Expert Report to the Land Court by William Simes

1. Experts Details & Qualifications

1.1 Name

My name is William Dean Simes.

1.2 Address

I am a Senior Associate at Wood Mackenzie (Australia) Pty Ltd, Level 13, 50 Pitt Street, Sydney, NSW 2000.

1.3 Qualifications

Annexure A to this report is my curriculum vitae, which sets out my professional qualifications.

2. Instructions

I have been instructed by Allens Arthur Robinson on behalf of Xstrata Coal Queensland Pty Ltd to formulate a report in response to the following questions:

(a) Taking into consideration the Wood McKenzie Supply Demand Analysis, in your opinion, if coal from the Wandoan coal mine is not produced, is it reasonable to expect that coal from an alternate source will replace the Wandoan coal?

(b) Can you provide comment on whether coal from an alternate source supplied to replace coal which might have been supplied from Wandoan ("alternate coal") would be likely to create a similar, lower or a higher level of emissions to Wandoan coal?

3. Facts and Assumptions

Wood Mackenzie is a highly regarded global energy research and consulting firm, with around 650 staff around the world. It initially focused on the oil industry, and then gas and electricity, and in 2007 it acquired coal specialists Hill & Associates in the US and Barlow Jonker in Australia. Wood Mackenzie's coal industry analysis is well respected and accepted globally by producers, consumers, lenders and governments. One recent example is the Queensland Government Department of Infrastructure and Planning "CoalPlan 2030" report (November 2010) which uses Wood Mackenzie coal forecasts.

The Wood Mackenzie Supply Demand Analysis is a general reference to the specific type of work and services provided by Wood Mackenzie in relation to the coal industry and coal production throughout the world. It covers the coal production, supply and consumption chain from resource evaluation through to coal mining and coal consumption and contains long-term price and demand/supply forecasting. Wood Mackenzie has developed models covering the markets for domestic energy and internationally traded coal. Wood Mackenzie's view on coal supply and markets is integrated with its wider view on trends in global energy markets, and considers the inter-relationships between different fuel types as market relativities develop and change. Wood Mackenzie's Coal Market Service (from which Annexure B is sourced) provides an overview of coal supply, demand and prices out to 2030.

My report is based on my experience in conducting coal supply and demand analysis for Wood Mackenzie (and prior Barlow Jonker), and access to Wood Mackenzie data and models, including the Coal Market Service. I have also referred to the references listed in Section 8 of this report.

4. Opinion and Findings

4.1 Opinion as to alternate coal supply

(a) Taking into consideration on the Wood McKenzie Supply Demand Analysis, in my opinion:

(i) there is demand for coal from Wandoan; and

(ii) if coal from Wandoan is not produced, it is reasonable to expect that alternate coal will replace Wandoan coal.

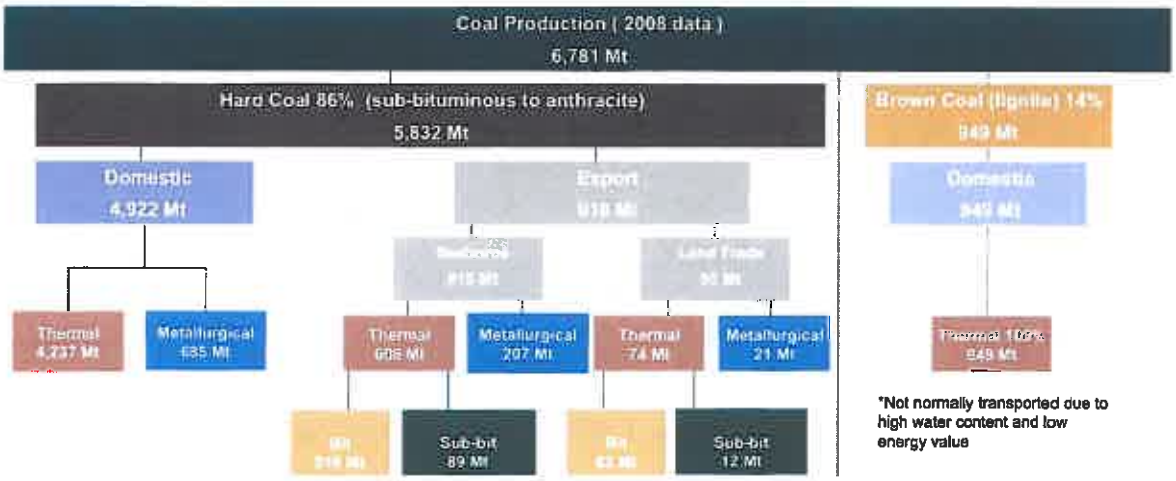
The background and reasoning for my opinion is as follows.

