

# **Supporting Submission**

Non-Confidential Version

November 2008

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## Glossary

ABARE	Australian Bureau of Agricultural and Resource Economics
ACCC	Australian Competition and Consumer Commission
Applicant Users	Goonyella producers exporting through DBCT as named in Forms A, B and D
ATA	Actual Time of Arrival
BBi	Babcock & Brown Infrastructure Group
CAS	Capacity Allocation System
Central Coordinator	Central Coordinator of the Dalrymple Bay Coal Chain
Coal Chain Board	Dalrymple Bay Coal Chain Board
DBCC	Dalrymple Bay Coal Chain
DBCT/Terminal	Dalrymple Bay Coal Terminal
DBCTPL/Operator	Dalrymple Bay Coal Terminal Pty Ltd
JFY	Japanese financial year
LTS	Long Term Solution
TAM	Transitional Allocation Mechanism
MOU	Memorandum of Understanding
Mtpa	Million tonnes per annum
QRN	QRNational
QMS	Queue Management System
System Capacity	Capacity of the Goonyella coal chain, including track, rail and Terminal
Supply Chain	Goonyella supply chain, comprising the mines that ship coal through DBCT, the Goonyella rail infrastructure, the rollingstock and DBCT.
TPA	Trade Practices Act 1974 (Cth)
Users	All Goonyella producers exporting through DBCT

QCA

Queensland Competition Authority

Working Queue

A working queue is a ship queue of sufficient length to enable throughput to be maximised.

# 1 Introduction

## 1.1 Purpose

This submission is made in support of an application for authorisation lodged by the coal producers using Dalrymple Bay Coal Terminal ("DBCT") ("Applicant Users") for the following:

- a maximum six month extension of the Authorisation granted by the ACCC in relation to the Queue Management System ("QMS") which expires on 31 December 2008;
- The Applicant Users will submit an implementation plan for a Long-Term Solution (LTS) by 31 March 2009, which will comprise a transition phase (Phase 1). Phase 1 will be the subject of a separate application for authorisation. If Users fail to submit the implementation plan by 31 March 2009 the authorisation for the QMS will cease from that date. It is envisaged that the Phase 1 will operate from the date of authorisation until such time as System Capacity is able to match and deliver the existing contracted capacity (up to 85 Mtpa), expected to be 18-24 months; and
- All existing port and rail contracts up to and including 85Mtpa are recognised and will be taken into consideration during the implementation of Phase One and Phase Two. The detailed rationale and motivation for this approach is explained in Sections 2 and 3 of this submission.

## 1.2 Background

The QMS is a port-based capacity management system used to manage the costs of congestion that are incurred when capacity in the Supply Chain, comprising the mines contracted to use DBCT, the Goonyella rail system (both above and below rail) and DBCT itself (collectively, the "Supply Chain"), is constrained. Capacity management solutions have been used to minimise the cost of congested supply chains in Australia since the late 1990s.<sup>1</sup> In bulk commodity supply chains congestion is managed by allocating the capacity in the Supply Chain so that the maximum aggregate tonnage can be exported while minimising inefficiencies such as demurrage costs.

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<sup>1</sup> The ACCC granted an authorisation for a capacity allocation system (CAS) for approximately 5 months in the Hunter Valley coal chain in 1998. The CAS was intended to lower the vessel queue, creating a net public benefit. The CAS was not implemented as the vessel queue decreased due to other factors.

The port-based QMS was developed by Users as an interim measure in response to the sudden loss of capacity at DBCT in 2004, following the collapse of a yard machine which resulted, at the time, in a terminal-based constraint within the coal supply chain. The ACCC initially authorised the QMS on 15 December 2005, and authorised an extension of the QMS in February 2008. However, in authorising the extension, the ACCC expressed reservations that:<sup>2</sup>

“The ACCC has significant doubts as to whether the current QMS is likely to result in a net public benefit beyond December 2008. In the event that there is no evidence of the development of a long-term solution before this time, the ACCC considers that the continued operation of the QMS has the potential to result in significant public detriment in the form of insufficient investment and substantial losses in export revenues.

The ACCC further warned that:

“At the time when authorisation was granted in April 2005, the QMS was proposed as a short term measure to manage the vessel queue while investment and capacity expansions took place.

However, the ACCC is concerned that the operation of the QMS for an extended period may hinder the development of a long term solution to address contracting issues that exist within the Goonyella Coal Chain. In particular, the ACCC is concerned that under the current arrangements there is a propensity for service providers to enter contracts based on individual capacity without reference to the capacity of the coal chain as a whole.

The ACCC considers that the longer the QMS is in place the greater the potential for detriments to occur. As such, the ACCC proposes to grant authorisation for 12 months only [ie until 31 December 2008], to provide industry with the opportunity to develop and implement a solution to address these issues”<sup>3</sup>.

### **1.3 The Proposed Solution**

This submission is mindful of the concerns expressed by the ACCC and, for this reason, seeks only a limited extension of the QMS, to facilitate the development of an agreed LTS Phase 1. It also provides evidence of the extensive reforms that are being implemented with the Supply Chain and highlights to the ACCC the timeframes for

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<sup>2</sup> ACCC, *Determination - Application for revocation of authorisations A30239-A30241 and substitution by A91060-A91062*, 29 February 2008, paragraphs 6.109 – 6.111.

<sup>3</sup> ACCC Media Release, dated 20 December 2007.

reform. Information provided in this submission shows a significant program of investment in capacity, institutional reform and agreement on long-term contractual reform. The key sticking point for producers is the medium term where transition requires to changes in contractual positions of Users.

It is submitted that the implementation of the two-phased long-term approach will ensure the achievement of the following objectives:

- maximising the total volume of exports through the Supply Chain;
- providing greater certainty for all participants in the Supply Chain, thereby enabling them (and any potential participants) to commit resources - whether to increased production or increased capacity - with a greater degree of confidence and certainty;
- developing mechanisms to create appropriate signals, accountability and incentives for efficient investment in the Supply Chain;;
- providing appropriate incentives for participants to use or trade system entitlements which they do not require or cannot utilise;
- seeking contractual alignment across the Supply Chain as required by the ACCC;
- reducing the likelihood of gaming by Users due to uncertainty of obtaining access to the necessary capacity that Users require;
- achieving and maintaining a Working Queue, so as to minimise deadweight demurrage costs to all Users while maximising exports from DBCT;
- restoring and maintaining the international reputation of DBCT as a reliable and low demurrage facility; and
- promoting competition across the Supply Chain.

A number of significant investments and institutional changes have been initiated in the Supply Chain since the ACCC granted the current Authorisation in February 2008. These changes have been aimed at increasing the capacity of each of the elements of the Supply Chain and improving coordination between Supply Chain participants in order to maximise throughput. However, capacity constraints remain and are anticipated to continue at least 2010, as a result of the misalignment that exists between contracted capacity (ie Users have contracted for access to capacity in relation to each of track, train and port) and the actual capacity that can be delivered by the coal chain as a system. However, it is expected that the combination of continued institutional reform within the Supply Chain, together with coordinated capacity expansions across

the Supply Chain on a whole-of-supply chain basis, will ensure that a supply-demand balance can be achieved in the future.

Importantly all Users, under the aegis of the Coal Chain Board, have recognised that the ACCC requires a firm commitment by supply chain participants to ensure that contractual alignment across the Supply Chain is achieved. In addition to the numerous institutional issues outlined in this submission, there is broad agreement to the principles for achieving contractual alignment when capacity exceeds current contracted level of 85 Mtpa ("**Supply Chain Principles**"). These Supply Chain Principles will be further developed and expanded into a long-term implementation plan, the final detail of which will be provided the ACCC by 31 March 2009.

It will be argued in this submission that the implementation of the Proposed Solution is critical for the sustained and aligned operation of the Supply Chain. The implementation of the long-term solution will result in an integrated whole-of-system approach which will facilitate alignment of the contracted track, rail and port volumes of an individual producer which are often misaligned and, importantly, will seek to align total contracted volumes of all participants with the total actual throughput which the Supply Chain as a system can maintain.

In assessing the capacity of the Supply Chain as a system, the calculation will be underpinned by a defined common set of assumptions (underpinning a uniform definition of what constitutes System Capacity) to ensure alignment of contracted volumes across the coal chain. Importantly, by seeking to align individual participants' track, rail and port contracted volumes, the Proposed Solution will also reduce any distortions across the Supply Chain and will substantially reduce the potential disincentives for investment which were identified by the ACCC as a key detriment in its determination concerning the QMS.

Furthermore, the Proposed Solution will seek to incorporate accountability measures which serve to incentivise the creation or enhancement of capacity and efficient utilisation of capacity by allocating enhanced capacity or capacity losses to the responsible party. This will incentivise parties to maximise efficiencies and necessary investment as compared to the QMS which pro-rates any such capacity adjustment.

The Proposed Solution will also aid in minimising inefficient stockpiling and associated costs, as well as reducing the environmental risks arising from a significant off-Terminal queue of bulk vessels. This will in turn reduce, amongst others, the likelihood of the following detriments occurring:

- substantial demurrage<sup>4</sup> costs being incurred by Users;
- adverse reputational impacts for DBCT and, more generally, the Queensland coal industry;
- reducing the throughput of the Supply Chain and therefore resulting in a higher risk of reduced exports through DBCT;
- increased environmental risks associated with a large number of bulk cargo vessels moored off the Central Queensland coast; and
- reduced economic efficiency for the Supply Chain.

Essentially, it is submitted that the Proposed Solution, consisting of an integrated, aligned and co-ordinated approach, represents a principled solution that will encourage efficient investment and expansion throughout the Supply Chain and will enable all participants in the Supply Chain, including Users, above and below rail providers and port operators to enter into contracts with greater certainty. This will maximise the export capacity of the Supply Chain and will be a system capable of sustainable long-term operation within the parameters of long-term commercial arrangements.

The existing ACCC determination grants an authorisation to Dalrymple Bay Coal Terminal Pty Ltd (DBCTPL) to operate the Dalrymple Bay Coal Terminal Queue Management System Amendments to Terminal Regulations until 31 December 2008. Upon expiry of this Authorisation, DBCTPL will not be able to operate the QMS as it may contravene one or more of the substantive prohibitions in Pt IV of the *Trade Practices Act 1974* (Cth) (TPA).

While the purpose of this submission is to seek, at this time, an extension of the QMS, for a maximum 6 month period to avoid inefficient Supply Chain outcomes, which are not in the national interest, it also seeks to convince the ACCC that a long-term solution has been agreed and a process to achieve the last major area of reform – contract alignment – will be provided to the ACCC by 31 March 2009. The remainder of this submission is structured as follows:

- Section 2 provides background information in relation to the Applicant Users' application and the ACCC's consideration of that application;
- Section 3 describes the proposed conduct associated with the Proposed Solution;

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<sup>4</sup> Demurrage is paid on vessels when they are not loaded within a time agreed under the contracts between the various parties to a coal purchase.

- Section 4 identifies the relevant markets for the proposed conduct;
- Section 5 identifies the net public benefits associated with the application;
- Section 6 addresses the request for urgent interim authorisation;
- Section 7 addresses the request for authorisation;
- Attachment A provides further details on the Supply Chain;
- Attachment B is a copy of status report from the Office of the Central Coordinator;  
and

Attachment C contains the agreed Coal Chain Principles;

Attachment D contains a list of Assumptions Underpinning the Definition of System Capacity;

Attachment E is a copy of a report which assesses demurrage costs in 2009 with and without a QMS; and

Attachment F contains confidential cost data.

## 2 Background

The Goonyella coal supply chain rails metallurgical and thermal coal from mines in the central Bowen Basin to two export terminals at the Port of Hay Point. One of these terminals – DBCT – is a common user terminal whilst the other – Hay Point Coal Terminal (HPCT) – is privately owned and operated. Around 70% of the coal exported through DBCT is coking coal. The major participants in the Goonyella supply chain are:

- coal mine operators (Users);
- one below-rail track provider in QR Network;
- two above-rail haulage operators in QRNational and Pacific National;<sup>5</sup>
- two port terminals– DBCT (leased on a long term basis by DBCT Management from the Queensland Government) and HPCT (BHP Billiton Mitsubishi Alliance (BMA));
- two port terminal operators – DBCTPL and HPCST;
- one port authority in Ports Corporation Queensland (PCQ); and
- pilotage provided by Maritime Services Queensland.

This submission considers that part of the Supply Chain which delivers coal to ships berthed at DBCT.

### 2.1 Performance of the Supply Chain

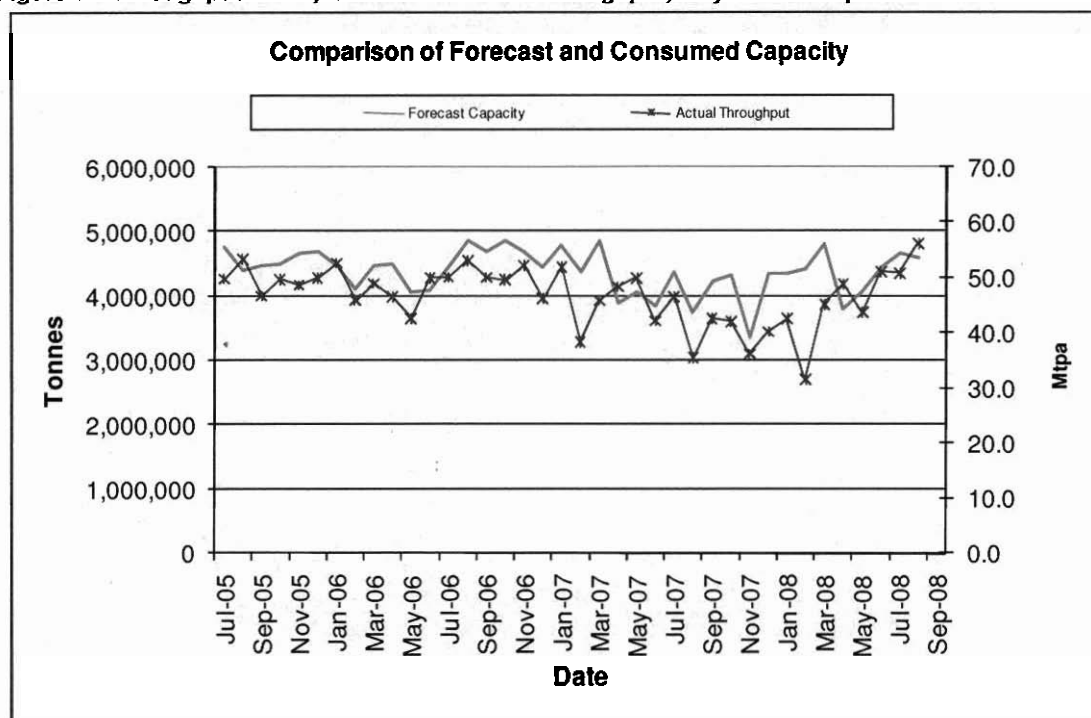
Figure 1 below, reflects the forecasted and actual throughput of the Supply Chain for the period July 2005 to September 2008. It is noted that the period includes expansions which have been undertaken at DBCT, as well as other expansion work being undertaken in the Supply Chain, which has had an impact on performance of the Supply Chain, resulting in high levels of throughput variation.<sup>6</sup> The more recent performance is therefore not necessarily a clear indication of the future capability of the Supply Chain once the expansion activity is complete and rollingstock that is on order becomes operational.

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<sup>5</sup> Pacific National is expected to commence operations in 2009.

<sup>6</sup> QR Network. (2008), Queensland Coal Rail Systems –Characteristics and Constraints: A Coal Rail Infrastructure Master Plan Working Paper:Northern Bowen Basin August 2008, Working Paper 3.1

**Figure 1 Throughput DBCT, forecast and actual throughput, July 2005 to September 2008**



Data source: 2319 Pty Ltd

During 2008, actual total monthly throughput has trended upwards following the flood-related low levels of throughput recorded in the first quarter, which included temporary mine, rail and port closures. For example, in February 2008 the annualised throughput rate was 35 Mtpa compared with annualised rates of between 53 Mtpa and 58 Mtpa between June and August.

Between March and August 2008, actual throughput has averaged 50.9 Mtpa (annualised), around 75% of contracted tonnage. This compares with the Independent Expert's forecast throughput of 54Mtpa for 2008. However, that actual output has exceeded forecast capacity in four of the five months between April and August.

However, while monthly throughput has trended upwards during the above period, importantly what Figure 1 fails to identify is that performance is still below that of capacity contracted across the system as a whole. In this regard, the existing contracts provide for 68 Mtpa capacity being delivered. The system has been unable to demonstrate, for even one month, that it can deliver above levels of 61 Mtpa. Daily peaks in excess of 68Mtpa and up to 90Mtpa have been delivered suggesting that contracted tonnages can be met. Nevertheless, the expectations of Users based on their contracts, are not being met. It is anticipated that this gap between contracted capacity and system- deliverable capacity is only set to widen unless alignment is sought.

### **2.1.1 Queues in a Supply Chain**

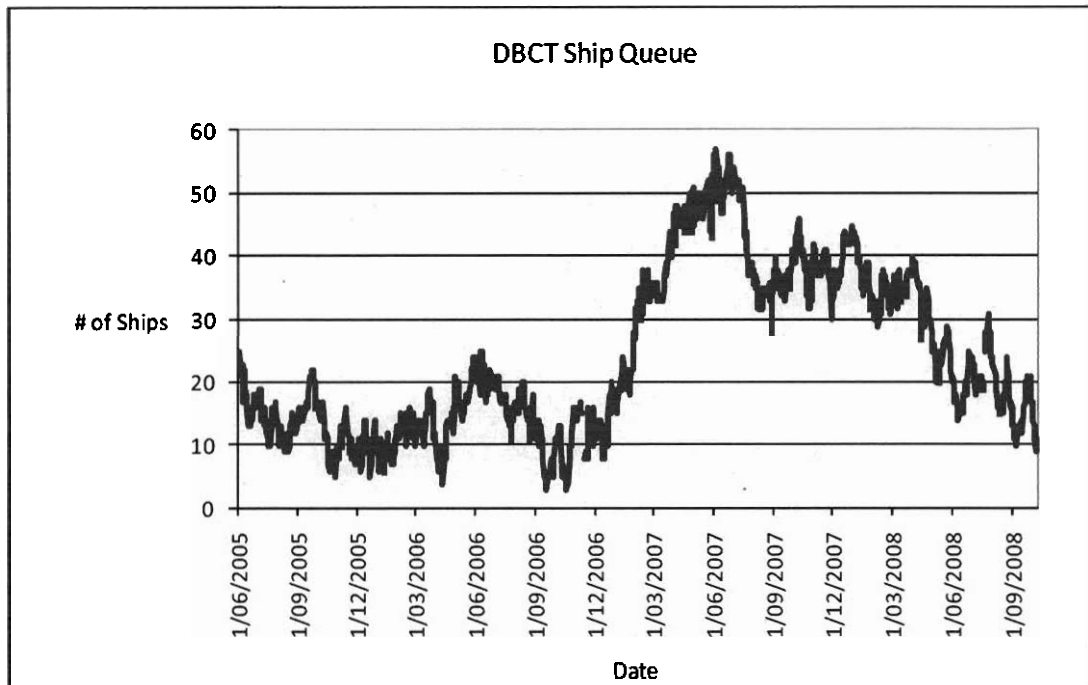
Queues result when demand exceeds capacity at one or more links in a bulk supply chain. Queues might emerge through temporary events like equipment failures or the random presentation of vessels. Of more concern, is when queues become a permanent feature of a supply chain and only dissipate when the capacity of the Supply Chain is increased or in response to a sustained reduction in demand. In these circumstances, the Supply Chain becomes congested and economic losses result.

In an attempt to address and alleviate congested supply chains in Australia, and minimise the associated economic costs/losses that result from congestion, capacity management systems have been authorised and utilised since 2004. Congestion has been managed by allocating the capacity in the Supply Chain so that the maximum aggregate tonnage can be exported through the Supply Chain while maintaining an efficient level of demurrage in the form of a Working Queue.

The QMS has to date been successful in reducing vessel queues off DBCT which has, in turn, reduced the potential liability for substantial demurrage costs which would have otherwise been incurred by producers shipping coal through DBCT. This has resulted in substantial public benefits and, most importantly, has not resulted in any reduction of the aggregate amount of coal being exported through DBCT.

As can be seen from Figure 2 below, the number of ships in the vessel queue has fallen from around 50 in July 2007 to a situation where the queue is now within the lower and upper bounds of the optimum ship queue range under the QMS of 15 and 20 vessels respectively. The average ship queue for the entire period for which the QMS has been operating is 18 ships.

**Figure 2 DBCT Shipping queue, June 2005 – September 2008**



Data source: DBCTPL

The operation of the QMS has been an important catalyst in relation to this outcome. It is noted that other factors have also contributed:

- the increase in DBCT's capacity from 59Mtpa to 68Mtpa effective from March 2008, including a third unloading pit<sup>7</sup>; and
- the improved coordination of train and port scheduling reflecting closer liaison between DBCT, QR Network, QRNational and users, as well as the establishment of the Central Coordinator.

However, the fact that the QMS has been successful in achieving a reduction in the vessel queue off DBCT does not negate the fact that it was initially established as an interim short- term allocation mechanism.

<sup>7</sup> The Phase 1 expansion consists of a new third train inloading facility & conveyor system and various major upgrades to the stockyard, including three new yard machines.

