

COMMODITY INSIGHTS BULLETIN

Thermal Coal (2Q, 2013 and 3Q, 2013)

Introduction

With regional demand for coal shifting across Europe (economic conditions) and North America (gas replacement energy sources are embedded into the US energy system), coal producers across the world are increasingly looking to the Asia Pacific region to underpin demand growth.

While key drivers of demand remain robust across the Asia Pacific region in the medium term, competition in supply and market sentiment towards the thermal coal outlook is keeping pressure on seaborne export thermal coal market prices.

The completion and development of brownfield projects will keep the short-term price outlook challenging before longer

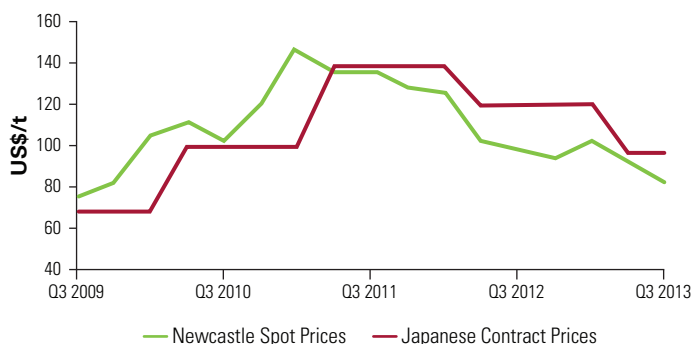
term demand can keep pace with supply and the impact of deferring Greenfield projects starts to bite. Within the overall global supply and demand equation bigger influences will emerge at regional levels as Chinese policy in restricting the import of low quality coal, continued infrastructure restrictions on US export coal, nuclear replacement strategies in Japan and Europe and the availability and access to infrastructure may change the supply mix substantially – there will be winners and losers as these changes take place.

In the longer-term the emergence of LNG as a viable source of energy remains a threat to the coal supply market but on current pricing of LNG equivalent, coal will remain competitive.

Commodity outlook

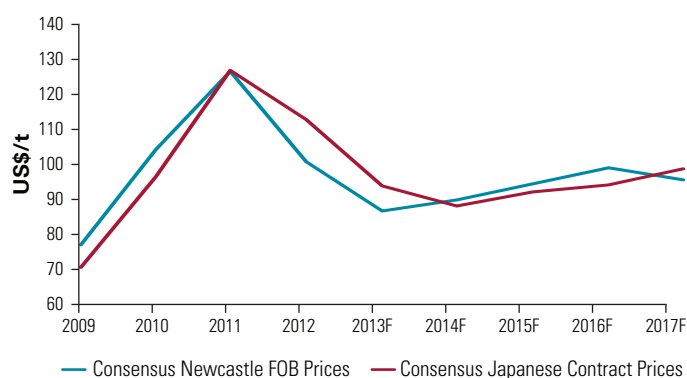
Abundant supply of seaborne thermal coal led to FOB Newcastle/Port Kembla thermal coal prices declining by about 7 percent q-o-q to about US\$92.2/t during 2Q, 2013 before further declining by 10 percent q-o-q to US\$82.8/t during 3Q, 2013. Development of key transport infrastructure in China for delivering inland domestic coal to the southern regions has led to imported coal landed prices to China becoming more competitive. Also, increased preference for lower calorific value coals has reduced the premiums paid for higher quality coal.

Figure 1: Historical prices of thermal coal



Source: IMF Primary Commodity Prices, International Monetary Fund, <http://www.imf.org/external/np/res/commmod/index.aspx>, accessed 8 November 2013; "Resources and Energy Quarterly," Bureau of Resources & Energy Economics (BREE), Australian Government, September quarter 2013