(b) Coal is a widely distributed natural resource that is mined in numerous countries around the world. The consumption of coal is driven by the demand for energy. Coal is relatively abundant and generally of lower cost than other forms of energy. Energy demand continues to grow, especially in the developing nations of Asia (in particular China and India), and coal will provide a considerable part of that energy demand growth over the coming decades.

(c) Coal consumption or use is broadly divided into two groups, thermal coal (used in combustion to produce steam for electricity and heat) and metallurgical coal (includes coking coals, plus other coals, such as pulverised coal injection (PCI) coals, used for reductant purposes).

(d) The majority of world coal production is consumed in the country in which it is produced. The United States and China are the largest coal producers in the world, with the majority of coal produced in those countries is consumed domestically. Although exports represent a relatively small amount of total world coal production, the Australian coal industry is primarily focused on coal exports. Figure 1 shows a breakdown of global coal production for 2008.

Figure 1: 2008 global coal production breakdown (Source: Wood Mackenzie analysis)



(e) In 2008, total annual global production of all coal exceeded 6700 million tonnes (Mt). The vast majority of this coal was used for domestic consumption. Brown coal or lignite and much of the hard coals used domestically are typically unsuitable for the export market due to cost and coal quality considerations (such as low energy content, high moisture and/or ash content). Domestic thermal coal consumers dominate global coal use. In order to minimise transportation costs, most coal fired power stations are located near domestic mines. Coal fired power stations without access to competitive domestic coal typically import higher energy or premium quality thermal coals. The number of power stations in this category continues to increase as domestic resources are depleted, become uneconomic, or become unacceptable due to impurities that render them unable to meet tightening emissions standards when burnt. Power stations most able to switch to imported coal are typically located in coastal regions. Recent strong demand growth has seen increasing levels of lower quality coals in international trade, as the availability of higher energy coals has been unable to match the demand growth.

(f) Wood Mackenzie[1] forecasts that the seaborne thermal coal trade will reach 1.1 billion tonnes (bt) by 2020 and 2 bt by 2030, driven by growth in coal-based power generation in the Asia Pacific region. Japan and China are currently the largest importers. India will account for the largest increase in imports during the coming decade and China will be the main source of increase in imports post 2020. Domestic coal dominates supply in both China and India, however it will not be able to meet the increasing coal demand in those countries.

(g) Australia and Indonesia are at present the largest exporters of thermal coal in the world, and both are expected to provide the largest proportion of the required growth in supply of export coal to meet the expected increase in demand. Russia, South Africa and Colombia are significant exporters at present and will remain so in the future, while Mozambique and Mongolia are new emerging export suppliers. Thermal coal exports from the USA have recovered in recent years, and in the long term it could become a significant export supplier. The strong market outlook is encouraging coal developments in existing and new coal regions worldwide. A number of these are briefly discussed in the following paragraphs, as well as the possibility of whether they might be able to substitute for coal that might be produced from Wandoan:

(i) Thermal coal exports from Australia mainly come from NSW and Queensland, where to date growth has been hampered by insufficient capacity of the rail and port infrastructure. Numerous mining and transport infrastructure expansions and new developments are in construction or planning. New mines and mine expansions in the Sydney and Bowen basins await completion of relevant infrastructure projects, which will also allow mine developments in the Gunnedah (in New South Wales), Surat (in Queensland) and Galilee (also in Queensland) basins. The Wood Mackenzie forecast predicts that numerous mine projects will come on line at lower production levels or later than the mining companies are planning due to infrastructure and project development limitations. There is a strong

likelihood that some of any shortfall in supply from Wandoan would be supplied from other Australian mines.