## 2.2 Capacity Management Systems

### 2.2.1 History of DBCT QMS

Following the collapse of a yard machine at DBCT in 2004 which resulted in a port-based constraint in the Supply Chain, persistent queues of vessels formed off DBCT waiting to load coal from the Terminal. In response to this port-based constraint, the Operator sought authorisation from the ACCC to implement the QMS by way of amendment to the Terminal Regulations. The primary cause of the persistent queuing was said to be:<sup>8</sup>

“The imbalance between the demand for coal loading services at the Terminal and the capacity of the Goonyella Coal Chain, including the Terminal (together “System Capacity”) to meet this demand.”

There had been no prior “capacity management system” in place, and the ship loading occurred in order of vessel arrival, which was the way the system allocated capacity, and there was no mechanism to align that to System Capacity.<sup>9</sup>

The submission by the Operator to the ACCC noted that the QMS was not designed to be a permanent solution:<sup>10</sup>

“Capacity expansion in the coal chain, including the Terminal, is the most appropriate solution to capacity constraints as it increases the amount of coal that can be exported. However, until there is such an expansion or demand abates, the QMS is the most appropriate solution to ensure that, without reducing aggregate coal exports, the vessel queue is maintained at a reasonable working length and coal producers are not exposed to substantial, economically inefficient, dead-weight demurrage charges.”

An application for authorisation of the QMS at DBCT was first made in April 2005. On 15 December 2005, the ACCC granted authorisation in respect of applications (A30239, A30240 and A30241) lodged by DBCTPL in respect of the QMS, which effectively comprised an interim solution to the capacity constraint which existed at DBCT and was authorised until the earlier of:

- 31 December 2008;
- the completion of the Phase 1 expansion of DBCT; or

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<sup>8</sup> See paragraph 1.1 of the submission by the Operator to the ACCC dated 5 April 2005.

<sup>9</sup> See paragraph 2.7 of the submission by the Operator to the ACCC dated 5 April 2005.

<sup>10</sup> See paragraph 1.5 of the submission by the Operator to the ACCC dated 5 April 2005.

- when system capacity reaches or exceeds the monthly tonnage of coal that Users wish to ship on a sustained basis.
- On 26 September 2007, DBCTPL lodged applications for revocation and substitution of authorisations (numbered A91060, A91061 and A91062) seeking an extension of the term of the QMS to the later of: completion of the Phase 2 and Phase 3 DBCT expansions;
- the date when system capacity reaches or exceeds the tonnages of coal that users wish to ship; or
- no later than 31 December 2010.

DBCTPL sought the above extension of the duration of the authorisations on the basis that DBCTPL as well as other industry participants anticipated that the imbalance in coal chain capacity and, in particular, the inability to obtain additional rail capacity would extend until the end of 2010.

On 29 February 2008, the ACCC granted authorisations extending the duration of the QMS until 31 December 2008. Importantly, the ACCC declined to extend the authorisations, as requested by DBCTPL, to 31 December 2010, stating that:

At the time when authorisation was granted in April 2005, the QMS was proposed as a short term measure to manage the vessel queue while investment and capacity expansions took place.

However, the ACCC is concerned that the operation of the QMS for an extended period may hinder the development of a long term solution to address contracting issues that exist within the Goonyella Coal Chain. In particular, the ACCC is concerned that under the current arrangements there is a propensity for service providers to enter contracts based on individual capacity without reference to the capacity of the coal chain as a whole.

The ACCC considers that the longer the QMS is in place the greater the potential for detriments to occur. As such, the ACCC proposes to grant authorisation for 12 months only [ie until 31 December 2008], to provide industry with the opportunity to develop and implement a solution to address these issues<sup>11</sup>

### **2.2.2 Operation of the QMS**

The aim of the QMS is to assist the operator, DBCTPL, to manage and maintain a Working Queue on behalf of Users at DBCT. Capacity at DBCT is allocated and

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<sup>11</sup> ACCC Media Release, dated 20 December 2007.

proportionately scaled back according to the Users' existing annual contract tonnages under their User Agreements with Babcock and Brown Infrastructure BBI, the owner of DBCT.

In 2005, when the QMS was designed, it was anticipated to be a short-term or interim mechanism that served to allocate capacity on the basis of a port constraint.

### **2.2.3 Objectives of the QMS**

There are four key objectives that a capacity management system aims to achieve:

- maintaining a Working Queue, so as to minimise deadweight demurrage costs to all users;
- maximising utilisation of capacity and maximising exports from the Terminal;
- preserving and enhancing the reputation of the Supply Chain as being competitive and reliable; and
- ensuring a fair, equitable and transparent system for allocating capacity from time to time between Users.

It appears that the QMS has achieved these objectives throughout its operation, in that:

- shipping queues have been maintained at efficient levels;
- despite significant floods and major capital works along the Supply Chain, record throughput has been achieved;
- demand for the region's high quality coal remains strong; and
- producers share available terminal access in proportion to the services they contracted.

### **2.2.4 QMS necessary in the short-term**

The Applicant Users believe that unless some form of queue management system is implemented beyond 31 December 2008, and in the absence of the existence of proper aligned commercial contracts, the vessel queue off DBCT is likely to expand significantly, resulting in demurrage costs being incurred by Users, as well as associated significant public detriment.

Despite its successes, it is submitted that the QMS is only necessary until transitional arrangements have been agreed by Users and the long-term implementation plan formed.

Users agree that a long-term extension of the existing QMS would be a retrograde step in the industry's collective goal of improving the system by bringing the Coal Chain Principles across the industry (in particular a mechanism based on system, rather than Terminal, contracts for capacity) so as to seek to ensure appropriate commercial alignment and incentives to invest.

It is clear that the QMS, in itself, is not a suitable means for resolving the fundamental issues within the Supply Chain but rather that a long term approach to contractual alignment and coordinated investment is required. However, it is needed in the short term and there is demonstrable public interest in authorising its extension for a further six months.

## **2.3 Institutional developments in the Supply Chain**

The following sections show that numerous improvements have been made throughout the Supply Chain in an attempt to improve coordination and throughput of the system. However, it is noted that, even on the most optimistic of forecasts, these initiatives alone do not address the fundamental stumbling block in the Supply Chain, being the mismatch between contracted capacity and the capacity of what the integrated system as a whole can deliver. Nevertheless, the initiatives undertaken to date include the following.

### **2.3.1 The O'Donnell Review**

In 2006, the Queensland State Government together with the Queensland Resources Council commissioned Stephen O'Donnell to undertake an independent review of the Supply Chain ("O'Donnell Review").<sup>12</sup>

The impetus for commissioning the review was the perceived inability of the Supply Chain to match the rate at which the Users could extract coal and meet their contract tonnages. There was also a perceived lack of clarity on what the projected capacity of the total Supply Chain would be in future years and what initiatives would be required to achieve these future capacities.

The first of two reports was released on 20 July 2007 and estimated that inefficiencies in the Supply Chain had cost \$ 900 million in the preceding 12 months. The report made three recommendations aimed at immediate gains in the System Capacity. The recommendations were:

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<sup>12</sup> Queensland Government, Queensland Transport website:  
[www.transport.qld.gov.au/Home/Industry/Rail/Goonyella\\_coal\\_chain\\_capacity\\_review/](http://www.transport.qld.gov.au/Home/Industry/Rail/Goonyella_coal_chain_capacity_review/)

- to create a central coordination role to oversee activities across the Supply Chain;
- for QR to commence a purchasing process for additional locomotives and carriages to meet projected coal haulage volume; and
- to implement a business improvement program across the Supply Chain starting immediately with QR.

Following these recommendations, QR proceeded to implement a number of short term initiatives.

The report also identified that the current bottleneck in the system was due to a lack of rail rolling stock capacity. The report noted that, during the planned construction works at DBCT, the Terminal would become the bottleneck but once the Terminal's capacity reached 68Mtpa the bottleneck would again be the result of a shortage of rail rolling stock.

A second report was released in January 2008, focusing on longer term planning issues and maximising the effectiveness of the Supply Chain. This final report again recommended that a planning co-ordinator be appointed and recognised the need for further cooperation between industry and government.

### **2.3.2 A process to coordinate master planning for the Supply Chain**

In March 2008, an MOU was signed and executed establishing a Supply Chain Board, composed of all Goonyella producers and transport service providers.

Under the MOU, a Supply Chain Leadership Team has also been established. The Central Coordinator chairs this forum whose purpose is to review coal chain performance and develop recommendations for coal chain improvement for the Coal Chain Board's consideration.

A number of initiatives have commenced following the signing of the MOU which are discussed below. The Office of Central Coordinator considers that transparency of information and motivating coal chain operational personnel to work towards a common target has assisted in moving towards increased Supply Chain throughput, as indicated in Attachment B.

In January 2008, at the same time as the release of the second report, the DBCT Users appointed Ross Dunning AC as the Central Coordinator for the Dalrymple Bay Coal Chain for a two year period. The Central Coordinator reports to both the Dalrymple Bay Coal Chain Board and the Dalrymple Bay Coal Chain Leadership Team and has three key responsibilities:

- integrated planning;
- monitoring and reporting performance; and
- developing performance improvement initiatives.

Further information in regard to the Central Coordinator is provided in Attachment B.

The responsibilities of the Central Coordinator include the development of a DBCT coal chain Master Plan including annual revisions. The master plan is to span short, medium and long-term planning horizons (with short-term considered to be the next 18 months, medium term a period of 2-4 years, and long term out to at least 10 years). A sub-committee of the Coal Chain Board has been formed to develop a 10 year Master Plan of the Supply Chain. The sub-committee has agreed to develop a model of future capacity requirements for the Supply Chain and operating options. The sub-committee is selecting a contractor to develop the Master Plan model. The intention of this sub-committee is to build upon and integrate the more formalised planning that is undertaken by each element of the Supply Chain (which has substantially improved since 2004 when the ACCC first considered capacity management authorisation processes).

### **2.3.3 Demand forecasting**

The DBCC Leadership Team has also agreed to a common forecasting process for the Supply Chain. Agreed forecasts for demand and demand scenarios are an important piece of coordinating information for service providers in a supply chain. Demand forecasts underpin future production and investment decisions across the Supply Chain. Using information provided by service providers, the Central Coordinator establishes monthly forecasts and stretch targets.

### **2.3.4 Operational coordination**

A number of initiatives have been undertaken to increase System Capacity through improved short and medium term supply chain (predominantly rail and port) planning and scheduling.

The Coal Chain Board asked the Central Coordinator to prepare a detailed submission for the establishment of a DBCC Management Centre. This proposal comprised various components, entailing:

- design and construction of a purpose built facility in the Mackay region to house all coal chain planning functions (i.e. integrated planning for operations, tactical

planning, long term master planning, etc.), across all supply chain participants, to be completed by the end of March 2010;

- centralisation of the planning functions that exist currently within the chain to one (temporary) location by 30 June 2009, until the purpose built facility can be commissioned; and
- transition of Central Coordinator activities into the Management Centre, including supply chain performance management and improvement initiatives.

The qualitative benefits to be realised through the establishment of the Management Centre, and co-location of the DBCC supply chain planning and executions function, including but not limited to, the following:

- improved coordination, cooperation and cultural alignment;
- improved cross-organisational understanding and supply chain situational awareness;
- staff knowledge transfer;
- joint ownership and commitment to throughput improvement; and
- integrated investment planning.

DBCTPL and QR Network have agreed to utilise a single asset maintenance plan which initially will have a time horizon of approximately 3 months. Tools are being developed to assist planners in identifying System Capacity loss due to maintenance activities and allowing them to make the correct alignment decisions. An Independent Planner has been engaged to review the alignment performed and ascertain system loss due to actual maintenance activities.

Daily operational coordination conferences have been initiated with service providers. The conference focuses on achievements the previous day, both inbound and outbound, and focuses on any priorities for the current day. The forum has established productive operational dialogue across all service providers with high levels of participation and transparency of information.

### 2.3.5 Contract Alignment

#### *Current action*

There are a number of contractual reforms already occurring within the coal chain. This is particularly evident in infrastructure regulatory models, which provide the foundation building blocks of the current commercial framework/s,

The current access undertaking for DBCT (held by BBI), regulated by the Queensland Competition Authority (QCA) under the *Queensland Competition Authority Act 1997*, expires on 31 December 2009. In order to achieve a higher degree of contractual alignment, and the maximisation of supply chain throughput, Users have gone to great lengths (commencing 2nd quarter 2008), working with BBI, to proactively enhance the replacement undertaking, i.e. from 1 January 2010. Some of the initiatives being considered as part of the access undertaking include:

- the concept of 'Terminal Capacity' to be replaced with 'System Capacity'<sup>13</sup>;
- Users and service providers agree to participate in a collaborative process to determine System Capacity, and the underlying Coal Chain Operating Assumptions;<sup>14</sup>
- an agreement between all parties to not service any future port contracts (beyond the 85Mtpa currently contracted from the completion of the Phase 2/3 expansion works) unless there is sufficient System Capacity to do so; and
- investment at the port should have regard to a 'whole of coal chain' Master Plan – in which all parties within the chain would participate.

Consensus has been reached between Users and draft changes have been provided to BBI, with the view to a joint submission (between Users and BBI) being lodged with the QCA within the next few months.<sup>15</sup>

The above principles would apply to all new port contracts, i.e. increases above existing contracts, re-contracted tonnages, etc. They are also consistent with the principles proposed to underpin the long-term solution proposed in this submission.

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<sup>13</sup> System Capacity would refer to the overall capacity of the DBCC and would be determined by reference to Coal Chain Operating Assumptions agreed between Users and Service Providers (including BBI, QRNetwork and above-rail operators) and calculated by an independent party

<sup>14</sup> Set of assumptions regarding all factors which may materially impact on the capacity of the system over time.

<sup>15</sup> The timing of the QCA decision is expected to be 6 months after the access undertaking has been lodged.

Similarly, Users and QR Network have also focused great effort on evolving the next rail network undertaking (held by QR Network and regulated by the QCA), which commences on 1 July 2009, to have a greater focus on, and regard to, the alignment of supply chain contracts and capacity. Under this initiative there are a number of sub-elements being progressed, including:

- contracted rail does not exceed an appropriate measure of rail capacity, with the assessment of rail capacity taking into account all aspects of the Supply Chain;
- complete alignment of assumptions (Coal Chain Operating Assumptions) across the coal chain when contracting for capacity;
- continued development of a Rail Infrastructure Master Plan which accounts for the expansion of the rail network, within the context, and in consideration, of the relevant supply chain. Further, such a Master Plan should have regard to any broader 'whole of coal chain' Master Plan; and
- establishment of an alternate access agreement, which would facilitate a more integrated and aligned contracting framework between Users, QR Network, above-rail operators and the port/terminal.

In addition to the above, Users are also aware of both above and below-rail service providers seeking contractual alignment with DBCT, by means of only contracting capacity (new, expanding and re-contracted) conditional upon demonstration of a matching port contract.

#### *Proposed action*

Importantly all Users, under the aegis of the Coal Chain Board, have recognised that the ACCC requires a firm commitment from supply chain participants that they will seek contractual alignment across the Supply Chain. In addition to the numerous institutional issues outlined in this submission, producers have agreed certain principles of contractual alignment, being the Supply Chain Principles, see Attachment C for more detail.

These principles will be further developed and expanded upon in order to form an implementation plan, for the long-term Proposed Solution, which will be provided to the ACCC by 31 March 2009.

## **2.4 Expansion of the Supply Chain**

A substantial investment program has been undertaken in the Supply Chain since the QMS was initially submitted for authorisation. This significant investment program

has continued since the ACCC authorised the extension of the QMS in February 2008. As shown in Table 1 below, investment will continue in the below and above-rail elements of the Supply Chain in 2009 and 2010.

**Table 1 Capacity expansions in the Goonyella coal chain**

Project	Additional Capacity (Mtpa) <sup>a</sup>	Date of Completion/ Planned date of Completion	Capital Expenditure/ Estimated Capital Expenditure \$m
<b><i>Above Rail</i></b>			
Pacific National Queensland	14 <sup>d</sup>	2010	380
QR National	Na	2009	<sup>e</sup>
<b><i>Below Rail</i></b>			
Bolingbroke Substation Power Strengthening		December 2008 <sup>b</sup>	
Brodlea-Mallawa-Wotonga Duplication	-	December 2008	74
Connor's Range – Signalling	5	July 2007	3
Coppabella Yard Upgrade	-	February 2008	40
DBCT Third Rail Loop	16	November 2007	106
Jilalan Rail Yard Upgrade	38	December 2009	500
Mindi Substation Power Strengthening	-	March 2008	40
			<b>803</b>
<b>Ports</b>			
DBCT 7X Project Phase 1	14	March 2008 <sup>c</sup>	565
DBCT 7X Project Phase 2	17	March 2009	679
			<b>1244</b>

**Source:** Queensland Treasury, *Budget Paper 3: Capital Statement*, 2008, <http://www.budget.qld.gov.au/budget-papers/bp3.shtml>, 109-119.

**a** all estimates of additional capacity from: Queensland Department of Infrastructure and Planning, *Queensland Coal Infrastructure Program of Actions Overview*, December 2007, 6.

**b** all above rail dates of completion from: QR, *CoalRail Infrastructure Program*, 2008, at [www.qr.com.au/CoalRail](http://www.qr.com.au/CoalRail)

**c** all dates of completion for ports from: Queensland Department of Infrastructure and Planning, *Queensland Coal Infrastructure Program of Actions Overview*, December 2007, 6.

**d** Pacific National's announced capacity is for the Blackwater and Goonyella supply chains. No announcements have been made on how the rollingstock will be deployed.

**e** QR National Coal has spent \$654 million on 45 3800-class electric locomotives built by Siemens in Germany. The first 20 of these will enter the fleet this year with additional engines coming online through to July 2010. Further investment has been made in upgrading 63 locomotives to increase their haulage capacity and another 30 new 4100-model diesel locomotives will start coming into service in 2009. 1700 wagons are also arriving at a rate of 150+ a month to meet the demand for coal and another 6800 are planned over the next eight years. However there is no publicly available information on the proportion of these assets deployed to the Supply Chain.

## 2.4.1 Constraints in 2009

It is widely accepted in the industry, and particularly by the Central Coordinator, that constraints within the Supply Chain in 2009 will continue to exist in 2009 and 2010. A Report prepared for this submission on the constraints and demurrage costs, see Attachment E, notes that the system constraints are expected to be dynamic in 2009

and not necessarily attributable to a single element of the Supply Chain. This view is consistent with the interdependencies that exist within the Supply Chain.

Having regard to this imbalance between forecast demand and System Capacity, it is clear that, in the absence of a queue management system, the vessel queue will grow substantially throughout 2009 and 2010. Furthermore, in the absence of an integrated approach, as provided by the Proposed Solution, the misalignment between contracted port and rail volumes, and total contracted capacity and System Capacity, is likely to persist.

#### **2.4.2 Mismatch between contract and supply chain capacity**

A fundamental problem which has existed within the Supply Chain for many years is the misalignment between the volumes of contracted capacity and the volume or throughput which the Supply Chain as a system is able to maintain. The reason for this mismatch is that the contracts for capacity throughout the Supply Chain are not concluded on a back-to-back basis but rather parties contract individually with each element of the Supply Chain for track, rail and port capacity. It is also because each element of the Supply Chain has applied different assumptions when assessing capacity.

On a stand-alone basis, and without regard to optimising Supply Chain performance as a whole, it appears from the contractual arrangements, that if each particular element within the Supply Chain has sufficient capacity available to meet the total contracted demand of users, that the Supply Chain should operate efficiently and without constraint.

What is not taken into consideration by the stand-alone contracts, is how the system as a whole functions when each element of the Supply Chain interacts with other elements. As a result, in reality, the capacity of the Supply Chain as an integrated system consisting of each of train, track and port infrastructure will always be less than the stand-alone capacity of each of the component parts. This is as a direct result of the capacity losses which arise due to the interactions of each of the components of the system.

Users will not have their coal transported in line with their contracted position as a result of the fact that the System, when each individual element interacts with the other, is not able to match the contracted position as a result of certain capacity losses which inevitably occur. However, it is also difficult to identify and hold accountable the constraining elements of the coal chain as each of the infrastructure owners is able to rightfully claim that its own capacity exceeds the System Capacity which would lead

to the assumption that each individual element cannot be the constraint within the supply chain. This leaves Users without any recourse to have the lack of System Capacity addressed.

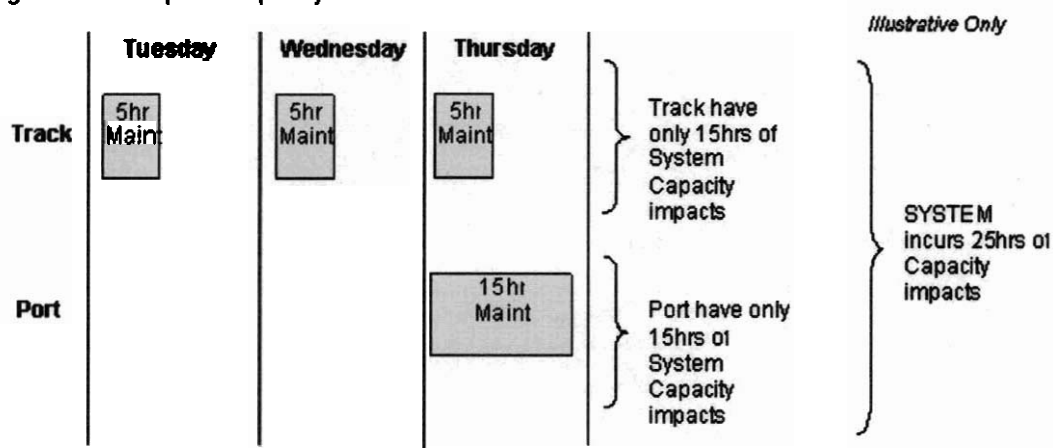
It is for this reason that a uniform agreed definition of System Capacity must be incorporated into future contracts for access to coal chain infrastructure, and why new access contracts should not be allowed to be triggered until such time as there is sufficient coal chain capacity available to service the contracts.