Figure 2: Price forecast for thermal coal



Source: "Resources and Energy Quarterly, September 2013," Bureau of Resources and Energy Economics, Australian Government; J.P. Morgan Cazenove – European Metals & Mining: Coal Price Forecast Update – Modest, 21 August 2013; Bell Potter Securities – Metals & Mining: Commodity Price Changes, 17 May 2013; Credit Suisse–Japan –Trading Companies: Are Trading Companies A Buy Even Without A, 10 October 2013; Morgan Stanley – Latin America Mining: Higher Iron Ore Price In 2014; Lower Nickel And Copper Prices, 7 October 2013; CIMB Research – Mining –Ten Years Into The Boom – Is There Really Value In Resources?, 1 October 2013; BMO Capital Markets – Mining & Commodity Roundup – September 30, 2013(Comment), 30 September 2013; BMO Capital Markets – Global Commodities Research – Commodity Canvas – Q4/13: Home On A Range(Report), 17 October 2013; VTB Capital – VTB Capital: Commodity Price Outlook –Turning point, 29 July 2013, via Thomson Research/ Investext, accessed 11 November 2013; KPMG analysis

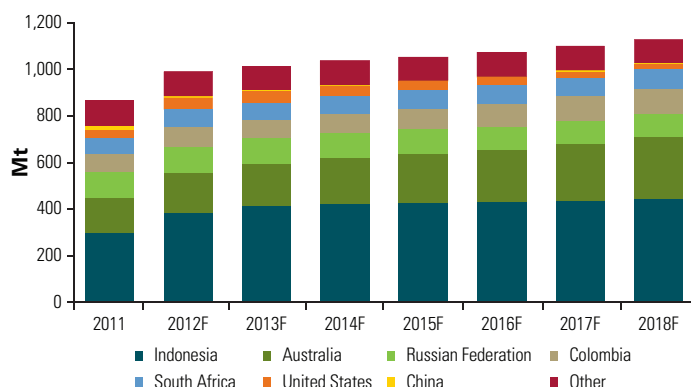
* Actual prices for 2009, 2010, 2011 and 2012 have been considered

The 2013 Japanese Financial Year (JFY, April 2013 – March 2014) contract price has been settled at US\$95/t, down 17 percent on a year-over-year (y-o-y) basis from JFY 2012 price of US\$115/t. This decline was due to prolonged periods of lower spot prices leading up to JFY price negotiations in early 2013, and the continuing expectations that this trend might continue.¹

Over the medium term, thermal coal JFY contract prices are projected to initially decrease before increasing

Supply and demand^{2,3}

Figure 3: Global exports for thermal coal



Source: "Resources and Energy Quarterly," Bureau of Resources & Energy Economics (BREE), Australian Government, September quarter 2013; KPMG analysis

- Thermal coal exports from Indonesia are expected to increase by about 8 percent y-o-y to 409 MT in 2013, supported by continued import demand from China and India. Over the medium term, factors such as infrastructure issues, higher transportation costs from inland coal mines and coal export regulations could lead to Indonesia's exports growing at a slower rate than in previous years. Indonesia's exports are estimated to grow at a moderate CAGR of about 1 percent from 409 MT in 2013 to 437 MT in 2018. A trend of increased demand for lower calorific value cheaper coal, such as that from Indonesia has been observed. This trend, which has led to lowered prices for high-quality thermal coal, is expected to continue over the medium term. These lowered projected prices for high-quality coal could exert downward pressure on the demand for lower-quality Indonesian coal. Additionally, Chinese government policies to restrict imports of low-quality coal also pose a risk to the growth of Indonesian exports.⁴
- Australia's thermal coal exports are estimated to increase by about 8 percent y-o-y to 184 MT in 2013. This increase is expected to be due to the start up of recently completed projects, such as Rio Tinto and Mitsubishi's Hunter Valley Operation Expansion, BHP Billiton's Mount Arthur project and stage two of Whitehaven

starting 2015. The decrease is anticipated due to a group of factors such as increase in competition, cost-cutting and coal oversupply, which could decrease thermal coal prices in the short term. Later in the medium term, increasing demand for imported coal, especially from Asian economies such as India and China, along with corresponding increase in thermal coal spot prices, is expected to support an increase in JFY contract prices of thermal coal.¹

Coal's Narrabri Coal Project. Japan is expected to be the principal importer for Australian thermal coal. Over the medium term, Australian thermal coal exports are forecasted to increase at a CAGR of about 8 percent from 184 MT in 2013 to 271 MT in 2018. This growth is expected to be driven by continued increase in thermal coal demand from China and India, which are expected to surpass Japan to become the top two export destinations for Australian thermal coal in the medium term.

