
INDUSTRY OVERVIEW

We commissioned AME Mineral Economics (Hong Kong) Limited (“AME”), an industry consultant in the mining sector, to provide a report (the “AME Report”) for use in whole or in part in this prospectus. In particular, unless otherwise specified, all of the data presented in this Industry Overview has been based on or derived from the AME Report.

AME prepared its report based on its in-house database, independent third-party reports and publicly available data from reputable industry organisations. The information contained herein has been obtained from the official government and non-official sources believed by AME to be reliable. However, since such information is unavoidably subject to certain assumptions and estimates made by third parties, there can be no assurance as to the accuracy or completeness of included information. As certain economic data is collected on a sample basis or estimated by AME, each table and figure should be assumed to include estimated information.

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A total fee of US\$69,500 is payable to AME for the preparation and update of the AME Report.

AN INTRODUCTION TO COKING COAL

Coal is a common and widely distributed carbon-based energy natural resource, mined by both open-cut and underground mining methods. Typically, there are two main types of coal produced, based on the end-use of the coal, namely coking coal and thermal coal, both of which fall into the broad categories of Bituminous and Sub-bituminous Coals. The markets for coking coal and thermal coal operate relatively independently of each other.

Coking coal, also commonly referred to as metallurgical coal, is used to produce coke, which is used as a reductant in the manufacturing of iron and steel. To a lesser extent, coke is also used in the casting and smelting of base metals. Market participants typically refer to six types of coking coals based on specific characteristics of the coal, including the ash content, volatile materials, coke strength and fluidity. Lower ranked coking coals such as Semi-soft Coking Coals are used as either a coking blend component or as PCI coal. PCI coal is generally injected into a blast furnace to provide the required carbon in the iron-making process. However, there is no clear definition of coking coal apart from use in steelmaking.

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Thermal coal, also referred to as steaming coal, is primarily used as an energy source in the generation of electricity. Thermal coal covers all black coals other than those which are specifically designated as coking coal. In broad terms, all coals can be used as thermal coal, however, not all coals can be used for coking purposes.

Coking Coal Classification

There is no global standard by which coking coals are graded and classified.

Table 1: Types of Coking Coals

Coal Type	Approximate Chinese Equivalent Coal Type	Ash	Volatile Matter	Crucible Swelling Number	Coke Strength after Reaction
		% air dried	% air dried		%
Premium hard coking	Primary Coking Coal and	<8.5	19 - 38	8 - 9	55 - 74
Standard hard coking	Fat Coal	<9.7	19 - 38	6 - 9	>55
Semi-hard coking	1/3 Coking Coal and	8.0 - 10.5	17 - 26	4 - 6	50 - 60
Semi-soft coking	Lean Coal	8.0 - 11.0	25 - 41	3 - 8	45 - 55
Low-volatile PCI	Gas Coal, Meagre, Lean and	6.0 - 10.5	10 - 19	1 - 2	n/a
High-volatile PCI	Sticky Coals	4.0 - 10.0	26 - 42	1 - 5	n/a

Source: AME Report

Outside of China, references are typically made to six types of coking coal, broadly in accordance with the parameters set forth in Table 1. Chinese classification of coal however is based on a different system. Chinese coal classification developed in the late 1950s covering coal types from lignite to anthracite as set out in Table 2 below. This classification has been designated as one of China's National Standards, GB5751-1986.

There is no direct comparison between the Chinese and other international classifications. Chinese coal classifications have a finer and more detailed gradation. Generally, hard coking coals under typical international standards are equivalent to Primary Coking Coals and Fat Coals in China, while semi-soft coking coals are similar to 1/3 Coking Coals and Lean Coals in China.

Table 2: Chinese Coking Coal Classification (China National Standards — GB5751-1986)

Terminology in English	Coal Class Type	Terminology in Chinese	Volatile Matter (% air dried)	Chinese Caking Index (G)	Chinese Plasticity Index (Y)
Meagre Coal	PM	貧煤 Pin Mei	>10 - 20	<5	n/a
Meagre Lean Coal	PS	貧瘦煤 Pin Shou Mei	>10 - 20	>5 - 20	n/a
Lean Coal	SM	瘦煤 Shou Mei	>10 - 20	>20 - 65	n/a
Primary Coking Coal	JM	焦煤 Jiao Mei	>10 - 28	>50 - 65	<25
Fat Coal	FM	肥煤 Fei Mei	>10 - 37	>85	>25
1/3 Coking Coal	1/3 JM	1/3 焦煤 1/3 Jiao Mei	>28 - 37	>65	<25
Gas Fat Coal	QF	氣肥煤 Qi Fei Mei	>37	>85	>25
Gas Coal	QM	氣煤 Qi Mei	>28 - 37	>35 - 65	<25
1/2 Middle Sticky Coal	1/2 ZN	1/2 中粘煤 1/2 Zhong Nian Mei	>20 - 37	>30 - 50	n/a
Weak-Sticky Coal	RN	弱粘煤 Ruo Nian Mei	>20 - 37	>5 - 30	n/a

Source: AME Report

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GLOBAL COKING COAL INDUSTRY OVERVIEW

Pricing

Prices for all coking coal types are expected to grow for the period from 2010 to 2012. This is supported by the following factors:

- Current shortage of coking coal supply, particularly premium coking coal;
- Increased steel production targets supporting strong demand growth of coking coals in China and India;
- China's continuance to be a significant importer of coking coals;
- Traditional coking coal importers such as Europe, North America and Japan resuming contracted off-takes following recovery from the global financial crisis;
- Supply growth limited by port and rail infrastructure constraints, availability of capital funding and adverse weather conditions;
- Greater pricing power of producers resulting from industry consolidation and increased use of quarterly rather than annual pricing regimes during buoyant market conditions; and
- Scarcity of high-quality coking coal and acceptance of lower coking blends in blast furnaces may increase demand for lower quality coking coals.

Table 3: Benchmark Coking Coal Prices 2004 to 2012

	Japan-Australia Benchmark Coal Contract Prices								
	(Japanese fiscal year, US\$ per tonne, FOB, Nominal 2004-2009, Real 2010-2012)								
	2004	2005	2006	2007	2008	2009	2010F	2011F	2012F
Premium hard coking	58	127	114	96	300	129	217	226	235
Standard hard coking	56	125	107	89	289	120	206	214	222
Semi-hard coking	51	110	92	72	265	115	197	205	213
Semi-soft coking	43	80	58	64	240	83	164	169	175
High-volatile PCI	44	81	60	66	215	80	158	164	168
Low-volatile PCI	47	102	66	68	245	90	165	171	177

Source: AME Report

AME anticipates price growth may ease in the medium term, as new supply catches up with demand, especially with the expected emergence of relatively low-cost producers in Mozambique and Mongolia. Mozambique and Mongolia is likely to be well placed to meet the expected increase in demand from the Indian and Chinese steel industries over the long-term. In addition, bottlenecks that are currently faced with land-borne and seaborne trade are expected to ease as greater rail and port capacity is eventually commissioned.

Changes in Coking Coal Benchmark Pricing

Coking coal purchasers in Asia-Pacific have historically followed settlements in the dominant Japanese market, with contracts based on the Japanese fiscal year, from 1 April to 31 March. Negotiations for new contracts generally commence in December or January and are completed by March.

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For the quarter ending June 2010, many coking coal producers moved to a quarterly pricing regime, in line with contracts signed by iron ore companies. Under the previous annual contract pricing regime, coking coal producers were generally required to wait at least one year before prices could be renegotiated to reflect changes in market dynamics. Sensitive to market changes, during buoyant market conditions spot prices for coking coal are generally higher than contract prices. As such coal producers have a preference to negotiate prices more frequently to reflect spot price closer in bullish markets.

Recently, increased market consolidation through mergers and acquisitions, and supply shortages has provided producers with greater pricing power. Given the current buoyant market conditions and relatively high spot prices, major coking coal producers have opted for quarterly contract pricing. Continuing market buoyancy and increased frequency in price adjustments may support the rise in coking coal prices over the short term.

Demand

AME expects that tight demand and supply conditions in the global coking coal market may persist in the medium term. Demand growth, mainly driven by China and India, may outstrip the rate of new supply entering the seaborne coking coal market over the short to medium term.

