

The Australian Thermal Coal Industry Facing Global Structural Decline Headwinds



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Thermal Coal Price decline

IEEFA is convinced that the seaborne thermal coal market has entered structural decline. Having peaked in 2009 and rebound again in 2011, the seaborne price has since fallen 70% - Figure 1. The Australian export benchmark is the Newcastle 6,000kcal net as received (NAR) free on board (FOB) index. In September 2015 this coal index price is US\$55/t.¹

The Newcastle coal **forwards** factor in prices remaining below US\$53/t through to 2021.

Figure 1: Thermal Coal Export Price - Newcastle 6,000kcal NAR US\$/t



Source: [Index Mundi, Australian thermal coal Monthly Price - US Dollars per Metric Tonne](#)

Figure 2 details the second Newcastle benchmark index of 5,500kcal NAR 20% ash content, down 20% to-date in 2015 alone to US\$43/t.

Figure 2: Newcastle 5,500kcal thermal coal export price hit a decade low (US\$/t)



Source: [Platts, August 2015](#)

¹ Platts Coal Trader International, 23 September 2015.

Seaborne Thermal Coal has Entered Structural Decline

In conjunction with Carbon Tracker, IEEFA published a major global thermal coal study in September 2014.² The key conclusion of this study was that the Chinese domestic demand for thermal coal was likely to peak by 2016, plateau and then steadily decline thereafter. Given China is half global thermal coal consumption, this led to the second conclusion, that world seaborne thermal coal demand would peak concurrently with China in 2016. Even this has proven too optimistic.

The International Energy Agency (IEA) has historically proven too bullish about the outlook for coal markets. The IEA's World Energy Outlook 2014 forecast a peaking then plateau in thermal coal demand in China by 2020-2025. A key weakness in this analysis is the reliance on data only up to 2013, ignoring the key turning point evident in 2014 that has accelerated into 2015. However, the IEA's June 2015 "*Energy and Climate Change publication*"³ models a dramatically different scenario with China's coal-fired power generation peaking at 4,110TWh in 2013 and declining -0.2% pa over the 2013-2030 period. This has staggering implications for the outlook for seaborne thermal coal imports into China, and with global implications for demand and hence pricing.

Major global investment banks have increasingly come to a similar conclusion. Bernstein Research in June 2013 called for a peak in China's coal consumption by 2016 in their seminal Blackbook: "*China: The beginning of the end of Coal*". Morningstar in April 2014 published "*Burned Out: China's Rebalancing Heralds the End of Coal's Growth Story*."

Citigroup Research in May 2015 said that thermal coal was in "*structural decline as a result of increasing environmental pressures and improving competitiveness of alternative power sources, including renewables and natural gas.*" In September 2015 Citigroup published "*Energy Darwinism II, Why a low carbon future doesn't have to cost the earth*" and analysing the transformation of the global energy markets currently underway.

UBS, Merrill Lynch, Deutsche Bank, HSBC, Morgan Stanley and Goldman Sachs ("*Thermal coal reaches Retirement Age*") have likewise massively downgraded their demand and price expectations for coal and now assume no material price recovery in the longer term.

In September 2015 Goldman Sachs reported coal was now in structural decline and downgraded their thermal coal forecast by 25% to US\$50/t nominal over the long term.

Professor Ross Garnaut has likewise argued that Chinese energy demand is at a cross roads⁴. Lord Stern and Fergus Green have published authoritative papers detailing the structural changes in China with the conclusion of structural decline of seaborne coal.⁵

² <http://www.carbontracker.org/wp-content/uploads/2014/09/Coal-Demand-IEEFA.pdf>

³ <http://www.iea.org/publications/freepublications/publication/weo-2015-special-report-energy-climate-change.html>

⁴ http://www.rossgarnaut.com.au/Documents/Garnaut_AFR_AustraliahasnotrecognisedchangeinChinesedemandforironoreandcoal060415%20.pdf

⁵ http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/06/Chinas_new_normal_green_stern_June_2015.pdf

Falling Import Demand for Thermal Coal

IEEFA forecasts that global import demand for thermal coal peaked in 2013 at 1,072Mt, and is set for a 40% decline by 2021 to 729Mtpa. This forecast is predicated on the view that Western Europe, Japan and China have already passed peak demand. Should Indian Energy Minister Goyal be successful, seaborne thermal imports will be the first casualty, with a globally material impact. Figure 3 assumes Goyal will be successful, but over 5-7 years rather than his hope for cessation of thermal coal imports within 2-3 years.

