

QR Network's
Access
Undertaking (2009)
SEQ Cluster
Capital Expenditure Costs
November 2008



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1 Background

As part of the development of the next QR Network Undertaking (UT3) QR Network has proposed an increase to the below rail tariff for coal carrying train services utilising the SEQ Cluster.

In developing its proposed tariff, QR Network has sought to establish a building block approach to calculate a ceiling price that reflects the Maximum Allowable Revenue. Due to issues that are evident in the Western System, QR Network understands that seeking to charge at the developed ceiling price is unrealistic and as such has proposed an adjusted tariff of \$22.07 per 000's GTK (\$July 2008).

Due to the complexities of tariff setting for coal services through the Brisbane Metropolitan system QR Network is proposing to apply the \$22.07/000GTK (\$July 2008) tariff to coal services east of Rosewood.

1.1 Purpose

The purpose of this paper is to provide a detailed commentary on the capital expenditure (CAPEX) allocation as presented as part of the Western System Coal Tariff model. This paper will detail the location and justification for the CAPEX project to be undertaken during the UT3 period.

All references to the Western System in this paper are with regard to the following track sections that support current or future coal movements

- Rosewood to Toowoomba – inclusive of the Toowoomba Range crossing;
- Toowoomba to Jondaryan – the load point for the New Acland mine;
- Jondaryan to Dalby; and
- Dalby to Macalister – the load point for the Wilkie Creek mine and the outer boundary of the SEQ Cluster

Reference is also made to the track section between Macalister to Miles – assuming the planned Columboola (Cameby Downs) mine load point at Columboola.

1.2 Context and Objectives

For understanding and clarity this paper is to be read in conjunction with the following submissions made by QR Network;

- Volume 1 of QR Networks Access Undertaking 2009 Submission
- QR Networks Western System Coal Tariff Development Paper.
- QR Networks Western System Maintenance Paper

The objective of this paper to provide an understanding of the forecast CAPEX activities in the SEQ Cluster (Western System) and the impact of coal traffics on the planned maintenance schedule.

As QR Network has proposed to apply the same reference tariff for coal carrying train services originating out of the Western System through the Metropolitan System this paper does not provide detail on planned CAPEX activities in the Metropolitan System.

This paper is support material to QR Network's proposed UT3 SEQ Cluster tariff.

1.3 CAPEX Cost Review Process

The CAPEX projects forecast to be undertaken presented in this paper have been sourced from both the Commercial Coal Business Team and Network Capital team including the Project Manager responsible for the development of project scope, management of cost and project delivery.

1.4 Structure of this Report

This report will be presented in two parts

- Part 1 will discuss the development of the UT3 opening asset base
- Part 2 will provide an overview of projects to be undertaken in the UT3 period and the modelling assumptions used in the UT3 Western System Ceiling Tariff Model.

2 Western System Coal Supply Chain Expansion Requirements

The Western System services a variety of traffics including coal services from the coal mines operating in the Surat and Clarence-Moreton Basins for export via Fishermans Island and domestic power station use in the Brisbane area.

In the 2007-08 financial year 5.4mt of coal was hauled on the Western System. This haulage task is forecast to increase in 2010/11 up to 7.67mtpa. The current longest coal haul on the Western System is Macalister to Fishermans Island a total of 286km for a loaded train service.

Full detail of western system coal volume forecast can be found at Section 6.2 of QR Networks Western System Coal Tariff Development Paper

The tonnage profile for Western System Coal is detailed in the following table.

	Tonnes expressed as mtpa ¹			
Western System Coal	2009/10	2010/11	2011/12	2012/13
Export Contracted	5.23	5.231	5.231	5.23
Export New	-	1.94 ²	1.94	1.94
Domestic Contracted	0.51	0.51	0.51	0.51
Domestic New	-	-	-	-
Total Tonnes	5.73	7.67	7.67	7.67

In order to encourage growth and ensure reliable and efficient service operation in this key market and keep up with industry demand, the Western system will require additional infrastructure investment. To this end, QR Network is planning to implement a series of incremental capacity enhancements which correspond with the forecast tonnage demands of its customers. These improvements will be complemented by industry investment.

The targeted throughput levels cannot be provided by the provision of rail infrastructure only, but will need all participants of the Western System Coal supply

¹ Mtpa = million tonnes per annum

² All "Export New" tonnes are forecast

chain to contribute. The following table summarises the key inputs expected from members.

