CENTRAL QUEENSLAND COAL RAILINGS FORECAST

A report prepared by Energy Economics for the Queensland Competition Authority

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Energy Economics Pty Ltd
65 Wentworth Avenue
Killara, NSW, Australia 2071

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1 EXECUTIVE SUMMARY

The volume of coal transported by rail in Central Queensland fell sharply in fiscal 2011 as a result of the extreme wet season and flooding that affected most of the state in late 2010 and early 2011. Since that time the recovery in coal production and transport has been muted, with many opencast pits still containing excess water as they entered the 2011-12 wet season and industrial action constraining output from BHP Billiton Mitsubishi Alliance mines.

A relatively benign 2012 wet season (albeit with some high intensity events late in the season) and government provisions for additional mine water discharge, under the Transitional Environment Program, has resulted in coal producers being in a much better position to increase production as they approach the start of the fiscal 2013 year. Energy Economics forecasts a strong recovery in Central Queensland coal railings from 165.9 million tonnes estimated for fiscal 2012 to 187.4 million tonnes in fiscal 2013.

In its submission to the QCA, QR Network forecast fiscal 2013 railings of 186.0 million tonnes. This estimate excluded railings via the new link between the Goonyella and Newlands rail systems (the Goonyella Abbot Point Expansion, or GAP). Energy Economics forecasts coal railings excluding coal transported on the GAP railway will be 182.8 million tonnes in fiscal 2013, as tabulated below. The 3.2 million tonne (1.7%) difference between the Energy Economics forecast and the QR Network forecast is considered to be within the potential range of forecasting error. Energy Economics therefore concludes that the QR Network forecast of Central Queensland coal railings is reasonable.

Table 1 QR Network and Energy Economics fiscal 2013 railings forecast comparison, Mt

	QR National	Energy Economics	Differ-ence	%
Rail System				
Newlands	15.8	17.1	1.3	7.9
Goonyella	99.0	93.0	-6.0	-6.0
Blackwater	57.7	59.9	2.2	3.9
Moura	13.5	12.8	-0.7	-5.4
Total	**186.0**	**182.8**	**-3.2**	**-1.7**

Note: Excludes GAP railings

The levels of coal railings forecast by Energy Economics for fiscal 2013 are only a little above the level realised back in fiscal 2010, and are therefore not expected to be constrained by rail and port capacity. There are comfortable margins between forecast railings and the throughput capacity at each of the three ports that service the coal mines of Central Queensland.

In formulating our coal railings forecast we have assumed a 'normal' wet season in Queensland in fiscal 2013. The Southern Oscillation Index has fallen over recent months, indicating an end to La Niña weather patterns. For the purposes of this report Energy Economics has also assumed that the industrial action currently constraining production at BHP Billiton Mitsubishi Alliance mines will be resolved before the start of the 2013 fiscal year. However, we have assumed that all BMA mines will

commence the 2013 fiscal year with low mine-site coal inventories; and that this will result in coal railing volumes being lower than coal production volumes in fiscal 2013, while inventories are rebuilt back to optimum working levels.

It is noted that the balance of risks to our forecast is weighted to the downside. Our forecast is contingent on Queensland's coal exporters recovering market share within a loosening supply-demand balance in international markets. International demand for coal is expected to continue to grow through fiscal 2013, however export supply capacity is also expected to increase strongly and coal prices to remain subdued.

2 INTRODUCTION

In May 2012, the Queensland Competition Authority (QCA) engaged Energy Economics to assist it in verifying the reasonableness of traffic volume forecasts submitted to the QCA by QR Network Pty Ltd (QR Network). Specifically, Energy Economics was asked to provide an independent review of coal railings from the mines of Central Queensland to various ports and domestic customers for the year ending June 30 2013 (fiscal 2013).

Under the terms of QR Network's 2010 access undertaking, which came into effect on 1 October 2010 and is due to expire in 2013, QR Network is required to submit an Annual Review of Reference Tariffs to the QCA. The Annual Review of Reference Tariffs includes updated railing volume forecasts. QR Network's coal railings forecasts for the period in question are contained in its March 2012 report titled "2010 Access Undertaking - FY 2012-13 Annual Review of Reference Tariffs". QR Network Pty Ltd is a wholly owned subsidiary of QR National Ltd.

In formulating its view on future coal railings Energy Economics has based its evaluations on the parameters listed below.

- An appraisal of current mine capacity and capacity expansion projects;
- Potential changes at the mine/company level in terms of railing practices, changes in contractual arrangements, mine problems, new markets or contracts, etc;
- Domestic/global market conditions;
- Coal reserves;
- Mining costs;
- Port capacity and charges; and
- Rail infrastructure capacity and charges.

There are two components to this report, as provided to the QCA. The first is the main body of the report, which is provided on the basis that it can be made available for general dissemination by the QCA. The second part is a confidential appendix containing detailed railings forecasts on a mine-by-mine basis.

3 DOMESTIC COAL DEMAND

Coal demand in Queensland is dominated by the electricity generation sector (91.0% of coal receival), the non-ferrous metals processing sector (6.7%) and the cement sector (0.8%). Other end-use sectors combined account for only 1.5% of total coal distributions.