Demand growth may remain at relatively high levels as China continues to maintain a substantial share of the globally traded coking coal market and India aims to ramp up its steel production. China's emergence as a significant importer of coking coal in 2009 has strained globally traded coking coal supply. Expected growth in Chinese and Indian crude steel production, together with the return of import demand from traditional coking coal importers such as Japan, Europe and North America, may add to the pressure on supply and create competition for available global coking coals.

A scarcity of premium coking coal supply and issues such as infrastructure capacity and bottlenecks in key export countries such as Australia, Mongolia, Mozambique and Russia may limit the ability of coking coal producers to increase supply to meet increasing demand. This may result in a shortage in supply in the short to medium term.

Tight demand and supply conditions in the global coking coal market, especially in the case of hard coking coal, are reflected in increases in price experienced. Benchmark contract price for Australian premium hard coking coal for the first quarter of the Japanese fiscal year increased by approximately 55% from the annual contract price in 2009 (US\$129 per tonne FOB). Similarly, spot price for Australian hard coking coal reached US\$248 per tonne FOB in May 2010, approximately 136% increase from the average spot price in May 2009 (US\$105 per tonne FOB).

The quarter ending September 2010 has seen a fall for both spot and quarterly contract prices. Contract prices for the quarter ending December 2010 have been settled at US\$209 per tonne FOB, down approximately 7% from the previous quarter. Spot prices have also fallen in July and August, 2010. Average spot price Australian hard coking coal was US\$203 per tonne FOB in July 2010.

In the long-term, it is expected that the key market drivers may be China's and India's increasing reliance on coking coals and the lack of domestic coking coal supply to meet the demand of these two countries.

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Figure 1: Demand Growth between 2008 and 2012

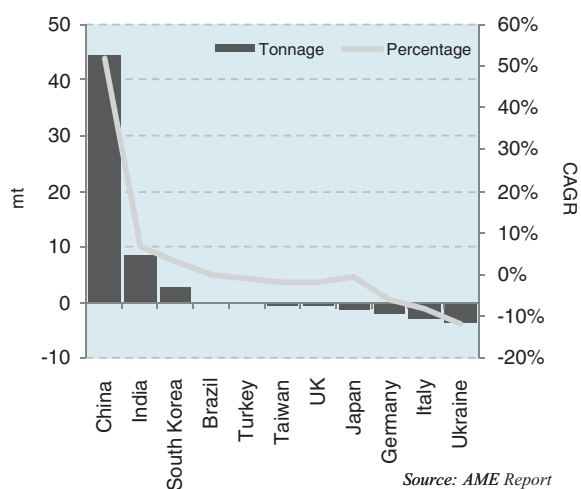


Figure 2: Global Traded Coking Coal Market Share in 2008 and 2012

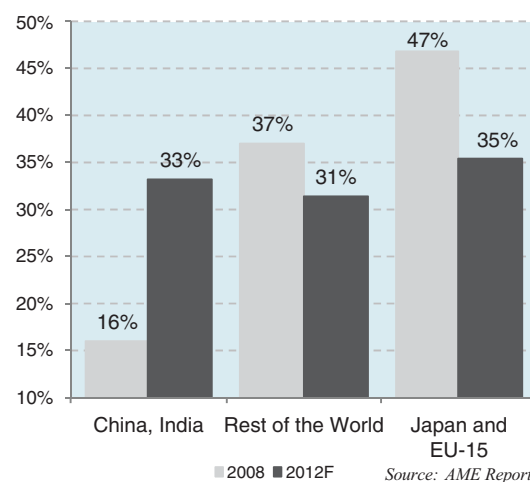


Figure 1 and Figure 2 show where the growth in coking coal imports may come from until 2012. China, India and, to a lesser extent, South Korea together comprise approximately 51 mt of growth in global coking coal demand between 2008 and 2012.

Reasonable demand growth is expected for traded coking coal based upon an annual global growth rate of approximately 4.5% as predicted by the International Monetary Fund. This is expected to be driven by long-term sustainable increases in import demand in China and India. Given China's gradual depletion of domestic coking coal reserves and the lack of coking coal reserves in India, there may be a shortage of domestic coking coal supply to meet demand from these two countries especially when it comes to premium hard coking coals. In addition, AME expects a steady demand recovery from traditional coking coal customers such as Japan, Europe and North America. Factors considered in AME's coking coal demand outlook include, amongst others, the following:

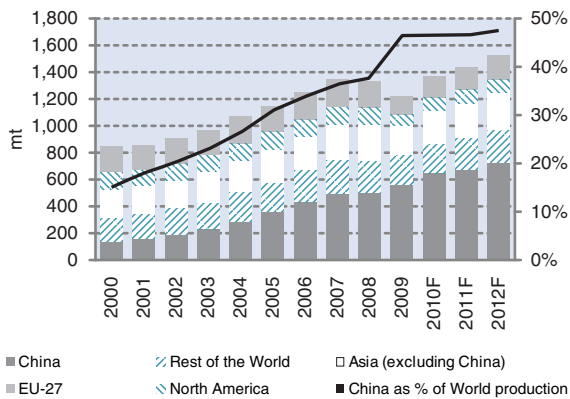
- China could be expected to continue to be a major factor in the internationally traded coking coal market. China's recent emergence as a net importer of coking coal has renewed optimism in the strength of demand but has caused supply shortages. AME assumes that China's coal industry may have insufficient production capacity to meet demand from its steel industry in the medium term. This could be driven by greater consolidation in the steel and coal mining industries. Ongoing coal mine safety campaigns and government pressure to close smaller, inefficient and unsafe coal mines may result in a lack of high-rank, high-quality coking coal supply;
- Indian demand could also be important, driven by a lack of domestic hard coking coal production and an ambitious steel industry expansion. India's national steel policy is targeting an additional 50 mtpa of steel production capacity by 2011. Given that India lacks domestic supply of high-quality coking coal, India is highly dependant on imports;
- Traditional coking coal customers such as those in Europe, Japan and North America are showing signs of recovery from the global financial crisis and returning to the seaborne coking coal market. Major coking coal producers have cited strengthening of re-stocking cycles in these countries, reflective of market stability and increased consumption. However, the expected long-term growth in these countries is expected to be relatively flat, especially in the Europe region;

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- Scarcity of premium hard coking coal is expected to have two implications. Firstly, the shortage may place greater demand pressure on high-quality coking coals and widen the premium for hard coking coal over coal with lower grades. Secondly, it may create a “flow-on” effect to other types of coking coals, driving demand for semi-soft and semi-hard coking coals and PCI coals, as a greater proportion of softer coals are used in coke blends; and
- Due to the scarcity of high-ranked coking coals, coupled with strong demand, steel makers have been evaluating coke mixes with larger proportions of lower ranked coking coals. The evaluation of new coke mixes is likely to be driven by potential cost-saving considerations. Increased acceptance of such new coke mixes may support growth in demand for lower-ranked coking coals such as semi-soft and semi-hard coking coals and high and low volatile PCI coals.

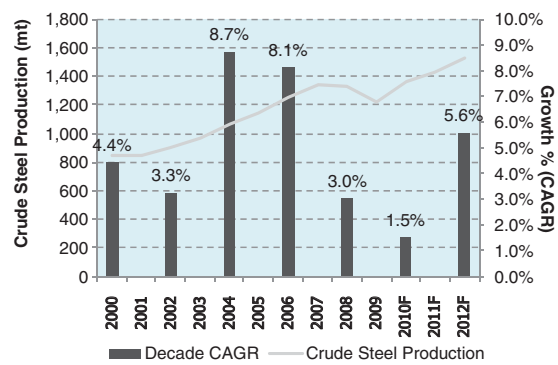
In Figure 4, AME forecasts global crude steel production to increase by an estimated 12% in 2010 as the world economy emerges from recession and GDP reverts to trend. Figure 3 shows that in 2009, approximately 1.2 bt of crude steel were produced. Crude steel production growth is expected to steadily increase at an approximate CAGR of 7.7% during 2010 to 2012. This outlook on crude steel production has prompted AME to upgrade forecasts for international coking coal demand. In 2009, approximately 222 mt of coking coal were traded. AME estimates global coking coal imports may grow at an approximate CAGR of 7.4% from 2009 to 2012.

