other costs*. In particular, Flagstaff had noted 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.

Overall, Flagstaff concluded that the EPCM structure was appropriate for the phase 2/3 expansion as, *inter alia*:

- (a) it was a recognised industry structure which is regularly used for a project of the scale of the 7x expansion;
- (b) the scope and responsibilities of the EPCM contractor were well documented at the start 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 environmental monitoring and rehabilitation works (incurred as owner's costs) were entirely in line with the Master Plan's community engagement initiative. In this regard, Flagstaff accepted that DBCT Management's efforts to seek good relations with the community accorded with good industry practice and minimised any potential conflict with the community regarding expansion works.

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

In respect of *other costs* permanent works, Flagstaff noted that for the phase 2/3 expansion DBCT Management incurred costs on minor mechanical works which were awarded during the phase 1 expansion. In this regard, DBCT Management advised that this contract spanned all phases of the expansion with a certain proportion of its costs expended in phase 1 and the balance during phase 2/3. The Authority has reviewed this contract and based on the information provided by DBCT Management, is satisfied that there was no double counting of costs.

In addition, Flagstaff advised that DBCT Management incurred costs on the following:

- (a) administration building expenses;
- (b) miscellaneous works;
- (c) minor structural, mechanical and electrical works;
- (d) phase 2/3 completion works; and
- (e) constructing a new warehouse.

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

Authority's Analysis and Final Decision

Consistent with its view expressed in its phase 1 actual cost decision, the Authority accepts the EPCM arrangement as the appropriate project delivery model for the 7x expansion. 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.

Also, as the scope of the *other costs* works were a necessary part of supporting and delivering the expansion, 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: 56).

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 2/3 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 (9.5%) of the aggregate *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 2/3 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 develop and implement strategies to improve the performance of contractors who were experiencing performance issues;
- (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 contractors' performance issues; 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 2/3 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 \$136 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	55.3	88.1	\$32.8
Owner's costs	26.8	31.8	5.0
CF&S	2.2	3.6	1.4
Non-TCMP physical works	5.3	12.4	7.1
Contingency	12.1		(12.1)
Total	101.7	136.0	34.3

Overall, *other costs* comprised 18.3% of phase 2/3's construction costs (excluding financing and IDC costs). DBCT Management indicated that there was an overrun of 33.7%, which, given that phase 2/3 sustained a 6-month delay and that the majority of *other costs* were duration-dependent, is consistent with the project extension and demonstrates that cost management measures were effective under the circumstances.

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 submitted that the benchmark range (assessed by KBR) for EPCM costs is around 14% to 30% for major infrastructure projects. Given this, DBCT Management advised that EPCM costs for phase 2/3 as a proportion of direct costs at 14.2% are relatively low. However, they noted that EPCM costs should be considered in the context of the entire project since the design component for the project was included in phase 1 rather than split across phases. DBCT Management advised that this project-wide approach minimised any delays in implementation once the phase 2/3 expansion was approved.

As a result, DBCT Management noted that the EPCM cost for both phases combined represents 16.8% of the total direct costs for the 7x Project, which is towards the lower end of the benchmark range.

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 it implemented a number of strategies to address this, including:

- (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, and highlighted KBR's comment 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: 62)

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 the expended owner's costs, 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 slightly above 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 revised cost build up of the DBCT Owners Costs estimate was reasonably detailed to separately identify staffing costs, external consultants, project overheads and expenses. ... After looking at the build up and the associated costs, KBR believe that these are consistent with projects of this size. All costs and allowances appear to be adequate (DBCT Management sub: 63)

DBCT Management advised that, given the relatively high level of non-discretionary costs, the good performance under the circumstances of the project, and an increase in the project duration, 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 2/3 expansion, which included the development of the phase 2/3 *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 DBCT Management utilised a budget setting methodology consistent with the one approved for the phase 1 expansion. That is, in preparing the budget for the phase 2/3 *other costs* the owner:

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

In particular, Flagstaff advised that in the first step of this process DBCT Management and Connell Hatch prepared the base budget to calculate the contingency level required; Broadleaf International were engaged to assist in calculating the contingency level.

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. In particular, Flagstaff noted that the process for developing the phase 2/3 budget was consistent with the one followed for phase 1 and therefore, was considered reasonable.

Separately, Flagstaff noted that DBCT Management's budget setting process was independently reviewed by KBR who stated that:

"The proposed estimated contract sums, contingencies, capital estimates for the specific works packages and proposed contingencies are appropriate and in line with industry practice."