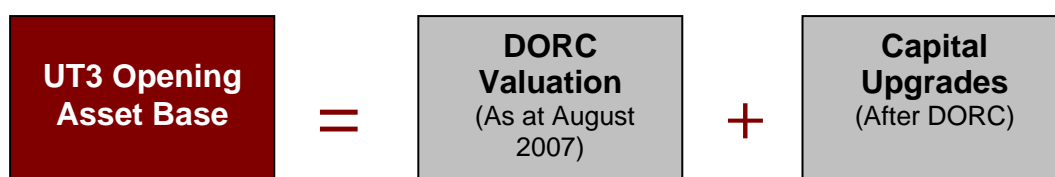
Target Capacity Level	Mine Load-out	Rail Infrastructure	Rail Operator(s)	Export Terminals
Up to 7.67mtpa	Planned improvements in load rate (tph) at some load points	Increased availability of paths in Metro system. Upgrade of existing infrastructure to facilitate increased tonnages (eg resleepering, timber bridge replacement etc)	Additional consists and better utilisation of current consists	Re-alignment of current stockpile arrangements to facilitate expansion within current port facility footprint

3 UT3 Western System Opening Asset Base

In the development of the UT3 Western System Ceiling Price model QR Network engaged Connell Hatch to undertake a DORC valuation of the Western System between Rosewood and Columboola. A copy of this valuation was provided as Attachment H, to Volume 1 of QR Network's 2009 Access Undertaking submission to the QCA.

The site visit for this DORC valuation was completed in August 2007. All CAPEX undertaken prior to August 2007 was captured in this asset valuation.

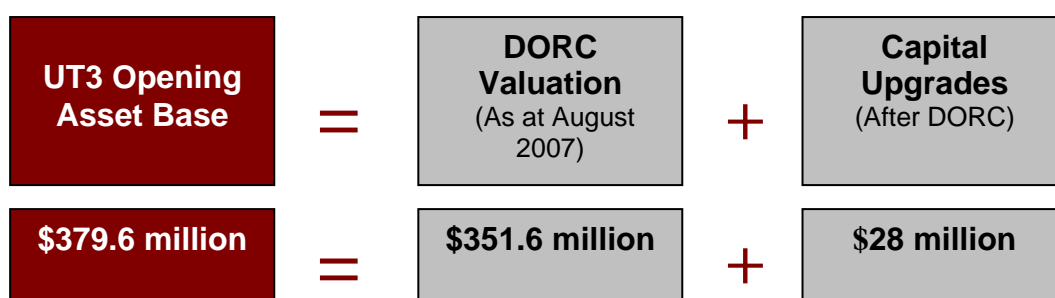
To develop the UT3 opening asset base all CAPEX completed after this DORC date has been added. Therefore the UT3 opening asset base equals DORC valuation plus CAPEX upgrades. This is illustrated below:-



The following table illustrates the CAPEX for the 2007/08 year (excluding June 07) and the 2008/09 year. The table is split into Western System specific CAPEX and a share of system wide projects.

	2007/08	2008/09
Western System Mainline CAPEX	3,000	17,200
Allocation of System wide CAPEX	3,585	2,625
Applicable Financial Interest	387	1,166
TOTAL	6,972	20,992
Total (Rounded)	7,000	21,000

The Depreciated Optimised Replacement costs of the Western System line section between Rosewood and Macalister is \$351.6 million³ as at June 2007. The table above forecasts CAPEX for the period August 2007 to June 2009 as \$28 million⁴. Therefore the opening asset base for the Western System Coal Ceiling model is DORC + Upgrades which equal \$379.6 million. This is illustrated in the following diagram;



³ The DORC Valuation report supplied to the QCA as Attachment H to Volume 1 of QR Network's 2009 Access Undertaking Submission states the DORC valuation as \$485 million. This value is for the line section Rosewood to Columboola. The figures in this paper related to the DORC valuation Rosewood to Macalister only

⁴ Rounded

3.1 UT2 Western System Mainline CAPEX

The following section provides a discussion of the CAPEX to be undertaken on the Western System mainline between Rosewood and Macalister for the period August 2007 to June 2009 (the termination date of UT2). This period reflects the capital upgrades undertaken after the DORC valuation date. All capital upgrades prior to the DORC have been captured in the valuation.

CAPEX for this period has been conducted under two specific projects;

- Surat Basin Track Upgrade: Stage 4
- SW Coal – Mainline Track Upgrades for Additional tonnes

The Surat Basin Track Upgrades: stage 4 Project is a 10 year asset replacement programme developed to ensure the Western system track structure is upgraded and fit for purpose. It involves the replacement of existing mainline turnouts with 60kg RBM turnouts on concrete sleepers as well as curves greater than 120m radius being replaced with 50kg rail on concrete sleepers.