(ii) Indonesia supplies a mix of thermal coals – Bituminous (> 5,400 kcal/kg (gar)), Sub-bituminous (>4,500 to 5,400 kcal/kg (gar)) and Low rank (up to 4,500 kcal/kg (gar)). Indonesian low rank coal is lignite. Bituminous and sub-bituminous coals make up almost 90% of thermal coal exports, however, as noted above at (e), strong coal demand and competitive prices mean low-rank coal is gaining increasing market share. By 2020 these coals are expected to account for about one third of exports. Continued growth of exports from Indonesia is expected, and it is likely that some of any shortfall in Wandoan coal supply would be supplied from mines in Indonesia.

(iii) Russia has very large coal reserves, principally in central Russia. The improved export market conditions have allowed Russian thermal coal exports to increase to approximately 90Mtpa currently (excluding cross border trade to Ukraine). Most of this coal is railed in excess of 4,000km to ports in western and eastern Russia. Russian coal exports represent less than half its overall production. It is possible that some of any shortfall in coal supply from Wandoan would be met by Russian suppliers.

(iv) South African coal exports have been restricted for a number of years, due to domestic demand, rail capacity and diminishing reserves in the major coal producing region near Witbank. However, stronger coal prices are resulting in marginal reserves being mined and the development of new coal regions. Neighbouring countries of Mozambique and Botswana have coal deposits that are under development or planning. Some of this coal will be used to meet the energy demands of southern Africa, and while the focus of the Mozambique developments is for export metallurgical coals, thermal coal by-products will also result and be exported. The net result will see increased thermal coal exports from southern Africa. It is possible that some of any shortfall in coal supply from Wandoan would be met by these suppliers.

(v) Colombia has large reserves of good quality thermal coals, and exports in excess of 70Mtpa principally to American, European and Mediterranean markets. The growth in Asian demand has seen some South African coal switch out of Europe allowing Russian and Colombian exports to grow. This trend is likely to continue. In periods of high prices Colombian coals are also sold into Asian markets. It is possible that some of any shortfall in coal supply from Wandoan could be supplied from Colombia.

(vi) The strong demand growth is also resulting in coal developments in regions considered to only offer domestic coal. For example sub-bituminous coals in Western Australia are being exported (in small volumes currently) from the Collie Basin. In the USA, similar coals in the Powder River Basin are being exported into the Pacific, with plans for rail and port

upgrades to allow significant growth in the long term. It is possible that some of any shortfall in coal supply from Wandoan would be met by these suppliers.

(vii) The key demand growth markets of China and India are largely self sufficient in coal supply, albeit that much of this coal is of lower grade than exports coals. China produces and consumes all grades of coal (anthracite, bituminous, sub-bituminous and lignite), with much of its production growth in sub-bituminous coal and lignite. During periods of higher export prices, Chinese consumers reduce imports to buy locally. It is likely that some of any medium term shortfall in Wandoan coal supply would be supplied from these domestic mines.

(h) In summary, it is reasonable to expect that any shortfall in coal supply from the Wandoan coal mine will be met by alternate supply from one or more of a range of coal supply regions worldwide.

4.2 Opinion as to emissions from alternate coal

(a) In terms of CO_2 emissions, it is my opinion that any coal supplied to meet any shortfall from the Wandoan coal mine is likely to create a similar level of emissions or a higher level of emissions. The following paragraphs set out my reasoning.

(b) When burnt, differing coals will give off different emissions of CO_2. This is recognized within the numerous groups as outlined below:

(i) The National Greenhouse Accounts[2] show fuel combustion emission factors of 88.2 kg CO_2-e/GJ for black coal (other than that used to produce coke) and 92.7 kg CO_2-e/GJ for brown coal.

(ii) IPCC Guidelines for National Greenhouse Gas Inventories[3] have default emission factors for coal (used in stationary combustion in the energy industry). Coal from Wandoan would be classified as "Other Bituminous Coal" in this list.

	Default Emission Factor kg CO_2/TJ
Anthracite	98 300
Coking Coal	94 600
Other Bituminous Coal	94 600
Sub-Bituminous Coal	96 100
Lignite	101 000

(iii) The Energy Information Administration in its Quarterly Coal Report[4] listed carbon dioxide emission factors for USA coals by state and coal type, with the following national averages by coal type:

	USA Average lb CO_2/Mbtu
Anthracite	227.4
Bituminous Coal	205.3
Sub-Bituminous Coal	211.9
Lignite	216.3

(c) Wandoan coal is a bituminous coal. As is shown by the paragraphs above bituminous coals produce less carbon dioxide emission per unit of energy than other coals.