Table 2 Coal distribution within Queensland by district (tonnes)

	2010-2011			
	Northern	Central	Southern	**Total**
Consumer group				
Agriculture	-	-	881	881
Basic Metal Products	-	-	-	-
Basic Non-Ferrous Metals	321,969	1,199,251	-	1,521,220
Beverages And Malt	112	-	-	112
Cement And Concrete Products	-	-	188,782	188,782
Chemical,Petroleum And Coal Products	64,047	-	-	64,047
Clay Products And Refractories	-	-	5,794	5,794
Coal	-	2,650	14,750	17,400
Electricity	243,457	5,399,799	14,870,096	20,513,352
Fruit And Vegetable Products	-	-	21,344	21,344
Glass And Glass Products	-	-	-	-
Health	-	-	3,457	3,457
Meat Products	7,674	5,364	57,748	70,786
Milk Products	-	-	1,177	1,177
Mining	-	326	-	326
Not Known	-	1,607	-	1,607
Other Non-Metallic Minerals	-	-	331	331
Paper,Paper Products,Printing And Publishing	-	-	97,953	97,953
Railway Transport	96	333	-	429
Road And Transport	-	2,355	516	2,871
Services To Transport	-	-	-	-
Sugar	20,469	258	2,948	23,675
Wholesale And Retail Trade	-	-	1,623	1,623
Wood,Wood Products And Furniture	-	-	4,211	4,211
Agriculture,Forestry,Fishing And Hunting	-	125	100	225
Construction Materials	-	-	1,573	1,573
State total	657,824	6,612,068	15,273,284	22,543,176

Data Source: DEEDI

3.1 Electricity

Queensland's coal-fired power stations have operated at low capacity utilisation since early last decade, when substantial additional coal-fired generating capacity was commissioned. New coal-fired power stations constructed at that time included Callide C (900 MW), Millmerran (850 MW) and Kogan Creek (750 MW), which came on line in 2001, 2002 and 2007 respectively. The resulting surplus in generating capacity has been exacerbated over recent years by weak electricity demand, with rapidly rising electricity prices constraining electricity consumption across eastern Australia. Another factor reducing coal-fired electricity generation is the commissioning of significant additional gas-fired generation in Queensland and elsewhere in the National Electricity Market (NEM), e.g. the commissioning of the base and intermediate load 630 MW Darling Downs Power Station (a combined cycle gas turbine commissioned in Queensland in November 2010).

Coal-fired electricity generation in Queensland was 51,490 GWh in fiscal 2007, but had fallen to 50,049 GWh by fiscal 2010 (source: Intelligent Energy Systems Pty Ltd). Coal-fired electricity generation collapsed to only 45,796 GWh in fiscal 2011, as the Queensland floods resulted in reduced demand, constrained coal deliveries to power stations, and otherwise hindered power station operations. We expect a substantial rebound in coal-fired generation post 2011, but only within the envelope of the long-term trend of weak demand dictated by high electricity prices. The introduction of the carbon tax from July 2012 will further boost electricity prices and have a disproportionate impact on coal-fired generation, as it is designed to do.

Over the long term, coal-burn in Queensland power stations is expected to recover as the substantial spare capacity at existing power stations is more fully utilised.

Most of the coal-fired power stations in Queensland are mine-mouth operations. Only the Gladstone and Stanwell power stations are currently supplied coal by rail.

The Stanwell Power Station has been operating at low capacity utilisation over recent years – with load factors being 67% in fiscal 2009 and 69% in fiscal 2010. The load factor fell to only 54% in fiscal 2011 as the Queensland floods reduced electricity demand, curtailed plant operations and cut coal supply. The rail line between Stanwell's coal source, Curragh Mine, and the power station was out of service from the 1st to the 19th of January 2011, during which time power generation was cut back to conserve coal inventories. After the rail line reopened, Stanwell Power Station received coal deliveries of varying quantity and quality due to pit flooding at the mine. The coal quality problems caused operational issues at the power station. During the floods essential employees were flown into Stanwell Power Station by helicopter. Coal consumption fell from 3.01 million tonnes in fiscal 2010 to 2.45 million tonnes in fiscal 2011. We expect coal railings to recover to 2.9 million tonnes in fiscal 2013. The Blackwater mine was also an important supplier of coal to the Stanwell Power Station up until fiscal 2011, but Curragh is expected to be the only significant coal supplier in fiscal 2013.

Load factors at the Gladstone Power Station followed a similar trend to those outlined above for Stanwell. Gladstone load factors fell from 49% in fiscal 2010 to only 43% in fiscal 2011. Gross electricity generation of 6,275 GWh in fiscal 2011 was in stark contrast to the peak level of 10,415 GWh in fiscal 2001. The fall in output in 2011 is despite the Boyne Island aluminium smelter (Gladstone Power Station's major customer) maintaining constant aluminium production over the past three years.

3.2 Non-ferrous metals

There are three coal consumers in the non-ferrous metals sector.

Queensland Nickel Pty Ltd consumes about 300,000 tonnes of coal per year at its refinery located at Cobarra, near the township of Yabulu, northwest of Townsville. Coal is sourced from the Collinsville mine and railed via the Newlands rail system and the North Coast line.