- Colombia's thermal coal exports are expected to decline by about 6 percent y-o-y to 77 MT in 2013. This is primarily due to instances of labor strikes, which disrupted coal production during the March and September quarters.⁵ In the medium term, Colombian thermal coal exports are expected to increase at a CAGR of about 7 percent from 77 MT in 2013 to 107 MT in 2018. The major share of this export will be shipped to the Asia-Pacific market as weak import demand from the EU and the US are expected to continue. This growth in exports is expected to be supported by mining of high-quality coal (low sulphur content and high calorific value) at lower operating costs.
- South African thermal coal exports are estimated to increase by about 1 percent y-o-y to 75 MT in 2013. In the medium term, the growth in exports may be limited due to government policy, which could aim to secure coal supply for state-owned electricity generator, Eskom. Thus, exports are projected to increase at a moderate CAGR of about 2 percent a year between 2013 and 2018, to reach 83 MT in 2018.⁶
- Mozambique is expected to produce about 7 MT of coal in 2013, down by about 21 percent from its previous production forecast of 8.9 MT for 2013. This is mainly attributed to heavy rains that curtailed mining output and delayed rail shipments during the year.⁷ Mozambique is emerging as an important coal mining destination with the presence of major coal companies such as Vale and Rio Tinto. The government has awarded four coal concessions – the Revobóe mine, the Zambeze project, the Midwest mine and the Ncondezi project. Also, Vale has significant investment plans in the rehabilitation of its

¹ "Resources and Energy Quarterly," Bureau of Resources & Energy Economics (BREE), Australian Government, September quarter 2013

² "Resources and Energy Quarterly," Bureau of Resources & Energy Economics (BREE), Australian Government, September quarter 2013

³ "World commodity forecasts: industrial raw materials," The Economist Intelligence Unit, October 2013

⁴ "Chinese Ban, Higher Royalties Could Dethrone King Coal In Indonesia," Forbes, 13 June 2013; "Indonesia's plan to regulate coal exports worries Indian importers," The Financial Express, 11 July 2013

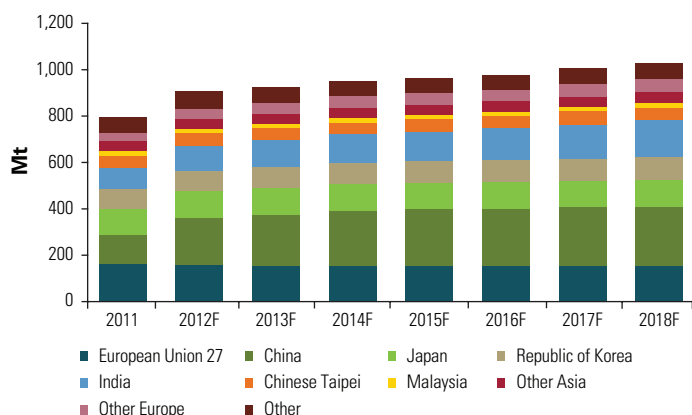
⁵ Sam Dodson, "Colombian coal workers return to work as strike comes to an end," Energy Global, 16 September 2013

⁶ Mike Cohen, "Eskom wants priority access to SA coal as shortages loom," Moneyweb, 13 September 2013

⁷ William Felimao & Paul Burkhardt "Mozambique Cuts Coal Output Forecast More Than 20% After Floods," Bloomberg, 5 August 2013

existing infrastructure and the construction of new railway tracks through Malawi and Mozambique. With major growth plans, the country is emerging as a significant coal miner.⁸ However, logistical and infrastructure challenges could limit its planned production growth.⁹

Figure 4: Global imports of thermal coal (2011–2018F)



Source: "Resources and Energy Quarterly," Bureau of Resources & Energy Economics (BREE), Australian Government, September quarter 2013; KPMG analysis

- Global demand for thermal coal trade is estimated to increase by about 2 percent y-o-y to 1,007 MT in 2013, boosted primarily by the demand from Asian economies, especially China and India. Over the medium term, world thermal coal consumption and trade are projected to grow at a CAGR of about 2 percent from 2013 to 2018, to reach 1,121 MT in 2018. This growth is expected to be supported by the growing energy demand from the emerging economies as low cost and reliability of coal-fired electricity generation capacity would make it appealing for the emerging economies to meet the projected growth in their energy demands.