(d) Section 4.1(g) above identifies a range of alternate coals that could replace any coal supply shortfall from Wandoan. These alternate coals include bituminous coals and lower quality coals (which produce higher CO_2 emissions), and thus would produce a similar or a higher level of CO_2 emission to any Wandoan coal they replace.

5. Summary of Opinion and Findings

(a) It is reasonable to expect that if coal from the Wandoan coal mine is not produced that coal from alternate source(s) will be supplied to the coal market to meet demand.

(b) In terms of CO_2 emissions, it is my opinion that any coal supplied to meet any shortfall from Wandoan is likely to create a similar level of emissions or a higher level of emissions.

6. Additional Information Required

I am not aware of any readily ascertainable additional facts that would assist me in reaching a more reliable conclusion.

7. Expert's Statement

I confirm the following:

(a) the factual matters stated in this report are, as far as I know, true;

(b) I have made all enquiries that I consider appropriate;

(c) the opinions stated in this report are genuinely held by me;

(d) the report contains reference to all matters I consider significant; and

(e) I understand my duty to the court and have complied with the duty.

Signed: .....

Name: William Dean Simes

Date: 8 July 2011

8. References

1. Wood Mackenzie, Coal Market Service – Thermal Trade, June 2011 – refer Attachment B
2. Department of Climate Change and Energy Efficiency, National Greenhouse Accounts (NGA) Factors, July 2010
3. Darío R. Gómez (Argentina) and John D. Watterson (UK), Branca B. Americano (Brazil), Chia Ha (Canada), Gregg Marland (USA), Emmanuel Matsika (Zambia), Lemmy, Nenge Namayanga (Zambia), Balgis Osman-Elasha (Sudan), John D. Kalenga Saka (Malawi), and Karen Treanton (IEA), Roberta Quadrelli (IEA), 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Energy Chapter 2 – Stationary Combustion, 2006
4. Hong, B.D. and Slatick, E.R., "Carbon Dioxide Emission Factors for Coal, Energy Information Administration, Quarterly Coal Report, January-April 1994, DOE/EIA-0121(94/Q1)(Washington, DC, August 1994).

9. Annexure A: Curriculum Vitae for William Simes

WILLIAM (BILL) DEAN SIMES

Nationality Australian **Year of Birth** 1960
Contact details 1 Yamba Street, North Balgowlah, NSW 2093 Australia.
Tel +61-2-9948 2081 (ah); Mob +61-437 185494

FIELDS OF SPECIAL COMPETENCE

Highly experienced in the coal mining industry. Strong background in mining operations, mine technical and commercial evaluations, coal industry economics, coal market analysis, and coal mine investments.
Particular skills include coal market dynamics, coal mine cost analysis and competitiveness, coal industry strategy, including investment identification and evaluation.
Strong negotiation, presentation, management and team building skills.

QUALIFICATIONS

Bachelor of Engineering (Mining), University of New South Wales

Master of Business Administration, Macquarie University Graduate School of Management

Queensland 1st Class Mine Manager's Certificate of Competency No 3490 (registered in NSW)

MEMBERSHIP OF PROFESSIONAL INSTITUTES

Member Australian Institute of Mining and Metallurgy

PROFESSIONAL EXPERIENCE

May 2010 - Present — **Extract Consulting Pty Limited** — **Sydney, Australia**
Director
Independent consultancy, specialising in coal industry developments, strategy, markets and investments.

2007 - 2010 — **Wood Mackenzie**
Vice President – Coal (& Senior Associate post May 2010)
Continued coal industry and strategic consulting, as per Barlow Jonker

2000 - 2007 — **Barlow Jonker Pty. Ltd** — **Sydney, Australia**
Executive Director

Responsibility for business management, leading the consulting team, and business growth. Over the period as Director, established new business offices in Brisbane, Beijing and Johannesburg, and achieved 5 times earnings growth.