Western Europe is forecast to decline materially over this decade due to European Union policy initiatives for renewables, energy efficiency and the Large Combustion Plant Directive 2001/80/EC.

Japan is forecast to decline due to the combination of factors: ongoing economic growth headwinds; continued energy efficiency gains; the addition of 8-10GW pa of new solar installations; any sustained nuclear facility restart (Japan needs to resolve 42GW of idle nuclear capacity one way or another) and a step-up in wind farm development.

IEEFA forecasts that thermal coal imports peaked into China in 2013, far earlier than most commodity forecasters have anticipated. Thermal coal imports to China declined 9% in 2014, and year-to-August 2015, coal imports have declined a further 31% year-on-year. This is driven by significant ongoing improvements in energy intensity of growth, a gradual slowing of economic growth and continued efforts to diversify away from an excessive reliance on thermal coal.

Figure 3: Thermal Coal Import Demand (1990 to 2021)

Calendar Year	Actuals				Estimate	Forecasts						
	1990	2000	2010	2013	2014	2015	2016	2017	2018	2019	2020	2021
COUNTRY												
China	11	8	126	264	240	168	134	108	86	65	45	29
India	0	10	81	142	152	192	167	139	108	72	36	0
Japan	42	93	128	142	145	142	137	133	129	125	122	118
Korea	12	45	90	96	98	100	102	104	106	108	111	112
Taiwan	14	40	58	61	63	63	65	66	67	69	70	71
South East Asia (1)	4	14	53	60	63	73	79	84	90	96	103	111
Western Europe (2)	48	80	98	128	114	102	99	95	91	87	83	79
Rest of world	191	150	172	179	181	184	188	192	196	199	203	208
Total World	322	441	806	1,072	1,055	1,025	970	921	874	822	774	729
United States	2	10	16	7	7	9	9	10	10	10	10	10
Russia	53	25	24	23	23	21	19	19	19	19	19	19
Net World Imports	267	406	766	1,042	1,025	996	942	892	845	793	745	700

(1) This includes only Thailand, Philippines, Malaysia, Pakistan and Vietnam
(2) This includes only United Kingdom, France, Germany, Spain and Italy
(3) Note - This is global traded thermal coal including lignite, and inclusive of non-seaborne trade.

Source: IEA database, IEEFA forecasts

The Four Largest Electricity Markets Globally: Rapidly Transforming

China – coal imports are down 31% year-on-year, year to date 2015

China's imports of coal declined a record 31% year-on-year in the first eight months of 2015,⁶ and coal consumption in 2015 year-to-date is [estimated](#) to be down over 7% yoy. Chinese electricity demand in 2015 is up just 1.0% year-on-year.⁷ The decoupling of electricity demand growth from the 7% annual economic growth over 2014 and 2015 is clearly continuing. This is contrary to the IEA forecasts for China's electricity demand to be highly correlated to economic growth for at least the next decade. China looks to have actually seen peak coal consumption and peak imports as early as 2013.

India – coal imports are down 5% year-on-year in July-Aug 2015

India is the third largest domestic thermal coal market in the world. On 12 November 2014 India's Energy Minister Piyush Goyal said he plans for India to cease importing thermal coal in 2-3 years.⁸ This is a part of a well conceived and ambitious development of the Indian electricity sector. India's Minister is making it clear India can't afford to solve energy poverty using expensive imported coal, and will increasingly diversify the electricity sector away from coal. Imported coal fired power plants are not commercial.⁹ "Our aim is to have zero import of coal, and manage with the coal from Coal India sources or our own mines. You can say in the next five years." NTPC MD Arup Roy Choudhury [said](#) April 2015 (for relevance, NTPC is the largest coal-fired power generator in India with 44GW of capacity).

A greater reliance on energy efficiency and improved grid efficiency, plus a plan to install 175GW of run-of-river hydro, biomass, wind and solar in the next seven years alone, combined with an acceleration in domestic Indian coal mining and nuclear power in India will all facilitate this transition.¹⁰

Japan – electricity demand has declined for five years running since 2010

An examination of Japan as Australia's largest thermal coal export destination suggests this is an increasingly global phenomenon.

