

Thermal Coal (Q4, 2013 and Q1, 2014)

Insight: Thermal coal landscape hard to read

With declining thermal coal prices, shifting supply and demand dynamics in the US and Chinese policy developments regarding the usage of coal in the energy mix, sentiment towards the future of thermal coal is negative.

As current price levels are impacted by increased investment in the coal sector over the last 5 years, suppliers increasing production to lower per unit net operating costs and operators maintaining production levels to meet infrastructure obligations, the supply side has not reacted to the reduced price environment in a textbook manner. In addition, there have not been any recent supply side shocks (floods, cyclones, etc) in key producing countries to dampen customers' views that access to coal remains uninterrupted.

This sentiment may be masking the true reality of global energy requirements and thermal coal's role in meeting that demand over the next 5 to 10 years. On the supply side, greenfield and brownfield projects will be harder to develop, production for infrastructure requirement purposes will rebalance and efficiency improvements will reduce the need to attain per unit cost reductions through volume-only initiatives. On the demand side, the need for energy will continue at a rapid rate with further urbanization across the Asia Pacific region and an emerging middle class in key thermal coal demand markets. These factors will present a different economic reality to the thermal coal market over the mid-term and prices should see a rebound.

There are two main questions to be asked about thermal coal: first, how quickly and cost effectively the emerging alternate energy sources, such as gas and LNG, can keep pace with energy demand growth in key markets and, second, how the attitude toward air quality in China, being

“There remains no doubt that thermal coal will be part of the global energy mix for years to come.”

Anthony Jones
KPMG in Australia

a significant importer of thermal coal, continues to drive policy and investment in that country.

There remains no doubt that thermal coal will be part of the global energy mix for years to come. In a rapidly changing landscape, however, for thermal coal mines to be sustainable they will need to be on the right side of the cost curve and compete with increasingly efficient alternate energy sources that will benefit from the completion of key infrastructure and volume increases over the next few years.

With that in mind, the focus on cost across the sector is critical and the next wave of efficiency initiatives will see sharing of infrastructure among industry participants and an enhanced use of technology throughout the mining process. We also expect to see more assets change hands in the next 12 to 18 months as traditional owners of thermal mines pursue other opportunities in the current capital constrained environment; different people assess the risks and opportunities differently; new independent mining houses re-emerge; and access to project financing in the current price environment remains challenging.

While it is difficult to read the thermal coal landscape, there is no doubt that the landscape will change rapidly.