The other two consumers are both alumina refineries located at Gladstone, and both are controlled by Rio Tinto. *Queensland Alumina Limited* (QAL) operates the larger of the two refineries, which produced 3.47 million tonnes of alumina in fiscal 2011. For the past 43 years, QAL has sourced its coal for the purpose of power and steam generation from the Callide/Boundary Hill mine, with minor additional tonnages from the Dawson mine. Both of these mines are controlled by Anglo American and the coal is transported on the Moura rail system. QAL's annual coal consumption is typically 1.5 million tonnes.

The other refinery, *Yarwun*, is operated by Rio Tinto Alcan and produced 1.36 million tonnes of alumina in fiscal 2011. Yarwun (previously known as Comalco Alumina Refinery) has only been in operation since the December 2004 quarter, but is already being expanded. All of Yarwun's coal requirements are supplied by the Callide/Boundary Hill mine.

Alumina production at the two plants has not been affected by chronic low prices for aluminium, with production having remained quite steady over the past few years. The Queensland Alumina plant is world-scale and the Yarwun plant is new, so both refineries appear likely to continue normal operations through the forecast period despite the weak aluminium market.

The doubling of capacity at the Yarwun refinery, which is scheduled for commissioning in the December 2012 quarter, will not result in much of a boost for coal demand, as a cogeneration plant has been constructed to service the expansion. Although the schedule for the main Yarwun expansion project was pushed back into late 2012, the co-generation plant was kept on original schedule and was commissioned in August 2010. Yarwun therefore currently has an excess of steam/electricity generation capacity, and coal-burn will be constrained at least until the main part of the expansion is commissioned at the end of 2012. Yarwun's coal consumption was about 300,000 tonnes prior to the commissioning of the cogeneration plant, but dropped to very low levels in fiscal 2011.

3.3 Selected other Queensland demand

Cement Australia's Gladstone plant consumes some 170,000 tonnes of coal per year. Historically its coal has been sourced from the Blackwater mine, with some supplies also understood to originate from the Ensham mine.

The *Bowen Coke Works* is part of Xstrata Zinc and produces metallurgical coke, nut coke and breeze. Most of the metallurgical coke is consumed in Xstrata Zinc's Mt Isa lead smelter, which uses about 37,000 tonnes of coke per year, while the remainder is exported. The nut coke is used in aluminium smelting, while the breeze (fines) is used in fuel production. Bowen Coke's coal consumption is fairly steady at around 66,000 tonnes per year, which is supplied by rail from Xstrata's Collinsville mine.

4 INTERNATIONAL COAL MARKETS

Queensland's coal exports are comprised of 72% metallurgical coal and 28% thermal coal. Over recent years thermal coal exports have been mainly constrained to distribution within the Pacific Rim and Indian Ocean markets, which take 98% of Queensland's thermal coal exports. Atlantic Basin and Mediterranean thermal coal markets, which take the other 2% of Queensland's thermal coal exports, are well supplied by Russia, Colombia, Venezuela and the United States. Over recent years there has been a glut of supply into Europe, to the degree that spot thermal coal prices at the coal importing ports of Europe have been cheaper than at the coal exporting ports of Australia. Ocean freight costs further discourage transport of relatively low value thermal coal to distant markets.

Queensland's metallurgical coal exports are more widely distributed, with the countries of the Pacific Rim and Indian Ocean taking 80% and the Atlantic Basin and Mediterranean markets accounting for 20%.

Table 3 Queensland's coal exports by type, Mt

	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	%
Metallurgical	110.254	112.414	110.243	124.734	116.284	72
Thermal	43.039	39.669	49.730	58.388	46.190	28
State total	153.294	152.083	159.973	183.122	162.474	100

Data Source: DEEDI

Just five countries - Japan, India, South Korea, China and Taiwan - account for 81% of Queensland's total exports.

Dangers remain to global economic growth prospects, as evidenced by the latest round of turmoil in Europe; however the International Monetary Fund (IMF) predicts that moderate economic growth will continue through the next few years. In its latest World Economic Outlook the IMF forecasts world GDP growth of 3.5% in 2012 and 4.1% in 2013. These forecasts are reasonably robust when compared to the simple average of world GDP growth over the past 8 years of 3.9%.

Thermal coal and coking coal seaborne markets are forecast to be fully supplied in fiscal 2013, however Queensland exporters are expected to be able to recover lost markets. They mainly supply into the high coal quality segments of the growing Asian market, where competition is expected to be less intense than in low end and European markets.

4.1 Thermal coal

Thermal coal prices in the Asia-Pacific market were pushed higher by a combination of strong demand and supply constraints during 2011, however prices have fallen since then as supply has progressively recovered. International thermal coal markets are currently characterised by strong growth in demand, but even stronger growth in supply potential. These fundamentals are expected to remain in place through the forecast period to mid 2013.

International demand for thermal coal continues to grow rapidly, driven primarily by rising Asian electricity consumption. Seaborne thermal coal imports rose by about 12% in 2011.

The world's population grew from 6.1 billion in 2000 to 7.0 billion at the beginning of 2012. Continued growth at that rate would see global population increase by another billion people by 2022. Furthermore, electricity consumption per person is continuing to increase, even in economically mature economies. Some of the historical drivers for this trend have been increased use of air-conditioning, larger average house sizes, growth in internet and computer usage and the switch to large-screen televisions. In future, the impact of electric hybrid cars is expected to be considerable.