### 2.4.3 How do losses result when the elements of the supply chain interact?

Without any requirement on the infrastructure owners to coordinate their investment decisions so as to create System Capacity, each of them will form their own view of the investment required to service their contracted demand. Each infrastructure owner will design their equipment and make the appropriate allowances for capacity losses to provide for maintenance and other interruptions to the system. Below is an example that illustrates losses which occur as a result of maintenance undertaken within the coal chain (maintenance is only one of the factors to be considered).

Assume each of the port and track operators has budgeted for the maintenance outages necessary to operate their equipment efficiently. In the following example, each operator has budgeted for 15 hours of outage time for maintenance:

**Figure 3 Example of capacity losses**



While each independent operator has only contributed 15 hours worth of outages, what in fact accrues is a loss of 25 hours to the System and, as a result, the capacity of the system will be less than the standalone capacity of the elements of the system.

This is just one example of how the interaction of the elements of the coal chain results in capacity losses if the capacity of the system as a whole is not accounted for in both

the design of the infrastructure and the way in which the capacity is sold to coal exporters. Until each of the elements of the Supply Chain adopts a common definition of all of the assumptions that are considered when calculating the capacity of the system as a whole, there will continue to be a mismatch between the total capacity that is contracted to the Users, and the capacity of the coal chain as a system to deliver against those contracts.

A detailed list of the proposed factors to be considered when calculating the System Capacity is contained in Attachment D.

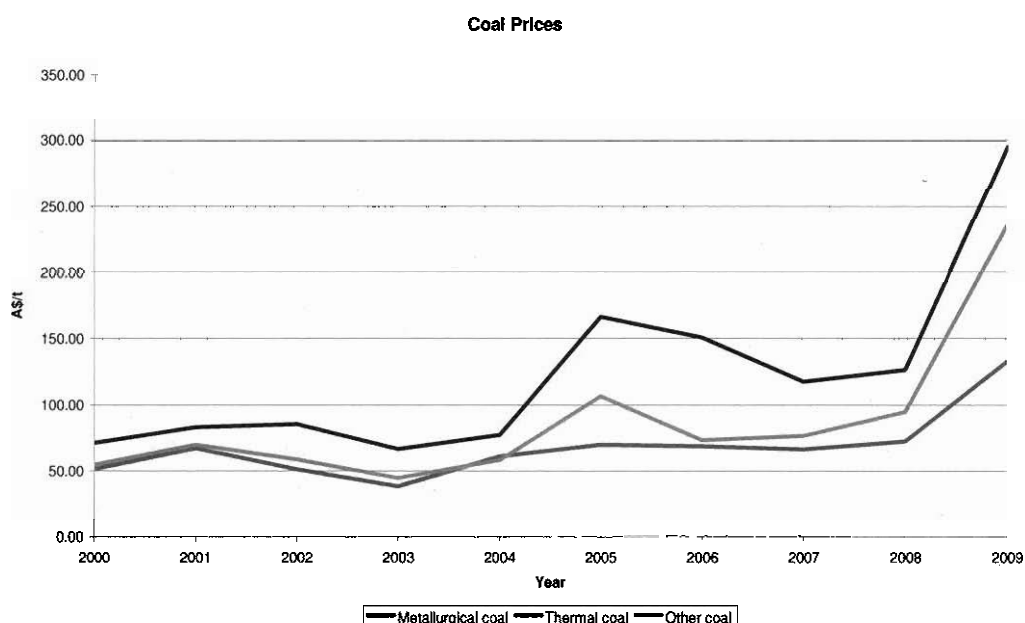
## 2.5 Incentives to supply when faced with queues

### 2.5.1 Coal Price Drivers

#### *Coking and Thermal Coal*

Figure 3 shows the trend in international coking and thermal coal markets since 2000. The graph clearly shows a spike in all coal prices that occurred following 2008 contract price negotiations for FYJ 2008-09.

**Figure 4:** Coal Prices, 2000-2008



Note: The price for thermal coal is the A\$ equivalent of the July Asian Spot Price in US\$.

Source: ABARE.

In recent years Australia's coal exporters have benefited from strong export demand for both thermal and coking coal. Recent price spikes for export thermal and metallurgical coal are attributable both to this strong demand, and the flooding of coal mines in parts of Queensland around the time of the most recent contractual negotiations.

Prior to the recent financial markets crisis, world metallurgical coal demand in 2009 was forecast to remain strong, driven by demand from India and China. Recent significantly higher world prices will encourage greater production and exports from North America and the Russian Federation and greater domestic coal production in China. Coal demand is forecast to grow by an average of 5.5 per cent in 2009.<sup>16</sup> The available evidence of global demand for thermal and metallurgical coal suggests that strong demand for Australian coal exports will continue over 2009, and most likely 2010. Although the price for coal may fall, the recent price spike has resulted in coal prices being sufficiently high that some reduction in price will not necessarily lead to a reduction in incentives to ship coal.

Figure 3 is based on the latest ABARE forecasts, which have not been updated as yet to reflect the current global economic slowdown. The impact on coal prices is expected to be negative but there is still a great deal of uncertainty about the extent of future price adjustments. If prices are expected to fall in the FYJ 2009-10 contracts, there will be a strong incentive for producers to achieve contract tonnages and maximise spot sales in the first quarter of 2009 (prior to April).

### **2.5.2 Cost Drivers**

Coal is produced from two distinct types of mines – open-cut (surface) and underground. In general, coal deposits more than 70-80 metres below the earth's surface are mined using underground methods, while deposits closer to the surface are mined using less expensive open-cut techniques. There is considerable variation in the total cost (that is including capital) of producing coal which largely reflects the characteristics of the mines producing each type of coal. On average, the cost of production for coal mined underground is higher (and is relatively more capital intensive) than open-cut mining.

Attachment F provides information, on a confidential basis, on the avoidable costs of open cut coking coal mines. Based on the available data the avoidable costs are a low proportion of current prices from which it follows that:

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<sup>16</sup> ABARE (2008). *Australian Commodities*, Vol 15, No. 3, pp 560-561

- reductions in production have a strictly limited impact on costs creating an incentive to maximise throughput;
- periods of high prices will encourage mines to maximise throughput as costs are largely fixed;
- the last tonnes produced from a high capital cost mine make a relatively greater contribution to profit than is the case for a low capital cost mine.

In the light of these mine cost characteristics, it could be expected that the recent high prices for metallurgical coal prices (noted in section 2.5.1) has created a very strong incentive for DBCT users to export additional tonnages and add ships to the queue at least until current coal contracts expire in April 2009.

## **2.6 Economics of supply chains**

Supply chain optimisation is a complex task. Logistics in Australian export commodity supply chains has emerged as a major policy issue in recent years as investments have been slow to respond to very high unexpected increases in demand, particularly those supply chains with a large number of non-related parties, such as DBCT and Port Waratah in NSW.

Supply chains are characterised by dynamism and complexity. The purpose of the following discussion is to explain these characteristics. In reality, these complexities in the past were less evident simply due to the fact that the available infrastructure was used less intensively – the “fat” in the system masked the inefficiencies that existed. With the growth in demand for infrastructure and the push to achieve greater efficiency in each element of the supply chain, the nature of the complexities is being increasingly highlighted.

### **2.6.1 Pervasive externalities and spillovers**

Perhaps the defining characteristic of a supply chain relates to the pervasiveness of spillovers and externalities throughout the chain. A key characteristic of supply chains is that the actions of each component of the supply chain can materially affect other components and thereby affect the operation of the entire system. If these actions are anticipated and regulated by contracts between the parties then it is likely that supply chain outcomes will be optimal. However, many supply chains contracts are incomplete; this will be discussed more in the following section.

A good example of the impact of each element of the supply chain on the other elements relates to the timing and scheduling of maintenance activity – failure to align

and schedule this activity across the various links in the supply chain results in lost capacity for the supply chain as a whole.

In addition to the performance of each element in the chain affecting the efficiency of the other elements of the chain and that of the supply chain as a whole, the manner in which this interaction occurs also changes significantly in response to what superficially appears to be subtle changes in operating arrangements. A good example, as explained in detail example above, is the impact each element of the supply chain has on the other elements.

The impact of the manner in which the interaction occurs can be seen in the comparison between cargo assembly and rail to stockpile environments. In a rail to stockpile environment the availability of the stockpile at the port enables the operation of the railway to be largely (but not entirely) separated from the operation of the port. This in turn allows the railway (particularly the above rail provider) the latitude to operate so as to optimise the utilization of its rollingstock. In contrast, in a cargo assembly environment there is no such separation – the railway must be completely responsive to the needs of the port. This in turn reduces the flexibility available to the above rail provider.

In a sense, in a cargo assembly environment, rollingstock becomes a substitute for stockpile capacity at the port terminal. That is the railway and port are simultaneously complementary to one another (as sequential links in a supply chain) but also substitutable (at the margin) for one another.

Therefore a cargo assembly environment can only operate with the compliance of the rail operator – as it requires the above rail operator to sacrifice its performance for the good of the supply chain as a whole. In the specific context of the Supply Chain, this in turn requires that the terms of the haulage contracts be overlooked. This in turn creates a significant risk to the Supply Chain – if a chaotic environment arose from the failure to authorize the Proposed Solution, it may affect the willingness of service providers to continue to operate in a compliant fashion.

## **2.6.2 Information and co-ordination**

Logistics chains are dynamic. It is very rare for a day of operation performance to closely reflect the plan. This is because there are so many factors which can arise to interfere with the performance of each element of the supply chain – with the performance of that element in turn affecting the other elements.

It is essential that logistics chains are responsive to internal (within the supply chain) and external (market) requirements, due to the material impact, activities or limitations

that each participant in the chain has on the efficiency of other supply chain participants and, in turn, the entire system.

In a supply chain, information is dispersed amongst participants. Even leaving aside incentive issues, if those making resource allocation decisions have insufficient information to comprehend the full impact of decisions, the result is invariably poor coordination and high supply chain costs especially when the effects may not be immediately apparent.

Coal supply chain coordination is arguably one of the more difficult supply chains to coordinate because it is formed by a sequence of long life, high cost and sunk capital assets. In these markets, it is very difficult to physically increase demand by small increments once the engineering capacity of an asset has been exceeded. Supply adjustments to meet an increase in demand are also achieved over lengthy periods of time required to complicated engineering structures such as port terminals and rail networks. Moreover, asset owners will be wary of the risks of installing excess capacity unless they are compensated adequately for bearing this risk. This risk is more pronounced in regulated markets where the risk of regulatory optimisation of assets further complicates investment decisions and timing. The instantaneous adjustment of capacity seen in many other markets is not achievable in coal supply chains.

A further complexity of coordination in the Supply Chain arises from the multi-owner infrastructure system which means that there is no coordination between the various infrastructure owners as to expansions that are required in order to give effect to increased System Capacity. Essentially, each individual infrastructure owner has its own commercial drivers and interests that operate in isolation of the remaining elements of the Supply Chain. Resolution of this problem essentially requires one single entity driving coordination of investment and expansion throughout the Supply Chain.

### **2.6.3 Incomplete Contracts**

The optimal operation of a supply chain will vary from industry to industry and from time to time depending upon achieving the maximum utilisation of the most expensive element of the chain or minimizing the impact of the bottleneck that then presents. This in turn creates a challenge for the contracting framework in a decentralised supply chain – the operating paradigm itself will need to adjust for the circumstances that present in order for optimal performance to be achieved (this is evident in the relatively recent adoption of a cargo assembly environment for the Supply Chain as well as other systems such as the Hunter Valley).

Contracts have disadvantages as coordinating mechanism in the Supply Chain for the following reasons:

- not all supply chain interfaces are controlled by contracts. Crucial interfaces in the transportation and logistics task may be 'incomplete' given that individual interactions are not governed by any contracts, legal obligations or voluntary codes of conduct. For example, there are currently no interface agreements between Terminal and above rail operators and, similarly, there are no contracts between the Operator and Users;
- contracts are not concluded on a back-to-back basis and, therefore, (as is currently the case) contracting on an individual basis with separate elements of the coal chain, has resulted in the mismatch between contracted capacity and the capacity that can be delivered by the system as a whole (ie System Capacity). A means of resolving this mismatch is the inclusion of a common definition of System Capacity in each contract that is concluded in the Supply Chain;
- even if there were contractual relations throughout the supply chain, contracting parties are unable to foresee and effectively mitigate all potential market outcomes (sometimes known as due to bounded rationality) so that the terms of the contract may be difficult to adapt to significant changes in economic circumstances which may result in further rent extraction opportunities and performance inefficiencies;
- contracts are written for long durations and are unlikely to be amended for temporary changes in market conditions;
- contracts overlap which make it difficult to achieve a standard form of contract along the Supply Chain.

While it is acknowledged that reform to the contracting framework is necessary, it is unlikely to resolve all coordination issues that occur in the Supply Chain.

In the absence of a complete and uniform contracting framework, better coordination can be achieved through extensive information sharing arrangements and supply chain integration. That is, the best response is to ensure that arrangements are in place to make the most efficient use of the available capacity whilst minimising the deadweight costs associated with demurrage.

Coordination can be a difficult task given the need to manage competing participant requirements whilst ensuring a systematic approach is used to the overall transportation task to optimise utilisation of available capacity. The complexity of this task increases significantly when competitive elements (that is haulage) operate in the Supply Chain.

In general, market mechanisms alone will not handle well the complexity of coordinating the many relationships which comprise a supply chain due to:

- the tendency for individual participant's decisions to affect others in the Supply Chain;
- the failure to provide sufficient levels of information that can result in poor coordination inevitably leading to inaccurate forecasts, demand uncertainty, high production costs, and timely investment; or
- the dynamic nature of supply chains as supply chain mechanisms that rely on contractually based coordination are poorly suited to adaptive change.

Market mechanisms can be augmented by implementing processes and procedures to coerce self-interested parties (with incentives that are not aligned) to provide the information necessary for efficient supply chain management. In this regard, the establishment of the Central Coordinator is an important institutional and complementary reform to contracting frameworks to address the problem of coordination in the Supply Chain. One of the key functions of the Central Coordinator is to ensure coordination and sharing of information between the Supply Chain participants and thereby provide a means of optimising the response of the Supply Chain as a whole to the numerous contingencies that emerge on a daily basis. As noted in section 2.3, Participant Users are members of the Coal Chain Board and have fully supported the establishment and operation of the Central Coordinator.

#### **2.6.4 Competitors**

The complexity in the operation of a supply chain can be exacerbated by the fact that the individual participants (particularly the mines that are served by it) are in direct competition with each other to varying degrees.

In such cases, individual supply chain participants will rationally seek to minimise the costs they incur.

#### **2.6.5 Implications for reform of the supply chain**

In an environment characterized by pervasive externalities, long term contracts of different vintages and overlapping terms, separate ownership of infrastructure elements, regulated infrastructure (with the impact of regulation potentially slowing the process of negotiation process) and considerable complexity, achieving reform presents considerable institutional challenges. However, reform is necessary and crucial for the long-term sustainable functioning of the Supply Chain. It is this approach to reform which is envisaged by the Proposed Solution.

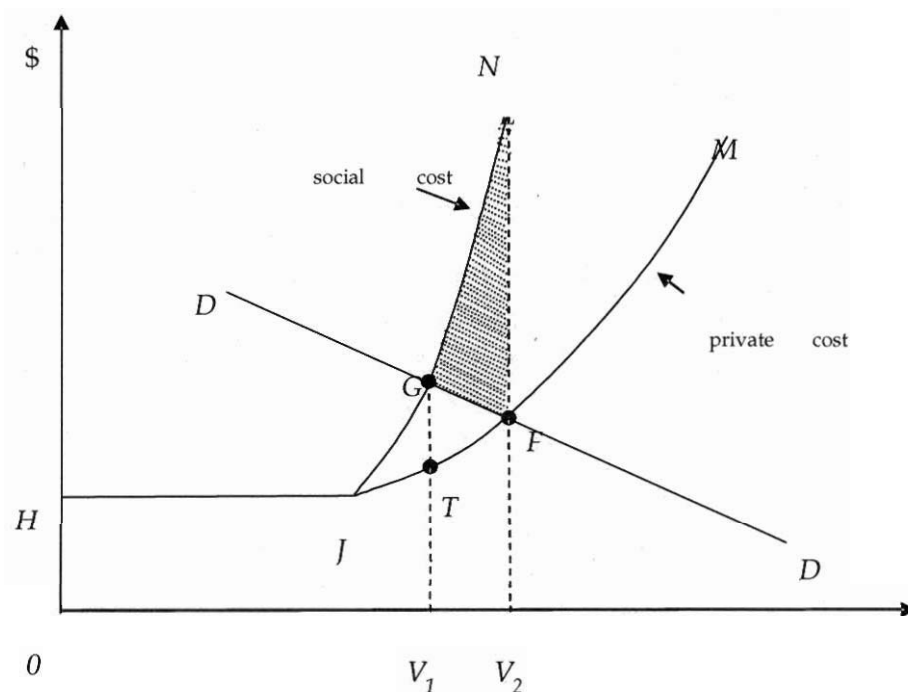
## 2.7 Market Failure

### 2.7.1 Congestion is a market failure

Congestion results in market failure when the social costs of congestion exceed the private costs. The private costs of port consumption represent the sum of terminal charges and the demurrage paid by that shipper.

When a port is congested, the social cost of another vessel joining the queue is greater than the private cost – because the additional vessel slows down the average turnaround time for *all* future users. The social cost of another vessel joining the queue (or the social cost of port use) is therefore the additional average vessel turnaround time summed across *all* producers. Figure 5 depicts a classical illustration of a congestion externality.

Figure 5 Social and private costs of congestion



In Figure 4, the line HM is the private cost curve for shipping and the line HN is the social cost curve for shipping. The line DD is the demand for shipping. When users add a ship to the queue they take into account their private costs and a ship queue of  $OV_2$  forms. If congestion impacts were factored into their decisions the queue would reduce to  $OV_1$ . At point N in Figure 6, the difference between social costs and private costs reaches its highest level. Because each producer only faces the private cost of

demurrage, that is, the amount of demurrage that it pays in isolation of other producers, no-one confronts the impact of an additional vessel on the industry as a whole. The difference between the costs each producer faces and those “caused” to the industry as a whole from an additional vessel joining the queue therefore represents a congestion externality. This shaded area is the cost of maintaining the queue at inefficiently high levels.<sup>17</sup>

Queues emerge in supply chains when prices, or contractual arrangements, cannot ration demand. Where queues exist in markets it is normally due to the high costs of adjusting (or the practical inability to adjust) prices instantly to clear demand. Also the capacity constraint (or bottleneck) can (and in the case of the Supply Chain is expected to) vary over time and with different levels of demand being placed on the system (mainly throughput levels). The key issue will be how to achieve an efficient queue length (i.e. a Working Queue). An efficient queue length will have been achieved when the costs of further reducing the queue length exceed any demurrage costs.

The presence of this externality means that reliance on the existing contractual framework produces socially suboptimal outcomes due to the economic cost of the congestion externality.

In addition to inefficient demurrage, failure to adopt a system that rations System Capacity, so as to provide certainty to Supply Chain participants, may undermine the efficient utilisation of the existing capacity. To the extent such an outcome occurred, there would be the additional opportunity cost of reduced throughput, particularly with record high prices for metallurgical coal. These costs will be discussed further in section 5 of this submission.

### **2.7.2 Rational response is to load the queue**

As noted in section 2.5, the costs of congestion are intensified significantly by the historically high price of coal. To see why the high current prices exacerbate this situation, consider the following example.

Assume in the future that current prices are \$100/tonne above what producers expect them to be next year and that in an ordinary year the margin per tonne (based on cash costs) for a mine is \$50, so that the current margin is \$150/t. If we ignore the effect of discounting, then a tonne of coal sold today is worth \$100 more than waiting until the price drops.

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<sup>17</sup> It should be noted that once a Working Queue exists, the lengthening of the queue does nothing to increase System Capacity – hence, beyond this point, all additional demurrage represents deadweight social cost.

The competitive dynamic is therefore for competing mines to “fight” for port capacity whenever (contractual) demand for the services provided by the Supply Chain exceeds System Capacity. In this environment, the only way producers can secure any capacity is to have vessels waiting in line incurring demurrage. In an environment of high prices (and profits) producers will add to the queue until the private costs of congestion equal the incremental profit from a shipment of coal (relative to a situation where the coal was left in the ground).<sup>18</sup> Only when private costs of congestion exceed the profit from a shipment of coal will it be rational for individual mines, focusing on their individual self interest, to reduce queuing for the port (at which point the social costs of congestion will be many times the private cost).

The convergence of a short-term price spike and constrained port capacity creates a situation where the **rational** response of producers is to *increase* the congestion. Indeed, the congestion can be expected to emerge in the absence of a form of capacity allocation mechanism, as soon as producers do not have confidence in the continuation of the current QMS.

The source of the current problem is that the sale of capacity has exceeded the physical capacity of the Supply Chain. In other words, because above rail, below rail and port expansion works were undertaken independently of each other, completion dates for the works have not been synchronised (even though it is expected that the known works will result in System Capacity being increased to meet contractual commitments over the course of 2009 and 2010). This in turn results in a misalignment of the capacity of each element of the Supply Chain (in which case the System Capacity will be determined by the capacity of the lowest capacity element of the Supply Chain assuming the prevailing operating paradigm prevails). This situation is materially exacerbated by the contractual mismatches that occur throughout the Supply Chain between individual users and the respective service providers.