The S.W Coal Mainline Upgrade for Additional Tonnes Project is being undertaken to facilitate an increase in tonnes from an existing mine. The 2008 Coal Rail Infrastructure Master Plan (CRIMP) identifies that further increases in capacity of the Western System is dependant on mainline infrastructure upgrades.

The scope works to be conducted under these projects include:-

- Track reconditioning
- Upgrade of turnouts to 60kg rail on concrete sleepers
- some Concrete re-sleepering
- Timber bridge replacements with concrete culverts
- Timber bridge replacement with concrete bridges
- Formation stabilisation
- Rail welding to 220m lengths (to add rail stability)
- Track reconditioning on curves

QR Network is forecasting that the scope of works as detailed above is expected to cost up to \$28 million with the majority of works to be completed in the 2008/09 year.

3.2 UT2 Western System System Wide CAPEX

A proportion of System wide CAPEX has been allocated to the line section Rosewood to Macalister. System wide CAPEX, is CAPEX undertaken either state-wide or across more than one system. Allocation of project cost is as per the allocation methods detailed in QR Network's Costing Manual.

There are two specific projects for which the majority of project cost can be allocated to the Western System. These are;

- Toowoomba Interlocking Replacement; and
- Toowoomba Range Stabilisation Works

The Toowoomba Interlocking Replacement Project is with relation to the Toowoomba Yard Signalling that is approximately 20 years old and no longer supported. In addition the existing arrangements were not designed with the current traffic task in mind, in particular current train lengths. The development of a fully interlocked passing loop at Toowoomba will allow shunting and passing without blocking the mainline, as a result access to and from the western line will be uninhibited. This project will aid QR Network to ensure that the movements of trains in the Toowoomba Yard do not impact on mainline running therefore making the mainline available to meet contracted tonnages. Work on this project is due for commissioning in December 2008 with completion in April 2009 at a forecast project cost of up to \$2.8 million. Project costs will be recovered through access charge revenue.

In 2007 QR Network engaged Golder Associates to complete a Geotechnical Risk Assessment of the Toowoomba and Little Liverpool Ranges⁵. A requirement of this assessment was for the consultants to provide an indicative cost estimate for the remedial works indentified based on their risk profile. The aim of this engagement and subsequent works was for QR Network to reduce the risk of rock falls and land slips on the range crossings that have the potential to harm employees or the public and damage the track causing traffic delays or line closures during rectification works. From this assessment 20 high risk areas were identified (all on the Toowoomba Range Crossing) and the remedial works required identified. QR

⁵ The Little Liverpool Range is between Grandchester & Laidley

Network is in the process of finalising the project scope for this project. In broad terms the project scope is:-

- conduct works at identified high risk sites to reduce the risk of geotechnical failure;
- conduct targeted vegetation control at identified sites;
- remove loose materials for identified sites, in particular from entry and exits to tunnels; and
- insert rock bolts to increase rock face stabilisation at identified locations.

Work for this project is forecast to begin in March 2009 and be completed by June 2009 at a forecast cost of \$1.75 Million. Project costs will be recovered through access charge revenue.

4 UT3 CAPEX Projects

In forecasting the CAPEX activity for the UT3 period QR Network have identified planned Western System capital projects and an allocation of system wide projects for the mainline section between Rosewood and Macalister forecast to be completed over a number of future years. The following table provides a summary of forecast UT3 CAPEX in the Western System.

UT3 Western System CAPEX Forecast	2009/10	2010/11	2011/12	2012/13
Western System Mainline CAPEX	3,900	37,425	3,100	3,000
Allocation of System wide CAPEX	952	661	151	119
Applicable Financial Interest	285	2,240	191	183
TOTAL	5,137	40,326	3,442	3,302
Total (Rounded)	4,100	40,100	4,100	4,100

4.1 UT3 Western System Mainline CAPEX

Capital expenditure for the UT3 period is forecast to be undertaken through two major projects;

- Surat Basin Track Upgrade Stage 4; and

- Columboola Coal Project

The Surat Basin Track Upgrade Stage 4 as previously mentioned is a 10 year asset replacement programme has been developed to ensure the Western system track structure is upgraded and fit for purpose. It involves the replacement of existing mainline turnouts with 60kg RBM turnouts on concrete sleepers as well as curves greater than 120m radius being replaced with 50kg rail on concrete sleepers.

QR Network's model has also considered the mainline upgrade costs of the Columboola Coal Project for Macalister to Fisherman Islands. QR Network has included this CAPEX as it is reflective of the scope of works required in mainline upgrades between Macalister and Fishermans Island to reach a system total of 7.67mtpa regardless of the origin of those additional tonnes.