Led the consulting group with responsibility for:

- Business and market strategy
- Strategic industry evaluations
- Coal market assessment and forecasts
- Cost estimates of current and future mining operations
- Identification of investment strategies and opportunities
- Economic evaluation for current and future business environments
- Mine and resource valuation
- Independent expert reports
- Research, analysis and publication of a series of multi-client in-depth coal industry reports

Individual assignments included:

- Valuation and technical assessment of operating coal mines (underground and open cut) and coal resources in Australia and Indonesia. Valuation and reports were relied on for lending and public listing purposes, as well as confidential negotiations by potential investors.
- Due diligence on coal mines and projects in Australia, Indonesia and China
- Analysis of domestic coal suppliers to NSW and Queensland power generators.
- Analysis of long term coal exports from Australian & international coal suppliers (mines & projects), and necessary infrastructure requirements.
- Analysis of short and long term international coal supply and demand for international coal producers and consumers.
- Strategic advice on coal industry opportunities, including identifying coal mining investment opportunities in Australia, China and Indonesia.
- Led major in-country assessment of Chinese coking coal producers and consumers
- Preparation of detailed cost & industry reports on Australian, Chinese and Indonesian coal producers and their supply chains
- Published reviews and cost studies of coal mining industries in Australia, China and Indonesia.
- Provided numerous in-house presentations to clients worldwide on strategy, investments, coal markets and industry developments. Plus numerous presentations to coal conferences globally.

1998 - 2000 **Mine Review Pty Ltd** **NSW**
Principal

Independent mining consultancy, specialising in mine design, investment analysis, performance reviews and feasibility studies. Assignments included:

- Justification of open cut equipment replacements
- Evaluation of a new project feasibility for a Joint Venture partner
- Valuation of the coal division of a major resource company

1993 - 1998 **Ulan Coal Mines** **Mudgee, NSW**
Planning Coordinator Business Operations Planning

Responsible for the strategic and business operational planning of the Ulan joint venture site. Provided strategic advice to senior management and corporate partners.

- Managed the professional engineering team, providing technical and planning support to open cut and underground operations.
- Coordinated site budgeting and strategic review programs.
- Led key feasibility studies in major capital projects, including financial analysis.
- Revised business plans to match market and business changes in direction.
- Provided 10 year Vision Statement.
- Evaluation and recommendation for major equipment replacements.
- Relief mine statutory supervision in open cut and underground mines

1989 - 1993 **Ulan Coal Mines** **Mudgee, NSW**
Senior Mining Engineer

Exxon Coal & Minerals **Sydney, NSW**
Senior Staff Engineer

- Responsible for underground mine engineering and supervision of staff including preparation of underground mining budget.
- Provided engineering and support activities for strategic planning studies, justified an increase in longwall face and provided major assistance for the relocation of the underground following a "heating" incident in 1991.
- Provision of key elements in ventilation design and development of Spontaneous Combustion Management Plan.

1983 - 1989 **Cook Colliery** **Queensland**
Undermanager/Engineer in Training

- Commenced as trainee and promoted to Undermanager in January 1986.
- Responsible for safety and profitability of the mine operations.
- Highlights included transforming the poorest shift to the best performing group in 12 months and supervision of 60 people on shift.
- Also acted as Mine Manager on a relieving basis

10. Annexure B: Wood Mackenzie - Coal Market Service – Thermal Trade, June 2011. Executive Summary

Executive summary

Key issues

Key issues for the H1 Thermal Coal Forecast include:

- Economic growth in Asia-Pacific will remain strong, while the Atlantic Basin and the US will exhibit slower, more stable economic growth.
- Domestic coal production in both India and China will be unable to completely satisfy the demand growth in either country in the long term.
- International thermal coal trade will grow from 2011's 748 Mtpa to over 2.1 Btpa by 2030.
- Coal supply and infrastructure projects currently in development will be sufficient to moderate prices until about 2020.
- Beyond 2020, year-on-year seaborne thermal coal demand begins to grow at a pace of 80 to 100 Mtpa reaching 2.1 Btpa by 2030. China and India become, by far, the largest importers.
- Australia and Indonesia will continue to be the leading thermal coal exporters growing, eventually, to over 600 Mtpa each by 2030.
- The US, Russia, Colombia and others will become larger participants in the international market beyond 2020.
- The tremendous growth beyond 2020 will require the development of new mining areas, some as yet incompletely explored, and massive new infrastructure projects – the result will be steeply escalating coal prices in real terms with CFR ARA and FOB Newcastle rising to US$104/t and US$161/t, respectively, in constant 2010 US$.