Figure 3: Global Crude Steel Production 2000 to 2012



Source: AME Report

Figure 4: Global Crude Steel Production and Growth Rates 2000 to 2012



Source: AME Report

Over the longer term, as shown in Figure 6, AME expects coking coal demand growth to stabilise at lower and more sustainable levels. China is expected to maintain a significant position in the global seaborne market. AME expects that Chinese demand for coking coal imports may be driven by a fundamental shortage in domestic coking coal reserves, particularly of hard coking coal, beyond the short term. The proportion of high-quality coking coal used in a typical Chinese coke blend is greater than the proportion of high-quality coking coal that is estimated to comprise the Chinese coking coal reserve base. This potential lack of coking coal reserves increases the likelihood of China continuing to depend on coking coal imports. The economic recovery of Europe and North America is also likely to add to stable long term demand growth.

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Figure 5: World Coking Coal Consumption 2004 to 2012

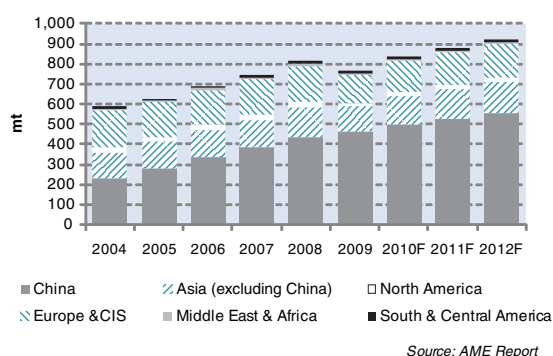
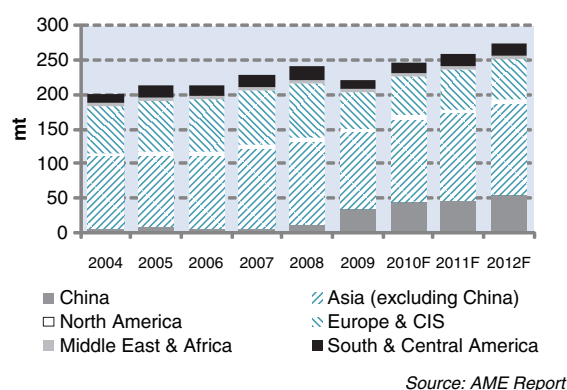


Figure 6: Internationally Traded Coking Coal Demand 2004 to 2012



Reserves

The process of quantifying minable coal is based on the assessment of several criteria including factors such as site geology and mining and economic viability. The quantity of coal deposited for a certain area and the amount of mineable coal may vary depending on the resource measurement criteria applied. The basis of resource and reserve assessment and classification applied varies from country to country.

References made to coal “resource” or “reserve” in this report refer to generally recognised definitions stated below (unless stated otherwise);

- **Resource:** This refers to coal that may be present in a deposit or a coalfield. This does not take into account the feasibility of mining the coal economically. Not all resources are recoverable using current technology.
- **Reserve:** This represent a part of resources that are economically viable to mine at a given point in time. Reserves can be defined in terms of proved (or measured) and probable (or indicated) reserves based on exploration results and the degree of confidence in those results. Proved reserves are considered to be highly confident of being recoverable economically, under current market conditions.

The data series for reserves and resources in this report does not necessarily meet the definitions, guidelines and practices used for determining reserves and resources at company level, for example the JORC Code (the Joint Ore Reserve Committee of the Australian Institute of Mining and Metallurgy) which has been adopted by the Australian and New Zealand Stock Exchange; UK accounting rules contained in the Statement of Recommended Practice, ‘Accounting for Oil and Gas Exploration, Development, Production and Decommissioning Activities’ (UK SORP) or as published by the US Securities and Exchange Commission. Rather, the data series has been developed by compiling a combination of third-party and country based data sources, which do not necessarily identify the specific resource measurement method used.

According to AME, at the end of 2008, total proved reserves of coal for the world were estimated to be approximately 826 bt. Of this total, global hard coal reserves accounted for approximately 411 bt of reserves. Hard coal consists of anthracite and bituminous coal which includes both coking and bituminous thermal coals.

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According to AME estimates for 2008, the hard coal reserve base for Russia and Australia was approximately 49 bt and 37 bt respectively. Russia is considered to have the third largest reserve base of anthracite and Bituminous Coals after the US and China, which have a reserve base of approximately 109 bt and 62 bt, respectively. Other countries include South Africa, accounting for approximately 30 bt, Canada, accounting for 4 bt, and Indonesia, accounting for 2 bt. Mongolia is estimated to have potential total coal reserves of approximately 100 bt. Most reserves are reported to be economically recoverable. For example, Tavan Tolgoi coal deposit has a reserve base of over 6.0 bt comprising coking and thermal coals. Despite a recent drive in exploration activity, especially in Mongolia, Mozambique and Australia, total reserves of hard coals have decreased by approximately 21% from reserve levels in 2000. The greatest fall in reserves came from Europe (excluding CIS countries) while reserves in Asia and Australia fell by approximately 18%.

Supply

The expected shortage of coking coals has spurred suppliers to attempt to expedite plans for new supply through numerous brownfield expansions and new projects in Australia, Canada, the US, Russia, Mongolia and Mozambique.

According to AME, the buoyant global market and high prices have initiated various plans to restart idled or closed mines over the next three years.

Despite the abundance of potential coking coal supply, growth in export supply is subject to the following two key limiting factors:

- Availability of rail and port infrastructure to support increases in production capacity. There are however several upcoming infrastructure developments due to come on stream in the medium term. The scarcity of supply has led to a growing emphasis on accelerating the development of new rail and port infrastructure to help ease the bottlenecks. This is especially evident along the east coast of Australia.
- Availability of capital funding. Following the global financial crisis the appetite for high-cost capital investments has dampened significantly. The scarcity of both equity and debt funding has had a direct impact on producers, who have delayed or cancelled numerous brownfield expansions and new projects over the last 24 months.

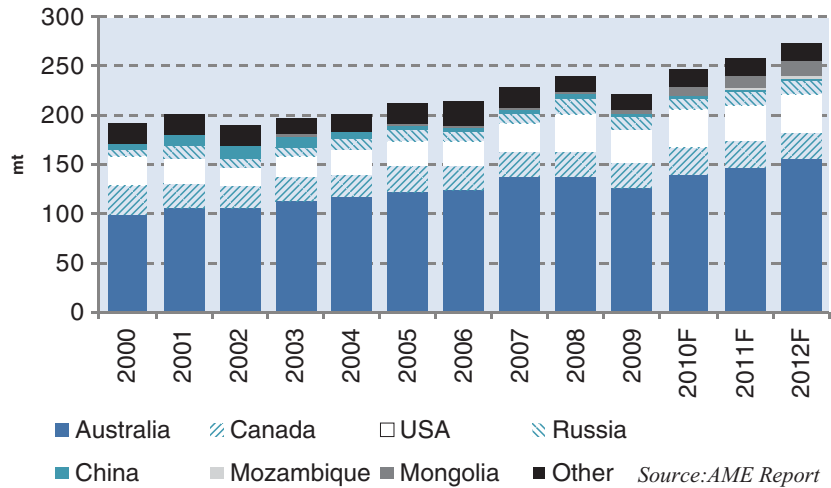
Coking coal exports from Russia may still be important to steel producers in Europe and the CIS, and increasingly to Asia. This is evidenced by continued coal trading between Russian coking coal suppliers and Japanese steel producers, recently settling quarterly contract price for low-volatile PCI at around US\$170 per tonne FOB for the quarter ending September 2010. However, due to a Government crackdown on the safety of Russian coal mines, and the remoteness and infrastructure constraints experienced by Russian coal producers, Russia is not expected to be a significant supplier to the seaborne coking coal market in the short term.

Australia has historically been the largest coking coal supplier in the world. In 2009, Australia exported approximately 125 mt coking coal, accounting for approximately 56% of global coking coal exports. AME expects that Australia is likely to remain as a major coking coal supplier in the short to mid-term. Despite the abundance of potential coking coal supply streams available in Australia, growth in export coking coal supply is limited by issues of port and rail access and availability of financing.

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As shown in Figure 7 below, Mongolia is emerging as a new supplier in the world coking coal market. If sufficient infrastructure is developed to alleviate transportation bottlenecks, the volume of Mongolian coking coal exports is expected to increase.

Figure 7: Coking Coal Exports by Key Countries 2000 to 2012



Transportation

The majority of coking coal traded is conducted via seaborne trade routes. Australia is the largest exporter of coking coal in the seaborne market, accounting for approximately 50% of global coking coal export supply. Australia supplies coking coal mainly across the Pacific region.