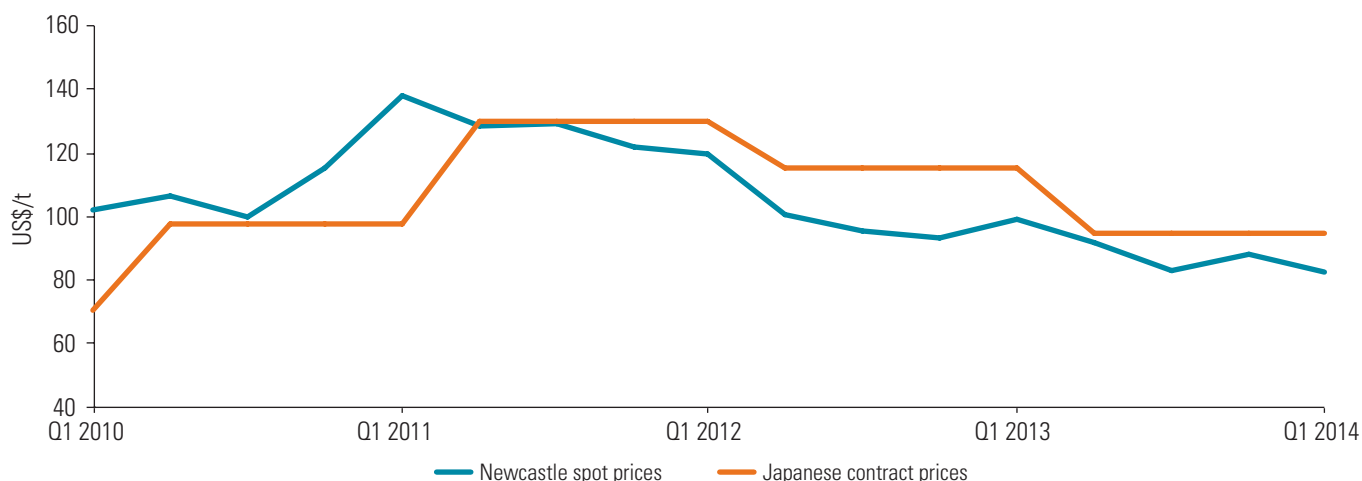
Price outlook¹

Spot prices for Australian 12,000 btu/pound thermal coal FOB Newcastle/Port Kembla averaged at about US\$90.6/ton during 2013. Prices were about US\$100/ton during the start of the year, but declined gradually to about US\$83/ton during mid-2013 as fresh production capacity came online. Prices rallied toward the end of 2013 in response to seasonal buying by Chinese utilities trying to ensure sufficient supplies during the winter season and Chinese New Year. This led to an increase in prices to about US\$90/ton during December 2013.

Prices declined during Q1, 2014 to average out at US\$82.6 for the quarter. This was driven by an increase in global production, weaker demand in emerging economies and reduced activity around the Chinese New Year. While a decline in prices has forced some marginal producers to close operations, others have increased production to reduce per unit cost and remain viable. Although consumption is expected to increase during the remainder of 2014, this extra supply is expected to place downward pressure on prices.

¹ "Resources and Energy Quarterly", Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2014

Figure 1: Historical prices of thermal coal



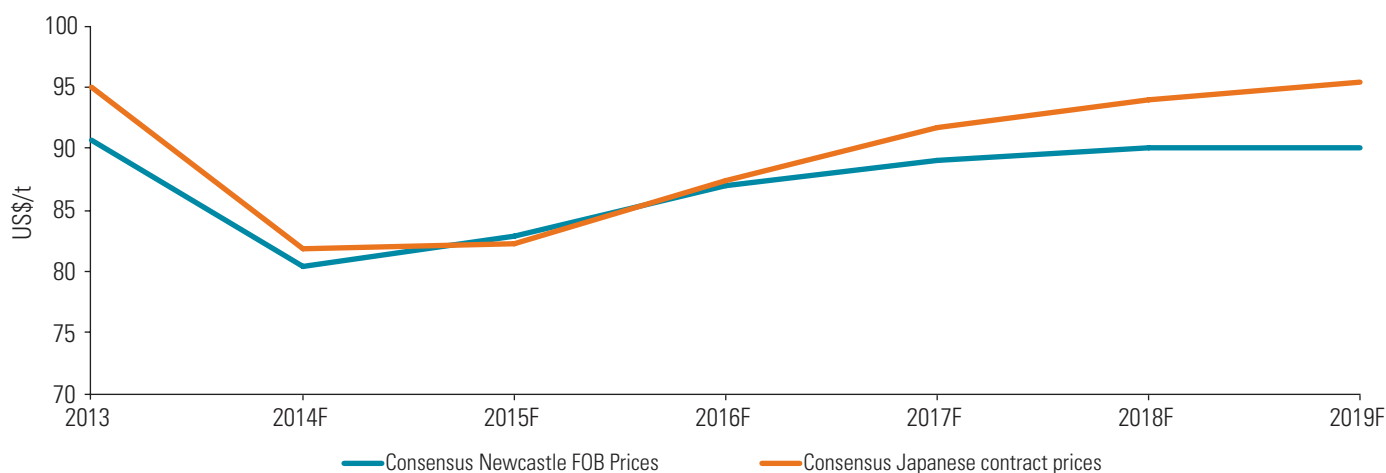
Source: IMF Primary Commodity Prices, International Monetary Fund, <http://www.imf.org/external/np/res/commmod/index.aspx>, accessed 10 June 2014; "Resources and Energy Quarterly", Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2014; "Xstrata, Tohoku set annual coal contract price down 14 pct-sources", Reuters, 31 March 2014.