In other words, producers are *compelled* to respond to the environment by adding to the congestion. In other words, congestion is both an inevitable and a self-fulfilling outcome of the current circumstances. This is simply a common property problem<sup>19</sup> - the failure to assign capacity rights propels all producers to an inefficient queuing solution.

There are two reasons why the better matching of capacity rights with underlying physical capacity is likely to reduce queuing quickly. The first and obvious point is

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<sup>18</sup> The incremental profit therefore equates to the sale price less avoidable cash costs.

<sup>19</sup> Hardin (1968), “The Tragedy of the Commons”, *Science*, 162, pp 1243 - 48. The concept was first recognised in Gordon (1954) “The Economic theory of common property resource: the fishery”, *Journal of Political Economy*, 62:124-143.

that it provides a vehicle for demand to be rationed – a vehicle that is far more efficient than the current mechanism of incurring demurrage as the (ultimate) capacity rationing mechanism.

Better matching of capacity rights has, in addition, a more subtle but important role. The capacity rights themselves provide an incentive for producers to engage in conduct that reduces the queue or prevents an inefficient queue from forming. This is because the producers are no longer exposed to the risk that they will be unable to sell their coal if they don't have vessels in the queue.

An interesting and significant implication from this changed dynamic is the expectation that an inefficient queue can be avoided, so long as producers have confidence that:

- failure to add to the queue will not jeopardise their ability to sell coal to the market; and
- an inefficient queue can be avoided over time.

In other words, because of the better matching of capacity rights with underlying physical capacity and the security and confidence that those rights inspire, producers have an incentive to *delay* ordering vessels, as this conduct affords those producers who can wait the benefit of lower demurrage. This, in turn, slows the rate of ship presentation at the port, enabling the queue to reduce rapidly.

In the absence of property rights to terminal capacity we are left with an environment that compels producers to respond by adding vessels to the queue in order to sell their coal, notwithstanding the fact that they incur substantial demurrage costs. In this environment, any producer that seeks to avoid demurrage will simply not sell coal. Contrast this with the incentives that arise where there are well specified capacity rights – here the very creation of the right fundamentally changes the way in which rational producers will respond to the commercial situation.

### **2.7.3 How the capacity rationing system works to reduce the queue**

The terminal operator plays an important role in coordinating the Supply Chain even when capacity is balanced along the Supply Chain; that is, mine outload, below rail, above rail and terminal capacity and operation are matched. The combination of finite stockpiling capacity at DBCT and the need to preserve product identity given the large number of coal products exported requires close management of the linkages between coal being railed and the shipping stem.

This is because the limited port stockpiling capacity effectively precludes substantial stockpiling at the port (at least for many grades of coal), and only coal destined for a particular vessel can be moved to the port. Ship arrival dictates the stockyard operation based on stockyard space availability which then pulls the delivery of coal for assembly. The terminal operator plays a key role in pulling forward coal.

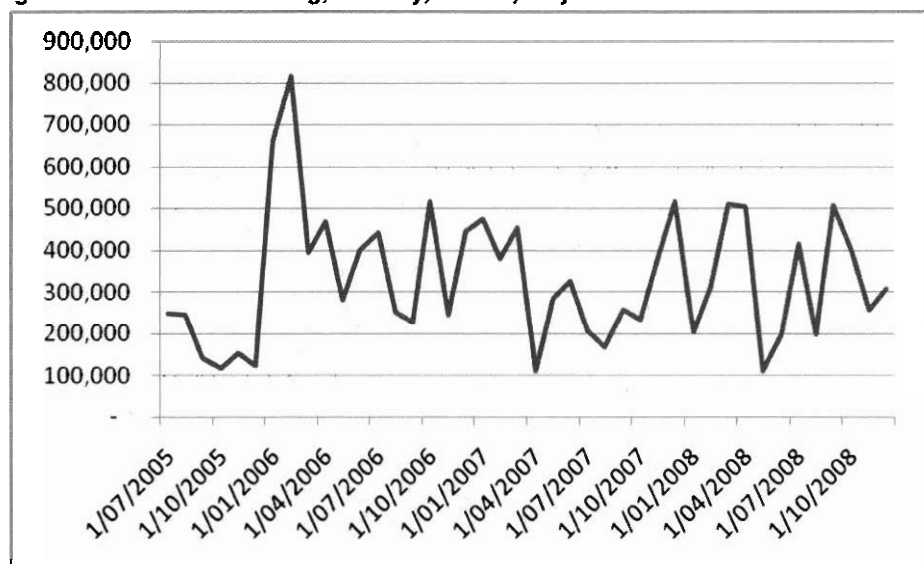
When the capacity constraint in the Supply Chain presents, a queue management system has been used to maximise throughput and minimise economic inefficiency from shipping queues that would otherwise form. The mechanism used to allocate capacity is discussed in more detail in the next section of this report. Essentially, the QMS changes the competitive dynamic by:

- providing reliable information on capacity;
- adjusting existing property rights to terminal services to be equal to assessed system capacity;
- increasing flexibility by allowing trading between producers and providing a buffer.

This latter feature of the QMS is important because it significantly increases the efficiency of the QMS. Although the capacity reduction is initially proportional to port contracts, the swapping of entitlements allows Users to trade to reach their preferred capacity position. Achieving coordination in a supply chain requires accurate and credible information to be available to producers. The QMS does this by capacity adjustments being determined by an independent expert. The independent expert has no incentive to reduce queue length above or below efficient levels. Capacity entitlements are adjusted according to a transparent formula. Flexibility is provided through the existence of buffers (to accommodate indivisibilities emerging from apportioning annual volumes to monthly volumes). In addition, trading between producers through transfers, swaps and pooling ensure that where any user is unable to utilise its revised entitlement that that entitlement is nevertheless able to be utilised by another producer where feasible.

Figure 6 shows that entitlement trading occurs each month at relatively small volumes compared to throughput levels.

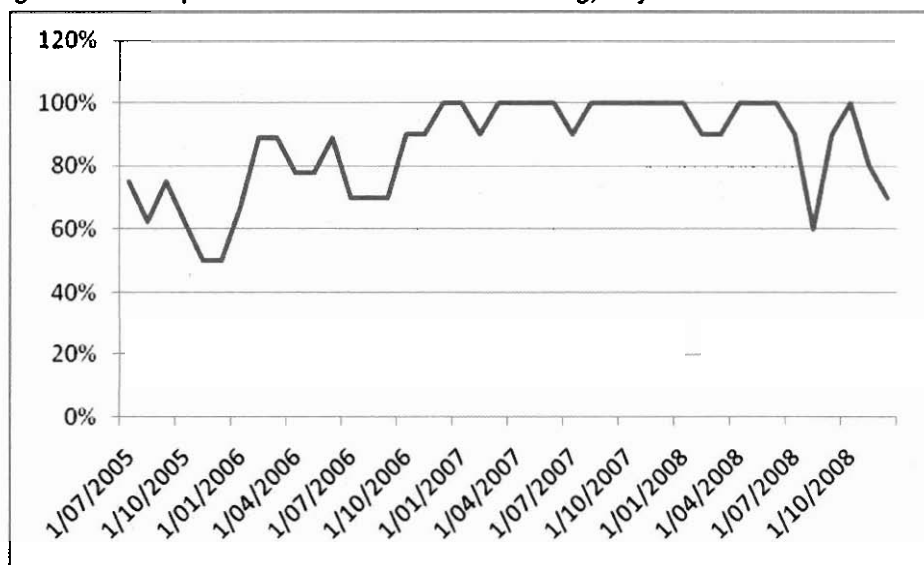
**Figure 6 Entitlement trading, monthly, tonnes, July 2005 – October 2008**



Data source: QMS Independent Expert

Figure 7 shows that the participation rate of Users is very high, suggesting that all Users find it beneficial trade entitlement.

**Figure 7 Participation of Users in entitlement trading, July 2005- October 2008**



Data source: QMS Independent Expert

### **3 Description of conduct comprising the Proposed Solution**

#### **3.1 Commitment of Users to long-term Supply Chain Principles**

While there is industry recognition that a whole of system approach is required to manage capacity, there have previously been divergent views amongst Users in relation to the form this should take. A number of options have been considered by Users but there has not been complete consensus as to the most appropriate solution. However, there is broad agreement amongst Users to Supply Chain Principles to form the basis of the long-term solution once current contracted capacity of 85 Mtpa is exceeded. In fact, as discussed in Section 2.3.5, examples already exist which demonstrate the Users' commitment to the Supply Chain Principles proposed to underpin a long-term solution. For example, the access undertakings being developed for both rail and port reflect these principles. Moreover, supply chain master planning has resulted in unprecedented agreement between Users and service providers on fundamental Supply Chain Principles. This demonstrates good faith by Users to collaborating to resolve the problems experience on the Supply Chain in recent years. In these circumstances, the Users submit that the Proposed Solution is an appropriate and sustainable solution for the efficient long-term operation of the Supply Chain.

##### **3.1.1 Short-term extension of QMS**

The Application seeks a short-term extension of the QMS for a maximum period of 6 months, from 1 January 2009 until 30 June 2009. The extension is required to facilitate the time period necessary for Users and service providers to reach agreement on the practical terms and mechanics of the LTS and in particular how in Phase 1 port and rail contracts will be aligned until capacity exceeds 85 Mtpa. Because of the lags associated with the terms of existing contracts, full implementation of contractual reform is anticipated to take between 18 to 24 months.

Notwithstanding the Users' intent, the extension of the QMS is necessary to ensure a Working Queue is maintained at DBCT.

All Supply Chain participants will consult in regard to the detail to be included, the practicalities required and the preparation of necessary documents to give effect to implementation of the LTS. This work will commence as soon as this application is lodged with the ACCC.

By 31 March 2009, the Users will submit to the ACCC a detailed implementation plan which sets out the mechanics and practical steps required in order to achieve the LTS, in particular the process through which contractual alignment will be achieved for existing contracts. The continuation of the QMS beyond 31 March 2009, until 30 June 2009, is conditional upon such implementation plan being made to the ACCC and, accordingly, in the event that the implementation plan is not submitted to the ACCC by 31 March 2009, the QMS will self-terminate and the proposed authorisation process will cease.

The submission of the implementation plan will be accompanied by a separate application for authorisation. The QMS will continue to operate until 30 June 2009, while the ACCC considers whether to authorise the implementation plan. In the event that the ACCC does not authorise the implementation of the LTS, the QMS will self-terminate on 30 June 2009.

However, in the event that the ACCC does authorise the implementation of the LTS, this will become operational from 1 July 2009.

### **3.1.2 Phase I of the LTS**

Phase I of the LTS effectively comprises a transitional phase which is necessary for achieving a long-term sustainable means of operation within a complete contractual framework within the Supply Chain. Phase 1 will be the subject of a separate application for authorisation.

In light of the fact that the reform to the contractual framework is not likely to be completed within at least 18 to 24 months (ie end of 2010 or early 2011) and in light of the fact that capacity up to 85Mtpa has already been contracted for, an interim phase is required until there is sufficient System Capacity to meet existing levels of contracted capacity, and prior to transitioning to a long-term position where new contracts will be regulated by reformed access undertakings and access agreements.

As mentioned in the introduction to this submission, all existing port and rail contracts up to and including 85Mtpa are recognised and will be taken into consideration during the implementation of Phase One and Phase Two.

Phase I of the LTS will require a transitional allocation mechanism ("TAM"). There is unanimous agreement to the majority of Supply Chain Principles listed in Box 1, and whilst there remain differences on some of the Principles and Objectives, all Users are committed to developing them further with a view to them underpinning the TAM in Phase 1 of the LTS. A TAM is a necessary interim mechanism which shall operate, to the extent required, until the regulatory and contractual reform process has been

completed. It is intended that when the system is constrained the TAM will allocate capacity.

#### **Box 1 LTS Phase 1 Principles**

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Service providers must only contract for the provision of deliverable System Capacity (not standalone capacity)

Users and service providers will develop a common view of System Capacity based on a comprehensive coal chain capacity model and standardised set of underlying assumptions (Reference Tonne) that allows for all interfaces and operating modes of the system etc

Contracts for access to capacity will include Access Protocols which provide that:

- a. Existing Users have surety of ongoing access to contracted system capacity
- b. New Users have a defined process/path by which to gain access to system capacity

Contracts for access to capacity will provide a mutual obligation:

- a. To use or pay for capacity on a long-term basis
- b. To make System Capacity available consistent with contracted volumes

The System Master Plan will evaluate and identify the most efficient investment options (from load-points to port to system rules) for increasing coal chain capacity from a cost and risk perspective

Capital investments in new infrastructure:

- a. Must be guided by the System Master Plan for the coal chain
- b. In the case of track and port infrastructure, must be undertaken where a commercial level of underwriting is offered via long-term take or pay contracts and agreed investment triggers are satisfied
- c. Users intend to will provide reasonable incentives to service providers to hold reserve capacity and expand capacity in a timely manner.

The commercial framework must:

- a. Ensure each User and service provider is held accountable, to the extent possible, for their consumption of coal chain capacity
- b. Provide for capacity to be traded and swapped between participants within the physical constraints of the system and without affecting any organisation not party to the trade

The Supply Chain is to be planned and operated as a system with an independent coal chain planning and live run coordinating body

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The TAM will allocate capacity as required with reference to train, track and port contracts in accordance with the method agreed by Users and will operate until such time as System Capacity matches total contracted demand at 85Mtpa. Any tonnes to be contracted over and above 85Mtpa will be regulated within the proposed long-term Supply Chain Principles.

The TAM seeks to put in place an integrated whole-of-system approach which will facilitate rationing of access to capacity in order to align with what the system, as a whole, is capable of delivering.

The Objective of the TAM are to:

- a) maximise the total volume of exports through the Goonyella Coal Chain;
- b) allocate capacity via a mechanism of rationing that will operate by reference to all of coal chain contracts (ie based on firm contracted volumes/obligations on each of train, track and port).
- c) provide greater certainty for all participants in the coal chain, thereby enabling them (and any potential participants) to commit resources - whether to increased production or increased capacity - with a greater degree of confidence;
- d) create appropriate signals, accountability and incentives for efficient investment in the Supply Chain;
- e) provide appropriate incentives for participants to use or trade system entitlements which they do not require or cannot utilise;
- f) provide a logical and principled "transitional step" towards Phase II, being a sustainable long-term market-based solution to the existing demand-over-supply imbalance;
- g) seek contractual alignment across the Supply Chain, in line with the Supply Chain Principles;
- h) achieve and maintain a Working Queue, so as to minimise deadweight demurrage costs to all users while maximising exports from the Terminal;
- i) maximise utilisation of System Capacity, hence maximising coal exports from the Terminal;
- j) restore and maintain the reputation of DBCT as a reliable and low demurrage facility;
- k) reduce the potential for participants to engage in inefficient gaming; and
- l) promote competition across the Supply Chain.

Users are committed to reaching agreement on a common definition of a reference tonne which will underpin the measurement of System Capacity. Attachment D shows that there are a wide range of factors to be considered in defining a reference tonne. Users intend to reach an agreed position for the implementation of the long term solution and the transition arrangements when they report to the ACCC by 31 March

2009. Furthermore, with the support and cooperation of the service providers, the TAM will seek to provide incentives for the creation or enhancement of capacity and the efficient utilisation of capacity. This will be achieved by establishing commercial

drivers which will ensure that capacity which is created or lost, accrues to the maximum extent possible, to the coal chain participant responsible for the creation or loss.

It is proposed to include in the TAM procedures for transferring allocations between Users, while providing safeguards to ensure that transfers do not unreasonably impact on System Capacity. In addition, the contractual rights and obligations in the respective commercial arrangements between the Users and the service providers will provide an incentive to ensure that capacity is either delivered and utilised, or transferred (for example take or pay obligations) - noting transfers of allocation is only achievable if there is the ability of another User to utilise such capacity.

The Users submit that this integrated, aligned and co-ordinated approach represents a principled solution which, with the support and cooperation of the service providers, will encourage efficient investment and expansion in the medium-term throughout of the Supply Chain. This approach will also enable all participants in the Supply Chain, including Users, above and below rail providers and port operators to enter into contracts with greater certainty. This will maximise the export capacity of the Supply Chain and it will be a system capable of ultimately transitioning to Phase II of the LTS, being a sustainable long-term position underpinned by optimal commercial arrangements.

### *Operation of the TAM*

The TAM will be triggered and operate when the following two requirements are satisfied:

- aggregate forecast coal tonnage demand exceeds the estimated declared System Capacity; and
- aggregate forecast coal production (based on actual throughput and mine stocks as assessed by the Independent expert) is *likely* to exceed the declared System Capacity (or indeed is self evident as a result of the creation of a vessel queue).

Essentially, therefore, the TAM will not be required to operate when the coal chain as a system is able to meet the ability of the Users to produce, sell and export coal.

Whether the two requirements are satisfied or not will be determined on a quarter-ahead basis whereby an independent expert will make a determination as to the requirement for the TAM to be operational during each month.

The independent expert will make this assessment based on the probability that the above two requirements are satisfied given his view on forecast demand and forecast coal production for each User, and declared System Capacity. To the extent that a vessel queue has formed during a period in which the TAM was not operational, the independent expert will determine whether, based on his assessment of forecast demand, forecast production and declared System Capacity, that the TAM ought to be introduced so as to reduce the vessel queue.

### **3.1.3 Phase 2 of the LTS**

Phase 2 of the LTS effectively entails the existence of commercially aligned contracts which are underpinned by the Coal Chain Principles that create efficient investment incentives. In Phase 2 the system will be in alignment and operating in accordance with the agreed coal chain principles, which will be reflected in the rail and port access undertakings<sup>20</sup> and associated contractual framework. It is not expected that there will be any further need for a capacity balancing mechanism that would require authorisation by the ACCC.

As indicated above, significant reform is currently being embarked upon in regard to the contractual framework in relation to the Supply Chain. Both the terminal and track access undertakings are in the process of being revised and submitted to the QCA for approval prior to expiry of the respective existing undertakings. As part of the reform, the draft of each revised undertaking is incorporating the Coal Chain Principles. It is anticipated that capacity in excess of 85Mtpa will be contracted for and regulated by the reformed long-term contractual framework.

The principles underpinning Phase II of the LTS are listed in Attachment C. The difference between the principles for Phase I and Phase II is the need to acknowledge that contractual alignment will require compromise between Users in terms of allocating capacity when the Supply Chain is constrained.

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<sup>20</sup> Access undertakings are approved under the *Queensland Competition Authority Act 1997 (Qld)*

## 4 Relevant markets

The relevant markets are those that have the potential to be affected by the operation of the QMS in the short-term, and the LTS, in the long-term. A consideration of which markets are relevant in relation to the implementation of the Proposed Solution has already been undertaken for previous determinations by the ACCC in relation to the operation of the QMS at DBCT. The relevant markets are those identified in the ACCC's 2008 determination in relation to the QMS's operation at DBCT:<sup>21</sup>

- the global market for coal (or at least the Asian coal market);
- the market for the provision of coal loading services for bulk coal carrying ships in the Bowen Basin; and
- the market for the provision of rail haulage services in the Bowen Basin.

There have been some changes in circumstances since the ACCC last determined the relevant markets for the purposes of authorising the QMS:

- a second above rail operator has been awarded contracts to haul coal;
- phase 1 of DBCT's 7x expansion completed;
- phase 2/3 of DBCT's 7x expansion over 75 percent complete;
- QRNational has purchased \$650 million worth of rollingstock comprising 40 locomotives and 1190 wagons to be delivered over the period to the end of 2010<sup>22</sup>
- QR Network will have completed an investment program of just over \$800 million by December 2009;
- A spike in the price of coking coal following the flood induced production difficulties that preceded the negotiations around the benchmark price last year.

It is submitted that none of these factors affect the definition of the market for the purposes of authorising the Proposed Solution.

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<sup>21</sup> ACCC, *Determination - Application for revocation of authorisations A30239-A30241 and substitution by A91060-A91062*, 29 February 2008, p20.

<sup>22</sup> [http://www.freight.qr.com.au/Freight/News\\_room/Current/News\\_Articles/071011coal.asp](http://www.freight.qr.com.au/Freight/News_room/Current/News_Articles/071011coal.asp)

## 5 Future with and without Test

In identifying and measuring public benefits and detriments the ACCC and the Tribunal apply a 'future with-and -without' test. In *Re Queensland Independent Wholesalers Ltd*, the Tribunal observed:

'The test is not to compare the present situation with the future situation, were the acquisition to take place: a "before and after" test. Rather the test is to appraise the future, were the acquisition to take place, in light of the alternative outcome, were the acquisition not to take place: the "future-with-and- without" test.'

There are two aspects to the test.

First, it is necessary to predict what will happen in the future. The benefits and detriments in the future with the conduct are compared with the benefits and detriments that are likely to flow in the future without the conduct.

Secondly, the ACCC or the Tribunal must be satisfied that if the conduct occurs it will cause the public benefits that will outweigh the public detriments.

In *Re Qantas Airways Limited*, the Tribunal stated:

'In summary, the proper question to ask in this regard is not what is the current position but what is it anticipated will be the position under either a factual or counterfactual scenario over the next five years?': *Re Qantas Airways Limited* [2005] ATPR 42-065 at [357]

The future 'with' the authorisation is sometimes referred to as the 'factual'. The future 'without' the authorisation is referred to as the 'counterfactual'. The counterfactual provides the benchmark against which anti-competitive detriment and public benefits are assessed. In the majority of authorisation cases which come before the ACCC the counterfactual is represented by the status quo.

However, this need not necessarily be the case if the status quo is likely to change in the near future.