As shown in Figure 8 below, key global seaborne trade routes include the route from Eastern Australia to Northeast Asia, including China, Japan and South Korea, the route from Indonesia to Northeast and the Atlantic region, the route from South Africa to Europe and Asia, the route from the US to Northeast Asia (via the Pacific ocean), the route from Canada to Europe and Asia, and the route from China to Northeast Asia.

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Land-based coking coal routes are typically used amongst countries of the CIS, Europe and Northern Asia, principally Mongolia and China.

Figure 8: Key World Coking Coal Trade Routes



CHINESE COKING COAL INDUSTRY OVERVIEW

Pricing

In China, there are two types of pricing for coking coal: term contracts and spot sales. Large coal mining companies usually sign long-term contracts, typically for one year, with coke plants or steel makers. Generally, the term prices are lower than spot prices, but prices are adjusted through negotiation if there are significant market changes.

Spot prices in China may differ between regions. Numerous grades and differing properties of coking coals between regions contribute to price variations. On a general basis, coal produced in Northeast China are priced higher. Generally, coking coals in the North and Northeast China are better in quality and have more consistent seam lines, while coals sourced from the southwest, near the Tibetan border, and southeast are typically lower quality coals.

Table 4: Estimated Spot Price⁽¹⁾ — by Region and by Coal Type

<u>Province/City</u>	<u>Clean 1/3 Coking Coal</u>	<u>Province/City</u>	<u>Clean Coking Coal</u>
Hebei	1,293	Hebei	1,430 ⁽²⁾
Inner Mongolia	1,050	Inner Mongolia	1,190
Liaoning	1,238	Linfen	1,415
Linfen	1,293	Taiyuan	1,365
Shandong	1,275		

Source: AME Report

Note: Prices are provided on a FOR basis (RMB per tonne including VAT, as at July 2010)

(1) An estimate of average spot prices by region and by coal type has been provided.

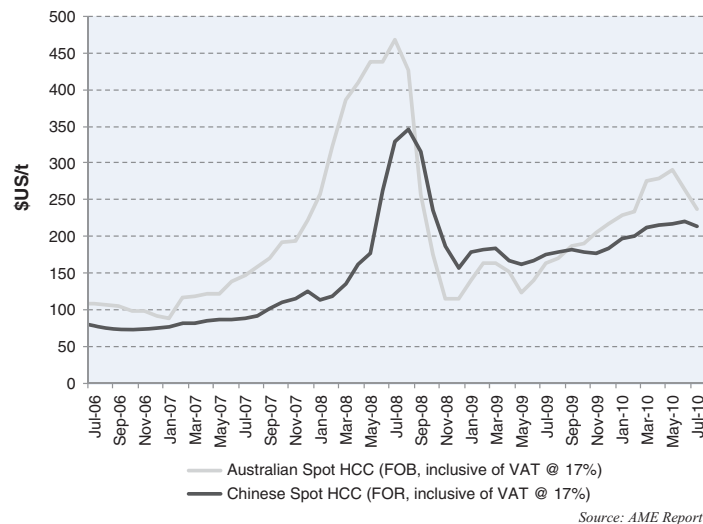
(2) Ex-works price basis.

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In the seaborne market, recent coking coal price increases have affected the Australian spot market. For the current year to date, spot prices for Australian hard coking coals exported from Newcastle, have increased by approximately 30% from US\$193 per tonne in January to approximately US\$250 per tonne in May (excluding VAT). These price increases have affected China to a lesser extent where spot prices have increased 15% for the year to date. This is reflective of the scarcity of hard coking coals and China's appetite for coking coal imports. Notwithstanding relatively higher prices, China has continued to import Australian hard coking coals.

After peaking in May, Australian hard coking coal spot prices fell during June and July, reaching an average of around US\$237 per tonne (inclusive of VAT) in July. Similarly, the Chinese hard coking coal equivalent spot price fell from June, reaching an average of around US\$213 per tonne FOB (inclusive of VAT) in July 2010.

Figure 9: Historical Spot Price — Australian Hard Coking Coal vs China Hard Coking Coal Equivalent



Demand

China's recent emergence as a net importer of coking coal has renewed optimism in the strength of demand but has caused supply shortages in the medium term. Chinese demand, combined with the economic recovery of traditional coking coal importers such as Europe, North America and Japan, have amplified the shortage of high-quality coking coal. AME predicts China may continue to be a major player in the internationally traded coking coal market as demand from Chinese steel production is expected to exceed domestic coal production.

By producing approximately 568 mt of crude steel in 2009, China accounted for approximately 47% of the world's total output, a sharp increase from 2008, when China produced approximately 38% of global crude steel. The significant rise was mainly due to the slowdown in the crude steel output experienced in other major steel producing regions.

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Over the next five years, the global steel market is expected to witness increases in steel output to meet recovering steel demand. As shown in Figure 10, Chinese crude steel production may reach an estimated 724 mt in 2012. In AME's view, China's steel industry has matured and although future growth may continue, it is likely to be at a slower pace than the rapid growth experienced between 2000 and 2007. Future increases in new steel production capacity are expected to be heavily regulated by the Chinese government.

Figure 10: Global Crude Steel Production 2000 to 2012

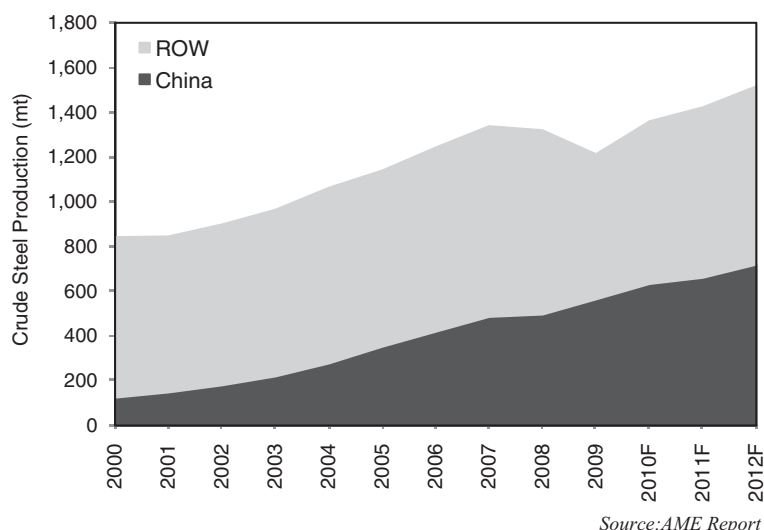


Table 5: Top 10 Steel Producing Provinces/Municipalities

<u>Provinces/Municipalities</u>	<u>Crude Steel Production (mt)</u>						<u>2009 Domestic Production Share</u>
	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	
Hebei	59	74	91	107	116	135	24%
Jiangsu	25	33	42	47	49	55	10%
Shandong	20	32	38	44	45	49	9%
Liaoning	26	31	38	41	41	48	8%
Shanxi	13	17	20	25	23	26	5%
Henan	10	12	18	23	22	23	4%
Shanghai	18	19	19	21	20	20	4%
Hubei	14	16	17	18	20	20	3%
Anhui	9	11	13	17	18	18	3%
Tianjin	7	10	13	16	17	21	4%
Top-5 Total	143	186	229	265	273	313	55%
Top-10 Total	201	254	307	359	369	415	73%
China	280	356	423	489	500	568	

Source: AME Report

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Increasing Chinese demand may exert significant influence on the global hard coking coal export market, with the potential displacement of hard coking coal demand towards lower-quality coking coals. In addition to China's lack of high-quality coking coal reserves, there are two other key drivers AME considers pertinent:

- Industry consolidation in Chinese coal sector: Increased consolidation in the coal mining industry is also occurring. For instance, Shanxi province, China's largest coal-producing province, is planning measures to expedite the closure of smaller and unsafe coal mines and consolidation within the coal mining industry, which could lead to an estimated 30% reduction in raw coal output from Shanxi province; and
- Increased competitiveness of hard coking coal imports due to lower freight rates: China's new steel production capacity is under continuing expansion in the eastern coastal regions, closer to ports, and utilities. This is likely to increase the competitiveness of Australian coking coal producers compared to local suppliers from Shanxi and Inner Mongolia. Similarly, the emergence of Mongolia as a significant producer of coking coal is supporting the competitiveness of coking coal imports.

