

Australia - Developing Integrated Coal Chains

– A timeframe for Change

Bede Boyle

- **AustCoal Consulting Alliance**

Dr Don Barnett

- **MINEC Pty Ltd**

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Australia exported 252Mt of coal in 2007/2008

137Mt of metallurgical coal

115Mt of thermal coal

Major investment in coal chain expansions in Queensland and New South Wales will provide additional Export Terminal, Rail Infrastructure and Rolling Stock to meet customer demands.

However, cooperative coal chain planning and operational management is required to maximise coal chain throughput.

Queensland Export Terminals

Location	2007 capacity		2008 capacity	2012 Planned capacity
North > South	Mtpa	(actual)	Mtpa	Mtpa
Abbot Point	15	(11.7)	21	80
DBCT	59	(44.8)	68 March 2008	85 from 2009
Hay Point	44	(39.6)	44	44 > 55 study
RG Tanna	68	(53.4)	68	72
Barney Point	7	(7)	7	Closed
Wiggins Island				25
Fisherman Islands	6	(5.2)	6	7
Terminals	199		214	313
Coal Chains		(161.7)	182 system?	266 system?

Newcastle Export Terminals

Terminal Location	2008 capacity	2009 committed	2010 committed	2015 planned
PWCS	77 KCT <u>25 CCT</u>	88 KCT <u>25 CCT</u>	88 KCT <u>25 CCT</u>	120 KCT <u>25 CCT</u>
Total	102 Mtpa	113 Mtpa	113 Mtpa	145 Mtpa (dependent on long term contracts)
NCIG			30 Mtpa	66 Mtpa > 90?
Terminals	102 Mtpa capacity	113 Mtpa committed	143 Mtpa committed	211 Mtpa planned
HVCC Master Plan	95 Mtpa	95 > 105	105 > 125	

The Port Kembla Coal Terminal (PKCT) has a throughput capacity of 16 Mtpa but is under utilised.

PKCT

Throughput in 2007- 08 was 13.1Mt

Exports in 2007- 08 was 11.5Mt

We will outline the positive changes that are occurring to better align rail and port infrastructure to industry demand and export customer needs by discussing:

- **Hunter Valley Coal Chain**
 - **A cooperative Planning Model for an integrated export coal chain**

HVCC is the world's largest and most complex coal export operation with **80 brands of coal:**

- **PWCS exported 89 Mt in 2007- 08**
- **14 coal companies operating 40 coal mines**
- **2 rail operators – Pacific National & QR**
- **2 track owners – ARTC & RailCorp**
- **2 existing coal terminals KCT & CCT operated by PWCS with 5 ship berths**
- **Approx 1100 vessels per year averaging 87kt capacity through Port of Newcastle**
- + **3rd loading terminal to be operated by NCIG**

Hunter Valley Coal Chain Logistics Team

The interdependence of the coal mines, rail loading points, rail track, rail operations and coal loading terminals was recognized in 2003 by the formation of the Hunter Valley Coal Chain Logistics Team (HVCCLT) to coordinate planning and operation of the coal chain.

HVCCLT: A cooperative Planning Model for an integrated export coal chain

HVCCLT Objectives:

- **Conduct coordinated planning & scheduling**
- **Maximise throughput at minimum total logistics cost**
- **Implement improvements to existing operating practices**
- **Identify capacity constraints, propose and encourage investments**

HVCCLT: A cooperative Planning Model for an integrated export coal chain

HVCCLT provides centralised planning services on behalf of its members:

1. Short term objective

focus on maximising daily throughput

2. Long term objective

assist members with investment planning

HVCCLT Annual Declared Capacity

After extensive consultation HVCCLT provides Annual Declared Capacity for the HVCC which is reviewed quarterly

2008 Base Coal Chain Capacity	118Mt
Less	
Planned ARTC & PWCS	
Asset Unavailability	(11Mt)
Risk Adjustment	(2Mt)
10% Unplanned Capacity Losses	<u>(10Mt)</u>
2008 Annual Declared Capacity (Mtpa)	95Mt
HVCCLT revised capacity on 24/9/08 to	91.8Mt

Export demand exceeds coal chain capacity and the Capacity Balancing System (CBS) balances ship arrivals to coal chain capacity.

“The ACCC has always considered that queue management systems are appropriate as short term transitional management systems only.”

ACCC in proposing to authorise a CBS for PWCS to December 2008

In Authorising The Capacity Balancing System ACCC identified a number of underlying issues that were affecting operation of HVCC.

“The common user provisions of PWCS Kooragang Lease, which appear to be restricting its ability to enter into long term, binding contracts to underpin Investment, and service providers contracting based on assessments of individual capacity without reference to the coal chain as a whole”.

Nick Greiner a former NSW Premier was appointed by NSW Government Minister Joe Tripodi in January 2008 to examine HVCC infrastructure flaws and oversee the development of a new model of coal export allocations.

“There is an urgent need to create a commercial framework that stimulates investment that encourages stakeholders to work in an aligned manner.”