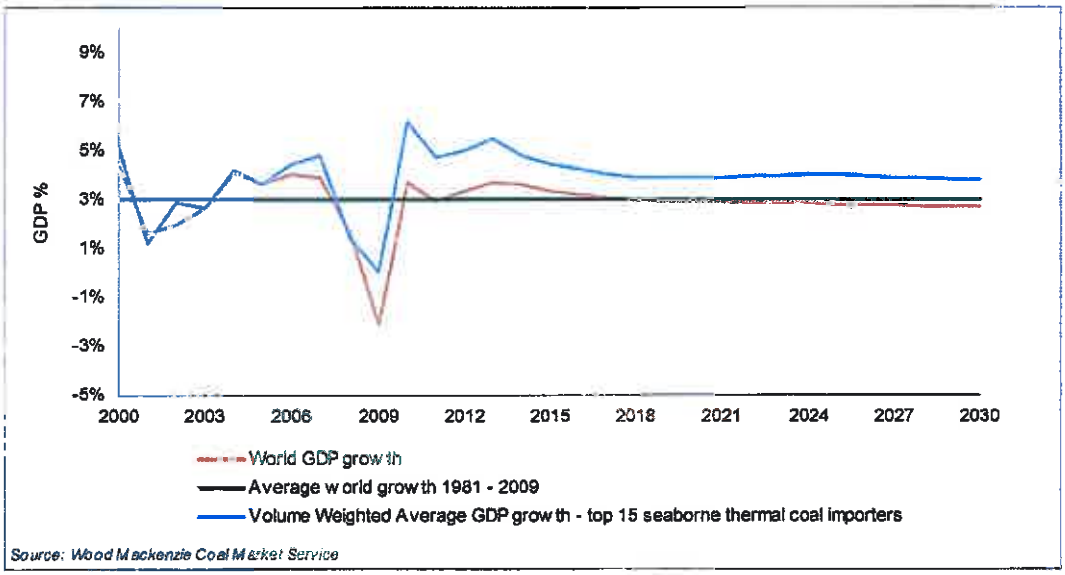
Major risks to the forecast include faster or slower Asia Pacific economic growth. The mid-term price moderation depends on the completion of currently planned infrastructure and port capacity expansions in China, Indonesia and Australia and the ability of Chinese domestic coal production to keep pace with internal demand growth. The long-term forecast, beyond 2020, assumes that Chinese domestic coal production will, at last, be unable to keep up with demand – a deviation in the timing or extent to which Chinese demand falls short would affect the forecast.

Macroeconomic indicators

Despite the recent spate of endogenous and exogenous shocks that have influenced the global economy over the past several months, Wood Mackenzie expects global GDP growth of 2.9% and 3.3% in 2011 and 2012 respectively. We see stronger growth in China and Germany, but weaker growth in Japan arising from the earthquake.

We expect global growth to peak in 2013 at 3.6% with stable, but lower growth in emerging markets that have been overheated in 2010-2011, and modest improvement in the Euro zone. Our long-term growth trend beyond 2015 will see a modest decline from 3.3% in 2015 to 2.9% by 2022. This trend reflects the length and breadth of industrialization in China that will continue well beyond 2020 where investment growth will remain above 5% per annum through 2025. In India, industrialization will not accelerate on a scale with China until 2025, but this still implies an even greater contribution from Asia Pacific (56%) to global growth over the long run.

Wood Mackenzie GDP growth forecasts – world and major thermal coal importing countries



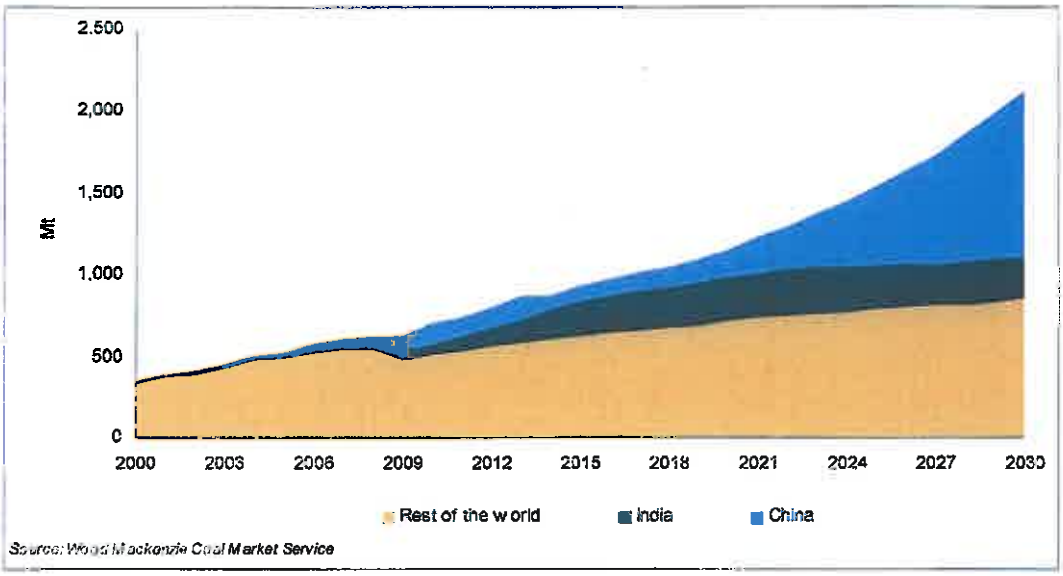
Source: Wood Mackenzie Coal Market Service