Table 6 and Table 7 below provide an estimated outlook on the amount of coking and hard coking coals required by China and the estimated life of reserves remaining respectively.

Table 6: Chinese Production of Low-volatile Coking Coal and Fat Coal 2008 to 2012⁽¹⁾

	<u>Estimated Primary Coking Coal production (mt)</u>	<u>Estimated Fat Coal production (mt)</u>	<u>Estimated growth in coking coal industry</u>	<u>Estimated hard coking coal reserves (mt)</u>	<u>Estimated life of reserves⁽¹⁾ (yr)</u>
2008	105	45	13%	3,563	19
2009	106	45	1%	3,379	18
2010F	113	48	6%	3,146	15
2011F	118	50	5%	2,903	12
2012F	123	52	4%	2,638	11

Source: AME Report

Note:

(1) For simplicity in this piece of analysis, AME assumes the proportion of low-volatile coking coal and fat coal remains constant to 2012. Growth rates are based on of AME's forecast for the production of all types of coking coal. "Life of reserves" calculated based on previous year's consumption.

Table 7: Chinese Steelmaking Coal Requirements 2008 to 2012⁽¹⁾

	<u>Estimated pig iron production (mt)</u>	<u>Estimated coking coal requirement⁽¹⁾ (mt)</u>	<u>Estimated hard coking coal requirements (mt)</u>
2008	471	366	183
2009	543	424	212
2010F	547	466	233
2011F	569	487	243
2012F	600	529	265

Source: AME Report

Note:

(1) Coking coal requirement based on 1.3 tonnes of coking coal required to produce 1 tonne of coke and 0.6 tonnes of coke to produce one tonnes of pig iron. Pig iron production refers to AME's forecasts.

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In line with growth in steel production, Chinese consumption of coking coal is expected to increase at rates above 10% over the next one to two years. In the longer term, the International Monetary Fund predicts that the annual growth rate of Chinese coking coal consumption is likely to be at approximately 4% to 5% as the Chinese economy matures and steel production slows.

Reserves

Classification and estimation of reserves may vary country-to-country due to different quality standards. According to Chinese-based data, Chinese coking coal reserves totalled approximately 62 bt in 2008. An estimated breakdown of China coking coal reserves by regions is provided in Table 8 below.

Similar to general international standards, the China Solid Mineral Resource or Reserve classification system is based on economic viability, geological knowledge and relative confidence in the feasibility or exploration results. China generally classifies mineral resources or reserves into three classes, reserves, basic reserves and resource reserves.

Table 8: China Coal & Coking Coal Reserves (2008) (bt)

Region	Coking Coal Reserves⁽¹⁾	Coking Coal Basic Reserves⁽²⁾	Coking Coal Resource Reserves⁽³⁾	Total Coking Coal Identified Reserves⁽⁴⁾	Total Coal Identified Reserves⁽⁴⁾
Beijing	-	-	0.1	0.1	2.3
Tianjin	-	0.3	0.1	0.3	0.4
Hebei	1.3	3.5	5.1	8.6	14.6
Shanxi	33.2	60.7	92.9	153.6	263.4
Inner Mongolia	2.1	3.9	3.3	7.1	289.3
Liaoning	1.1	1.9	0.5	2.4	7.1
Jilin	0.2	0.3	0.2	0.6	2.9
Heilongjiang	0.9	4.8	4.7	9.5	22.0
Jiangsu	1.0	1.8	1.8	3.6	3.7
Zhejiang	0.0	0.0	0.0	0.1	0.1
Anhui	4.1	10.1	9.9	20.0	25.2
Fujian	0.0	0.0	0.0	0.0	1.2
Jiangxi	0.3	0.5	0.3	0.8	1.4
Shandong	4.2	9.2	9.8	18.9	24.7
Henan	2.4	3.8	5.5	9.3	26.0
Hubei	0.0	0.1	0.1	0.2	0.7
Hunan	0.2	0.4	0.3	0.7	3.1
Guangdong	0.0	0.0	0.0	0.0	0.6
Guangxi	0.0	0.1	0.1	0.1	2.3
Sichuan	0.9	1.5	1.3	2.8	10.8
Chongqing	0.3	0.6	0.6	1.2	3.0
Guizhou	3.9	6.2	3.7	9.9	51.4
Yunnan	1.9	2.9	2.4	5.3	26.8
Tibet	-	0.0	0.0	0.0	0.1
Shaanxi	1.2	2.0	3.3	5.3	165.8
Gansu	0.3	0.5	0.7	1.2	10.7
Qinghai	0.3	1.1	2.5	3.6	4.9
Ningxia	0.7	1.7	2.2	3.9	31.2
Xinjiang	1.0	2.7	6.7	9.4	161.0
Hainan	-	-	-	-	0.2
Shanghai	-	-	-	-	-
TOTAL	62	121	158	279	1,157

INDUSTRY OVERVIEW

Source: AME Report

Notes:

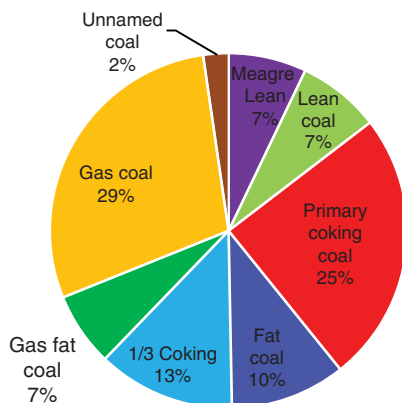
- (1) “Reserves” means the actual recoverable quantity of coking coal.
- (2) “Basic Reserves” means resource reserves that have been indicated or proven (reserve is a subset of basic reserves).
- (3) “Resource Reserves” means reserves of lower confidence and marginal economic viability.
- (4) “Total Identified Reserves” is the sum of Basic Reserves and Resource Reserves.

In 2008, according to Chinese mineral resource and reserves classifications, total coking coal identified reserves represented approximately 24% of total coal identified reserves in China. Considering the depletion of coking coal reserves and the relatively high use of coking coal in Chinese blast furnaces, there is a growing concern that there may be a lack of domestic coking coal supply in the long-term.

China’s coal resources lack low-to-medium volatility, high-fluidity hard coking coal in any great abundance. This may be an issue as the Chinese steel sector moves towards increased consolidation and larger blast furnace sizes, as larger blast furnaces generally demand higher-quality coking coals.

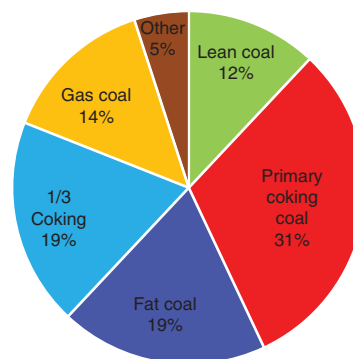
Figure 11 and Figure 12 below represent the estimated Chinese coking coal reserves by type and the estimated typical Chinese coke blend, respectively. The primary coking coal and Fat Coal are Chinese termed names and are relatively equivalent to hard coking coals. While these coals represent only one third of Chinese reserves, they represent approximately half of the coke blend. This raises concerns over the long-term availability of domestic premium coking coal supply. In addition, the typical Chinese coke blend could increase its hard coking coal proportion as the Chinese steel industry modernises with the addition of larger blast furnaces, which may add to the pressure on the long-term supply of domestic premium coking coal. Larger blast furnaces require the use of higher-quality coking coals to maintain the burden strength.

Figure 11: Chinese Coking Coal Reserves by Type



Source: AME Report

Figure 12: Typical Chinese Coke Blend

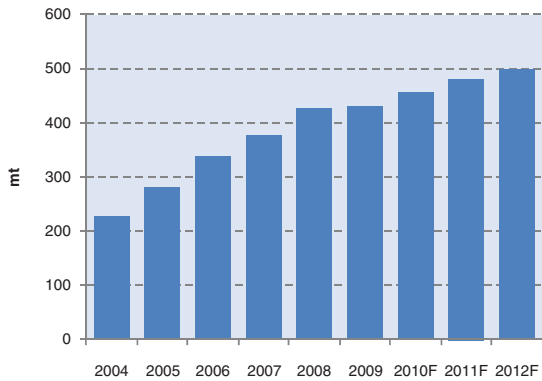


Source: AME Report

Supply

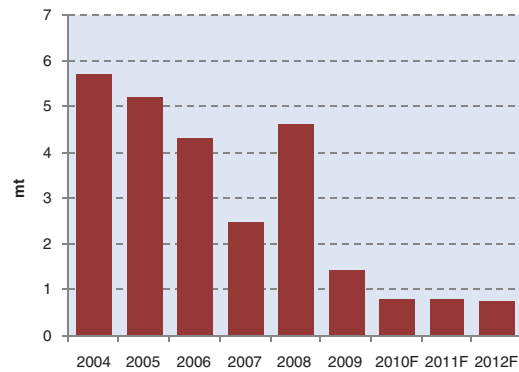
Insufficiencies in Chinese domestic coking coal production may be driven by greater consolidation in the coal mining industry. Ongoing coal mine safety campaigns and growing government pressure to close smaller, inefficient and unsafe coal mines are expected to add to the lack of high-rank, high-quality coking coals. Over the longer term, the depletion of Chinese hard coking coal reserves could add to China’s dependence on coking coal imports. This is particularly the case for premium hard coking coals, as they account for approximately 50% of the coke blend.