Negotiations for the Japanese Fiscal Year (JFY) 2014 benchmark contract price for Australian producers were settled at US\$81.8/ton between Glencore Plc (formerly Glencore Xstrata) and Tohoku Electric Power in March 2014.² As per consensus estimates, the contract prices are expected to increase by 0.7 percent to US\$82.3/ton in JFY2015 as the market balance tightens due to increasing import demand and declining supply growth. The supply is expected to decline as price pressures in the preceding years force less competitive mines to close. Thus, the JFY contract price is projected to

increase to US\$87.3/ton by 2016. Spot prices would also be supported and are expected to increase to US\$87.0/ton in 2016.

However, there are two significant downside risks to these price estimates. Firstly, China's efforts to reduce coal usage may drive the transition away from coal at a faster pace than expected, leading to lower-than-expected growth in China's imports. Secondly, if Indonesia's plans to reduce production growth are unsuccessful, exports would grow at an accelerated pace and maintain the surplus situation in the market. This would lessen the possibility of higher prices post-2015.

Figure 2: Price forecast for thermal coal



Source: BMO Capital Markets – Mining & Commodity Roundup, 26 May 2014; Morgan Stanley – Europe Metals & Mining: Metals and Mining Tracker, 14 May 2014; RBC Capital Markets – Bulking up: Iron ore Prices Retreat to a Low; J.P. Morgan – European Metals & Mining: Equity Strategy Colleagues Upgrade Mining to Ow, 12 May 2014; Barclays – UK Mining: Base Over Bulk; Its Working, 29 April 2014; Macquarie Research, Metals & Mining – Base and Spot Valuation Analysis, 19 May 2014; UBS Research – Commodity Drillbit – Mining Benchmark – Morgan, 22 May 2014; via Thomson Research/Investext accessed June 2014; "Price Forecasts", IMF Primary Commodity Prices, <http://www.imf.org/external/np/res/commmod/index.aspx>, accessed 11 June 2014; "Resources and Energy Quarterly", Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2014; KPMG analysis.

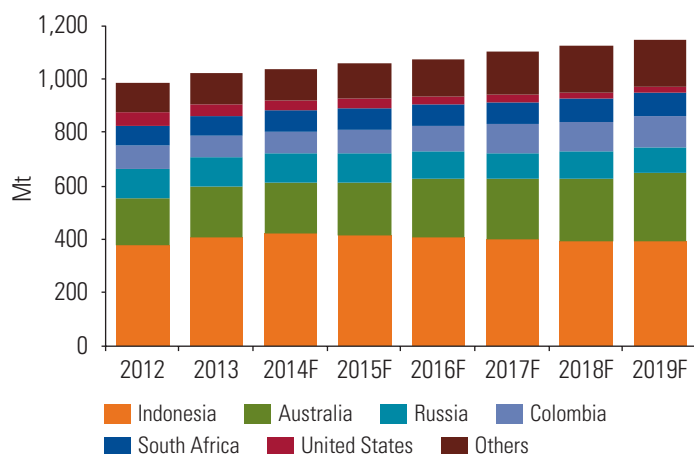
* Actual prices for 2013 have been considered.

² "Xstrata, Tohoku set annual coal contract price down 14 pct-sources", Reuters, 31 March 2014

Supply and demand^{3,4}

Supply

Figure 3: Global exports for thermal coal (2012–19F)



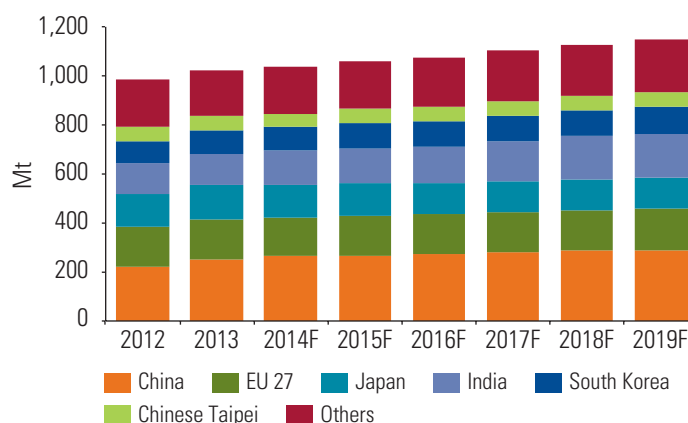
Source: "Resources and Energy Quarterly," Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2014; KPMG analysis.