Given that the budget setting methodology for phase 2/3 *other costs* was consistent with phase 1 and that it was independently reviewed, Flagstaff 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 cost over-runs were observed in all major cost categories (see Table 4.1), Flagstaff considered these over-runs within the context of the total project circumstances and the external influences on the project, as well as the individual cost areas in isolation.

Flagstaff noted that the EPCM Contractor's services and CF&S costs were related to the duration of the project. For instance, the EPCM costs include construction management on site, which would necessarily extend directly with an extension in the construction period. Similarly, CF&S costs consist of works related to site cleaning & waste removal for contractors which are also directly related with the duration of the expansion works.

In particular, Flagstaff advised that since EPCM services were managed across the 3 phases of the project, it has not reviewed the EPCM costs incurred during the phase 2/3 expansion in isolation. That is, Flagstaff reviewed these costs across the complete 7x project, and then formed a view on the appropriateness of the actual costs incurred for EPCM services during the phase 2/3 expansion stage. Given this, cost overruns in the EPCM cost category would necessarily have to be compared with the delays experienced in the 7x project.

Flagstaff noted that the 7x project was delayed due to two primary reasons:

- (a) performance issues related to two key contractors in phase 1, which caused follow on delays in subsequent works; and
- (b) on-going and severe wet weather events which adversely effected performance of some contracts.

Since the 7x project (across phases 1 and 2/3) experienced a 19% increase in the duration of these works, Flagstaff advised that it was reasonable to expect the time related costs for EPCM services to increase proportionately. In particular, Flagstaff noted that EPCM cost overruns comprised largely of the additional expenditure incurred in construction management (overrun of 20.6%) and engineering costs (overrun of 16.3%). Flagstaff noted that the construction management costs were directly proportional to the aggregate delay of 19% in the project duration. Flagstaff advised that due to significant delays observed in the C005 contract (supply and commission in-loading system (IL3)), it was reasonable for DBCT Management to expend more energy on works critical to the phase 2/3 expansion to ensure a swift completion of the relevant contracts. Flagstaff noted that these cost overruns were limited to an increase of only 1.6% above the delay in the duration of the works and accordingly, the aggregate overruns incurred were considered reasonable.

The increase in engineering costs was largely caused by the design costs for certain additional unbudgeted items including environmental works and certain structural/electrical works on site. Flagstaff noted that these related to phase 2/3 completion works and should have been part of the original expansion scope and budget. Given this, Flagstaff advised that these cost overruns were appropriate. Separately, additional costs were incurred due to increased post-award engineering support to ensure the timely completion of the project. Flagstaff considered these costs as necessary to mitigate overall project costs and delays. Overall, Flagstaff advised that they closely monitored the performance of the EPCM contractor, observed DBCT Management's supervision of works and reviewed the monthly reports noting the progress of the expansion. On this basis, Flagstaff has concluded that there is no evidence of the EPCM contractor unreasonably incurring costs and thereby, the incurred overruns were accepted as prudently incurred.

Within CF&S expenditure, the largest overrun was observed in the site office waste collection contract. Flagstaff noted that the original scope for this contract related to the site office, but DBCT Management subsequently removed the waste collection component from the scope of all construction works to include it in the site office contract. Consequently, the cost overruns in the site office waste collection contract are comprised of transfers in scope from other construction contracts. Flagstaff advised that the total costs originally budgeted for waste collection for all construction contracts would have been considerably higher than the actual costs expended and accordingly, the observed cost overruns were considered not unreasonable

for a site of that size. Overall, Flagstaff submitted that the CF&S contracts were appropriately managed and that the cost overruns were prudently incurred.

In regards to owner costs, Flagstaff noted that the cost overruns amounted to approximately 12% of the original budget and comprised largely of costs incurred to acquire additional resources to manage project delays. This included additional expenses related to owner's team salaries, construction and operations support and project office facilities and consumables. Flagstaff reviewed these overruns and concluded that these costs were unavoidable and were prudently incurred by DBCT Management to support the management of construction delays.

Finally, Flagstaff noted that DBCT Management experienced significant cost overruns in non-TCMP physical works (111.1%). Flagstaff advised that a majority of these overruns (approximately 60%) were related to additional scope of work completed as part of *other costs*. Flagstaff has verified that these costs were essential for project completion, were prudently incurred and could not be foreseen at the time of budgeting.