Figure 13: Chinese Coking Coal Production 2004 to 2012



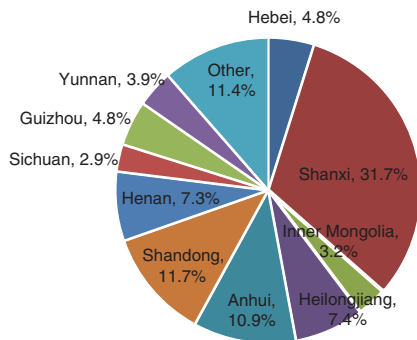
Source: AME Report

Figure 14: Chinese Coking Coal Exports 2004 to 2012



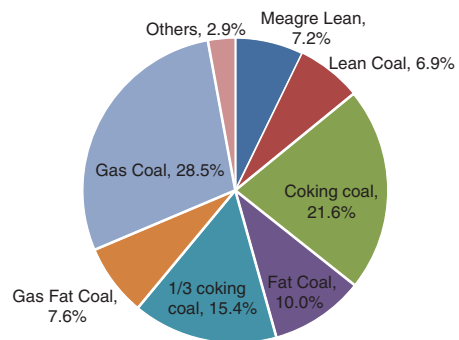
Source: AME Report

Figure 15: Percentage of Chinese Coking Coal Production by Region



Source: AME Report

Figure 16: Percentage of Chinese Coking Coal Production by Coal Type



Source: AME Report

Given China’s crude steel production targets, growth in China’s demand for coking coal is expected to exceed potential increases in domestic coking coal supply. This is reflected in the expectation that China is likely to continue to be a net importer of coking coal.

Growth in China’s domestic supply of coking coal is expected to be limited. In the short term, the consolidation of the coal industry is likely to restrict the growth potential of China’s domestic coking coal supply. However, the expansion of larger and more productive mines that remain post-consolidation will likely be easier to implement and may lead to relatively higher yields. In the longer term, the availability of coking coal reserves is likely to be a limiting factor on supply growth.

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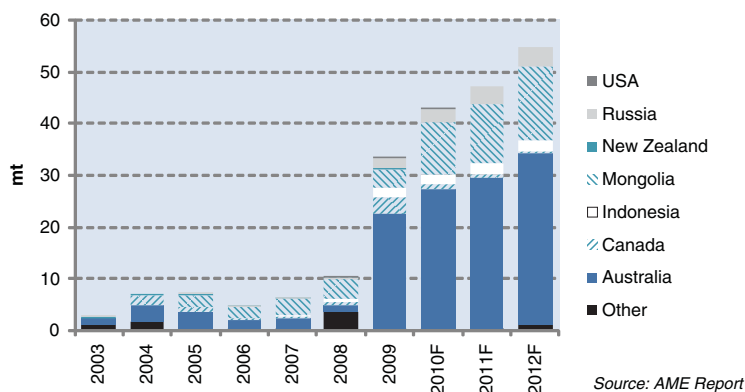
Imports

Chinese demand for coking coal imports is estimated to increase by over 20% in 2010. As shown in Figure 17 below, coking coal imports have grown by over four times since 2008 when China had less than a 3% share of the global coking coal trade market. This increase is due to the shift in purchases by Chinese steel plants away from the tight domestic coal market and towards the overseas market in 2009.

AME forecasts China's share of the global coking coal trade may grow to approximately 19% in the medium term and rise over 20% in the long-term. AME expects long-term demand for coking coal may be supported by shortages in domestic reserves and supply, particularly of premium hard coking coal. Factors considered in AME's coking coal China imports outlook include, amongst others, the following:

- As growth in domestic coking coal production gradually slows, growth in coking coal imports is likely to consequently increase to satisfy the growing demand. By 2012, China may import around 55 mt of coking coal;
- In the long run, it is expected that China may become a key importer of coking coal. This is not only because China lacks high-quality hard coking coal, but also because much of China's new steel production is expected to be located on the east coast, closer to ports, energy and water sources. With sea freight rates expected to remain depressed for some time, the competitiveness of Australian producers compared to mines in Shanxi and Inner Mongolia is likely to increase; and
- The emergence of Mongolia as a significant coking coal supplier to China may displace relatively less competitive countries such as Canada and the US, which have generally been swing suppliers of coking coal in the seaborne market, particularly in the Asia-Pacific region.

Figure 17: China Coking Coal Imports 2003 to 2012



Cost Benchmarking

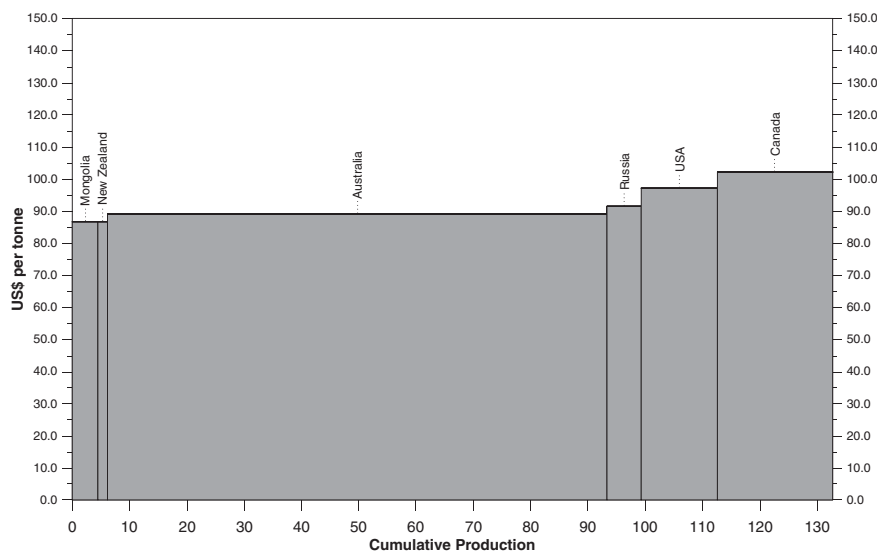
Figure 18 below represents a preliminary operating cost analysis performed by AME in which Mongolian operating costs are compared to other hard coking coal export countries along a "cost curve".

Based on a preliminary operating cost analysis of hard coking coal export countries, at approximately US\$85 per tonne CIF (to Hebei, China), Mongolian hard coking coal cost is relatively

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comparable to Australian and New Zealand CIF cash cost to China and is competitive against North American hard coking coal cost. Assuming delivery to the Hebei area in China, Australian hard coking coal cash cost is estimated to be at approximately US\$89 per tonne. Canadian and US CIF cash cost to China is estimated to be approximately US\$97 to US\$102 per tonne including port handling and rail transportation cost within China. Russian hard coking coal cash cost is also relatively higher at approximately US\$91 per tonne CIF. The higher costs are mainly due to the cost of hauling coals over long distances into China.