### 5.1 Relevant factual

The relevant elements of the factual were outlined in section 2 of the report. The key features include:

- the QMS will operate to maintain the shipping queue at optimal levels until 30 June 2009;

- Current contracts expire in April 2009;<sup>23</sup>
- planned investment to increase capacity at DBCT 85 Mtpa by June 2009. Over the longer term expect Abbot Point expansion to continue and the Newland and Goonyella system to be linked;
- coordination of supply chain operations will continue to improve under the leadership of the Central Coordinator;
- a supply chain master plan will be developed which will identify the least cost expansion path for the Supply Chain;
- the Supply Chain will operate on a cargo assembly mode;
- Users will reach an agreed position on a transitional allocation mechanism by 31 March 2009 and a detailed plan for the implementation of a long – term solution based on the agreed Supply Chain Principles; and
- above rail contracts will be progressively renegotiated and reformed to reflect the Supply Chain operating mode and to limit incentives to over-contract capacity.

## 5.2 Relevant counterfactual

The short-term counterfactual is a reversion to the regulations that existed prior to 1 October 2004. These regulations are described as 'Edition 2: Rev 4: 27/5/03' (2003 Regulations).

If the 2003 Regulations apply, clause 6.6 provides that vessels are to be loaded in order of arrival unless the Operator, DBCTPL, determines that the considerations which are listed in clause 6.6 override that priority.

While it is open to the Operator, DBCTPL to take steps to adjust the priority of Vessels to address efficiency of the Coal Transport Chain, there is considerable uncertainty as to the basis upon which priority would be allocated in order to manage the vessel queue at the DBCT.

For example, clause 6.6 only permits to the Operator to change the priority or order in which Vessels are berthed at the Terminal. It does not permit the Operator to reduce each user's contract tonnage and does not provide for a capacity balancing system.

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<sup>23</sup> In the event that there is a significant fall in demand for coking coal in 2009 it is unlikely the QMS will operate.

Under the "counterfactual" whereby ships are loaded in order of arrival, it is in the interests of an individual user to have a large number of vessels in the queue, as that will maximise the tonnage of coal which that user can ship, so long as the return from that additional tonnage exceeds the cost of demurrage to the particular user. The counterfactual will result in excessive queues forming in the first quarter of 2009 and beyond.

### **5.3 Other counterfactuals**

The current mismatch between contract and supply chain capacity is discussed at 2.4.2 above. The mismatch has arisen from the piecemeal development and expansion of the Supply Chain (with each element of the Supply Chain operating largely in isolation of the other elements) and the contractual relations that underpinned it. With the benefit of hindsight, contracts for rail haulage services should have been aligned with terminal capacity.

It would be unrealistic to assume a counterfactual under which, in the absence of the QMS, the contracts for rail haulage services would be rapidly brought into alignment with terminal capacity. As shown in Section 2 and the Attachment F the avoidable costs of a tonne of coal are a small proportion of the current coal price. In this circumstance, it is unlikely that increased demurrage costs will provide a sufficiently powerful incentive for Users to align contracts. The rail haulage and terminal user contracts are long-term contracts in order to manage the risks and uncertainty that has to be managed by the contracting parties.

For example an access agreement for DBCT which requires a capacity expansion of the terminal must be for a minimum term of 10 years, with no right on the part of the user to voluntarily reduce the contracted tonnage earlier (except any right to terminate for default by DBCT Management).

For an existing mine covered by an access agreement, the agreement may be for any term, but:

- if it is for less than 5 years, that term and the relevant tonnages must correspond with the expected remaining mine life; and
- no options to extend the term may be granted if the term is for less than 10 years.

For a new mine, the access agreement may be for any term but:

- if it is for a term less than 5 years, DBCT Management may reserve the right to terminate it on not less than 12 months notice if:

- DBCT Management executes an access agreement for a period in excess of 5 years, commencing during that term; and
- DBCT Management would have been unable to execute that new access agreement without a capacity expansion at the terminal, had the first mentioned access agreement not been terminated at that time; and
- no option to extend the term may be granted under it if the agreement provides for the handling of coal for a term of less than 10 years.

As new contracts are struck and existing contracts are renegotiated the opportunity arises to align port and rail capacity arrangements and, as mentioned in section 2, alignment requirements are being incorporated into the terminal access undertaking and into below-rail access arrangements. However, the existing contracts represent each party's assessment and mitigation of risk at the time the contracts were formed and it would be inefficient to prematurely change these arrangements. This is because if it were possible to make both parties better off the contracts would be voluntarily renegotiated.

The movement to a cargo assembly port demonstrates the difficulty in aligning interests in a supply chain. Cargo assembly is necessary to operate the Supply Chain efficiently even though it may have adverse effects on some elements of the Supply Chain (for example, it forces the more intensive use of rollingstock and thereby reduces its utilisation). Consequently, above-rail providers are disadvantaged from the change even though the change is in the best interests of the Supply Chain as a whole.

The only way that these contracts could be brought into alignment is through a voluntary process or re-negotiation or a mandatory process that would require new legislation or regulation under some existing legislative scheme such as the *Queensland Competition Authority Act 1997 (Qld)*.

Under a voluntary process, coal producers would give up their existing rights to rail haulage or terminal capacity in the hope of negotiating something better. This is unlikely to occur without an authorisation.

Under a mandatory process the existing rail haulage and terminal capacity contracts would be declared void and rail haulage and terminal capacity would be reallocated on some basis (which invariably would be arbitrary). This is also unlikely to occur.<sup>24</sup>

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<sup>24</sup> Even if it were possible to amend contracts, we believe that there is good reason to be cautious before embarking upon such a course. This is because, quite apart from the gravity of such an intervention, we believe that the complexity of the process of institutional reform will be evolutionary and take time to optimise.

What is more likely to occur is that over time as existing contracts expire, future contracts will be negotiated on an aligned basis.<sup>25</sup> Short-term inefficiencies will even out over the long term. As new capacity is built and new contracts are entered into, it is anticipated that the parties will ensure that they are on an aligned basis.

It would be unrealistic to adopt a counterfactual which ignores the current realities of binding long –term contracts. Similarly, it would be unrealistic to assume that, in the absence of the Proposed Solution, contracts would somehow be brought into alignment any more quickly than would be the case if the authorisation was granted for the Proposed Solution. The development of a long-term solution will occur after capacity reaches 85 Mtpa as it will be reflected in both rail and port access undertakings. Existing contracts however will remain ‘on foot’ without only increasing demurrage costs providing an incentive to advance contract alignment.

## **5.4 Application of the future with and without test**

### **5.4.1 Benefits**

A detailed examination of the net public benefits that will result from the Proposed Solution is set out below. The benefits that will accrue to relevant parties from its implementation and detriments that have previously been identified in relation to logistics chain solutions are considered.

It is submitted that the Proposed Solution will:

- Prevent a large vessel queue re-emerging, reduce the potential for incurring demurrage costs and reduce inefficiencies in the coal supply chain);
- Throughput benefits from greater certainty;
- Environmental benefits;
- Enhance the reputation of Australian coal exports.

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<sup>25</sup> It is also possible that over time the terms and conditions of contracts will evolve to provide commonality on issues such as the governance arrangements for the supply chain as a whole.

#### 5.4.2 Public benefit

##### *Vessel queues and demurrage costs*

Once a port becomes congested, the outcome will be a lengthy vessel queue (as has been addressed in detail above), particularly in the present environment of strong demand and high prices for export coal. A long vessel queue will normally mean that the time taken to load a vessel, from when the vessel arrives at the port and is ready to be loaded, will increase. For this reason, there is a correlation between vessel queue length and the quantum of demurrage that is paid by port users.

The Proposed Solution will provide a substantial public benefit through a reduction in vessel queues at DBCT. Absent the Proposed Solution, congestion would likely arise at DBCT due to the imbalance between the demand for coal loading services of the Supply Chain and the physical capacity of the Supply Chain. For the reasons outlined in section 2, congestion is a market failure (increased demurrage charges are a deadweight loss).<sup>26</sup>

The Independent Expert has estimated queue lengths through 2009 with and without a capacity management system or other form of allocation mechanism.

The Independent Expert estimated that if the DBCT Coal Chain operates with a capacity management system in place for 2009 (Scenario One), the ship queue at the end of June 2009 has been estimated to be 19 ships with an average wait time of 8 days with a demurrage bill across the year conservatively estimated to be in the order of \$59 million.<sup>27</sup>

If the DBCT Coal Chain operates without a capacity management system in place for 2009 (Scenario Two), the ship queue at the end of June 2009 has been estimated to be 109 ships with an average wait time of 41 days with a demurrage bill across the year conservatively estimated to be in the order of \$ 227 million. The avoided demurrage cost of authorising an allocation mechanism is \$ 168 million.

The predicted queue should be considered an upper bound estimate as the model does not include a feedback mechanism whereby the increasing size of the queue affects Users and customer decisions to send ships. It is difficult to predict when or how a feedback mechanism might stop the growth of the queue as predicted in the model.

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<sup>26</sup> Some level of demurrage charges being paid by Users is efficient. This is because demurrage will normally need to be paid even before maximum throughput capacity from the terminal is reached. Without some vessel queue then it is probable that maximum capacity would not be reached.

<sup>27</sup> AS / US\$ 0.6681 as at 4pm AEDT 16 October 2008 used to convert Independent Experts estimate which are reported in \$US, see Attachment C.

However, in the past queues have increased rapidly and have only been stopped by the introduction of a capacity management system.

The possible feedback mechanisms include:

- private demurrage costs moderate the willingness of producers to add ships to the queue;
- some other form of institutional intervention occurs (some form of capacity management system that has been authorised by the ACCC);
- Users renegotiate their demurrage costs;
- Users seek supply access through alternative coal chains; and/or
- buyers seek coal from elsewhere

Since previous queues have been “capped” through regulatory interventions we have no experience at what point a market feedback mechanism would “cap” queue lengths. In the current context, it is reasonable to expect that the demand feedback mechanism will be weaker than in previous experience simply because of the gap that (currently) exists between the avoidable cost of producing a tonne of coal and the price received for a tonne of coal. This gap, and the prospect of future price reductions, creates a very strong incentive for Users to send ships to port. These two factors alone suggest that it is conceivable that the market feedback mechanism might halt the queue close to the upper bound estimate reported above.

Table 2 shows the results of a simple sensitivity test undertaken on the demurrage accumulated to the end of June 2009. These scenarios will reflect increases and decreases of shipping demand. This was achieved by varying the demurrage rates up and down by 25%. These show that shipping demand, as reflected in demurrage rates, has a significant impact on demurrage costs.

**Table 2 Sensitivity rates on 2009 Demurrage estimates, \$ million**

	With a QMS	Without a QMS	Change
Demurrage rate reduced by 25%	44	170	126
Demurrage rate increased by 25%	74	283	209

Source:

*Productivity and throughput increases from greater certainty*

Anecdotal evidence suggests that the certainty of terminal capacity allocation, benefits all participants upstream from the port (irrespective of whether or not terminal capacity is a binding constraint on System Capacity).

A key example of the benefits of implementation of the Proposed Solution arises for above rail operators - certainty regarding rollingstock capacity required in the Supply Chain will result in greater productivity of rollingstock. For example, it is understood that there may be a reasonably significant spot market for above-rail capacity during 2009 (depending on the commissioning of new consists on the system). Certainty as to the entitlement to System Capacity of Users will be important for the efficient operation of this spot market.

Especially since the incumbent above-rail operator (QRNational) is understood to be entitled contractually to “walk away” from the cargo assembly operating paradigm and operate to the even railings commitment in its existing haulage agreements. Such an outcome would have catastrophic consequences for the Supply Chain.

A similar productivity benefit results for coal producers because production levels can be aligned to their entitlements to System Capacity. In particular, certainty of export volumes provides clear benefits for short, medium and long term business planning for the coal producer in relation to their own mining operations.

Just as increased certainty benefits haulage providers so too does it provide benefits to producers by enabling them to secure spot rail capacity based on improved knowledge of their allocated export volume. The User will be better able to make production decisions based on the price and volume of spot rail capacity available, if they first know with certainty their allocated export volume.

Productivity gains for Users and rail operators represent a public benefit to the economy and the Australian public.

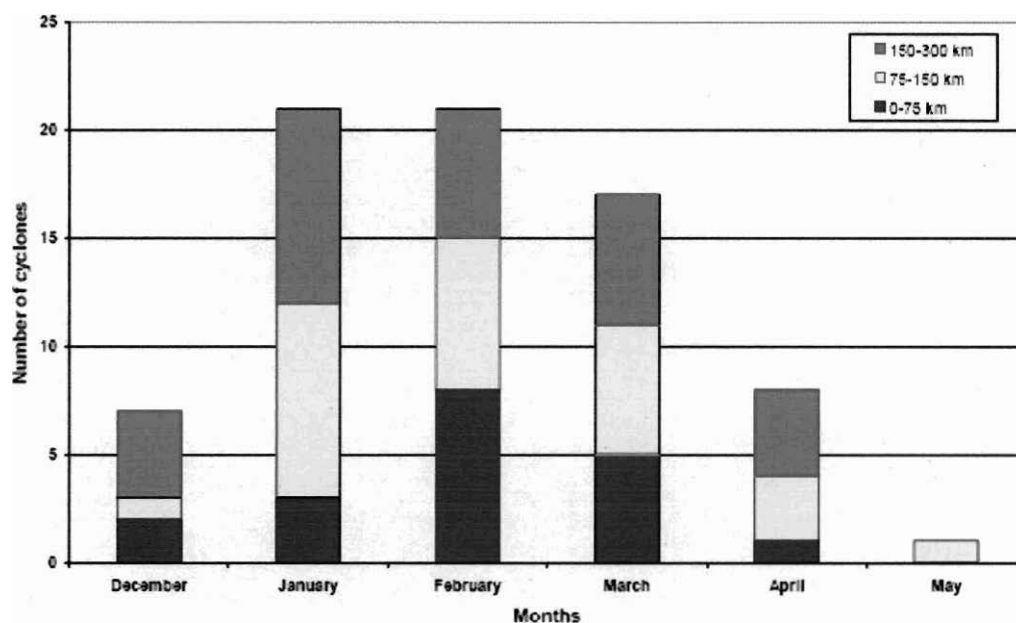
In the absence of the Proposed Solution, Users will have an incentive to congest the Supply Chain and result in greater variability of throughput. Anecdotally, variability of throughput can result in lower aggregate throughput, see page 14 of Attachment E. This occurs when producers reduce production because of significant congestion and reduced volumes are shipped because the shipping plans of the other users are not known. During 2009, the reforms implemented by the Central Coordinator are likely to largely address this issue but the Applicant Users acknowledge that there remains some potential for throughput losses. At expected coal prices even a reduction of throughput of 1 Mtpa is likely to reduce export earnings by up to \$300m.

### *Reduced environmental risks*

Previous submissions to the ACCC have noted the importance of the Great Barrier Reef to Queensland and Australia's tourism industries. It also has flow-on effects for other industries. DBCT is located within the Great Barrier Reef Marine Park Boundary and the Marine Park is an environment that is particularly sensitive and exposed to negative external impacts.

Large vessel queues increase the risk of substantial environmental harm. DBCT is located at the Port of Hay Point, which is a tropical environment. A particular risk to vessels, the Port and the surrounding environment is the cyclone season. It is expected that in the absence of authorisation of the Proposed Solution, the vessel queue will peak just prior to 31 March 2009 – a time which coincides with the cyclone season, as shown in Figure 8.

**Figure 8 Cyclone Frequency – Mackay 1867 - 1997**



Data source: Geoscience Australia

The threat of environmental damage due to substantial vessel queues is significantly compounded by the proximity of DBCT to the Great Barrier Reef. The significance of this public benefit is highlighted by the incident that occurred involving the grounding of the Pasha Bulker at Nobbys Beach, Newcastle in June 2007. In its report following the Pasher Bulker incident, the Australian Transport Safety Bureau ("ATSB") identified port congestion as a factor which increases the likelihood of ships anchoring in close proximity to each other which, in turn, results in less time to take action if their

anchors drag and therefore creating a higher risk of collision. The ATSB specifically identified a *“potential for major pollution or the blockage of the port resulting in enormous financial costs”*<sup>28</sup>.

Consequently, it is submitted that the implementation of the Proposed Solution will decrease the risk of environmental risks associated with a large vessel queue – particularly during the most high risk periods for cyclone activity. Protection of the Great Barrier Reef is important to the Queensland and Australian economies. Improved reputation

The presence of a lengthy vessel queue, associated with substantial demurrage charges, is readily apparent for international coal purchasers in making their purchasing decisions. The presence of a long vessel queue impacts on the customers’ perceptions of price and reliability of the coal supply chain. The ACCC has previously accepted that “certainty with regard to coal deliveries and cost savings as a result of reduced waiting times” influence the purchasing decisions of coal buyers.<sup>29</sup> International coal buyers, faced with uncertainty about how long it will take for their coal to be loaded at DBCT because of a long vessel queue, may lose confidence in DBCT’s coal producers and be more likely to consider alternative sources of supply, including from other countries (ie Indonesia and Russia).

By way of example, on 31 October 2007, the Argus Coal Daily reported that:

“As traditional suppliers struggle to meet demand, Japan is diversifying supply by taking 77pc more Russian coal, rising to 705,916mn t, compared with September last year...

To meet strong demand and counter tight export availability in Indonesia and Australia, Japan’s supply from Russia is climbing.... For some Japanese buyers this means making allowances for quality issues surrounding Russian coal, which has a higher proportion of debris...”

There is, therefore, a very real prospect of international substitution by buyers in response to uncertain supply conditions in Australia. Accordingly, the Applicant submits that there is a very clear public benefit from the Goonyella Coal Chain and the Bowen Basin coal producers having a strong international reputation as efficient, timely and low-demurrage exporters.

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<sup>28</sup> ATSB Transport Safety Investigation Report, Marine Occurrence Investigation No 243 “Independent investigation into the grounding of the Panamanian registered bulk carrier Pasha Bulker” [www.atsb.gov.au/publications/investigation\\_reports/2007/MAIR/pdf/mair243\\_001.pdf](http://www.atsb.gov.au/publications/investigation_reports/2007/MAIR/pdf/mair243_001.pdf)

<sup>29</sup> ACCC, *Determination - Application for revocation of authorisations A30239-A3024 1 and substitution by A91060-A91062*, 29 February 2008, p33.

It is submitted that the Proposed Solution will result in a benefit of improved reputation of DBCT. An improved reputation for DBCT manifests as a competitive advantage to Australian coal exports. This is because Australian export ports will collectively enjoy an improvement in their competitive advantage compared to ports in other locations if negative perceptions related to infrastructure bottlenecks can be removed.

### **5.4.3 Public detriments**

Several potential public detriments are thought to occur from the use of a capacity allocation mechanism:

- Lessening of competition;
- Restrictions of aggregate coal exports
- Impact on investment incentives and contract alignment.)

#### *Lessening of competition*

A potential concern with the Proposed Solution is that it may significantly reduce competition in the relevant markets. In section 4 of this submission, the relevant markets were identified as:

- the global market for coal (or at least the Asian coal market);
- the market for the provision of coal loading services for bulk coal carrying ships in the Bowen Basin; and
- the market for the provision of rail haulage services in the Bowen Basin.

#### *Global market for coal*

The authorisation and implementation of the Proposed Solution will not have an adverse impact on competition in the global market for coal. The existence of the QMS has stabilised throughput rather than restricting exports and it is, therefore, anticipated that the Proposed Solution, being a more long term approach, will result in further stabilisation of throughput.

The global market for coal is a large and sophisticated market involving many coal producers, ports, shipping providers and consumers. As discussed in section 2.5, demand for coal, and the volume of exports of Australian coal, is likely to remain high. In this situation, competition between coal producers is strong to ensure that their product reaches the market.

Coal prices are high under current global coal market conditions. This provides an incentive for entry to the global market for coal. The threat of competitive entry will also ensure that competition between coal suppliers remains strong.

#### *Market for coal loading services*

The authorisation and implementation of the Proposed Solution will not have an impact on competition in the market for coal loading services for bulk carrying ships in the Bowen Basin. This is because if left to a market solution, the ability of a user to get their coal through the terminal has little to do with the user's efficiency, and is instead determined by how many vessels the user can place in the queue.

With the Proposed Solution in place, an initial allocation is determined, after which secondary trade in that allocation can still provide for competition and efficiency in the use of terminal capacity.

Expansions of capacity at DBCT and above and below-rail capacity are currently underway. This investment in capacity expansion should, in a little over a year, lead to a situation in which the situation of substantial excess demand for terminal capacity will cease to occur.

#### *Market for the provision of rail haulage services*

The ACCC has previously considered that continued operation of the QMS decreases the likelihood of competitive entry in the above rail haulage market.<sup>30</sup> Entry into the rail haulage market is based on long-term decisions for potential competitors in the market.

The Applicant Users submit that, in fact, implementation of a sustainable long term principled approach will therefore likely provide certainty to a potential new entrant which may result in an incentive for entry. The presence of the Proposed Solution, therefore, assists competitive entry. The Proposed Solution provides certainty of volumes to all supply chain participants. This enables rail providers to know, with certainty, the volumes to be shipped. For above rail entrants, certainty assists competitive entry as it ensures that rollingstock can be efficiently utilised.

In particular, it has previously been contended that a new above-rail entrant will need to acquire more assets than will be fully utilised under its contracts when a capacity allocation mechanism is in place, acting as a disincentive to entry. The Applicant Users

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<sup>30</sup> ACCC, *Determination - Application for revocation of authorisations A30239-A3024 1 and substitution by A91060-A91062*, 29 February 2008, 6.34.

submit that this is not the case. Asciano has announced its entry to the above rail market and will be able to compete with QR National during the time period during which the Proposed Solution will be implemented. The timing of the entry of Asciano related to the availability of uncontracted capacity rather than the operation of a capacity allocation mechanism.