- Indonesia continued as the largest exporter, accounting for about 40.2 percent of the global export in 2013. Exports from the country increased 8.2 percent year-over-year to 411Mt in 2013. Indonesia has indicated plans to limit coal production to preserve domestic resources to stabilize its coal production and reduce the downward pressure on coal prices. To achieve this, the Energy and Mineral Resources Ministry (EMRM) has outlined a coal production target of 397Mt for 2014.⁵
- The Indonesian government has outlined a number of measures to reduce coal production. Large miners could be asked to cut production in order to avoid penalties. The EMRM has also issued a new law requiring miners to have a certificate and transport license to export coal. Additionally, the country is planning to raise royalties to 13.5 percent uniformly for all miners, which could affect the competitiveness of small suppliers and result in the closure of certain capacities. If China proceeds with its plans to limit the import of low-quality coal, it could further reduce Indonesia's exports.
- Exports of thermal coal from Australia increased 9.9 percent year-over-year to 188Mt in 2013. This was driven by strong demand, especially from China toward the end of 2013 and increased production from recently completed expansion projects. Australia's exports are expected to increase by 3.7 percent to 195Mt in 2014 with additional output expected from freshly commissioned projects. Further, Australia's thermal coal exports are expected to increase at a CAGR of 5.3 percent from 188Mt in 2013 to 257 Mt in 2019, driven by commissioning of large-scale projects being planned in Queensland's Galilee Basin. These include GVK Hancock's Alpha mine, Adani's Carmichael mine and Bandanna Energy's South Galilee projects. However, China's import ban on high-ash and high-sulfur content coal could affect the volume of Chinese imports from the country.⁶

- The US is trying to reduce its dependence on coal-based power generation over a short time frame. As a part of the Climate Action Plan, the US Environmental Protection Authority (EPA) has proposed new legislation to limit emissions from new coal plants with a capacity of more than 25Mw. The limit has been set to less than 1100 pounds (0.5 tons)/Mwh of electricity generated. This will prevent the construction of new facilities, which require technologies that are currently considered uneconomic and not commercially proven. Further, the Mercury and Air Toxics Standards for New Power Plants mandates reduced emissions of mercury, acid gases and toxic metals. These standards are scheduled to be introduced from 2015 onward. While lower domestic consumption would make more coal available for export, low thermal coal prices and declining demand in key markets would lead to decline in exports from the US at a CAGR of 10.6 percent, from 47Mt in 2013 to 24Mt in 2019.

Demand

Figure 4: Global imports of thermal coal (2012–19F)



Source: "Resources and Energy Quarterly," Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2014; KPMG analysis.

- China retained its position as the world's largest producer, consumer and importer of thermal coal by importing about 24.5 percent of the global coal trade in 2013. China's thermal coal imports increased by about 15.1 percent year-over-year to 251Mt in 2013. Carbon emissions and air quality are gaining importance in China and the government appears to be committed to a long-term goal of rebalancing the country's energy usage. For example, in April, the government approved a ban on imports of low-calorific high-sulphur coal.⁷ While these plans are likely to slow the growth in coal use, China would continue to remain the largest coal consumer, accounting for about 25.2 percent of the global import in 2019.
- Coal-powered generation was comparatively economical versus gas-fired power among the large consumers in the EU during 2013. This was due to high gas prices, low EU carbon prices and low international freight rates. However, with generally weak energy consumption and

³ "Resources and Energy Quarterly," Bureau of Resources & Energy Economics (BREE), Australian Government, March quarter 2014

⁴ "World commodity forecasts: industrial raw materials," The Economist Intelligence Unit, June 2014

⁵ Fitri Wulandari "Indonesia to Limit Coal Production This Year to Support Prices," 10 February 2014

⁶ "China Plans Ban on Imports of Coal With High Ash, High Sulfur," Bloomberg, 10 April 2014

⁷ "China Plans Ban on Imports of Coal With High Ash, High Sulfur," Bloomberg, 10 April 2014

overall tough economic conditions, coal consumption declined 1.8 percent year-over-year in 2013. As per the European Commission's Climate and Energy goals, a target of reducing emissions by 40 percent from 1990 levels and increasing EU-wide renewable energy to at least 27 percent has been kept for 2030. However, the EU did not give details of the amount of renewable energy that each country should produce. These goals are not expected to affect coal consumption in 2014, but they can pose a downside risk in the long term. Coal imports by the EU are expected to increase at a CAGR of 0.2 percent, from 165Mt in 2013 to 167Mt in 2019.