For instance, miscellaneous minor orders were let to available contractors to finalise and handover the project to meet the operator's requirements. These works amounted to around \$3.4 million and were not included in the original budget since they were dependent on the conditions prevalent at the time of commissioning. Flagstaff noted that, when compared with plants of equivalent size, expenditure of less than \$3.5 million for post-completion works can be regarded as a successful outcome. Separately, Flagstaff reviewed these miscellaneous orders individually, and was satisfied that the relevant works were essential for commissioning of the phase 2/3 expansion and that the related costs were prudently incurred.

Authority's Analysis

The Authority notes that DBCT Management's budget for *other costs* across phases 1-3 was reviewed by independent consultants engaged on behalf of DBCT Management's financiers who concluded, in general, that the budget was reasonable.

The Authority further notes that the budget overruns observed in the cost categories were unavoidable given the circumstances of the project and were prudently incurred by DBCT Management. In particular, the majority of cost overruns were a direct result of project delays and were incurred to expedite the completion of the works.

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 has proposed that \$136.0 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 \$137.9 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 \$742.7 million in construction costs, DBCT Management has sought approval for funding costs of:

- (a) \$16.9 million in financing costs; and*
- (b) \$76.3 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 \$835.9 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 2/3 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 and its phase 1 actual cost 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) \$742.7 million in construction costs (\$329.3 million for step A and \$413.4 million for step B); and
- (b) \$93.2 million financing and IDC costs (\$37.5 million for step A and \$55.7 million for step B).

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 2/3 expansion costs represented a significant proportion of the asset base and could not be financed from the internal cash-flows of the business. On this basis, DBCT Management proposed an allowance of \$16.9 million for the transaction costs incurred in securing the necessary debt and equity finance from capital markets for phase 2/3 of the expansion. These financing transaction costs comprised of \$7.4 million for step A and \$9.5 million for step B.

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 2/3 benchmark debt requirement; and
- (c) an up-front equity raising fee of 3.55% to the phase 2/3 benchmark equity requirement (DBCT Management sub: 73).

Authority's Analysis and Decision

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

Similar to the approach followed for the phase 1 expansion, the Authority also undertook an assessment of DBCT Management's internal cash flows available to fund the phase 2/3 expansion. The Authority determined that, from a benchmark perspective, DBCT Management was unable to fully fund that expansion solely from these cash flows and, as such, external funding was required. Taking DBCT Management's benchmark internal cash flows into account, the Authority's analysis indicated that the proposed financing cost allowance was reasonable (see the Authority's phase 1 actual cost decision of December 2009 for details on the Authority's approach to assessing financing costs for the 7x expansion).

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

Interest during Construction (IDC)

DBCT Management has proposed an allowance of \$76.3 million for IDC (\$30.1 million for step A and \$46.2 million for step B), noting that the undertaking provides for construction-related financing costs:

... which will include a return on capital over the construction period on the phase 2/3 expenditure incurred. (DBCT Management, sub: 73)

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 yields of 10-year nominal Commonwealth bonds over the 20 business days preceding the first drawdown date on construction debt financing (i.e. 12 February 2008 for both stages of the expansion). Accordingly, WACC(2) was calculated at 9.34%.

Authority's Analysis and Decision

As with the phase 1 expansion, the Authority was able to establish that, in estimating IDC for the phase 2/3 expansion, 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 9.34%;
- (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 2/3 expansion are discounted using the rate of return applying to the capacity expansion.

As DBCT Management has applied this approach appropriately and estimated an allowance that is not materially different from the Authority's estimate, the Authority accepts DBCT Management's phase 2/3 IDC costs of \$76.3 million.

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 original, pre-expansion 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 for step A of the expansion is based on a WACC of 7.46%, comprised of a WACC margin of 3.18% and a risk-free rate of 4.28%, with the latter reflecting the average daily yields of 10-year nominal Commonwealth bonds over the 20 days preceding its actual commissioning on 31 December 2008.

Similarly, the return on capital component for step B of the expansion is based on a WACC of 8.85%, comprised of a WACC margin of 3.18% and a risk-free rate of 5.67%. This is based on the average daily yield of 10-year Commonwealth nominal bond rates over the 20 days preceding its actual commissioning on 30 June 2009.