#### *Restriction of aggregate coal exports*

The Proposed Solution is designed to allocate scarce port capacity effectively and equitably. While individual coal exporters may be unable to export as much coal as they would like to at prevailing market prices, this does not mean that aggregate coal exports from the port are adversely affected by the Proposed Solution. The Proposed Solution merely rations excess demand to equal existing capacity.

The Proposed Solution will not operate in times when there is insufficient demand. Even if there is a constraint which requires the Proposed Solution to allocate capacity, there are provisions that enable participants to trade capacity. There are two factors which affect the incentive to trade capacity:

- Users of DBCT have firm take or pay commitments which provides a financial incentive to trade; and
- trading is frequent and participation rates by Users are high. These repeated transactions underpin Users' confidence in the ability of the QMS, and similarly the Proposed Solution, to allocate capacity among Users when required.

Together these incentives ensure that throughput is maximised under a capacity allocation mechanism. There will be leakage of capacity under the Proposed Solution, as there will without the Proposed Solution. This is because events can occur to disrupt throughput and throughput lost at a moment in time cannot be recovered.

To increase aggregate coal exports from the DBCT, additional investment in rail and terminal capacity is required, together with alignment of contracts. The issue of contractual alignment is considered in below, but it should be noted that aggregate coal exports are adversely affected by other aspects of the operation of the Supply Chain. The Proposed Solution has no affect on these other aspects of supply chain operation. Rather it increases efficiency of the coal chain given capacity constraints.

### *Impact on investment and incentives*

The ACCC has previously stated that it accepts that investment in the Supply Chain is occurring while the QMS is in place<sup>31</sup>. However, it also noted its concern that the continued operation of the QMS would stifle incentives for necessary investment. The Applicant Users submit that the Proposed Solution contains numerous incentives for investment, in contrast with the QMS. In this regard, users consider that rail and port capacity enhancements are being pursued as quickly as possible, recognising the lags associated with installing additional capacity, particularly the current overheated construction and engineering markets. Moreover, users' commitment to the scheduled DBCC capacity enhancements has been demonstrated by a willingness to enter into long-term contracts underpinning this additional capacity.

The lags in the new capacity coming on stream mean that this will not assist managing the international demand pressures that will impact on the DBCC.

The ACCC has also stated that it believes underlying causes of the vessel queue are not being addressed.<sup>32</sup> The ACCC's primary concern is that investment alone is not sufficient to address the issues facing the Supply Chain. In particular, it does not provide for contractual alignment, which would improve the problems facing the Supply Chain.

While the QMS was designed to address issues related to the existing terminal capacity at DBCT, the Proposed Solution seeks to address issues throughout the coal chain and ensure that the System as a whole operates efficiently and equitably amongst all coal chain participants.

The appropriate mechanism for achieving a long-term solution for the Supply Chain is to achieve a coordinated approach to investment and contracting for or across each level of the Supply Chain. Until this approach is taken, the total supply chain capacity will be driven by the weakest element of it, without a coordinated strategy to maintain capacity across the entire supply chain. As noted in sections 2.6 and 2.7 reliance on contracting reforms alone is unlikely to completely address the concerns of the ACCC in relation to the contracting framework because:

- existing contracts are long term and overlapping which means it may take several years to achieve reform;

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<sup>31</sup> ACCC, *Determination - Application for revocation of authorisations A30239-A3024 1 and substitution by A91060-A91062*, 29 February 2008, paragraphs 6.43, 6.48 and 6.104.

<sup>32</sup> ACCC, *Determination - Application for revocation of authorisations A30239-A3024 1 and substitution by A91060-A91062*, 29 February 2008, paragraphs 6.48, 6.73.

- contracts are incomplete in two respects:
  - they will not perfectly anticipate all future demand movements and have a response for each demand scenario; and
  - contracts are not made between all interfacing service providers.

The implication is that institutional reforms need to complement investment and contract reform.

As noted in section 2, the role of the Central Coordinator has already facilitated greater coordination and cooperation in the Supply Chain which is contributing to the improved performance of the Supply Chain. However, as indicated in this submission, there are additional factors which will not be resolved by the current initiatives being undertaken in the Supply Chain. For this reason, the Proposed Solution is required to alleviate the contractual misalignment and reduced investment incentives.

Past experience demonstrates that detailed industry reform can be a lengthy process. For instance, where the commencement of the reform process in the energy sector that led to the establishment of the National Electricity Market in December 1998 can be traced back to a 1990 announcement by the NSW Government declaring the corporatisation of the government-owned Electricity Commission of New South Wales (ECNSW). It is submitted it is unrealistic to assume contractual alignment to occur early than the 18-24 month timeframe discussed earlier in this submission.

The recent investments in both rail and terminal capacity demonstrate that the QMS has not proven to be an impediment to investment incentives but it is emphasized that the QMS has not sought to coordinate the investment across the whole Supply Chain which is critically required to increase System Capacity. Such coordination is a feature of the Proposed Solution.

#### **5.4.4 Net Benefit**

The public benefits from authorising the implementation of the Proposed Solution are potentially very significant:

- avoidance of potential demurrage costs of up to \$168 million;
- greater certainty of throughput which is likely to reduce throughput variability. A reduction in variability is expected to increase average throughput. It would only require a small improvement to generate a significant benefit. For example, an additional 1 Mtpa would increase export earnings by up to \$300 million;
- productivity gains for producers and rail operators;

- reduced risk of environmental harm to the Great Barrier Reef Marine Park; and
- maintaining and enhancing Australia's reputation as an efficient and reliable mineral exporter.

Very few potential public detriments are likely to arise from the implementation of the Proposed Solution. The major concern of the ACCC has shifted from a concern regarding investment to one of the contractual framework that coordinates the Supply Chain. Together with the current reforms taking place in the industry, the Proposed Solution seeks to address the ACCC's concerns and seeks to result in an efficient and aligned Supply Chain in the long term. Therefore, there are compelling reasons for authorising the implementation of the Proposed Solution.

## 6 Request for urgent interim authorisation

The Amended Terminal Regulations will need to be implemented from 1 January 2009. Given that the ACCC will not have had an opportunity to assess fully whether the Amended Terminal Regulations satisfy the authorisation test by that date, the Applicant Users request an urgent interim authorisation to allow them to commence the necessary steps to implement the Amended Terminal Regulations.

The implementation of the Amended Terminal Regulations, as soon as practicable, is necessary to avoid a situation where Coal Producers would be likely to send a large number of vessels to the Terminal in the last quarter of 2008, if it became apparent that the Existing QMS will terminate on 31 December 2008 and there will be no system in place to manage the vessel queue at the Port of Hay Point.

Accordingly, the Applicant Users are seeking an interim authorisation under Section 91 of the TPA for the following reasons.

### 6.1 Urgency

In the absence of some form of Queue Management System, excessive queuing is likely to commence soon after the Queue Management Procedures end on 31 December 2008. Excessive queuing is likely to arise because, on expiry, the Terminal Regulations will revert to the regulations that existed prior to 1 October 2004. These regulations are described as 'Edition 2: Rev 4: 27/5/03' (**2003 Regulations**).

If the 2003 Regulations apply, clause 6.6 provides that vessels are to be loaded in order of arrival unless the Operator, DBCTPL, determines that the considerations which are listed in clause 6.6 override that priority.

Clause 6.6 provides:

'Vessels must be berthed and loaded in their respective order of arrival except to the extent that the Operator determines that the following considerations override that order of priority:

The relevant Customer's authority to berth and load must be received by the Operator before a Vessel is deemed to have arrived for the purpose of scheduling, berthing and loading;

The Vessel Consignment plus 10% (or such other discretionary variance as is allowed under the relevant sale contract) of the tonnage nominated by the customer must be available at the Terminal and/or on a train scheduled to arrive at the Terminal within 24 hours (or such longer time as the Operator determines) when

berthing commences, unless the Customer notifies the Operator in writing before berthing commences that the Customer accepts the risk of coal not being available and the Vessel being required to unberth when not fully loaded;

The Operator must be satisfied that the Vessel is in all respects ready to commence loading, before it is accepted for berthing;

The Operator must be satisfied before berthing that all Regulations relating to the Vessel and its berthing, loading and departure are able to be complied with;

Priority is also subject to:

Originally estimated arrival time notified in the 72 hour arrival notice given by the Vessel's Master;

Berth availability;

Tidal constraints;

Loading constraints;

De ballasting requirements;

Special product handling requirements (eg blending);

Prevailing weather conditions;

Equity amongst all Customers;

Optimum operation and efficiency of the Coal Transport Chain.'

While it is open to the Operator to take steps to adjust the priority of Vessels to address efficiency of the Coal Transport Chain, there is considerable uncertainty as to the basis upon which priority would be allocated in order to manage the vessel queue at DBCT.

Clause 6.6 only permits the Operator to change the priority or order in which Vessels are berthed at the Terminal. It does not permit the Operator to reduce each user's contract tonnage and does not provide for a capacity management system.

Without interim authorisation, ships will be loaded in order of arrival and it will be in the interests of an individual user to have a large number of vessels in the queue, as that will maximise the tonnage of coal which that user can ship, so long as the return from that additional tonnage exceeds the cost of demurrage to the particular user.

There is, accordingly, an urgent need for interim authorisation due to the imminent expiration of the ACCC's February 2008 authorisation.

Interim authorisation will provide ongoing certainty for the Coal Producers and will avoid the considerable commercial harm which is likely to occur from increased demurrage costs, not to mention the potential environmental harm, if interim authorisation is denied.

## **6.2 Claimed savings**

Export prices for metallurgical and thermal coal are generally set by annual contract (for the Japanese financial year (JFY), 1 April to 31 March), rather than on the spot market. Australian metallurgical coal exports account for around 60% of global metallurgical coal trade, with this type of coal accounting for the majority (around 70%) of exports from DBCT.

The severe flooding in the Central Queensland Bowen Basin in early 2008 (exacerbated by supply problems in China), caused a significant tightening in the supply-demand balance in the world metallurgical coal market.

This, in turn, resulted in Australian coal producers negotiating very strong price increases for the 2008/09 JFY. According to ABARE, contract prices for most types of metallurgical coal tripled for JFY 2008/09, rising to around \$300 a tonne for premium hard coking coal.

The significant increase in coke and coal prices in the JFY 2008/09 contracts has created a very strong incentive for Queensland producers to ship to contract.

Existing ABARE coal price forecasts have not been updated as yet to reflect the current global economic slowdown. The impact on coal prices is expected to be negative but there is still a great deal of uncertainty about the extent of future price adjustments.

Given these circumstances, and in the absence of a mechanism to manage available terminal capacity at DBCT, there is likely to be a lengthening of the ship queue in the first quarter of 2009 if an interim authorisation is not granted. The Applicants believe that the lengthening will begin to occur well in advance of the end of the current authorisation period.

It is submitted that the implementation of the Proposed Solution will maintain a reduced/Working queue. Based on data reported by the Office of the Central Coordinator for the Dalrymple Bay Coal Chain, the number of ships in the vessel queue has fallen from around 34 to 15, in trend terms, between 26 February to 11 September 2008. This has led to substantial efficiency gains through avoided demurrage costs without in any way comprising the throughput that has been achieved with the current infrastructure.

The granting of an interim authorisation will reduce the prospect of any further increase in the number of vessels in the queue at the Terminal, for the interim period to 30 June 2009, while the ACCC considers the merits of the substantive application.

### **6.3 Potential impact on competition**

As set out in detail in 5.4.3 above, an interim authorisation of the Proposed Solution will not lessen competition in any of the identified markets.

### **6.4 Degree of change to the market and possible harm to industry participants**

The granting of an interim authorisation will help to maintain the market status quo and will not permanently alter the competitive dynamics of the market or inhibit the market from returning to its pre-interim state if final authorisation is later denied.

The Amended Terminal Regulations will continue to operate on a periodical basis. If the ACCC were to decide not to grant a final authorisation by 30 June 2009, the QMS would self-terminate and the Proposed Solution would not be implemented.

As indicated above, if interim authorisation is not granted, the Vessel queue is likely to increase rapidly and, as a consequence, Users will incur significant commercial detriment by virtue of the demurrage costs incurred. In addition, the environmental risk, flowing from an increased vessel queue, will escalate dramatically.

## **7 Request for authorisation**

There are three related applications for authorisation under Section 88(1) and 88(7) of the TPA. The first application seeks authorisation for the Applicants and others to make and give effect to a contract, arrangement or understanding with provisions that are, or may be, exclusionary provisions within the meaning of Section 45 of the TPA.

The second application seeks authorisation for the Applicants and others to make and give effect to a contract, arrangement or understanding that may have the purpose, effect or likely effect of substantially lessening competition within the meaning of Section 45 of the TPA.

The third application seeks authorisation for the Applicants and others, to engage in conduct that might constitute a secondary boycott for the purpose of causing substantial loss or damage (prohibited by Section 45D), a secondary boycott for the purpose of substantially lessening competition (prohibited by Section 45DA) and a boycott affecting trade or commerce (prohibited by Section 45DB).

As set out in section 6 above, the Applicant Users are also requesting an urgent interim authorisation under Section 91 of the TPA.

### **7.1 Length of authorisation**

As noted elsewhere in this submission, the demand for coal is likely to remain strong for several years. While there has been a significant expansion of System Capacity since the original authorisation was granted in 2005, demand is likely to continue to exceed capacity for at least another 6 months. An authorisation of the Proposed Solution, in the face of a capacity constrained Supply Chain, will serve to ensure that the high demand does not lead to the development of long vessel queues, with resultant high demurrage charges being incurred and potential environmental risk.

As noted at 5.1 of this submission, the DBCC supply-demand imbalance is likely to persist, particularly in the first half of 2009 after which it is currently anticipated that the commissioning of port investment will begin to address the current supply demand imbalance. Accordingly, the applicants are seeking an authorisation of the Proposed Solution as follows:

- a maximum six month extension of the Authorisation granted by the ACCC in relation to the Queue Management System ("QMS") which expires on 31 December 2008;;
- The Applicant Users will submit an implementation plan for a Long-Term Solution (LTS) by 31 March 2009, which will comprise a transition phase (Phase 1).

Phase 1 will be the subject of a separate application for authorisation. If Users fail to submit the implementation plan by 31 March 2009 the authorisation for the QMS will cease from that date.

- It is envisaged that the Phase 1 will operate from the date of authorisation until such time as System Capacity is able to match and deliver the existing contracted capacity (up to 85 Mtpa), expected to be 18-24 months.

In Phase 2 the system will be in alignment and operating in accordance with the agreed coal chain principles, which will be reflected in the rail and port access undertakings<sup>33</sup> and associated contractual framework. It is not expected that there will be any further need for a capacity balancing mechanism that would require authorisation by the ACCC.

## **7.2 Coverage**

The authorisation is requested to apply to the Applicant Users and all users of the Terminal of DBCTPL, DBCTPL's shareholders, and BBI currently and during the term of the authorisation.

The Applicants will provide the ACCC with the names and addresses of any new shareholders and users, to the extent necessary, during the term of the authorisation.

## **7.3 Substantial net public benefit**

As has been demonstrated in sections 5 and 6 of this submission, significant benefits will flow from the implementation of the Proposed Solution including:

- Avoidance of potential demurrage costs of an estimated \$168 million;
- Greater certainty of throughput will reduce throughput variability and is expected to increase average throughput. It would only require a small improvement to generate a significant benefit. For example, an additional 1 Mtpa would add up to \$300 million in export earnings;
- Productivity gains for producers and rail operators;
- Reduced risk of environmental harm to the Great Barrier Reef Marine Park; and
- Maintaining and enhancing Australia's reputation as an efficient and reliable mineral exporter.

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<sup>33</sup> Access undertakings are approved under the *Queensland Competition Authority Act 1997 (Qld)*

The implementation of the Proposed Solution will have no or negligible public detriments. In particular, the Applicant Users believe that the Proposed Solution will not adversely affect the development of above rail competition in the DBCC.

Indeed, the Applicant Users believe that the implementation of the Proposed Solution will provide the relevant competitors in the identified market with greater certainty as to the operating environment which will facilitate them securing greater asset utilisation than might otherwise be the case.

On that basis, the Applicant Users respectfully submit that the statutory test is satisfied and that the ACCC should grant authorisation of the Proposed Solution for the time periods as stated above.

## **A Queensland Goonyella Coal Supply Chain**

The Goonyella Coal Chain takes metallurgical (coking) and thermal coal from mines in the central Bowen Basin coal fields and moves it thorough the electrified Goonyella rail system to the Dalrymple Bay and Hay Point Coal Service Terminals for export.

The Dalrymple Bay Coal Terminal (DBCT) is located at the Port of Hay Point, 40 kilometers south of Mackay in Queensland. The terminal opened in 1983 as a common user coal export facility, servicing mines in the Goonyella system of the Bowen Basin coal fields. The terminal has since been significantly expanded to service the growth in demand for coal. The terminal operates constantly and, as of June 2007, has a capacity of 60 Mtpa. DBCT is currently being expanded in two stages, with capacity at completion of the second stage in early 2009 expected to be 85 Mtpa. The terminal is the largest coal export facility in Queensland.

The Hay Point Coal Services Terminal (Hay Point) is adjacent to DBCT and has a throughput capacity of about 36 Mtpa. In contrast to DBCT, Hay Point is a single user terminal.

Participants in the Goonyella export coal supply chain include:

- two train operator – QR National (government owned) and Pacific National (commencing in 2009);
- one rail track provider – QR (government owned);
- two operators of cargo assembly and ship loading terminals – Babcock and Brown Infrastructure (DBCT) and BHP Billiton Mitsubishi Alliance (BMA)(Hay Point);
- the port authority which oversees all vessel movements – Ports Corporation of Queensland (government owned); and
- 19 mine operations.

In terms of governance frameworks, the Goonyella supply chain is predominantly disaggregated, with contractual arrangements the most important determinant of supply chain performance given there has been no coordination of the whole supply chain up to this point in time (as discussed further below, this situation will shortly change). However, the above and below rail elements of the chain are integrated and BMA controls a number of mines and has a dedicated terminal facility at Hay Point.

Recognition of the need for coordination of the whole supply chain has been a relatively new development, stemming from the recent high profile rail and port infrastructure bottlenecks in the Supply Chain, reflected in significant ship queues.

The infrastructure bottleneck has been more apparent at the common use port facility of DBCT as opposed to the dedicated Hay Point terminal.

An independent review, jointly commissioned by the Queensland Government and the Queensland Resources Council in late May 2007 made three key recommendations in relation to the Goonyella supply chain:

1. A central coordination role be created to oversee and, if necessary, coordinate all activities which span the whole of the Goonyella supply chain.
2. QR National (QRN) to immediately commence a process to purchase additional train sets to allow it to meet projected volumes.
3. A business improvement program be commenced across the Supply Chain, starting immediately with rail operations as this is the current bottleneck.

In July 2007, the Queensland Government, QR and Queensland Resources Council committed to endorse all three recommendations of the independent review report.

In January 2008, DBCT producers appointed Ross Dunning AC as the Central Coordinator for the Dalrymple Bay Coal Chain. A Coal Chain Board has been established with participants under a Memorandum of Understanding executed in March 2008. The current members of the Coal Chain Board are:

- Anglo Coal Australia Pty Ltd
- Babcock and Brown Management Pty Ltd
- BHP Mitsui Coal Pty Ltd
- Dalrymple Bay Coal Terminal Pty Ltd
- Isaac Plains Coal Management Pty Ltd
- Macarthur Coal Pty Ltd
- Peabody Pacific Pty Ltd
- Ports Corporation of Queensland
- QR Limited (Network Access)
- QR Limited (QR National)
- Rio Tinto Coal Australia Ltd
- Vale Australia Pty Ltd

- Xstrata Coal Queensland Pty Ltd.

An invitation has been extended to Pacific National Queensland to become a participant of the MOU.

A leadership forum has been formed to review coal chain performance and make recommendations in relation to coal chain improvement.

Other initiatives being pursued by the Central Coordinator include:

- master planning in relation to future capacity requirements;
- short-term planning in relation to alignment of rail and port maintenance schedules; and
- daily operational performance monitoring.

Prior to the establishment of the Central Coordinator, a capacity master planning process involving all supply chain participants formed part of QR's 2006 Access Undertaking approved by the Queensland Competition Authority (QCA) in June 2006. It is too early to provide meaningful comment on the extent to which this master planning process will facilitate better coordination of the Goonyella supply chain although it has been an important development supported by supply chain participants.

The Master Plan will be developed annually with input from a Coal Master Planning Forum, for a minimum rolling five-year period. The Forum includes users (mines) for each Central Queensland system (Goonyella, Blackwater, Newlands and Moura) who are entitled to vote on the appropriateness of QR Network Access's proposed investments. This approval process is linked to the regulatory approval of the scope of QR's capital expenditure on the Central Queensland coal systems, including Goonyella. Port owners and operators, train operators and the Queensland Resources Council are non-voting participants in the Forum.

Under its lease agreement with the Queensland Government for DBCT, BBI must also develop a master plan.

## **B Coal Chain Improvements**

**A Report Prepared by the Office of the Central Coordinator**

## **B.1 Background**

The existing authorisation for extension of the Queue Management System (QMS) at Dalrymple Bay Coal terminal will expire on the 31<sup>st</sup> December 2008. The Dalrymple Bay Producers have entered into discussions to determine if some form of QMS is required post 2008. Having regard to the current circumstances, a unanimous decision was reached that a management system will be required for the 2009 calendar year. However, not all Users could agree on the methodology to be employed for the QMS. Several meetings have taken place to attempt to negotiate an amicable agreement. After exhaustive discussion, the Producers have agreed to apply to the Australian Competition and Consumer Commission (ACCC) for authorisation of a long term solution for capacity constraints within the Goonyella Coal Chain.