There are constraints to the growth of fuels that compete with thermal coal. Output of oil is believed to be limited by declining reserves. In the atrophied nuclear sector long lead times are expected for new capacity. In Europe and most of Asia there is little remaining potential for large scale hydro-electric developments, while other renewable energy sources remain expensive. Gas and renewable energy will continue to rapidly grow their share of world energy markets, but substantial growth in coal consumption will also be required to meet global energy demand. Coal continues to be the lowest cost fuel for electricity generation in most regions of the world.

A continued shift away from nuclear power following the reactor melt-down at the Fukushima-Daiichi nuclear power station in March 2011 will likely result in incremental demand increases for both coal and gas. Few countries near tectonic plate boundaries, where earthquakes and tsunamis are most common, are expected to risk building nuclear power stations in future. Plate boundaries extend the length of the west coasts of North America and South America, transect the Mediterranean region and pass through or near the island nations of eastern Asia (including Japan, Taiwan and the Philippines).

The safety concerns raised by the Fukushima-Daiichi accident will also delay new nuclear power projects in tectonically stable parts of the world. It appears likely that governments will demand more safeguards on nuclear facilities, pushing up their capital costs and making them less competitive with gas, coal and renewable energy generation. It is now unlikely any new-start construction of nuclear power stations will take place in Western Europe in time for commissioning within a ten year horizon. This may also be the case in the United States.

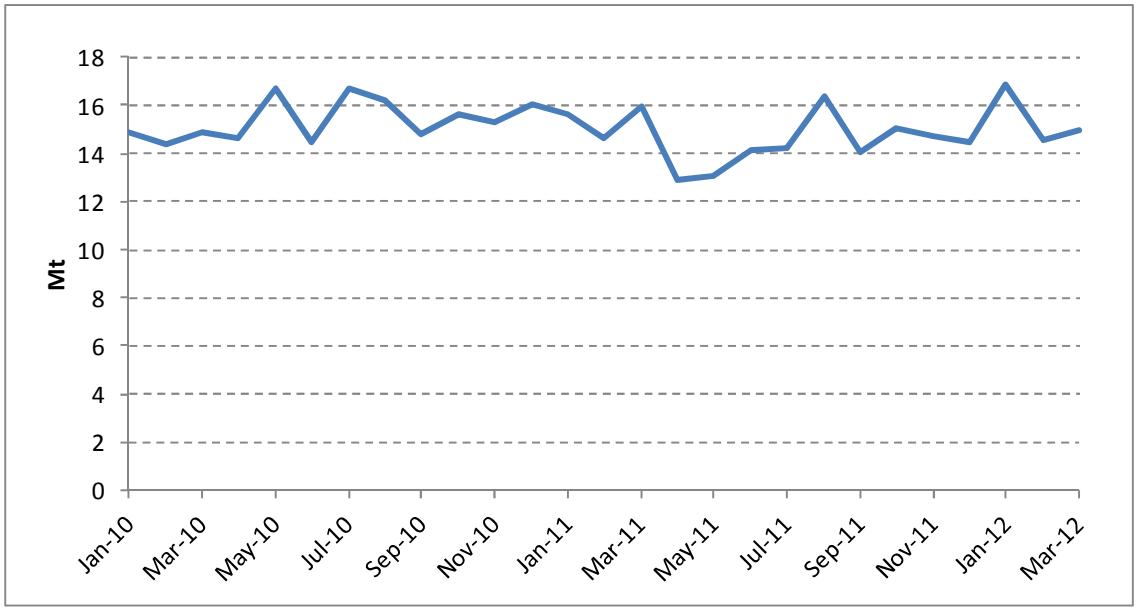
European coal imports recovered strongly in 2011, after two years of declines. This was due to high gas prices, the shutdown of seven of Germany's oldest nuclear plants in response to the Fukushima disaster and reduced costs for carbon emission allocations. In future Europe's thermal coal demand is expected to grow relatively slowly due to static/declining population, low economic growth, carbon constraints and a decline in heavy industry as a proportion of GDP. Most incremental demand for imported thermal coal will be from China, India and Southeast Asia – areas which are

increasingly becoming the world's manufacturing hubs and which also contain most of the world's population.

China's seaborne imports increased by 34% in 2011, to 174 million tonnes, as domestic thermal coal production failed to match growth in demand. China's thermal coal imports are expected to continue to grow rapidly into fiscal 2013 as lower prices increase the competitiveness of imported thermal coal in southeastern provinces relative to domestic coal.

The tragic earthquake and tsunami in Japan slowed thermal coal imports though the middle of 2011 as a result of damage to coal-fired generation facilities and electricity transmission infrastructure. As depicted in the chart below, total coal imports fell below the normal 14.0 to 16.5 million tonne per month range for only two months, in April and May 2011. Since then the recovery in demand has been weak, despite most coal-fired power stations being back in service by the end of 2011. An unusually mild 2011/12 winter enabled electricity demand to be met despite most of the country's nuclear plants being shut down at that time. Now, as the summer season commences, all 54 of Japan's commercial nuclear reactors have been shut down, although the government is considering restarting the number 3 and number 4 reactors at Kansai Electric's Oi power station to help cope with peak summer demand. Japan's coal imports are expected to surge over summer - even if the Oi reactors are restarted all available non-nuclear generation capacity will need to be operated at high load factors to meet air-conditioning demand.