Thermal coal demand

World thermal demand will more than triple in volume, mainly fuelled by the insatiable demand of China and India. Seaborne coal demand is expected to grow at 5.8% CAGR over the next 20 years reaching 2.1 Bt by 2030. This represents an increase of 1.4 Bt over 2011's expected 728 Mt. Growth is primarily concentrated in the Pacific Basin. Seaborne coal import demand in the Asia-Pacific region is expected to grow at 6.7 % CAGR while the Atlantic Basin will grow at 1.9% CAGR.

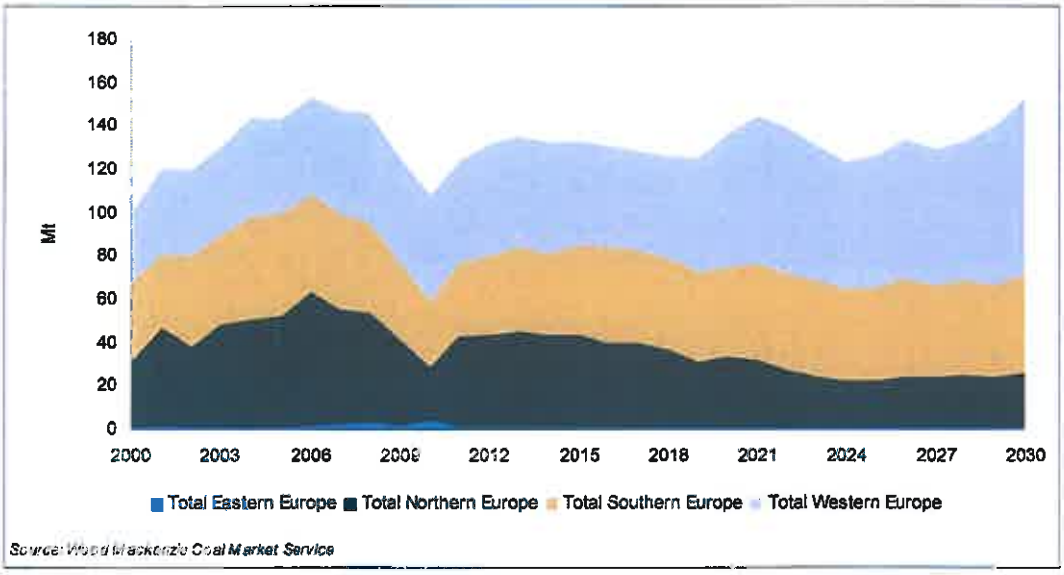
China, Japan, South Korea and India are the main coal importers in the Asia-Pacific region. In 2010, China's demand exceeded that of Japan reaching 137 Mt. Japan imported 120 Mt followed by South Korea and India at 90 Mt and 62 Mt, respectively. As Japanese demand growth continues to flatten, we have projected China's appetite for thermal coal imports to reach 1.063 Mt by 2030. Japan, will reduce its coal imports during 2011 due to the generation loss during the March earthquake, however demand will start rebounding in 2012 with a slow return to 2010 levels only by 2014. Longer term, we are not projecting that Japan will turn to coal in a major way as a base load option for future demand growth, or as a replacement for nuclear, in the aftermath of the March earthquake and tsunami. South Korean seaborne thermal import demand is expected to grow strongly due to an expansion of coal-fired capacity and demand from industry.