The majority group approached the Office of the Central Coordinator to provide documented input for the authorisation application submission, requesting that all coal chain improvements be documented since the previous application was submitted by DBCTPL in December 2007. This document details the request.

## **B.2 Goonyella Coal Chain Capacity Review**

In July 2007 a review of the Goonyella Coal Chain was completed by Stephen O'Donnell which was jointly commissioned by the Queensland Government and the Queensland Resources Council on behalf of the Dalrymple Bay Coal Chain Users.

Three recommendations were provided in the review and these are:

1. A central coordination role be created to oversee and if necessary coordinate all activities which span the whole of the supply chain
2. QRNational immediately commence a process, including negotiating commercial contracts with Users, to purchase additional train sets to allow it to meet projected volumes and
3. A business improvement program be commenced across the supply chain, starting immediately with Queensland Rail as this is the current bottleneck.

The improvements within this document primarily focus on the implementation of recommendation 1 within the coal chain.

## **B.3 Appointment of the Central Coordinator**

On the 14th of January 2008 the DBCT Producers appointed Ross Dunning AC as the Central Coordinator for the Dalrymple Bay Coal Chain (DBCC). The tenure

period was stated as being two years primarily with all deliverables being formed as part of the Memorandum of Understanding (MOU).

The Central Coordinator has an office in Brisbane and now has 4 part time and 1 full time employees.

## **B.4 Formation of the DBCC Board**

A Coal Chain Board has been established with all members referred to as "Participants" under the Memorandum of Understanding. The first MOU was signed and executed in March 2008. The original Participants of the MOU were:

- Ports Corporation of Queensland
- Babcock & Brown Management Pty Ltd
- Dalrymple Bay Coal Terminal Pty Ltd
- Anglo Coal Australia Pty Ltd
- BHP Mitsui Coal Pty Ltd
- CVRD Australia Pty Ltd
- Isaac Plains Coal Management Pty Ltd
- Foxleigh Mining Pty Ltd
- Macarthur Coal (C&M Management ) Pty Ltd
- Peabody Pacific Pty Ltd
- Rio Tinto Coal Australia Pty Ltd
- Xstrata Coal Queensland Pty Ltd
- QR Limited (Network Access Division)
- QR Limited (QRNational Division)

There have been some changes to the Participants of the original MOU with these being:

- Foxleigh Mining has been acquired by Anglo Coal Australia Pty Ltd
- CVRD have altered their business name to VALE Australia Pty Ltd

- Asciano has advised their intention to operate on the coal chain with firm contracts confirmed commencing on the 1st January 2010, and an invitation has been extended for their subsidiary Rail Operator Company, Pacific National Queensland to become a Participant of the MOU. This is currently in progress.

Participation at the Coal Chain Board level has typical representation by the Chief Executive Officers from each organisation and is currently chaired by Seamus French, CEO Anglo Coal Queensland Pty Ltd. The position of Chairperson is rotated annually.

The DBCC Board has a decision making and voting process, when necessary, to drive decision making, but would prefer consensus across all MOU participants. This decision making process falls directly with Producers who have voting rights only.

The Board meets face to face each quarter and monthly by teleconference.

## **B.5 Formation of the DBCC Leadership Team**

The leadership team is comprised of members from the MOU (both Producers and Service Providers) and is typically represented by the General Manager Level. The Central Coordinator chairs this forum and its purpose revolves around reviewing coal chain performance and developing recommendations for Board approval around coal chain improvement.

The Leadership Team meets face to face each month and fortnightly by teleconference.

## **B.6 Master Planning**

A sub - committee has been formed to focus on Master Planning of the Coal Chain up to 10 yrs in advance. The group has agreed to develop a model of the complete supply chain to model future capacity requirements and operating options.

The group is currently working towards defining the intellectual property ownership of the coal chain model and is well progressed in identifying the parameters of modelling scope.

## **B.7 Tactical Planning**

Work is progressing with Service Providers regarding the development of maintenance alignment processes to release maximum system capacity. The port and rail components have agreed to utilise one asset maintenance plan across a time

horizon of approximately 3 months to begin with. Tools are being developed to assist planners in identifying system loss due to maintenance activities and allowing them to make the correct alignment decisions. An Independent Planner has been employed for one week a month to review the alignment performed and ascertain system loss due to actual maintenance activities.

## **B.8 Performance Management System**

Booz & Co. consultancy were engaged to identify key performance indicators for the coal chain. Their draft report is now complete and this has been circulated to the Coal Chain Board Participants with recommendations for decision making at the next Board conference in October 2008.

The report details a Performance Management Framework for the coal chain which will provide commonality in reporting with all Participants but more importantly identify areas of improvement.

## **B.9 Co-location Strategy**

Phase 1 of collocation was implemented in June 2008 and consists of three employees (1 X Port, 1 X Rail Operator and 1 x Rail Manager) collocated in a common facility. These employees primarily have been on a learning curve to understand the supply chain and have focused on improvement areas within the day of operations.

Phase 2 has been agreed to at a Coal Chain Board level. This phase of work involves a detailed conceptual design of both a Greenfield and Brownfield co-located management centre located in Mackay. The concept will house day of operations and all planning functions out to Master Planning (10 years) from all coal chain Service Providers.

Ranbury consultants are working with the Office of the Central Coordinator to prepare the conceptual design for Board approval in October 2008.

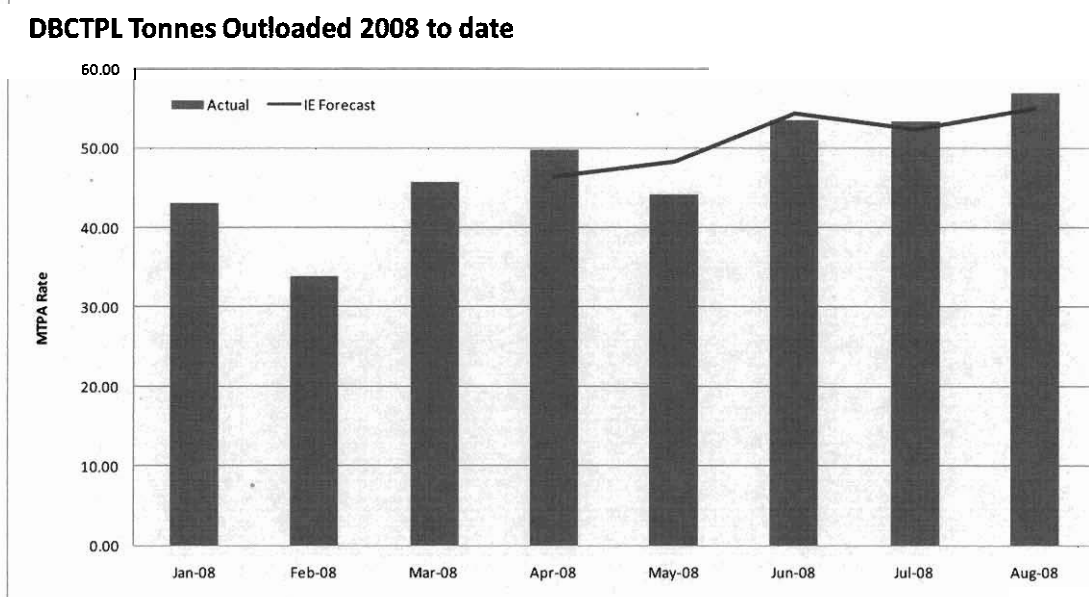
## **B.10 Daily Operational Teleconference**

Each day, Monday to Saturday at 0730 am, the Central Coordinator and his team chair a teleconference with the Service Providers at an operational level. The teleconference is short and sharp and focuses on achievements the previous day, both inbound and outbound and focuses on any priorities for the current day. The forum has established excellent operational dialogue across all Service Providers with high levels of participation and transparency of information.

## B.11 Forecasting Process

The Leadership Team has approved a common forecasting process for the coal chain. This process involves all Service Providers providing information to the Office of the Central Coordinator where an independent forecast is developed and communicated via the monthly Leadership team forum. Since March 2008, Forecast and Targets have been set by the Central Coordinator. The Target is typically 5% higher than the forecast amount and its intent is to make available a stretch goal for the operational personnel to aim for. To date, the actual outbound tonnes have exceeded the independent forecast from 3 out of the previous 5 months, as detailed below in graph 1.

Graph 8



## B.12 Business Rules

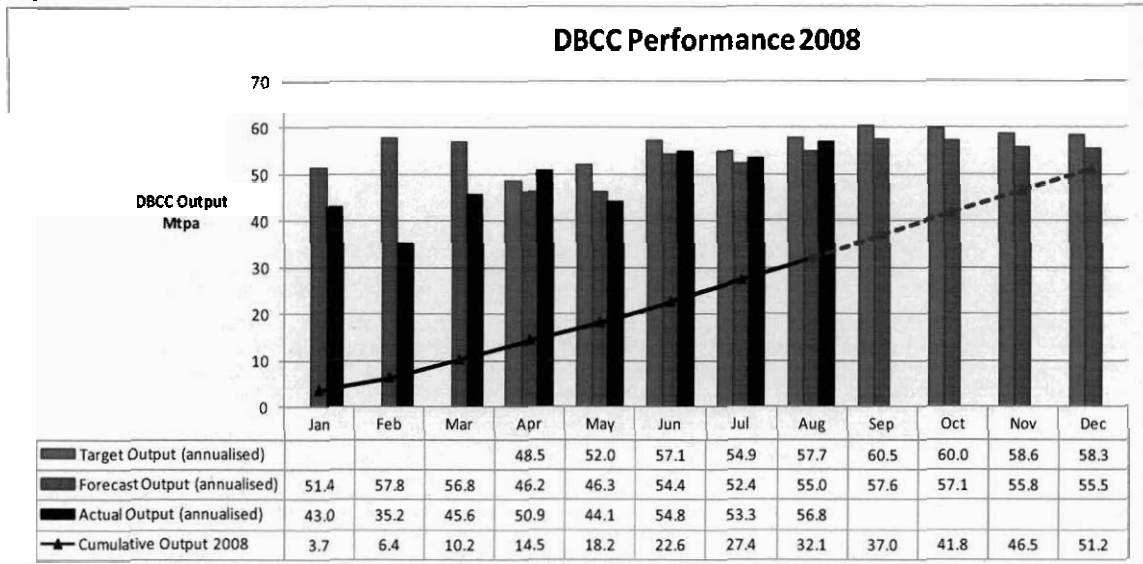
The Coal Chain Board has approved operational business rules for the Coal Chain which will improve tonnage throughput. The first rule that has been implemented involves having a minimum parcel size for all vessels. This rule required multiple discussions across Board and operational level and consensus has been reached. There are further rules being discussed for recommendation.

## B.13 Performance Throughput 2008

In August 2008, the coal chain set a new Queensland Port export coal monthly tonnage record of 56.83 Mtpa rate. Transparency of information and motivating coal

chain operational personnel to work towards a common target has assisted in moving towards increased throughput.

Graph 9



## B.14 2008 Ship Queue

The ship queue has been in and out of the optimum management range since approximately May 2008. Ship queuing time has reduced significantly, thus associated demurrage charges have also reduced.

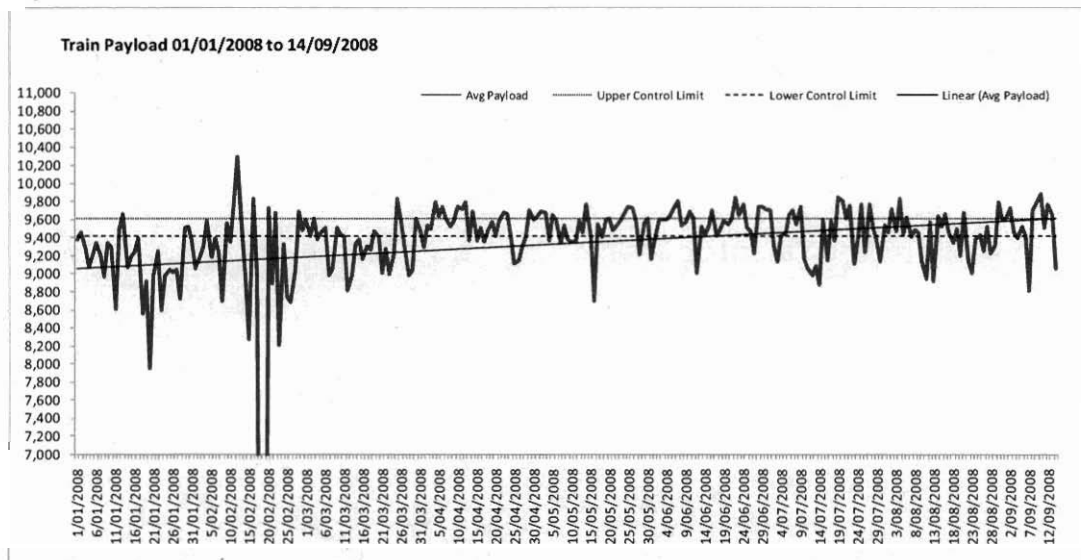
Graph 10



## B.15 Train Payload

There has been a significant improvement in average payload over the past 4 months, lifting performance by an average 150 tonnes per train. There is still a daily range to manage however, with large variances being recorded from train to train each day.

Graph 11



## **C Supply Chain Principles**

### **Coal Chain Principles for Sustainable Operation of the Multi Owner Coal Chains**

#### **Objective:**

To maximise the value of coal export industry by creating a commercial framework to provide certainty of access to supply chain capacity such that:

- Existing mines can rely on their contracted access to system capacity
- New/expanding mines have certainty of being able to contractually trigger and access increased coal chain capacity to meet future demand with reasonable notice

---

#### **Principles:**

##### **Access to capacity is based on contracts for system capacity**

1. Service providers must only contract for the provision of deliverable System Capacity (not standalone capacity)
  2. Users and service providers will subscribe to a common view of System Capacity based on a comprehensive coal chain capacity model and standardised set of underlying assumptions (Reference Tonne) that allows for all interfaces and operating modes of the system etc
  3. Each User's access to capacity is based on contractual entitlement to each of train, track and port system capacity, with the contract for Reference Tonnes for track and port determining their entitlement to system capacity
  4. Contracts for access to capacity will include Access Protocols which provide that:
    - a. Existing Users have surety of ongoing access to contracted system capacity
    - b. New users have a defined process/path by which to gain access to system capacity
    - c. No new/expanding User will gain access to system capacity at the expense of contracted existing Users (and service providers invest to fulfil existing contracted obligations). For clarity this only applies to post 85 Mtpa.
  5. Contracts for access to capacity will provide a mutual obligation:
    - a. To use or pay for capacity on a long-term basis
    - b. To make System Capacity available consistent with contracted volumes
-

**Investment in infrastructure to be guided by a System Master Plan and triggered by contracts such that new/growing producers can access capacity with reasonable notice**

6. The System Master Plan will evaluate and identify the most efficient investment options (from loadpoints to port to system rules) for increasing coal chain capacity from a cost and risk perspective
7. Capital investments in new infrastructure:
  - a. Must be guided by the System Master Plan for the coal chain
  - b. In the case of track and port infrastructure, must be undertaken where a commercial level of underwriting is offered via long-term take or pay contracts and agreed investment triggers are satisfied
  - c. Users intend to will provide reasonable incentives to service providers to hold reserve capacity and expand capacity in a timely manner.

---

**Contracts must provide commercial incentives for efficient planning, execution and consumption of coal chain capacity**

8. The commercial framework must:
    - a. Ensure each User and service provider is held accountable for their consumption of coal chain capacity
    - b. Provide for capacity to be traded and swapped between participants within the physical constraints of the system and without affecting any organisation not party to the trade
  9. The Supply Chain is to be planned and operated as a system with an independent coal chain planning and live run coordinating body
-

## **D Factors Likely to Underpin the Definition of System Capacity**

The System Capacity Definition describes the maximum capacity of the system to move coal both in total as a system and from each logical geographic location or zone or cluster within the coal chain to the port and onto vessels. It is calculated based on a whole-of-coal-chain capacity assessment taking into account key factors and operating assumptions affecting the capacity of the coal chain. These factors and operating assumptions must be described in the definition and shall include, but not be limited to the following:

- Demand Profile: Factors affecting the volume of coal to be transported through the coal chain over time and by geographic location.
- Mine: For every mine and loadpoint a description of key factors affecting the capacity of the mine to load coal onto trains over time;
- Trains: Factors affecting the capacity of the system based on the cycling, provisioning and maintenance and trains within the system;
- Track: Factors affecting the number and capacity of train paths and resulting capacity of the track network to haul coal;
- Terminal: Factors affecting the capacity of the terminal to receive, stockpile and load coal;
- Vessels: Factors affecting the shiploading rates; and
- System: Factors affecting the overall operation of the system and the points of interface between each element of the system.

## E Demurrage Estimate

### E.1 Summary & Findings

In order to estimate the size of the ship queue and estimate the number of days each ship is likely to spend in port for the period January 2009 till June 2009, both simulation models and spreadsheet models were utilised. The model output was also applied to the following demurrage rates (base case) to estimate the demurrage accumulated for the period January 2009 till June 2009.

Ship Class	Demurrage rate (\$US/day)
Handy	\$8,000
Panamax	\$12,000
Small Cape	\$14,000
Cape	\$16,000
Very Large Cape	\$20,000

These demurrage rates are believed to be comparable to the conservative long term Japanese contract rates.

If the DBCT Coal Chain operates **with** a queue management system in place for the first six months of 2009 (Scenario One), the ship queue at the end of June 2009 has been estimated to be **19 ships** with an average wait time of **8 days** with a demurrage bill conservatively estimated to be in the order of **US\$ 39.58 Million**.

If the DBCT Coal Chain operates **without** a queue management system in place for the first six months of 2009 (Scenario Two), the ship queue at the end of June 2009 has been estimated to be **109 ships** with an average wait time of **41 days** with a demurrage bill conservatively estimated to be in the order of **US\$ 151.78 Million**.

Summary Table	With a QMS	Without a QMS
Ship Queue at June end (2009)	19 Ships	109 Ships
Average Wait time per vessel	8 Days	41 Days
Demurrage Cost	US \$39.58 Million	US \$151.78 Million

The demurrage impact of not having a queue management system in place for the first six months of 2009 would be in the order of **US \$112.2 Million**.

A simple sensitivity test was undertaken on the demurrage accumulated across the first six months of 2009. This was achieved by changing the demurrage rates by  $\pm 25\%$  and comparing them to the base case. This showed that the impact between scenarios as follows:

	Demurrage with a QMS (US\$ Million)	Demurrage without a QMS (US\$ Million)	Impact (delta) (US\$ Million)
Demurrage rates reduced by 25%	29.68	113.83	84.15
Base Case	39.58	151.78	112.20
Demurrage rates increased by %25	49.48	189.73	140.25

The important finding is that there is a significant order of magnitude of difference between the two scenarios that can be measured in the hundreds of millions of dollars.

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## E.2 Introduction

The analysis undertaken in preparing this report is aimed at quantifying an indicative number of ships that will be in the queue awaiting access to coal from the Dalrymple Bay Coal Chain for the period January 2009 till June 2009 and what will be the likely wait time for those ships under the two following scenarios:

There is a queue management system, and

There is no queue management system.

From this analysis, indicative demurrage charge rates can be applied to respective ship classes and estimated demurrage figures can be established for the period January 2009 till June 2009.

### E.2.1 Methodology

In performing this analysis, two approaches were applied, namely static and dynamic. In the first instance a spreadsheet was used to compare forecast throughput levels against contract throughput levels. The dynamic analysis required the use of a simulation model to cross check the static approach and to quantify the time each ship spent in port under the two scenarios.

### E.2.2 Analysis

#### E.2.3 Expected throughput

In performing this analysis the current QMS forecast was used as the expected throughput for the 2009 calendar year. The current QMS forecast (as released in September 2008) is as follows:

The forecast tonnage for 2009 (on a month-by-month basis) is as follows:

Month	Forecast System Throughput	Forecast Monthly System Throughput
Jan - 09	58.6	4,977,030
Feb - 09	57.5	4,409,046
Mar - 09	56.3	4,784,133
Apr - 09	65.6	5,391,270
May - 09	70.6	5,991,990
June - 09	70.6	5,798,700
Jul - 09	73.9	6,273,966
Aug - 09	73.9	6,273,966
Sep - 09	73.9	6,071,580

Month	Forecast System Throughput	Forecast Monthly System Throughput
Oct - 09	76.9	6,535,381
Nov - 09	76.9	6,324,563
Dec - 09	76.9	6,535,381

Table 1 QMS Forecast

#### E.2.4 Comparison of QMS Forecast Vs Actual

The following graph provides a comparison between QMS forecast throughput levels and the actual throughput achieved in recent years. The average variation between forecast and actual throughput is in the order of +10%.

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Figure 12 – Forecast Vs Actual

#### E.2.5 2009 Port Contract Figures

At the time of assembling this report the aggregate port contract tonnages for 2009 (on a month-by-month basis) are as follows:

Month	Aggregate Port Contract (Mtpa)	Monthly Port Contract Tonnage
Jan - 09	72.0	6,114,814
Feb - 09	72.0	5,523,058
Mar - 09	72.0	6,114,814
Apr - 09	84.2	6,922,192
May - 09	84.2	7,152,932
June - 09	84.2	6,922,192
Jul - 09	84.2	7,152,932
Aug - 09	84.2	7,152,932
Sep - 09	84.2	6,922,192
Oct - 09	84.2	7,152,932
Nov - 09	84.2	6,922,192
Dec - 09	84.2	7,152,932

Table 2 – Port Contract Tonnages for 2009

In performing this analysis, the port contract tonnages have been used as the upper boundary of expected ship demand. We do not expect to see accumulative ship demand present at the Dalrymple Bay Coal Terminal in greater numbers than those represented in the above table.