Figure 1 Japan's monthly coal imports



India's thermal coal imports increased by 30% in 2011; driven by the commissioning of over 10 GW of new coal-fired power station units during the year. Between October 2009 and March 2012, 9 coal-fired units entered service at Adani's Mundra power station, with total capacity of 4,620 MW. Indian thermal coal imports are expected to continue to grow strongly over the long term, with the main

drivers being the chronic deficit between electricity supply and demand, flat domestic thermal coal production, a rapidly growing population and increased electricity consumption per capita.

On the supply side of the equation, the extreme wet season reduced Queensland's thermal coal exports by 21% to 46 million tonnes in fiscal 2011. Bad weather also impacted exports from Indonesia, Colombia and South Africa in early 2011, but export levels have now recovered in all three countries.

In the USA domestic gas production is increasing rapidly and its price has fallen sharply. This is providing increased competition for coal in the domestic electricity sector and pushing thermal coal out onto the export market. Over the past few years the USA has transitioned from being a large net importer of thermal coal to a net exporter. The surge in gas production is the result of improvements in horizontal drilling and rock fracturing techniques in shale deposits, which have increased gas extraction rates and gas reserves. The price of gas at Henry Hub fell to a monthly average of US$1.95 per million British-thermal-units in April 2012, its lowest level since February 1999, but prices did recover to US$2.50 by mid-May. For comparison the annual average price of gas peaked at US$8.86 per million British-thermal-units in 2008. The US Energy Information Administration has forecast that coal consumption in the domestic electricity sector will fall by a remarkable 120 million tonnes in 2012, under the combined impacts of the low gas price and the mild 2011/12 winter. Not all of this unwanted coal can be profitably diverted to export markets at current prices, however some US producers will be prepared to export coal at prices that just cover their cash production costs, in order to keep their mines operating until domestic demand recovers (US gas prices are considered to be unsustainable at current levels and are forecast to rise to US$3.30 per million Btu in 2013). It is therefore hard to envisage any sustained recovery in spot thermal coal prices in the European market this year, unless the Northern Hemisphere summer is extremely hot.

4.2 Metallurgical coal

The World Steel Institute released its short-term forecast of apparent steel use in April 2012. It forecasts growth in global finished steel consumption will slow from 5.6% in 2011 to 3.6% in 2012 then increase slightly to 4.5% in 2013. These growth rates are very similar to the IMF's GDP growth rates outlined earlier.

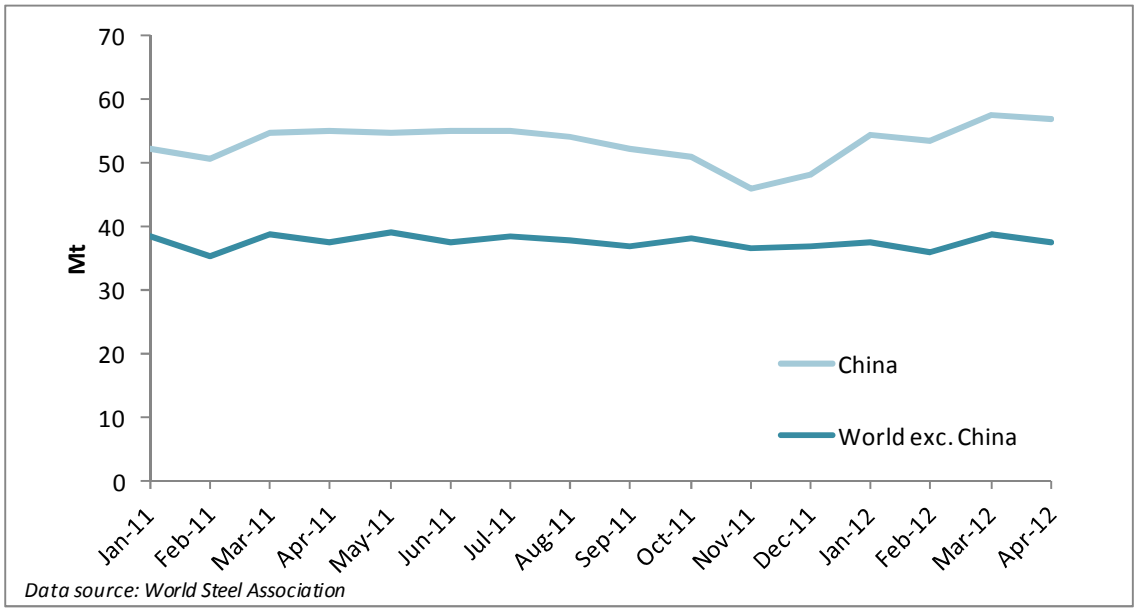
It is noted that downside risks to the WSI forecasts remain considerable. Steel demand is concentrated in sectors susceptible to investment deferral, such as infrastructure, construction, shipbuilding and manufacturing of cars and other consumer goods. Metallurgical coal demand is, therefore, affected to a greater degree by any weakness in economic growth than is thermal coal.

On balance, however, Energy Economics expect seaborne metallurgical trade to grow at the rate of 2 to 4% in fiscal 2013, with ongoing increments of landborne exports of metallurgical coal from Mongolia into the important Chinese market offsetting some seaborne demand.