**Figure 18: Estimated Export Hard Coking Coal Mine Cash Costs by Country
(US\$ per tonne CIF)**



Source: AME Report

Notes:

- (1) Figure 18 illustrates the global hard coking coal industry cash costs based on estimated company operating cost breakdowns, including labour, mining and processing, royalties, haulage, freight and port handling. The estimated cost position of Mongolia is shown as a grey strip along the cost curve. The cost curve is based on 2010 calibrated and benchmarked cash costs and subsequent updates.
- (2) Mongolian hard coking coal CIF cash costs are estimated to be approximately US\$80-90 per tonne based on available relevant information. Mongolian hard coking coal export production is estimated to be in the order of 4.4 mt.
- (3) To construct cost curves and undertake industry analysis, AME analysts compile information from a variety of sources, including reports made available by producers, direct contact and trade publications. Consequently, AME makes no warranty or representation regarding this cost curve or metallurgical coal industry information, and it should not be relied upon. In addition, the time required to produce cost curves means that even the most recent available examples will be unable to take account of recent developments. In some cases, the most recent available cost curve may be based on data that is several years old. Cost data for specific producers may be based on costs incurred by the producers over their respective accounting years; to the extent these differ, the direct comparability of their costs may be limited. Moreover, all cost curves embody a number of significant assumptions with respect to exchange rates and other variables. Thus, the manner in which cost curves are constructed means that they have a number of significant inherent limitations.
- (4) Cost curves are based upon a set of assumptions and limited data, and as such are estimates of actual costs. Mongolian hard coking coal production costs are estimated to be around US\$80-90/t based on available relevant information. Mongolian hard coking coal export production is estimated to be in the order of 4.4 mt. AME's work uses a wide range of public domain and industry data sources. AME then compiles, interprets and analyses this data to make estimates of mines in production which may contain inconsistencies or be otherwise unreliable.

Transportation

Railway

The capacity of rail infrastructure has been a limiting factor to the expansion of China's domestic coking coal industry. There is a current push for China to expand and increase the capacity of its rail network.

The top three coal producing provinces in China are Shanxi, Inner Mongolia and Shaanxi, all located in northwest China. Shanxi is the largest coking coal producing province in China, accounting for over 30% of the Chinese coking coal production. Coal produced in this region is generally hauled by rail to ports in the northeast. Coal is then typically transported by vessel to customers in the Yangtze River Delta and Pearl River Delta.

Currently, the Daqin and Shenhuang rail lines are considered to be the two main trunk rail lines that are capable of transporting large volumes from the northwest China region. Total capacity of the two lines is estimated to be approximately 450 mtpa. This capacity is insufficient to support the transport of coal produced in and around the region, the growth and size of coal traded has strained the Chinese rail system.

Accordingly, among other things, the following efforts have been taken in China to expand and increase the capacity of its railway network:

- Coal production in Inner Mongolia has grown significantly, adding pressure on the railways in the region. In 2009, raw coal production volume in Inner Mongolia was similar to that of Shanxi. In an effort to ease bottlenecks along railways, the Ministry of Railway and Inner Mongolia Government signed a memorandum of understanding in March 2010 to expedite the improvement of the railway network in Inner Mongolia. The implementation of such plans is likely to facilitate the transportation of coal out of Inner Mongolia to other parts of China;
- In line with the memorandum of understanding between the Ministry of Railway and Inner Mongolia Government, currently new railway lines are in the process of planning and development. The railways are expected to transport coal out of the Erdos region and connect the railway network in Inner Mongolia with the Caofeidian port in Hebei province. The proposed new lines include the DaMa Line (大馬線), the New BaoShen Line (新包神線) and the Zhangjiakou — Tangshan Line (張家口-唐山線). In eastern Mongolia, the Chisui Line (赤綏線) is being built to transport coals from Eastern Mongolia to Huludao port (葫蘆島港) in Liaoning province;
- Bank of China, China's third largest lender, expects to invest RMB7.5 billion to assist in developing a 1,260km railway between northern China's major coal producers and port cities to the south. The proposed railway is planned to pass through Shanxi, Henan and Shandong provinces;
- As part of the nation's push to increase the capacity of China's railway network and ameliorate the growing demand pressure driven by recent economic growth, funds from the Chinese Government's recent four trillion RMB stimulus package are being contributed to expand the rail system;
- The upgrade and maintenance of the Daqin railway, which is considered to be the country's leading coal-dedicated railway, has been completed, and rail capacity was increased to

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400 mtpa from 350 mtpa. This recent upgrade has helped increase coal transport volumes at one of China's largest ports, Qinhuangdao port; and

- The construction of the Shanxi to Shandong railway is scheduled for completion in the next four to five years. The railway will link Shanxi coal mines with ports such as Rizhao. The project cost is estimated to be RMB99.8 billion.

Ports

China is reported to have around 30 ports along its coastline. These ports have strategic importance in transporting seaborne coking coal into China and coal from Northwest China to Southeast China. The three largest coal freight ports include Qinhuangdao, Huanghua and Tianjin. These three ports account for over 70% of coal transport volume. Table 9 below sets out the approximate coal transport volume at Chinese ports for 2006 to 2009.

Table 9: Coal Transport Volume at Chinese Ports (mt)

<u>Total transport volumes</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Domestic Sales	345	411	463	442
Foreign Sales	62	53	47	24
Total coal transport volume	408	463	510	467

Source: AME Report

MONGOLIAN COKING COAL INDUSTRY OVERVIEW

Mongolia is considered by some market observers to be one of the last untouched frontiers in terms of potential coking coal supply. Recent surveys suggest that there are approximately 300 coal deposits identified across 15 coal basins stretching throughout Mongolia. Most of the coal resources are situated in the eastern and southern portions of Mongolia in proximity to China.

Given the insufficient supply of oil and natural gas, coal is considered to be Mongolia's main energy source. As a country of an estimated 2.7 million people with relatively little industrial activity outside of agriculture and mining, growth in domestic consumption of coal, especially coking coal, is likely to be limited.

It is only since 2004 that Mongolia began expanding coal production to cater to the export coal market. Approximately 162.3 bt of coal resources have been recognised. Preliminary and detailed exploration activities in 2008 show a coal reserves base of approximately 23 bt. Proved coal reserves account for approximately 12.2 bt, comprising of approximately 2 bt of coking coal.

Most of the Mongolian coal mines, including Tavan Tolgoi, are open-cut mines, where the majority of the coal deposits are close to the surface. Favourable mining conditions at open-cut mines allow miners to generally extract raw coals more economically than underground mines. Mongolian open-cut coal mines may also potentially expand production capacity relatively easily while keeping lower production costs.

Given the lack of infrastructure in the immediate term, including but not limited to established sources of water and electricity, Mongolia is generally considered to be not an ideal location to set up and operate coal processing facilities. Therefore, at this stage, Mongolian coal producers typically supply raw coking coal directly to their customers.

Mongolian Coal Trade

The key driver behind Mongolia’s future production expansion is likely to be demand from China, and, to a lesser extent, demand from Russia, South Korea and Japan. Mongolian coal exports have been, and will likely continue to be, predominantly driven by Chinese import demand. As a landlocked country, the cost advantage of transportation and the relatively high premium coking coal demands from China have driven a robust growth in exports of coking coals from Mongolia.

According to the Mineral Resource Authority of Mongolia, exports of Mongolian coal commenced in 2003. For the period 2003 to 2008 coal exports from Mongolia have grown by approximately 52% CAGR. Total production of Mongolian coal in 2009 is estimated at approximately 13.2 mt, with exports accounting for approximately 7.0 mt or approximately 53% of the total production.

From 2003 and 2004 most or all of the Mongolian coal exported was sent to China. Other countries such as Russia began importing coal from Mongolia in 2005. Figure 19 shows that between 2005 and 2009, China accounted for an average of approximately 93% of total Mongolian coal exports. An average of approximately 88% of total Mongolian coal was exported to China in 2009. Additional thermal coal of approximately 2 mt was exported to China in 2009.