#### E.2.6 The Ship Queue WITH a Queue Management System

If we assume that a queue management system is in place for the first six months of 2009 and it has a similar mechanism to the existing QMS then it should be safe to assume that the DBCT ship queue for the first six months of 2009 will reflect the past performance of the existing QMS.

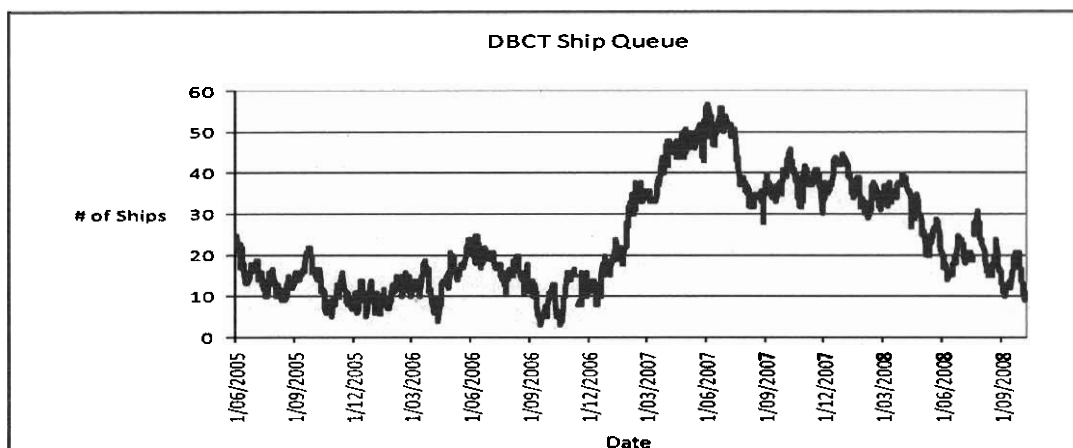


Figure 13 – DBCT Ship Queue to Date

From the data set for Figure 2 – DBCT Ship Queue to Date, we can establish that the average ship queue for the entire period for which the QMS has been operating is 18 ships.

The following graph shows the actual vessel queue and the average time at port for ships for June 2008 till September 2008. This data set has arbitrarily been taken as representative of the overall performance of the QMS for the purposes of establishing the time at port for ships. This period captures the positive changes in system performance and encompasses the expansion works completed to date.

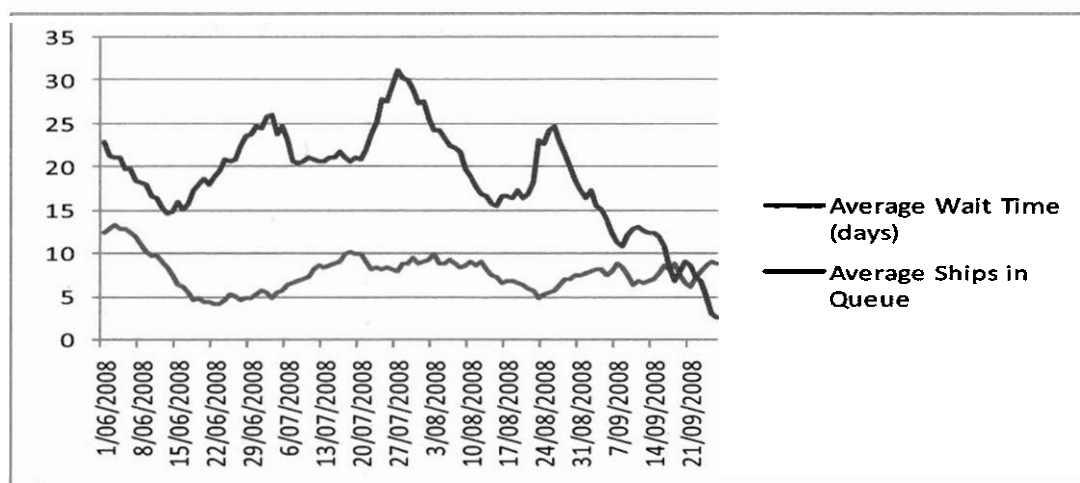


Figure 14 – Actual Ship Queue and Time at Port

### E.2.7 Time n Port (with a queue management system)

From the data set for Figure 14 – Actual Ship Queue and Time at Port, we can establish that the average wait time per vessel is 8.05 days and the average ship queue is 19.25 ships.

If we assume that a queue management system applied in the first six months of 2009 delivers a similar outcome to the QMS currently in place, then we could expect to have a ship queue in the order of 19 ships with each ship waiting approximately 8 days.

### E.2.8 The Ship Queue WITHOUT a Queue Management System

Under this scenario it is expected that the ship demand (i.e. the ships that arrive at the port) will reflect the port contract figures. That is to say that we would not expect more vessels to arrive at DBCT than what has been contracted and as such this represents the upper most demand that should be applied. It is not unreasonable to expect that any coal producer will look to move their port contract tonnage on the presumption that they will be able to produce the coal, have it delivered to the terminal and subsequently loaded.

There will be further discussion in later sections on impacts to throughput and the likelihood of achieving port contract.

A simplistic simulation model was used to calculate the number of ships in the queue at the end of June 2009. This simulation model processed a ship stream (on a ship by ship basis) to estimate the ship queue and the time each ship spent in port.

A historical ship mix, shown in Table 3 – Ship Mix, was used to create a ship stream and this ship stream was applied to the model based upon the contract demand numbers on a month by month basis. The model then processed these ships (on a ship by ship basis) according to the forecast throughput levels

As an explanation, a historical ship mix defines how many ships are in each class of vessel and the number of products aboard each class. The following tables show an example of the ship mix that was used in this analysis:

Ship Class	DWT	% of vessels in ship stream
Handy	<60kt	34%
Panamax	60-80kt	36%
Small Cape	80-120kt	9%
Cape	120-160kt	17%
Very large Cape	>160kt	4%

Table 3 – Ship Mix

Ship Class	1 Prod	2 Prod's	3 Prod's	4 Prod's	5 Prod's	6 Prod's	7 Prod's	8 Prod's
Handy	94%	3%	3%	0%	0%	0%	0%	0%
Panamax	63%	21%	13%	2%	0%	0%	0%	0%
Small Cape	91%	4%	2%	2%	0%	0%	0%	0%
Cape	39%	25%	18%	12%	5%	1%	1%	0%
Very large Cape	6%	16%	32%	27%	6%	3%	4%	5%

Table 4 – Product Mix

The above tables, Table 3 – Ship Mix and Table 4 – Product Mix are based upon actual ship streams that presented at DBCT between September 2004 and September 2005. We appreciate the ship mix for this data set may well be marginally different to the ship mix that has been presented at DBCT in recent months however we believe that the data set used in this analysis is a fair and reasonable representation of a vessel stream that may be presented at DBCT.

It should be understood that the vessel mix that presents at DBCT is largely driven by the customers' needs, coal markets, discharge ports and freight rates. As such the ability to predict a ship mix is limited.

As an example, the following table shows the actual ship mix from previous years at DBCT compared to the current.

Ship Class	DWT	1991	1995	2000	2004/5 (used in this analysis)	2008
Handy	<60kt	23%	21%	22%	34%	28%
Panamax	60-80kt	30%	46%	33%	36%	36%
Small Cape	80-120kt	17%	10%	9%	9%	17%
Cape	120-160kt	25%	15%	20%	17%	7%
Very large Cape	>160kt	5%	8%	16%	4%	13%

Table 53 – Ship Mix History

As mentioned previously the ship stream was applied to the model. The simulation model produced the estimated ship queue on a ship by ship basis for the first six months of 2009. The output was analysed to find that the model is predicting a ship queue in the order of 167 ships.

### E.2.9 Time in Port (without a queue management system)

As mentioned previously the ship stream was applied to the model. The simulation model also produced the estimated “time in port” on a ship by ship basis across the first six months of 2009. The output was analysed to find that the model is predicting a ship queue in the order of 109 ships with an average wait time of 41 days. This analysis is also based upon a starting queue of 19 ships. We are presuming that there will be 19 ships in the DBCT ship queue at the end of 2008.

The model output is presented in the following figure.

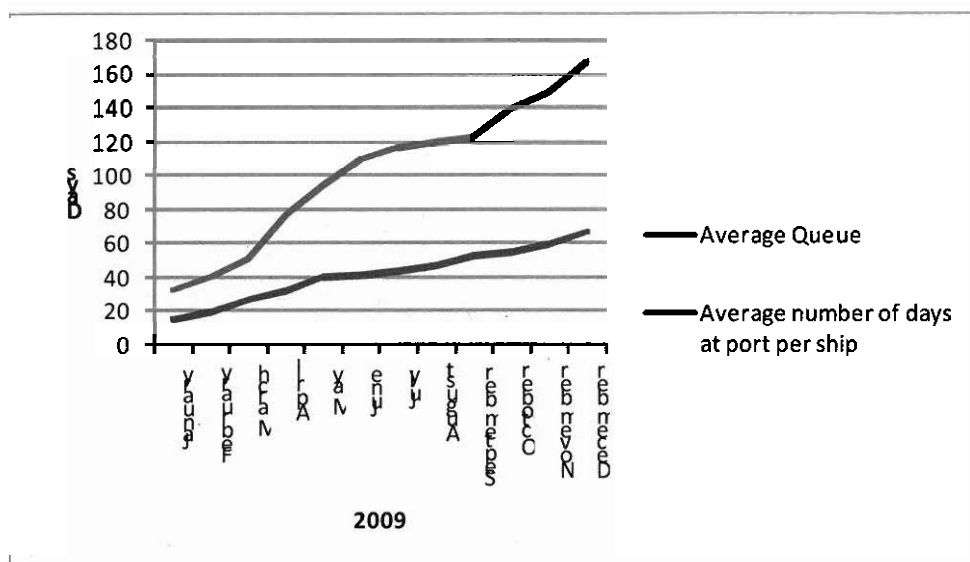


Figure 15 – Predicted Ship Queue with NO queue management system

The suggestion that the ship queue could grow to such significant numbers seems nonsensical however it should be kept in perspective that the contract tonnages for DBCT will be in the order of 85Mtpa and if we assume for argument sake and ease of calculation, an average ship cargo size of 85,000 tonnes, this makes for around 1000 ships a year being process through DBCT alone. If we add Hay Point Services, Gladstone, and Abbot Point into argument then the Central Queensland coal basin will be processing in the order of 3500 ships a year. A ship queue is the order of 150 ships is well and truly possible.

The predicted queue should be considered an upper bound estimate as the model does not include a feedback mechanism whereby the increasing size of the queue affects Users and customer decisions to send ships. It is difficult to predict when or how a feedback mechanism might stop the growth of the queue as predicted in the model. However, in the past queues has increased rapidly and have only been stopped by the introduction of a capacity management system.

There are two possible feedback mechanisms:

- private demurrage costs moderate the willingness of producers to add ships to the queue; or
- some other form of institutional intervention occurs (some form of capacity management system that has been authorised by the ACCC).

Since previous queues have been “capped” through regulatory interventions we have no experience at what point a market feedback mechanism would “cap” queue lengths. In the current context, it is reasonable to expect that the demand feedback mechanism to be weaker than in previous experience simply because of the gap that (currently) exists between the avoidable cost of producing a tonne of coal and the price received for a tonne of coal. This gap, and the prospect of future price reductions, creates a very strong incentive for Users to send ships to port. These two factors alone suggest that it is conceivable that the market feedback mechanism might halt the queue close to the upper bound estimate reported above.

### E.2.10 Demurrage

Given that we have now estimated the ship queue and vessel wait time, we can now estimate a demurrage cost for both scenarios.

For the purposes of this analysis the following demurrage rates will be applied to the analysis for the estimation of the total demurrage cost.

Ship Class	Demurrage rate (\$US/day)
Handy	\$8,000
Panamax	\$12,000
Small Cape	\$14,000
Cape	\$16,000
Very large Cape	\$20,000

Table 6 – Demurrage Rates per Ship Class

There will be further discussion in the following sections on these demurrage rates.

### E.2.11 Demurrage Levels WITH a Queue Management System

If we assume that a queue management system is in place and that it performs as the current version does, then we can expect to see an average wait time per vessel in the order of 8 days.

If we applied the above demurrage rates (Table 6 – Demurrage Rates per Ship Class) to the ship mix used in this analysis (Table 3 – Ship Mix) then the demurrage incurred on the ship stream under the scenario of having a queue management system is in the order of **US\$ 39.58 Million**.

It needs to be noted that the actual demurrage incurred (in \$US) under the current QMS is unknown to the author and as such the number put forward in this scenario should only be used as a relativity reference between the two scenarios under consideration in this report.

### E.2.12 Demurrage Levels WITHOUT a Queue Management System

Under this scenario, there is no queue management system in place and the ship queue is expected to grow to the order of 166 ships with an average wait time of 66 days.

If we applied the above demurrage rates (Table 6 – Demurrage Rates per Ship Class) to the ship mix used in this analysis (Table 3 – Ship Mix) on a ship by ship basis to the model output (i.e. the time in port per vessel) then the demurrage incurred on the ship stream under this scenario is in the order of **US\$ 151.78 Million**.

### E.2.13 Sensitivity on Demurrage Rates

The sensitivity around the magnitude of the demurrage numbers is well understood. For this reason we have conducted a simplistic sensitivity test on the demurrage accumulation across the first six months of 2009. This was achieved by adjusting the demurrage rates per ship class and reapplying them to the model outputs to gauge the difference on the overall impact between the two scenarios.

The resulting demurrage rates applied in this sensitivity where as follows:

Ship Class	Demurrage rate (\$US/day)	Base Case Dem rate (\$US/day)	Increased Dem rate (\$US/day)
Handy	\$6,000	\$8,000	\$10,000
Panamax	\$9,000	\$12,000	\$15,000
Small Cape	\$10,500	\$14,000	\$17,500
Cape	\$12,000	\$16,000	\$20,000
Very large Cape	\$15,000	\$20,000	25,000

Table 7 – Adjusted Demurrage rates for Sensitivity Test

The resulting change in the demurrage accumulation across the first six months of 2009 is shown in the following table: -

	Demurrage with a QMS (US\$ Million)	Demurrage without a QMS (US\$ Million)	Impact (delta) (US\$ Million)
Demurrage rates reduced by 25%	29.68	113.83	84.15
Base Case	39.58	151.78	112.20
Demurrage rates increased by %25	49.48	189.73	140.25

Table 8 – Demurrage Sensitivity

It is evident from the above table that the accumulated demurrage figure is largely dependent on the demurrage rates applied to the scenario. As we have mentioned, we believe the rates applied in the base case are a fair and reasonable set of demurrage rates for use in this analysis.

The important finding is that there is a significant order of magnitude of difference between the two scenarios that can be measured in the hundreds of millions of dollars.

## **E.3 Discussion**

### **Global downturn**

At the time of performing this analysis and the writing of this report, there has been significant global economic turmoil. This turmoil has driven shock waves and volatility into many global industries and this has driven markets into heavy downward trends. This turmoil has also shown itself at DBCT as there has been a definite downturn in ship demand at DBCT in recent weeks.

The duration of this economic turmoil is unknown. The likely impact to the coal industry and in particular the impact to the export of coal through DBCT is also unknown to the author (and many others). We appreciate that there may well be a downturn in coal demand; however this analysis has not taken into consideration that potential impact.

In this analysis we have considered the upper most demand as being the port contract tonnages for 2009.

### **Demurrage**

It is clear that the true sensitivity around this analysis hinges around the demurrage rates applied to the model outputs. Given the global economic turmoil previously mentioned, predicting the demurrage rates to apply across the first six months of 2009 is very difficult at best. It is for this reason we have used a set of demurrage rates that are believed to be conservative as they are based on long term Japanese contract rates.

The author has had recent engagement in demurrage apportionment cases through DBCT where the demurrage rates were significantly higher than the rates used in this analysis.

We recognize that there is the potential for the demurrage rates to swing either way or potentially both. If a significant queue arises at DBCT then the freight rates will most likely increase significantly as the ship queue grows – recent history would suggest this is the case. This will ultimately drive up the demurrage cost well beyond this forecast demurrage presented in this report. Likewise it should also be noted that if

the global economic turmoil continues for some period then there is the distinct possibility that demurrage rates will fall below those used in this report.

### **Variability**

The existing QMS has provided stability in ship demand and production requirements according to the system performance on any given day.

From historical experience at DBCT and experiences at other ports, it is expected that without some form of a queue management system in place we can expect to see higher levels of operation variability as the ship demand drives higher levels of variability into the coal chain. This in turn will also drive the demurrage liability higher than the forecast demurrage presented in this report.

### **System constraints**

The author believes there will be a series of system constraints across the first six months of 2009. The real issue in identifying and forecasting the system bottlenecks is in the information available or more to the point, the lack of it. There is very little information available to establish what the bottleneck will be on any given day. Couple this with the system stakeholders' lack of desire to show their position makes forecasting system constraints very difficult.

To name a few:

- The train design (i.e. what trains go where) for 2009 remains largely undecided.
- The port operating mode remains largely untested
- The successful level of interaction between QR and the new rail provider remains unclear
- Coal production capabilities are unclear

To help quantify this, it is believed there are two tiers of constraints. The first tier constraints are those constraints which for the vast majority of the time will be the 'challenge' to throughput. The second tier constraint will be those constraints which may well occur for a short period of time within the tier one constraints. As an example a second tier constraint may last for a few hours to a few days or maybe weeks.

The bottlenecks within the system will change between first tier constraints and second tier constraints on a regular basis – weekly if not daily. The author believes the constraints across 2009 as follows:

Tier One Constraints (in no particular order)

- above rail operations
- coal availability
- port operations
- Tier Two Constraints (in no particular order)
- the integration of rail and port operations
- below rail operations
- port infrastructure

The following figure shows the indicative capabilities of the system across 2009 coupled with the current QMS Forecast.

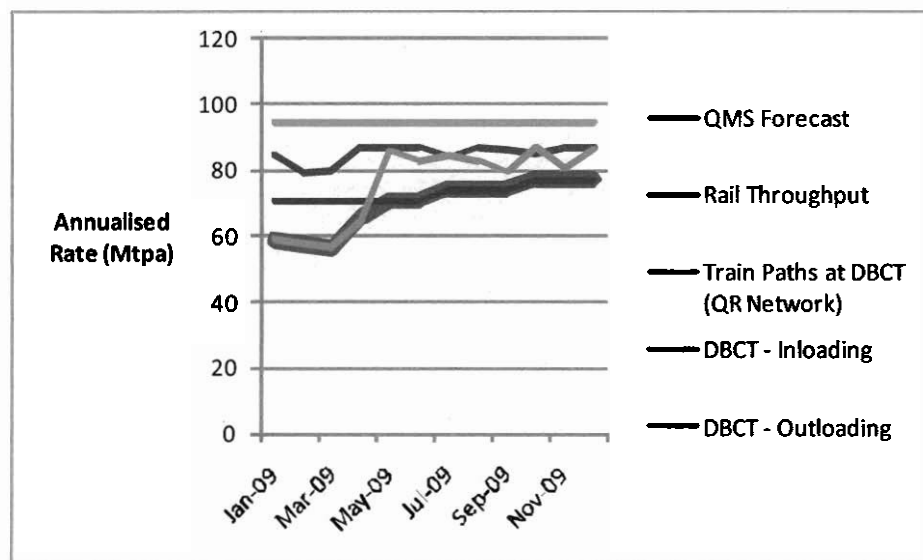


Table 9 – System Capabilities

**Coal Availability**

There has been recent discussion by external parties on coal production as being a system constraint in 2009. The QMS forecast used in this analysis is based upon the fact that there is always coal available for the ship demand. This in turn means that if coal production turns out to be a constraint then this will drive the ship queue further as the vessels will take longer to turn around.

## E.4 Conclusion

The author expects 2009 to be an operationally complex year. There are still many unknowns relating to train operations and port operations at the expected throughput levels. Couple this with the Jilalan project and the nuisances of a third out loading system at DBCT and we have a new complex operating set.

Two points are clear.

The more complexity and constraints the more the ship queue will grow. The analysis under taken in this report, albeit brief, provides an order of magnitude of the impact to the ship queue and subsequently demurrage, as a result of running a queue management system versus not running a queue management system.

The order of magnitude between the two scenarios can be confidently assessed to be in the hundreds of millions of US dollars. The order of the amount is subject to the demurrage figures applied. The following demurrage numbers are based upon a conservative long term Japanese contract rates.

### In Summary

If the DBCT Coal Chain operates **with** a form of queue management system in place, the ship queue at the end of the year has been estimated to be **19 ships** with an average wait time of **8 days** with a demurrage bill for the period January 2009 till June 2009 conservatively estimated to be in the order of **US\$ 39.58 Million**.

If the DBCT Coal Chain operates **without** a form of queue management system in place, the ship queue at the end of the year has been estimated to be **109 ships** with an average wait time of **41 days** with a demurrage bill for the period January 2009 till June 2009 conservatively estimated to be in the order of **US\$ 151.78 Million**.

Summary Table	With a QMS	Without a QMS
Ship Queue at June end (2009)	19 Ships	109 Ships
Average wait time per vessel	8 days	41 days
Demurrage Cost	US \$39.58 Million	US \$151.78 Million

Table 10 – Conclusion

The demurrage impact as a result of not having a form of queue management system in place for the period January 2009 till June 2009 would be in the order of **US\$ 112.2 Million**.

The important finding is that there is a significant order of magnitude of difference between the two scenarios that can be measured in the hundreds of millions of dollars.

**F      Confidential Attachment Removed**