Indian imports are forecast to increase as new integrated steel mill capacity comes on stream, while lower international coking coal prices, relative to domestic coal pricing, are expected to sustain Chinese import levels despite a slowdown in steel intensive sectors of the Chinese economy. Nevertheless, competition will be intense as Queensland producers look to regain market share lost during 2011. Mozambique's new coking coal industry is starting to ramp up exports to meaningful levels, and much of Queensland's cost advantage over competitors in Canada and a resurgent United States has been whittled away by increasing costs across the board and the strong Australian dollar. Queensland's premium low volatile and mid-volatile hard coking coals will continue to find ready market acceptance, however producers of lesser quality brands will in particular be looking to re-focus on costs in order to maintain competitiveness in a lower price environment.

Chinese production of pig iron increased by 7% in 2011, despite dips in production that occurred in February and in the last two months of the year. Despite the rise in pig iron production, seaborne imports of metallurgical coal fell quite sharply. High international coking coal prices prompted Chinese steel producers to buy a higher proportion of their metallurgical coal requirements from domestic mines and Mongolian mines. In the four months to April 2012, Chinese pig iron production was up by only 4.5% over the equivalent period of 2011. The recent monthly Chinese pig iron production levels graphed below are in stark contrast to the strong growth which characterised the Chinese industry pre-2011. China is no longer a particularly low cost steel producer, investment in steel intensive infrastructure projects is waning, and the government is working to restrain a real estate bubble and rebalance the economy.

Figure 2 Pig Iron monthly production, China versus the rest of the world



Indian pig iron production was up only 0.6% in 2011 due to a ban on iron ore mining in the southern state of Karnataka that was imposed by India's highest court last August. The ban, imposed due to breaches in environmental conditions, is only now in the process of being lifted. JSW Steel expanded the capacity of its Vijayanagar plant in Karnataka by 47% to 10 million tons last July, but has been

unable to fully utilise the increased capacity due to the restricted iron ore supply. Expansions of coke oven and blast furnace capacities are expected to support increased Indian demand for coking coal imports through the forecast period. The growth potential of domestic coking coal production is limited by high costs, limited reserves and poor coal quality.

Japan's pig iron output was down only 2% in 2011 despite the earthquake and tsunami. Steel production is expected be flat over the next two years due to the impact of the high value of the yen on steel demand, partially counterbalanced by post earthquake reconstruction projects.

The ramping up of production from the new Hyundai integrated steel mill in Korea resulted in pig iron production growing by 20% in 2011. Similarly, production from the new Dragon Steel integrated steel mill in Taiwan saw pig iron production grow 38% in 2011.

5 COAL RAILINGS

The tonnages of coal transported by rail in Central Queensland fell sharply in fiscal 2011 as a result of the extreme wet season and flooding that affected most of the state in late 2010 and early 2011. Since that time the recovery in coal production and transport has been muted, with many opencast pits still containing excess water as they entered the 2011-12 wet season.

A relatively benign 2012 wet season (albeit with some high intensity events late in the season) and government provisions for additional mine water discharge, under the Transitional Environment Program, has resulted in coal producers being in a much better position to increase production as they approach the start of the fiscal 2013 year. Energy Economics forecasts a strong recovery in Central Queensland coal railings from 165.9 million tonnes estimated for fiscal 2012 to 187.4 million tonnes in fiscal 2013, as detailed in Table 4.

Table 4 Central Queensland coal railings by destination, Mt

Fiscal year	2010e	2011e	2012f	2013f
Queensland Consumers				
Gladstone Power Station	3.5	3.1	3.4	3.4
Stanwell Power Station	2.9	2.4	3.0	2.9
QAL	1.5	1.2	1.4	1.5
Yarwun, Alcan	0.3	0.0	0.1	0.3
Cement Aus.	0.2	0.2	0.2	0.2
Bowen Coke	0.1	0.1	0.1	0.1
QNI Yabulu	0.3	0.3	0.3	0.3
Subtotal	**8.8**	**7.3**	**8.5**	**8.7**
Export & Interstate				
Abott Point port	17.3	15.4	14.5	21.3
Hay Point port	99.4	88.6	85.3	93.0
Gladstone port	61.1	52.9	57.5	64.4
Subtotal	**177.8**	**156.9**	**157.4**	**178.7**
Total	**186.6**	**164.2**	**165.9**	**187.4**

Source: Energy Economics

This would only take railings back to a little above the level realised back in fiscal 2010, which we have estimated at 186.6 million tonnes.

In its submission to the QCA, QR Network forecast fiscal 2013 railings of 186.0 million tonnes. This estimate excluded railings via the new link between the Goonyella and Newlands rail systems (the Goonyella Abbot Point Expansion, or GAP). Energy Economics forecasts coal railings excluding coal transported on the GAP railway will be 182.8 million tonnes in fiscal 2013, as tabulated below. The 3.2 million tonne (1.7%) difference between the Energy Economics forecast and the QR Network forecast is considered to be within the potential range of forecasting error. Energy Economics therefore concludes that the QR Network forecast of Central Queensland coal railings is reasonable.