- After the Fukushima incident, Japan has increased its reliance on thermal power to manage lost nuclear capacity. Japanese coal-fired power generation has been running at full capacity, leading to greater coal usage and imports. Coal imports increased by 3.8 percent year-over-year to 137Mt in 2013. Japan released a draft of its new Basic Energy Plan (BEP) in February 2014, which indicates that nuclear power along with renewable and fossil fuels will provide the most reliable energy mix for Japan. However, the existing nuclear reactors will need to pass rigorous safety requirements before they resume operation. This has been a slow process and it is expected that only six reactors will be restarted by the end of 2014. As a result, coal consumption

is unlikely to be affected at 137Mt in 2014. As more nuclear reactors are restarted over the medium term and renewable energy's share is increased in power generation, dependence on coal-based generation is expected to decrease. As facilities are closed, Japan's coal imports are expected to decline at a CAGR of 1.3 percent from 137Mt in 2013 to 127Mt in 2019. If Japan decides to expedite the nuclear restart process, the decline in coal imports could further accelerate.

- India's thermal coal imports increased 5.7 percent year-over-year to 130Mt in 2013. This was due to lower economic growth and a relatively weak INR that increased the cost of coal imports. Indian electricity demand is expected to grow significantly over the medium term in response to greater electrification, rising household incomes and the expansion of the middle class. Coal-fired generation is expected to play a major part in this. Moreover, domestic coal production is not expected to keep pace with its demand growth. Thus, India is expected to become increasingly reliant on imported coal. India's coal imports are expected to grow at a CAGR of 5.8 percent from 130Mt in 2013 to 182Mt in 2019. Some of this coal is expected to be sourced by developing foreign assets, particularly in the Galilee Basin in Australia and other countries such as South Africa.