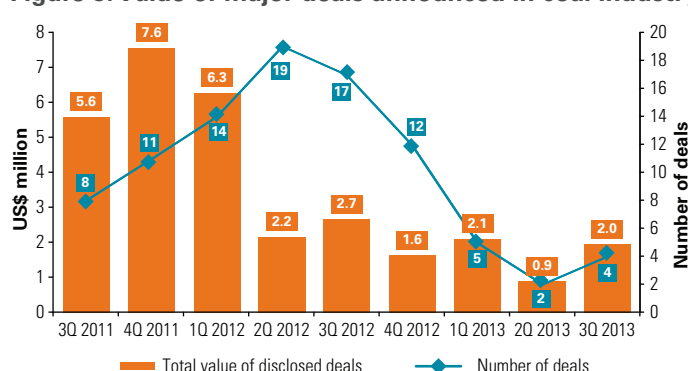
- Thermal coal imports by China increased by about 59 percent y-o-y to 218 MT in 2012 driven by continued growth in demand from its electricity sector and the relatively low cost of imported coal. An emerging preference for lower calorific value coal that is cheaper and has lower ash content has led to China importing higher quantities of lignite from Indonesia. In 2013, the country's thermal coal imports are expected to increase by 10 percent y-o-y to about 240 MT. Over the medium term, its coal consumption is projected to grow at a CAGR of about 3 percent from 240 MT in 2013 to 281 MT in 2018. Climate change policies and targets, and increasing focus on nuclear and renewable energy could impact the growth rate in Chinese coal consumption. However, in absolute terms, the overall coal consumption in the country is not expected to decline as it continues to add new coal-based power capacity, albeit at a slower rate.
- Japan's imports of thermal coal in 2013 are estimated to decline by about 2 percent y-o-y to 130 MT. Infrastructure and port capacity constraints for the importing coal continue to limit the prospects of the country's thermal coal imports. In the medium term, thermal coal imports by Japan are projected to decline at a CAGR of about 0.5 percent to 127 MT in 2018 from 130 MT in 2013, as the country is expected to shift toward the increasing use of gas and renewable energy for energy generation.
- India's thermal coal imports are expected to increase by about 6 percent y-o-y to 130 MT in 2013. In the medium term, its thermal coal consumption is projected to grow significantly as the country is expected to substantially increase its coal-based electricity-generating capacity. India's domestic thermal coal production is not expected to meet growing demand thus increasing its reliance on coal imports. Imports are projected to grow at a CAGR of 6 percent to 174 MT in 2018 from 130 MT in 2013.

Key developments

Ownership changes¹⁰

The total value of major deals announced in the thermal coal industry declined to US\$0.9 billion during 2Q, 2013, down from US\$2.1 billion in 1Q, 2013, representing a q-o-q decrease of 57 percent (refer to Figure 5). The deal valuation subsequently increased by 118 percent to US\$2 billion in 3Q, 2013. The number of deals announced in the 2Q, 2013 fell to two, against the five announced in 1Q, 2013 before increasing to four during 3Q, 2013.

Figure 5: Value of major deals announced in coal industry



Source: Deals: Search, Mergermarket; KPMG analysis

⁸ Keith Campbell "Mozambique approves coal projects, ponders iron-ore proposal," Mining Weekly.com, 20 September 2013; Metallurgical coal – supply side issues abating: HSBC, The BusinessTimes, <http://www.btinvest.com.sg/markets/commodities/metallurgical-coal-supply-side-issues-abating-hsbc/>, accessed 6 November 2013

⁹ Andrew England "Mining: Hazards of the frontier," Financial Times, 11 September 2013; Keith Campbell "Moz coal output ramping up but greater rail capacity needed," Mining Weekly.com, 26 July 2013