Table 5 Central Queensland coal railings by rail system, Mt

Fiscal year	2010e	2011e	2012f	2013f
Including GAP				
Newlands	17.6	15.8	14.9	21.7
Goonyella	99.5	88.6	85.3	93.0
Blackwater	58.2	49.9	53.4	59.9
Moura	11.3	9.9	12.3	12.8
Subtotal	**186.6**	**164.2**	**165.9**	**187.4**
Excluding GAP				
Newlands	17.6	15.8	14.8	17.1
Goonyella	99.5	88.6	85.3	93.0
Blackwater	58.2	49.9	53.4	59.9
Moura	11.3	9.9	12.3	12.8
Subtotal	**186.6**	**164.2**	**165.8**	**182.8**

Source: Energy Economics

Table 6 QR Network and Energy Economics fiscal 2013 railings forecast comparison, Mt

	QR National	Energy Economics	Differ-ence	%
Rail System				
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Goonyella	99.0	93.0	-6.0	-6.0
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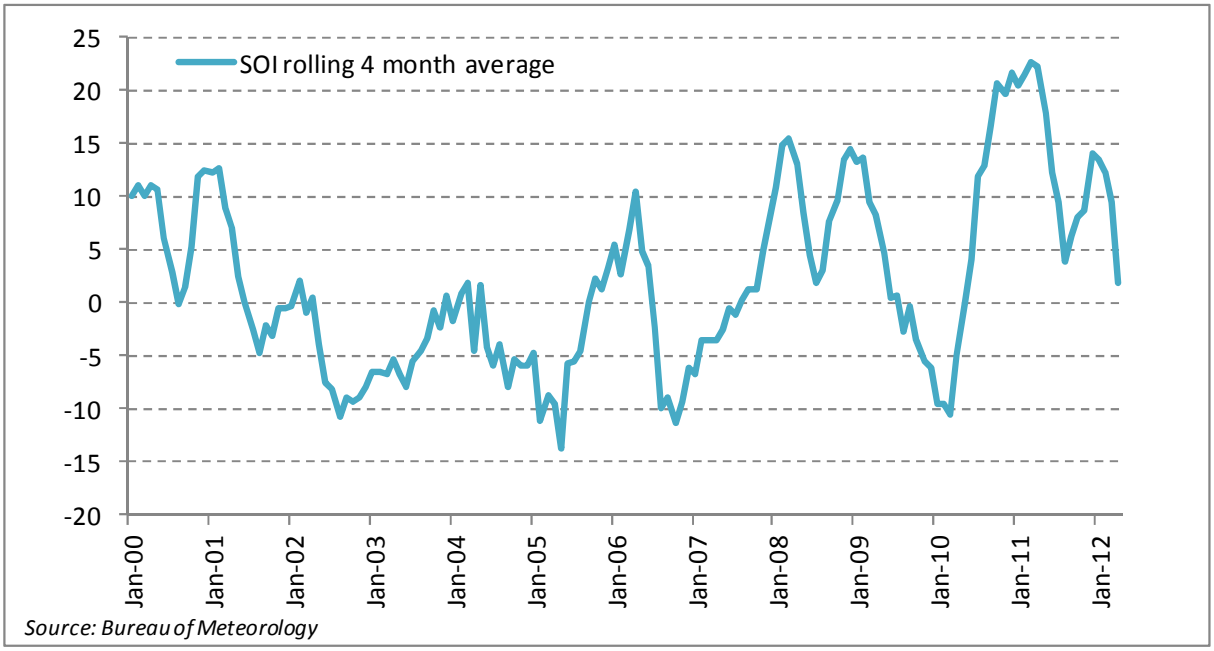
Moura	13.5	12.8	-0.7	-5.4
Total	**186.0**	**182.8**	**-3.2**	**-1.7**

5.1 Wet season assumptions

In formulating our coal railings forecast we have assumed a 'normal' wet season in Queensland in fiscal 2013. The Southern Oscillation Index has fallen over recent months, indicating an end to La Niña weather patterns. Indeed, the Southern Oscillation Index fell to -7.1 in April; which was the first negative monthly reading since March 2010. On 8 May 2012 the Australian Government Bureau of Meteorology wrote "Climate models surveyed by the Bureau of Meteorology indicate that the tropical Pacific Ocean may continue to warm over the next six months, with some, but not all, models approaching or exceeding El Niño thresholds during the second half of 2012. No models currently favour a return to La Niña."

Figure 3 Southern Oscillation Index



Source: Bureau of Meteorology

With regard to the ongoing impact of historical flooding, it is noted that by mid-May only two mines, Hail Creek and Clermont, were continuing to discharge mine water into the rivers of the Fitzroy Basin under the Transitional Environment Program, and by late May there were no mines discharging. The Fitzroy Basin encompasses all of the coal mines of Central Queensland except the northernmost: Newlands, Collinsville and Sonoma. It is understood that pumping continues at Newlands to lower water levels in the disused opencast pit that houses the underground mine entrances.

5.2 BMA industrial action assumptions

Long running industrial action at BHP Billiton Mitsubishi Alliance (BMA) operations continues to affect mine production, sales and unit costs. Force majeure was declared across all BMA sites in April 2012 and remains in place. It is of course difficult to predict how long the work stoppages will continue, but for the purposes of this report Energy Economics has assumed that the industrial action currently constraining production at BHP Billiton Mitsubishi Alliance mines will be resolved before the start of the 2013 fiscal year. We have, however, assumed that all BMA mines will commence the 2013 fiscal year with low mine-site coal inventories; and that this will result in coal railing volumes being lower than coal production volumes in fiscal 2013, while inventories are rebuilt to optimum working levels.