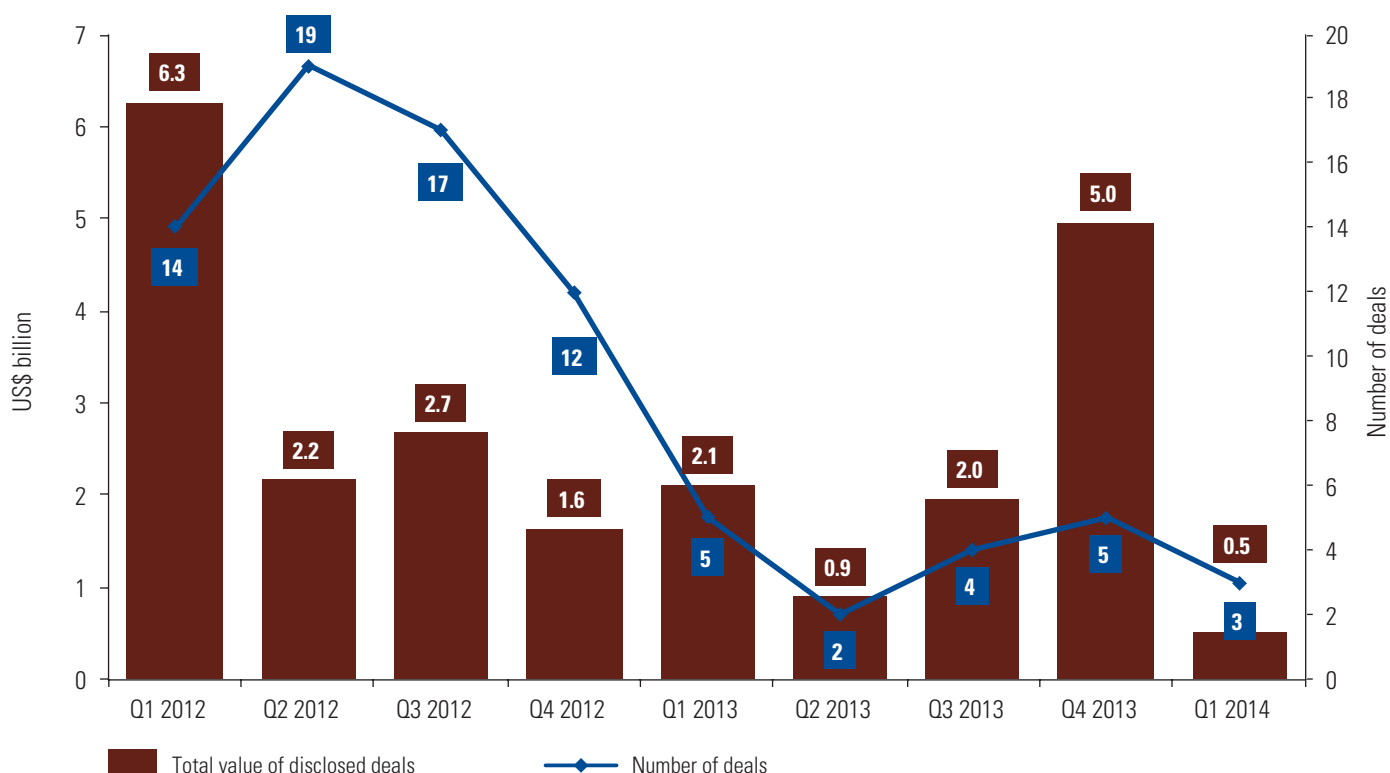
Key developments

Ownership changes⁸

The total value of major deals announced in the thermal coal industry increased to US\$5.0 billion during Q4, 2013, up from US\$2.0 billion in Q3, 2013, representing a quarter-over-quarter increase of 153 percent. The deal valuation

subsequently declined by 89 percent to US\$0.5 billion in Q1, 2014. The number of deals announced in the Q4, 2013 increased to five, against the four announced in Q3, 2013 before decreasing to three during Q1, 2014.

Figure 5: Value of major deals announced in coal industry



Source: Deals: Search, Mergermarket database accessed 13 June 2014; KPMG analysis.

⁸ Deals: Search, Mergermarket database accessed 13 June 2014

Table 1: Top thermal coal deals announced in 2013-2014

Date announced	Target	Nation of target	Acquirer	Nation of acquirer	Status	Value of transaction (US\$ million)	Stake (%)
03-May-14	Hazard complex	USA	Blackhawk Mining LLC	US	Closed	26.0	100.0
02-Mar-14	New Clydesdale Colliery	South Africa	Universal Coal Plc	UK	In-progress	NA (Not available)	100.0
31-Jan-14	PT Arutmin Indonesia	Indonesia	Bakrie Group	Indonesia	In-progress	500.0	30.0
24-Dec-13	Sherritt International (Prairie and Mountain coal mining operations)	Canada	Westmoreland Coal Company	US	Closed	437.0	100.0
02-Dec-13	NuCoal Mining (Pty) Limited	South Africa	Blue Falcon 212 Trading Proprietary Limited	South Africa	Closed	8.0	100.0
28-Oct-13	Consolidation Coal Company	USA	Murray Energy Inc	US	In-progress	3,500.0	100.0
25-Oct-13	Clermont Mine	Australia	Glencore plc (erstwhile Glencore Xstrata); Sumitomo Corporation	Switzerland; Japan	Closed	1,015.0	50.1
03-Oct-13	Blair Athol Coal Pty. Ltd.	Australia	New Emerald Coal Ltd	Australia	In-progress	NA	100.0

Source: Deals: Search, Mergermarket; KPMG analysis.

Regulatory updates

The regulations introduced during Q4, 2013 and Q1, 2014 focused on developing the global coal mining industry by streamlining domestic and imported coal operations. The environment was also given significant importance while formulating these developments. These regulations are expected to optimize the use of coal as a sustainable source of power generation along with developing other sources of energy.