Authority's Analysis and Decision

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

Return of Capital

The return of capital components of DBCT Management's proposed ARRs for phase 2/3 step A and phase 2/3 step B are \$8.6 million and \$11.6 million respectively for the 2009-10 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 45.25 years for phase 2/3 step A and 45 years for phase 2/3 step B;
- (d) each new asset of the phase 2/3 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 2/3 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: 74).

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 both its DBCT April 2005 decision on pre-existing assets and its decision on phase 1 actual costs.

5.2 Annual Revenue Requirement, Revenue Cap and Pricing

The Authority had previously approved the forecast costs of the phase 2/3 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 both stages of phase 2/3 expansion will lead to amendments to these tariffs, which were subsequently rolled forward in 2008-09 and 2009-10.

DBCT Management's proposal

As the phase 2/3 expansion was commissioned in two steps, DBCT Management has also modelled the price and revenue increases in two steps based on the costs associated with each step, in particular based on:

- (a) \$366.8 million of step A actual cost expenditure, DBCT Management has sought approval for a revenue increase (applying from 1 January 2009) as shown in Table 5.1; and
- (b) \$469.1 million of step B actual costs expenditure, DBCT Management has sought approval for a revenue increase (applying from 1 July 2009) as shown in Table 5.2.

Table 5.1: Phase 2/3 Step A Expansion Annual Revenue Requirement

<i>ARR Building Block</i>	<i>2008-09 (\$000)</i>	<i>2009-10 (\$000)</i>	<i>2010-11 (\$000)</i>
Return on Capital	13,178.6	26,589.8	26,713.5
Inflationary Gain	(2,826.1)	(5,620.9)	(5,646.7)
Return of Capital	4,255.1	8,597.4	8,848.9
Tax Payable	1,313.0	2,703.1	2,806.8
Imputation credits	(656.5)	(1,351.6)	(1,403.4)
Raw ARR – actual costs	15,264.0¹	30,917.9	31,319.0
Raw ARR – forecast costs	13,764.4	28,250.6	28,881.2

1. As step A of phase 2/3 expansion was commissioned in December 2008, the building blocks for 2008-09 are half year numbers whereas the numbers for subsequent years are full year numbers.

Table 5.2: Phase 2/3 Step B Expansion Annual Revenue Requirement

<i>ARR Building Block</i>	<i>2009-10 (\$000)</i>	<i>2010-11 (\$000)</i>	<i>2011-12 (\$000)</i>
Return on Capital	40,086.9	40,217.4	40,105.9
Inflationary Gain	(10,582.5)	(10,616.3)	(10,586.4)
Return of Capital	11,550.0	11,885.3	12,165.1
Tax Payable	3,064.0	3,194.7	3,283.2
Imputation credits	(1,532.0)	(1,597.3)	(1,641.6)
Raw ARR – actual costs	42,586.4	43,083.7	43,326.2
Raw ARR – forecast costs	34,953.2	35,716.8	36,484.3

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 both stages of the phase 2/3 expansion (see Table 5.3).

Table 5.3: Revised Pricing

<i>Estimates</i>	<i>2008-09 (1 January – 30 June 2009)</i>	<i>2009-10 (1 July – 30 June 2010)</i>	<i>2010-11 (1 July – 30 June 2011)</i>
	(\$)	(\$)	(\$)
Aggregate ARR	88,416,216	222,174,438	224,659,801
Aggregate Revenue Cap	88,416,216	222,174,438	224,659,801
Difference from forecast cost Aggregate Revenue Cap	1,499,617	10,612,712	10,734,613
Aggregate TIC	2.4561	\$2.6349	2.6487
Difference from forecast cost TIC	0.0417	0.1259	0.1266

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

- (a) for the 2008-09 financial year:
 - (i) increase the ARR and revenue cap by \$1,499,617 to \$88,416,216, effective 1 January 2009; and
 - (ii) increase the reference tariff by \$0.0417/tonne to \$2.4561/tonne, effective 1 January 2009;
- (b) for the 2009-10 financial year:
 - (i) increase the ARR and revenue cap by \$10,612,712 to \$222,174,438, effective 1 July 2009;
 - (ii) increase the reference tariff by \$0.1259/tonne to \$2.6349/tonne, effective 1 July 2009;
- (c) for the 2010-11 financial year:
 - (i) increase the ARR and revenue cap by \$10,734,613 to \$224,659,801, effective 1 July 2010; and
 - (ii) increase the reference tariff by \$0.1266/tonne to \$2.6487/tonne, effective 1 July 2010.