5.3 Transport Infrastructure

Energy Economics forecast of coal railing in Central Queensland for fiscal 2013 is 187.4 million tonnes. As mentioned above, this is only marginally higher than estimated historical railings of 186.6 million tonnes achieved in fiscal 2010. The annual capacity of the three ports that service Central Queensland coal mines is expected to be 257 million tonnes in fiscal 2013 (Abbot Point 50 million tonnes, Hay Point 129 million tonnes, and Gladstone 78 million tonnes). This compares with forecast

railings to port of 178.7 million tonnes of coal in fiscal 2013. There are comfortable margins between forecast railing and throughput capacity at all three ports.

5.4 Mine overview

Detailed forecasts of coal railings by mine and destination have been provided to the QCA as a confidential appendix to this report. An overview of the major changes (greater than one million tonnes per year) in coal railings that we are forecasting between fiscal 2011 and fiscal 2013 are as follows.

5.4.1 Major reductions

Only two mines are forecast to reduce coal railings by more than a million tonnes.

Blair Athol: Production is winding down towards closure as the mine's reserves near exhaustion.

Norwich Park: BHP Billiton announced in April 2012 that the joint venture partners intended to cease production at the mine indefinitely, as the mine had been "losing money for several months". We have assumed Norwich Park will not produce or rail any coal in fiscal 2013.

5.4.2 Major increments:

Blackwater: Recovery after the 2011 floods and industrial action.

Clermont: Clermont is the designated successor to Blair Athol, which will have exhausted its economic coal reserves by around 2016. Coal production commenced in the June 2010 quarter and is building up towards it ultimate production rate of 12.2 Mtpy.

Coppabella: Raw coal production has fallen to well below washery capacity since 2005. New owner Peabody Energy is focusing on overcoming an overburden deficit during 2012, while at the same time catching up on deferred major maintenance. These programmes and ongoing recovery from the 2011 wet season should result in some recovery in coal production in 2013.

Curragh: Curragh railings were severely affected by the extreme wet season of 2010/2011. A decision was taken in November 2009 to invest A$286 million to expand the Curragh mine to 8.0 – 8.5 million tonnes annual export capacity; excluding thermal coal railings to the Stanwell power station. The expansion is due for completion in the June quarter of 2012.

Dawson (Moura): Production in the first half of 2011 was only 2.4 million tonnes as a result of the severe Queensland wet season. Production improved to 5.2 million tonnes in the second half of 2011, which is the highest tonnage achieved in recent times. Average production levels of 9 million tonnes per year should be achievable in future.

Ensham/Yongala: Ensham has permits to produce up to 12 million tonnes per year of product coal. However the severe wet seasons of 2008 and 2011 impacted Ensham's opencast operations more than any other coal mine in Queensland. The Nagoya River runs between the Ensham pits and the Yongala pit, and the Nagoya River catchment area experienced amongst the highest levels of rainfall in the storm events of early 2008. Underground mining is commencing using two continuous miner sections operating simultaneously to produce around 1.7 million tonnes annually.

German Creek complex: German Creek production recovered from 2.9 million tonnes in the flood affected first half of 2011 to 4.3 million tonnes in the second half of the year - a recent high. Average production levels of eight million tonnes per year should be achievable in future.

Goonyella Complex: Recent performance has been impacted not only by industrial action and flooding, but also by patchy performance from the Broadmeadow longwall mine. Production has fallen from a peak of 14.7 million tonnes in 2007 to only 10.5 million tonnes in 2011. The owners, however, approved a life extension and small capacity expansion for Broadmeadow in 2011, and a sharp recovery in production from the opencast operations is expected as pit flooding is alleviated.

Hail Creek: In July 2004 Rio Tinto approved the Hail Creek capacity expansion from 5.5 to 8 million tonnes per year. The expansion included an additional dragline, which was commissioned in 2006. It has taken some years for the mine to ramp up production, in part due to port throughput entitlement limitations, but the mine is on track to produce near the 8 million tonne mark in the year to June 2012.

Isaac Plains: In April 2010 the Queensland government approved an increase in production from 2.0 to 3.6 million tonnes per year of raw coal, which would equate to 2.7 million tonnes of product coal at the average yield during fiscal 2011 of 75.9%.

Middlemount: Middlemount is, rather surprisingly, the only new mine to contribute substantial new production over this timeframe (excluding Clermont which is a replacement for Blair Athol). Government approval to increase production to 5.4 million tonnes per annum is expected to be granted by the end of the 2012 financial year.

Rolleston: Xstrata quotes the annual capacity of Rolleston as 8 million tonnes. In 2011 the mine produced 7.5 million tonnes despite its rail link being broken for two months in early 2011 by the floods. Production of 8 million tonnes therefore appears achievable in the 2012 and 2013 fiscal years.

Yarrabee: Yarrabee produced a record 2.43 million tonnes of marketable coal in calendar 2011. Overburden removal rose by 57% to 40.4 million bank cubic metres in 2011 as part of the first stage of an expansion of the mine. Yancoal's Organic Growth Strategy envisages annual mine production increasing to 3.2 million tonnes initially and then to 4.5 million tonnes when more port capacity becomes available.