Table 2: List of recent regulations in coal industry

Country/Region	Regulation/topic	Description
Colombia	Ban on the use of cranes and barges to load boats ⁹	The Colombian government enforced a law allowing coal exporters to load ships using enclosed conveyor belts only and outlawing the use of cranes and barges starting January 2014.
South Korea	Hike in power tariff and imposition of taxes on the use of thermal coal ¹⁰	- South Korea raised its electricity tariff and imposed taxes on the use of thermal coal in power plants in November 2013. - State-run power utility Korea Electric Power Corp. was allowed to raise electricity rates by an average 5.4 percent from 21 November 2013.
India	Coal Regulatory Authority (CRA) ¹¹	- As of March 2014, the Government of India decided to set up a coal regulatory authority (CRA), which will function under the administrative control of the Union coal ministry. - The primary function of the CRA is to advise the Central government on the formulation of the principles and methodologies to determine price of raw coal, washed coal and on the procedure for automatic coal sampling.
Indonesia	Certificate required for mining and exporting coal ¹²	Indonesia passed a regulation that requires thermal coal exporters to obtain a certificate from the government that clears them to produce coal before they are able to export coal.
Indonesia	Limit on coal production	Indonesia has set a target to reduce its coal production to 397Mt in 2014 with the intention to stem declining prices.
Japan	Basic Energy Plan ¹³	- Japan unveiled its first draft energy policy since the Fukushima incident of 2011. - The draft of the Basic Energy Plan states that a mix of nuclear, renewable and fossil fuel would be the most reliable and stable source of electricity to meet Japan's energy needs.
Australia	Repealing of carbon tax blocked ¹⁴	- The Australian Senate voted 37-35 against repealing the carbon tax in Australia on 10 July 2014. - Senators in the newly formed upper house of Parliament joined with the opposition Labor and Greens lawmakers to block the repeal of the tax. This policy was approved by the lower house.

⁹ "RPT-UPDATE 2-Colombia coal exports set to drop as loading ban looms", Reuters, 13 January 2014

¹⁰ "South Korea Hikes Power Tariff, Taxes Thermal Coal", via Factiva accessed 12 June 2014

¹¹ Indrani Dutta "Coal Regulatory Authority little more than eye-wash", The Hindu, 28 March 2014

¹² "Indonesian coal exporters face second regulatory hurdle", Platts, 20 February 2014

¹³ "Japan unveils draft energy policy in wake of Fukushima", The guardian, 25 February 2014

¹⁴ Rob Taylor, "Australia's Senate Blocks Carbon-Tax Repeal: Move Signals That Unpredictability in Upper House Will Continue", The Wall Street Journal, 10 July 2014

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	2018	60.0	The Coordinator-General's evaluation report of the Carmichael project EIS was released and the project approved to proceed.
China first coal project (gazetted as Galilee Coal Project – Northern export facility)	Australia	Waratah Coal	Thermal Coal	2017	40.0	The project in Queensland's Galilee Basin has been approved by the federal government.
South Galilee coal deposit	Australia	American Metals and Coal International	Thermal Coal	2015	19.0	EIS is nearing completion and approval.
Wandoan coal project	Australia	Glencore plc	Thermal Coal/Coking Coal	N/A	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. First coal is to be extracted by 2016.
East Kutai coal project	Indonesia	Churchill Mining plc	Thermal Coal	N/A	30.0	Following the rejection of the Republic of Indonesia's jurisdictional challenges, the Arbitral Tribunal has issued a procedural order. The order establishes a schedule for the merits phase of the proceedings ending with a hearing on the merits of Churchill Mining plc and its subsidiary's claims during mid-2015.
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	N/A	12.0	The Company's ongoing viability and its ability to continue with development work on Vista is subject to its ability to raise additional capital. Given the on-going depressed coal price environment, challenging equity and debt market conditions and the Company's current share price, Coalspur is facing a substantial challenge in its attempts to secure full funding for the development of Vista. In the absence of being able to fully fund Vista, the Company's primary objective is to protect and preserve the value of the Vista asset.

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

Source: Intierra; Company news release; Company reports.