The 2008 Coal Rail Masterplan identifies the next CAPEX uplift in the Western System as requiring track strengthening works, formation works, timber bridge elimination and passing loop extensions. The works scoped for completion in both the Columboola Coal mainline works and the Surat Basin Track Upgrade project combine to lift system capacity to 7.67mtpa by 2010/11 and are required to cater for the increased tonnages forecast in the UT3 period.

The mainline works package between Macalister and Fisherman Islands has been considered on the basis that tonnes from Columboola are not yet committed. If the Columboola (Cameby Downs) mine tonnes do not eventuate, both existing mines (New Acland & Wilkie Creek), have expressed the desire for additional tonnes and mainline upgrades would still be required. As a result a modified scope of works on the line section between Macalister and Fishermans Island would still be required to support a 7.67mtpa system

To facilitate the UT3 tonnage forecast a number of infrastructure enhancement will be required to the existing Western System main line between Macalister and Fisherman Islands as well as the infrastructure arrangements at the port.

For the avoidance of doubt all references to the Columboola Coal Project include only the following:

- Main line works between Macalister and Fishermans Island;

- Infrastructure enhancements at the Port of Brisbane (Fishermans Island); and
 - Project Management and project contingencies;
- and the exclusion of;
- The mine specific infrastructure such as the construction of the spur and balloon loop, mine weighbridge and mine load out infrastructure; and
 - Mainline works between Columboola and Macalister.

The scope of works to be undertaken under these projects includes:

- Track reconditioning at identified locations
- Replacement of existing timber bridges with concrete culverts between Macalister and Kingsthorpe
- Replacement of timber / steel sleepers at certain locations between Jondaryan and Helidon.
- Formation stabilisation, rail joint elimination and undercutting on the main line section between Macalister and Toowoomba
- Telecommunications and signalling upgrades on line section between Toowoomba and Jondaryan.
- The construction of additional holding roads and shunt roads at Fishermans Island.
- Upgrade of turnouts to 60kg rail on concrete sleepers
- Rail welding to reduces the number of rail joints
- Formation strengthening on black soil sections at Gowrie and Macalister; and
- Extension of passing loops at Murphy's Creek and Harlaxton

4.2 System Wide Projects

System wide CAPEX is capital projects undertaken on a state wide basis for which a % allocation is made to each line Section. The % allocated to the full Western System (Rosewood to Quilpie / Cunnamulla) has been further allocated to capture only the line section between Rosewood and Macalister. The allocation of System Wides CAPEX is indicated in the following table.

System Wide CAPEX Allocation	2009/10	2010/11	2011/12	2012/13
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Allocation to Western System Coal	952	661	151	119
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5 Future CAPEX

The future level of CAPEX in the Western System is dependant on a number of factors some of which are outside QR Networks control. These factors are summarised below;

- The construction of the Surat Basis Rail (SBR) – SBR is designed to facilitate the transport of coal from new mines west and south-west of Columboola via a new rail link to the Moura System and export via Gladstone. As the Surat basis has extensive coal reserves this project was designed as the possibility of transporting significant coal via the Western system to Fishermans Island is not practical due to haul length, port capacity, metro paths and public pressures.
- If existing mines decide to contract extra tonnages via SBR infrastructure such as Western angles to loading facilities and advanced signalling would be required
- A move to closer passenger separation in the metro services – any move to close passenger separation in the metro system would cap or limit the number of paths available to coal and reduce the tonnage to Fishermans Island. As no extra tonnes would be viable via Fishermans Island little to no CAPEX would be required.
- A move towards close coupled wagons – If above rail operators decided to run with close coupled wagons this would result in higher tonnages per train path. Significant track strengthening works would be required on both the Toowoomba and Little Liverpool Ranges.

Section 8 of the 2008 CRIMP⁶ provides details of the CAPEX required beyond 7.67mtpa.

⁶ CRIMP 2nd Addition, page 110.

6 Summary

For modelling purposes and reflective of the fact that system wide projects are difficult to forecast in the long term QR Network has provided a smoothed CAPEX forecast for the UT3 Period. This forecast is summarised in the following table.

UT2 & UT3 Western System CAPEX	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
UT2 CAPEX included in Opening Asset Base	6,585	19,825				
UT3 CAPEX for line Section Rosewood - Macalister			4,852	38,086	3,251	3,119
Financial Interest	387	1,166	285	2,240	191	183
Total CAPEX	6,972	20,992	5,137	40,326	3,442	3,302
Smoothed CAPEX	7,000	21,000	4,100	40,100	4,100	4,100

This forecast level of CAPEX and the scope of works to be undertaken are consistent with the level of required CAPEX presented in the 2008 Coal Rail Infrastructure Master Plan for the Western System to achieve 7.67mtpa.