¹⁰ Mergermarket database, accessed 11 November 2013

Table 1: Top thermal coal deals announced in 2Q and 3Q13

Date announced	Target	Target nation	Acquirer	Acquirer nation	Status	Value of transaction (US\$ million)	Stake (%)
25-Oct-13	Clermont Mine	Australia	Glencore Xstrata plc; Sumitomo Corporation	Switzerland; Japan	In-progress	1,015	50.10%
30-Sep-13	Shanxi International Electricity Group Limited Company (Coal Rail Trading and Mining business)	China	Shanxi Top Energy Company Ltd	China	In-progress	1777	NA
27-Sep-13	OKK Koksovny, a.s.	Czech Republic	Metalimex A.S.	Czech Republic	In-progress	131	100%
25-Sep-13	Cape Alumina Limited	Australia	MetroCoal Limited	Australia	In-progress	9	100%
25-Jul-13	Erchim-Tkhan LLC	Russia	Irkutskenergo OAO	Russia	Closed	40	50.10%
28-Jun-13	Canyon Fuel Company, LLC	USA	Bowie Resources, LLC	USA	In-progress	435	100%
10-May-13	Guangdong Golden Horse Tourism Group Stock Co. Ltd (21.03% Stake)	China	Shenhua Group Corporation Limited	China	Closed	465	100%

Source: Deals: Search, Mergermarket; KPMG analysis

Regulatory updates

The regulations introduced during 2Q and 3Q, 2013 were a diverse group of climate change regulations coupled with streamlining domestic and imported coal operations.

They are expected to optimize and project coal-fired power stations as a sustainable option for continued electricity generation in the future.

Table 2: List of recent regulations in coal industry

Country/Region	Regulation/topic	Description
US	US EPA regulation on the amount of carbon pollution generated by any new power plant ¹¹	<ul style="list-style-type: none"> US Environmental Protection Agency (EPA) is banning the construction of new coal-fired power plants. However, it would make exceptions for plants that are built with innovative and expensive technology to capture greenhouse-gas emissions.
India	Coal Regulatory Authority ¹²	<ul style="list-style-type: none"> India has decided to set up a Coal Regulatory Authority. The regulatory authority will perform various functions, including specifying the methodology for determining coal prices.
China	Easing of coal import quality restrictions ¹³	<ul style="list-style-type: none"> The National Energy Administration (NEA) of China is considering allowing thermal coal imports with a minimum calorific value of 3,750 kcal/kg, down from the previously proposed 4,540 kcal/kg limit. Maximum sulphur content has been raised to 2 percent from the earlier plan of 1 percent.
China	Tax on low grade coal imports ¹⁴	<ul style="list-style-type: none"> A 3 percent tax on imports of steam coal with low calorific value has been introduced. However, this will have no impact on imports from Indonesia as China has a zero tariff trade deal with the country.

¹¹ Cecilia Jamasmie "EPA unveils tighter regulations on carbon emissions, experts call them 'coal killer'"; Mining.com, 20 September 2013

¹² "Cabinet okays setting up of Coal Regulatory Authority"; Hindustan Times, 27 June 2013

¹³ "China considers less strict coal import quality restrictions"; Reuters, 4 June 2013

¹⁴ Fayen Wong "UPDATE 1-China sets tax on low-grade coal imports; Indonesia unaffected"; Reuters, 2 September 2013

Project updates

Table 3: Cross-section of global Greenfield projects*

Project	Country	Operators	Type	Potential start year	Thermal coal production (Mtpa)	Progress and updates
Carmichael Coal Project	Australia	Adani	Thermal coal	2014	60.0 ¹⁵	Supplementary information to EIS is being prepared by the proponent.
China First Coal project (gazetted as Galilee Coal Project – Northern Export Facility)	Australia	Waratah Coal	Thermal coal	2017	40.0	Queensland Coordinator-General has released the evaluation report on the environmental impact statement.
South Galilee Coal Deposit	Australia	American Metals and Coal International	Thermal coal	2015	19.0	Supplementary information to EIS is being prepared by the proponent.
Wandoan coal project	Australia	Glencore Xstrata plc	Thermal coal/Coking coal	NA	30.0	The project has been put on hold.
Alpha Coal Deposit	Australia	GVK Power & Infrastructure Ltd	Thermal coal	2016	32.0	GVK Hancock Coal appointed Thiess as the preferred mine operations contractor for the project in June 2013. The first coal is to be extracted by 2016.
East Kutai Coal Project	Indonesia	Churchill Mining plc	Thermal coal	NA	30.0	The hearing on Indonesia's challenge to the arbitral tribunal's jurisdiction for hearing of the damages claims against Indonesia raised by Churchill Mining was held in Singapore in May 2013.
Kevins Corner Coal Deposit	Australia	GVK Power & Infrastructure Ltd	Thermal coal	2018	30.0	The project received federal environment approval under the Environment Protection and Biodiversity Conservation Act 1999.
Vista Coal Deposit	Canada	Coalspur Mines Limited	Thermal coal	2015 ¹⁶	12.0	The development plan for the project has been finalized. It focuses on Phase 1 of Vista and will support a 6 Mtpa capacity thermal coal facility. The facility will be completed in mid-2015 and produce 3 MT of clean coal in 2015 and be capable of producing 6 Mtpa 2016 onwards.