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	N/A	14.6	The project is 97 percent complete as per 2013 annual report.
P40 – Cerrejon thermal coal mine expansion	Colombia	Anglo American, BHP Billiton and Glencore plc ¹⁵	Thermal Coal	2013	8.0	First coal was handled in 4Q13. Port still to be completed. On schedule and budget. The overall project is 86 percent complete as per BHP Billiton operational review for the half year ended 31 December 2013.
Ravensworth North project	Australia	Glencore plc	Thermal Coal/ Coking Coal	2013	8.0	89 percent complete as in March 2014. Coal handling and preparation plant (CHPP) completed in Q4, 2013. Ramp up to be complete by end of 2014.
Ulan West expansion	Australia	Glencore plc	Thermal Coal	2014	6.7	The project has commenced construction. 79 percent complete as in March 2014. Longwall commences in mid-2014.
Ulan open cut Thermal mine	Australia	Glencore plc	Thermal Coal	2013	1	Operations began at the 1 Mtpa Ulan open cut thermal coal mine in New South Wales and reached full production in 2013.
Hunter Valley operations	Australia	Rio Tinto	Thermal Coal/ Coking Coal	1979	12.0	The Hunter Valley No. 1 mine began production in 1979. In 2000 Coal & Allied merged the Howick and Hunter Valley mines to create Hunter Valley operations.
Narrabri North mine	Australia	Whitehaven Coal	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.
Moatize II	Mozambique	Vale	Thermal Coal/ Coking Coal	N/A	11.0	The ramp-up of the first phase of the project is being temporarily restricted by the existing limitations of the logistics, railway and port infrastructure that do not allow for total utilization of the mine's nominal capacity of 11 Mtpa.
Prodeco Coal mine expansion to 20.7 Mtpa	Colombia	Glencore plc	Thermal Coal	N/A	20.7	Prodeco produced 5.2Mt in Q1, 2014, 4 percent higher than Q1, 2013. The increase was due to the general expansion project at Prodeco, expected to increase production to circa 21 Mtpa.
Ukhaa Khudag CHPP	Mongolia	Mongolian Mining Corporation LLC	Thermal Coal/ Coking Coal	2011	15.0	Total name plate Run of mine (ROM) coal processing capacity reached 15 Mtpa by the successful commissioning of the plant's third module in June 2013.
Watermark coal project	Australia, China	Shenhua Energy Company Ltd	Thermal Coal	N/A	10.0	Mtpa for 30 years Hearing at the Planning Assessment Commission (PAC), the final regulatory step for the project, was held on 30 June 2014. The Panel declared that it would come back to Gunnedah and the Liverpool Plains within two weeks with the Land and Water Commissioner to talk to the agricultural community.

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

Source: Intierra; Company news release; Company reports; "Resource and Energy Major Projects", BREE, Australian Government, accessed 13 June 2014.

¹⁵ The project is jointly held by these companies in equal proportions of 33.3 percent each.



Anthony Jones
KPMG Australia
T: +61 2 9335 7238
E: arjones@kpmg.com.au

Anthony has worked with KPMG Australia in the Energy and Natural Resources sector for over 20 years. Anthony has extensive experience as an auditor and advisor to companies operating across the energy supply chain ranging from large-scale mining; oil and gas (upstream and downstream); power and utilities (generation, transmission and retail); and junior exploration. Anthony has worked with Australia's largest listed clients in the Energy sector and has a deep understanding of global energy markets.



We've got
mining on
our minds.

STRATEGY

GROWTH

PERFORMANCE

COMPLIANCE

SUSTAINABILITY

KPMG GLOBAL MINING INSTITUTE

Helping you navigate the mining asset life cycle.

kpmg.com/mining

kpmg.com/miningcommodities

kpmg.com/socialmedia



kpmg.com/app



The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2014 KPMG International Cooperative ("KPMG International"), a Swiss entity. Member firms of the KPMG network of independent member firms affiliated with KPMG International. KPMG International provides no client services. No member firm has any authority to obligate or bind KPMG International or any other member firm vis-à-vis third parties, nor does KPMG International have any such authority to obligate or bind any member firm. All rights reserved.

The KPMG name, logo and "cutting through complexity" are registered trademarks or trademarks of KPMG International.

Publication number: 131552 Publication date: August 2014