Figure 19: Mongolian Coal Exports 2005 to 2009

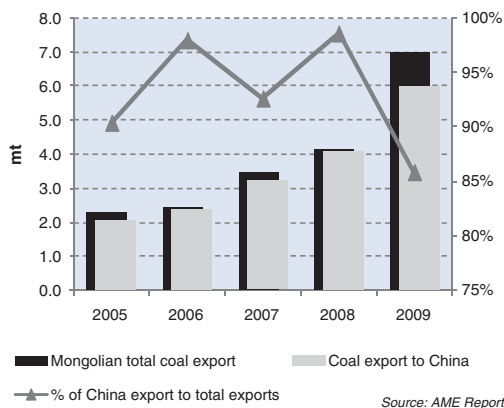
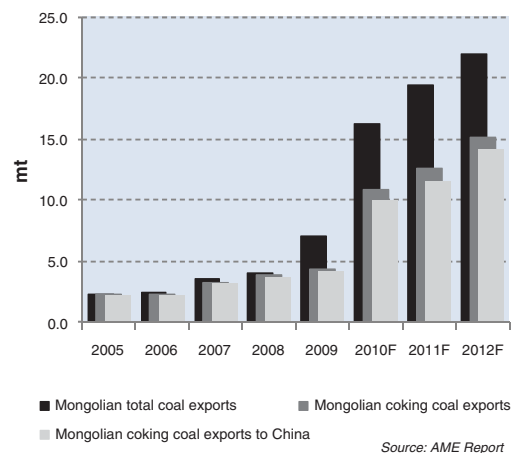


Figure 20: Mongolian Coking Coal Production and Exports to China 2005 to 2012



Recently there has been a significant ramp up in Mongolian production and exports to China. Over the first six months of 2010, approximately 5.8 mt of coking coal has been exported to China. This represents a greater than four-fold increase in exports compared to the same period in 2009. Robust growth relative to previously conservative export growth rates is expected to continue in the short to medium term due to increased demand. In the long-term, Mongolian premium coking coal supply, at a competitive cost, may replace supply from other producing countries such as Russia and Australia.

Accordingly, AME has revised and increased its forecasts for Mongolian coking coal exports. Mongolian coking coal exports are expected to be ramped up to approximately 10 mt in 2010. Robust growth is expected to continue amid increasing foreign and domestic investment in the Mongolia coal industry. Such investments are aimed at developing and expanding new and existing mines to complement growing Chinese demand.

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Mongolian Export Coking Coal Production

Given the buoyant market conditions, proximity to China and high demand growth from China aided by the possibility of exporting coking coal to Japan and South Korea, coal production in Mongolia is expected to accelerate in the future. However, the future production growth rate of Mongolian coal is subject to a number of limiting factors, for example:

- the recent suspension of the issuance and transfer of mining permits may have a limiting impact on the development of new supply streams;
- infrastructure needs to be improved before larger scale exports to China can occur; and
- future potential exports to Russia will be subject to governmental consent and Russian funded investment in infrastructure and mine development.

Mongolia's total coal exports could potentially grow to over 20 mtpa over the next three to four years, subject to the outcome of privatisation programs, other governmental policies and the extent of foreign investment. This would take total coal production to around 30 mtpa in that time.

In the long-term, Mongolian output could potentially ramp up to above 50 mtpa, subject to a range of issues, such as transportation infrastructure capacity.

Transport Infrastructure

Mongolia is landlocked by Russia to the north and China to the south. Neither rail system in the neighbouring countries has sufficient additional capacity to cope with a large-scale expansion of Mongolian coal exports. The Mongolian Government is currently examining its railway policy to seek greater control over its assets. Investment in rail is believed to be premature as the Mongolian Government continues to debate over issues such as rail routes, gauge of lines and ownership of future links.

A high proportion of Mongolia's reserves have not been developed due to the lack of infrastructure. Most of the country's current small mines are limited by lack of infrastructure. According to the Ministry of Fuel and Energy of Mongolia, approximately US\$1 billion of infrastructure investment is expected to be injected by 2012 or 2013. The development of the infrastructure projects will increase the volume of coking coal that Mongolia will be able to export.

RUSSIAN COKING COAL INDUSTRY OVERVIEW

Russia has some of the largest coal reserves in the world, second only to the US, with a total coal reserve base of approximately 157 bt, of which 49 bt are hard coal reserves. In 2008, Russia is estimated to have produced 65 mt of coking coal. Approximately 76% of Russia's production of coking coal is consumed domestically, with the remaining approximately 15 mt being exported mainly to Europe and Northern Asia. Historically, Japan has been the largest importer of Russian coal, followed by European countries such as Romania, Bulgaria, Finland, Spain and Greece. Russia is also reported to supply coking coal to North Korea.

There are close to 300 mines in Russia, three quarters of which are underground mines. Nearly 75% of Russia's proven coal reserves lie in the coal basins east of the Urals in the Siberian Region. Major coal producing basins in this region include the Kuznetski, Kansk-Achinsk and Irkutsk, in the

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south-central part of Russia, and the South Yakutsk coal basin, in the far-east. With the exception of Kansk-Achinsk, the remaining coal basins produce Bituminous or Anthracite Coal.

In addition, the two most significant and predominately undeveloped basins are the Tunguski and Lenski, both of which lie in the north-central and north-eastern portions of Russia in Western Siberia and the Russian Far East, respectively. These basins are considered to be the two largest in Russia in terms of both area and coal resource potential.

Russian Coal Trade

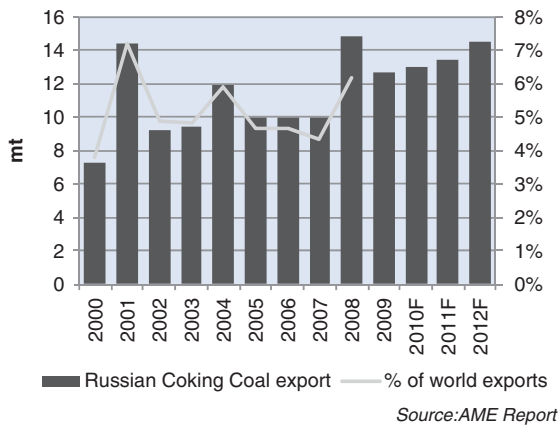
Russian coking coal exports fell by an estimated 20% to 11.6 mt in 2009.

For the first time, Japanese fiscal year 2009, Russian producers started to negotiate long-term coking coal contracts with Japanese steel makers. Hard coking coal prices were settled at mid-US\$90s, while low-volatile PCI prices yielded US\$80 to 85 per tonne. In order to maintain operational ratios, Russian hard coking coal needed an outlet and given the downturn in European demand, Asian steel makers became the desired destination. In further signs that Russian producers are targeting Asian steel makers, Russian suppliers had settled on a quarterly contract price for low-volatile PCI coal for the September quarter with Japanese steel makers.

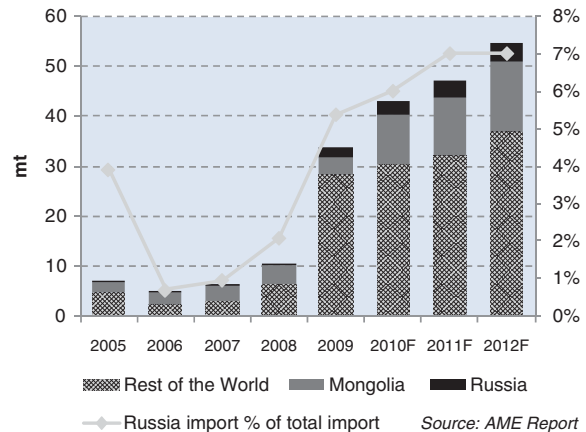
Russian Export Coking Coal Production

As shown on Figure 21, by 2012, AME forecasts Russia's coking coal exports to reach 14.5 mt, approximately 48% of which is expected to hard coking coal. AME believes Russia's coking coal may be required to a greater extent if demand is stronger than expected.

**Figure 21: Russian Coking Coal Exports
2000 to 2012**



**Figure 22: China Coking Coal Imports
2005 to 2012**



Russian coking coal exports are expected to grow at around 4% to 5% CAGR between 2009 and 2012. At this time, exports is likely to be approximately 15 mt. In addition to concerns about the abundance of high-quality coal reserves, the growth of Russia's coking coal exports may be limited by the following factors:

- Russian's primary rail transportation is the Trans-Siberian Railway which extends from west to east across the southern portion of the country and several railways which serve the coal producing regions of south-central Siberia. The railways operate at close to capacity which may have an impact on Russian producers' ability to expand exports of coking coal;

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- Currently there are around 40 seaports in Russia, among which approximately 20 can be used for coal transportation. Most of the 20 seaports are not ice-free year-around and only have the potential to handle panamax vessels;
- Transportation of coking coal through the Russian Far-East to Asia faces higher transport cost constraints due to longer haulage distances and limited availability of rolling stock such as wagons. These may constrain the ability of producers to transport coal to the Chinese market through rail and ports; and
- The winter season may have an impact on Russian coal exports. The severe weather conditions at times may pose certain challenges for Russian coal exports by disrupting normal operations of the port and railway systems. This may result in delays in coal shipments. In addition, freezing weather in Russia can adversely impact quality of delivered coal.

In the long-term, Russia output may increase significantly in the event that the above issues are resolved.