* The list is not exhaustive and contains only a limited number of projects.

Source: Intierra; Company reports; Australian Government

¹⁵ Yield of 60 Mtpa expected from 2022

¹⁶ Production start date for phase I

Table 4: Cross-section of global Brownfield projects**

Project	Country	Operators	Commodity	Potential start year	Thermal coal expansion (Mtpa)	Progress and updates
Grooteegeluk Medupi Expansion Project	South Africa	Exxaro Resources	Thermal coal	2012	14.6	According to the company's latest press release in 2012, the project was progressing as planned and within budget.
P40 – Cerrejon thermal coalmine expansion	Colombia	Anglo American, BHP Billiton and Glencore Xstrata ¹⁷	Thermal coal	2013	8.0	The project is 73 percent complete. Mine expansion, upgraded rail & second ship loader, construction to be complete by 2014, followed by ramp up.
Ravensworth North project	Australia	Glencore Xstrata	Thermal coal	2013	8.0	The project is 86 percent complete. It is expected to be completed by Q413 and ramp up by 2014. The CHPP is currently being commissioned. It is on time and within budget.
Ulan West Expansion	Australia	Glencore Xstrata	Thermal coal	2014	8.0	The project is 58 percent complete. Longwall is expected to commence by mid-2014 and is undergoing surface compatibility tests. Project is progressing as per development schedule on time and in budget.
Ulan open cut thermal mine	Australia	Glencore Xstrata	Thermal coal	2013	1.5	Operations began at the 1.5 Mtpa Ulan open cut thermal coal mine in New South Wales and are on schedule to reach full production in 2013
Hunter Valley Operations	Australia	Rio Tinto	Thermal coal	1979	12.0	NA
Narrabri Coal Project (stage 2)	Australia	Whitehaven	Thermal coal/Coking coal	2012	6.0	Following the installation of the new longwall in June 2012, the Narrabri mine ramped up output in line with schedule over the course of FY13.
RX1 Project – expansion at Mt Arthur Coal	Australia	BHP Billiton	Thermal coal	2012	4.0	The project was completed, ahead of schedule, and delivered first production in June 2012 quarter.
Moatize II	Mozambique	Vale	Thermal coal/Coking coal	2015	11.0	There are ongoing earthworks in the stockyards, in the conveyor belt area and raising tailing dams. Coal processing plant and civil works in final stages. Earthworks and civil engineering of the primary crusher have been concluded. 39% of physical progress has been achieved till August 2013.
Prodeco Coal mine expansion to 20.7 Mtpa	Colombia	Glencore Xstrata plc	Thermal coal	NA	20.0	Prodeco's new coal port, Puerto Nuevo, was officially opened in May 2013. The port's initial annual export capacity is about 21MT with the coal being transported to markets including North America, Europe and Asia.
Ukhaa Khudag 5Mtpa Washed Coal CHPP	Mongolia	Mongolian Mining Corporation LLC	Thermal coal/Coking coal	2011	5.0	The third module of the Coal Handling and Preparation Plant (CHPP) at the Ukhaa Khudag mine was successfully commissioned by the State Commission on 13 June 2013. The module is expected to reach full production capacity in the third quarter of 2013.

** The list is not exhaustive and contains only a limited number of projects.

Source: Intierra; Company reports; Australian Government

¹⁷ The project is jointly held by these companies in equal proportions of 33.3% each.

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