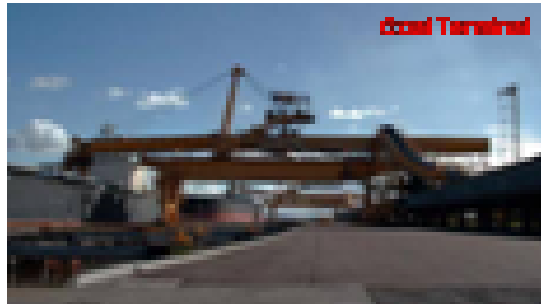
Graham Davidson GM PWCS in welcoming Nick Greiner’s appointment 4/1/2008

- **Agreement of Coal Chain Principles**
- **Establishment of HVCCC as legal entity**
- **Producer & Service Provider Board representation**
- **HVCCC to employ staff directly**
- **Industry commitment to 10 year Take or Pay rolling contracts to underpin investment**
- **Contracts & Performance to reflect capacity utilization**

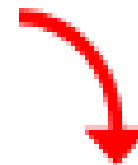
Denise McMillan-Hall Chair HVCCCLT June 2008



Contractual Alignment



Contractual alignment of volume and infrastructure requirements



- **The point of contention is** is that Minister Tripodi wants to make sure that:
“new coal producers will have access to port facilities in the future. This is critical to securing growth in the Hunter Valley”
- The government lease for Port Waratah Coal Services (PWCS) Kooragang Coal Terminal (KCT) stipulates a common user facility that must accommodate new entrants.
- If PWCS has a capacity of 100Mtpa and a new entrant nominated an export requirement of 10Mtpa through KCT then existing export allocations are reduced by 10% to accommodate the new entrant.

- **PWCS wants the government to change the lease conditions to give access to companies that enter long-term Take or Pay contracts to underpin investment in capacity growth.**
- **This is the Economic Framework which participants in the Newcastle Coal Infrastructure Group (NCIG) have agreed as a basis to fund the A\$1B stage one development to 30Mtpa.**

The way forward needs

From Buyers – long term coal supply contracts or JV equity investment to underpin Take or Pay Rail and Port rolling contracts

From Government – active coordination of infrastructure planning and urgent reforms to inconsistent project Approval Legislation and Competitive Regulation

From Industry – we now have Master Planning and decision-making process for coordinated investment in Infrastructure and rolling stock

A global economic recession will constrain steel production and energy growth and impact on metallurgical and thermal coal exports from Australia

Dr Don Barnett of MINEC has analysed costs of existing and proposed coal chain from mine to port and suggests:

- **Existing coal chains A\$10 to 15/tonne**
- **Proposed coal chains A\$22 to \$35/tonne will be a major cost impost for new mines**

Contact Dr Barnett donminec@bigpond.net.au for a copy of his coal chain presentation

In a capital constrained world some proposed infrastructure and mining developments may not proceed.

This is a strong driver for:

- 1. Incremental developments of existing mines and infrastructure**
- 2. Working existing assets harder**
 - > Synergy Six Sigma Lean**
 - > RENOIR Iron Ore Case Study**

Six Sigma™ is a means of measuring and managing processes to **consistently deliver outcomes that meet customer expectations**

It most importantly holds the dual promise of

1. improving productivity and reducing costs
2. whilst up skilling the organisation

Lean drives process simplification and combined **with Six Sigma is very powerful.**

Synergy Six Sigma - Lean addresses the challenge of delivering business benefits throughout the coal chain without capital expenditure and is based on 20 years coal industry consulting experience.

Contact Jim Laird

Synergy Management Consulting Group

jim.laird@synergymcg.com

Free six sigma briefings can be downloaded

www.synergymcg.com

Portman Mining

Australian Railroad Group (ARG)

WestNet Rail

Portman is Australia's 3rd largest supplier of iron ore and use ARG to transport iron ore within Western Australia on track that is operated and maintained by WestNet Rail. Renoir carried out a preliminary study of system capacity and developed a 4 phase, 40 week project engaging the 3 businesses.

The Renoir survey highlighted opportunities to increase the amount of transported tonnes of ore, by decreasing the number of “short” trains and cancellations, by improving train running performance and optimising wagon capacity with increased tonnage.

Renoir then engaged the three businesses with a goal of transporting an additional 300,000 tonnes of iron ore a year.

3 Management Action Teams were formed

- 1. Train Management**
- 2. Terminals**
- 3. Train Maintenance**

And achieved the following results

- 153,000 tonnes of iron ore per week**
- 6.1% improvement in unloading time**
- 5.2% reduction in travel time**

Also targets were achieved with a 16% reduction in track availability

These benefits were achieved by designing and installing processes and systems that promoted complete communication and cooperation between all companies.

And most importantly the benefits were achieved without additional capital expenditure.

Full case study www.renoirgroup.com

Bede Boyle

boyle.bede@bigpond.com

Convener

AustCoal Consulting Alliance

www.austcoalconsulting.com

Dr Don Barnett

donminec@bigpond.net.au

Managing Director

MINEC Pty Ltd

MINEC World Coal Outlook Seminars