In a September 2015 review,¹¹ UBS reported two different scenarios for Japanese coal demand: one from the Japanese government via its Ministry of Economy Trade and Industry (METI) and another from Bloomberg New Energy Finance (BNEF). METI has electricity demand in Japan flat through to 2030, whereas BNEF has it declining by 0.8% CAGR (at IEEFA, we think energy efficiency is the No. 1 driver of declining demand and we

⁶ <http://www.reuters.com/article/2015/09/08/china-economy-trade-coal-idUSL4N11E1P920150908>

⁷ <http://www.reuters.com/article/2015/09/07/china-power-consumption-idUSB9N11103V20150907>

⁸ <http://in.reuters.com/article/2014/11/12/india-coal-imports-idINL3N0T234F20141112>

⁹ <http://www.frontline.in/economy/there-is-no-intention-to-denationalise-coal-india/article6847880.ece?homepage=true>

¹⁰ <http://reneweconomy.com.au/2014/indias-plan-stop-importing-coal-deals-another-blow-australia-68894>

¹¹ <http://ieefa.org/wp-content/uploads/2015/09/UBS-report-Japan-et-al.pdf> slide 16.

see a decline of greater than 1 percent annually). Both the METI and BNEF forecasts factor in a nuclear restart. Gas and oil demand for electricity generation both decline, while solar and wind both rise five to tenfold in these forecasts. The conclusion from both scenarios is that Japanese coal demand peaked in 2013 and will decline 1 to 3 percent annually hereafter. Japan is Australia's No. 1 export market for coal.

America – coal consumption is down 10% year-on-year, year to date 2015

US domestic coal consumption is expected to decline 10% in 2015 alone, to be down 30% from its peak in 2008. UBS Equity Research forecast in September 2015 that coal-fired power generation would decline a further 45% from 2015 levels by 2030.

The Road to Paris

The historic November 2014 China-US Climate Change Agreement has created a wave of global regulatory, financial and policy initiatives into 2015 that strongly supports the IEEFA projection. This agreement commits to building upon a number of significant actions to move aggressively away from fossil fuels and transition towards a lower carbon energy mix.

India's INDC is due this month, and will likely involve a commitment to a tenfold increase in renewable energy to 350GW by 2030, underpinning their electricity market transformation. With Europe, America, China and India all in accord, global momentum is building.

Adding New Supply to An Oversupplied Seaborne Coal Market

It makes no strategic sense for Australia to add new greenfield thermal coal export capacity. Adding new mines into an already chronically oversupplied seaborne market when demand is declining will only serve to drive the thermal coal price down further, and more existing Australian mines will close as a result – given many are operating at gross cash breakeven at best in the current weak pricing environment.

Australia might gain export volume market share as a result. But adding new capacity, as is planned with the Galilee, Watermark, Caroona, Bylong, Drayton South etc is merely profitless prosperity, at best for Australia. At worst, it is building yet more stranded assets.

Global Listed Coal Companies Wealth Destruction

IEEFA [notes](#) the average 70% decline in global coal company share prices in just five years.

For example, Peabody Energy, the largest pure-play western coal producer has seen US\$17bn shareholder wealth destruction over the last five years. Peabody stock is down 96% in this period, whilst the US Equity market index is up more than 80%. Investing in coal companies is increasingly accepted by the financial markets as a wealth hazard.

Figure 4 details the shareholder wealth destruction in coal companies has mirrored the global trend, despite the decline in the AUD/USD. Whitehaven Coal shares (blue) are down 84% in the last five years, albeit outperforming Yancoal (red) and Cockatoo Coal (green).

Figure 4: Whitehaven, Yancoal and Cockatoo Coal (five years to 2015, indexed)



Source: Yahoo Finance, 24 September 2015

The global mining conglomerates show that those with the largest exposure to coal are suffering a similar de-rating, as Figure 5 details. Like Glencore (red line), Anglo American shares are down 74% in the last five years (blue) and have massively underperformed BHP (green). By comparison, the UK stockmarket has been flat overall (the FTSE index - brown).

Figure 5: Anglo American, Glencore & BHP share price (five years to 2015, indexed)



Source: Yahoo Finance, 24 September 2015

Institute for Energy Economics and Financial Analysis

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About the Author

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Tim Buckley has 25 years of financial market experience covering the Australian, Asian and global equity markets from both a buy and sell side perspective. Tim was a top rated Equity Research Analyst and has covered most sectors of the Australian economy. Tim was a Managing Director, Head of Equity Research at Citigroup for many years, as well as co-Managing Director of Arkx Investment Management P/L, a global listed clean energy investment company that was jointly owned by management and Westpac Banking Group. Tim has worked at IEEFA since 2013.

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