Seaborne imports China, India and rest of world



Seaborne Europe coal import demand is forecast to increase by 42 Mt during the next 20 years to 153 Mt from near 111 Mt in 2010 – this represents a 1.9% CAGR throughout the forecast period. However, the growth is not uniform throughout the continent. We expect Western and South Europe will increase seaborne imports by 31Mt and 16 Mt respectively as a consequence of new coal-fired power plants and the reduction of domestic coal production. German thermal coal imports are expected to expand to 51 Mt by 2020 due to the combination of declining domestic hard coal production and demand from new coal-fired capacity. Beyond 2020, German imports are expected to reach 61 Mt by 2030 as new CCS coal plants are expected to be commissioned.

Seaborne imports into Europe

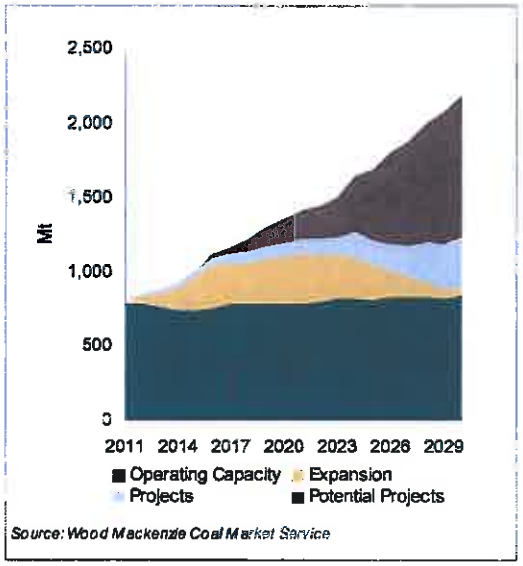


Supply outlook

Recent high prices in the thermal and metallurgical coal markets have stimulated expansion plans for both mining capacity and supporting infrastructure. Over the next several years, to 2018, thermal mining capacity, globally, is expected to grow by 50%, mostly at existing and identified new projects, and port capacity by 30%. More marginal producers with latent capacity such as the US and Canada are also searching for ways to participate in global markets. These activities are expected to keep the thermal export market well supplied until about 2018 when we forecast that Chinese domestic supply will be unable to keep pace with Chinese demand. China's continuing need to grow energy supplies will then tap into international markets in a significant way requiring substantial growth in thermal mining capacity and infrastructure in coal producing regions around the globe. Global seaborne thermal coal supply is expected to increase by 1.4 Bt to 2.1 Bt by 2030. Wood Mackenzie's analysis suggests that the Pacific Basin will supply 86% of the total increase and the Atlantic will supply 14%. The Pacific Basin supply is expected to increase by 239% over the next 20 years, from 503 Mt in 2011 to 1.7 billion tonnes in 2030. Atlantic Basin growth is expected to be more modest, increasing 84% over the forecast period reaching 414 Mtpa by 2030.

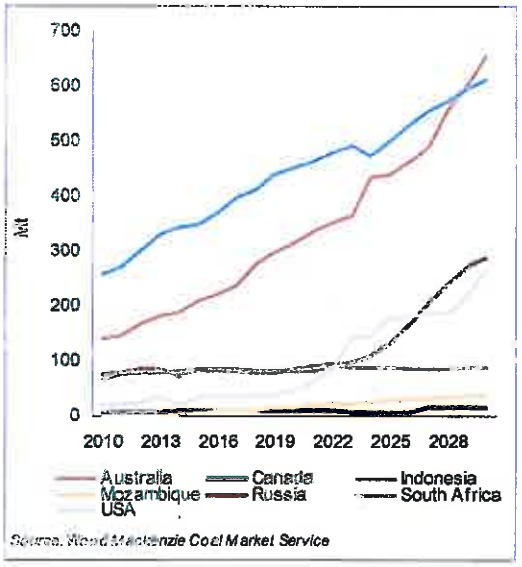
Australia and Indonesia will maintain their position as dominant suppliers to the seaborne global thermal coal market. Australia will increase its market share from 20% in 2011 to 31% in 2030, while Indonesia's market share will reduce from 37% in 2011 to 29% in 2030. Wood Mackenzie expects a significant increase of market share from the US, where market share will grow from 3% in 2011 to 12% by 2030.

World seaborne supply by status



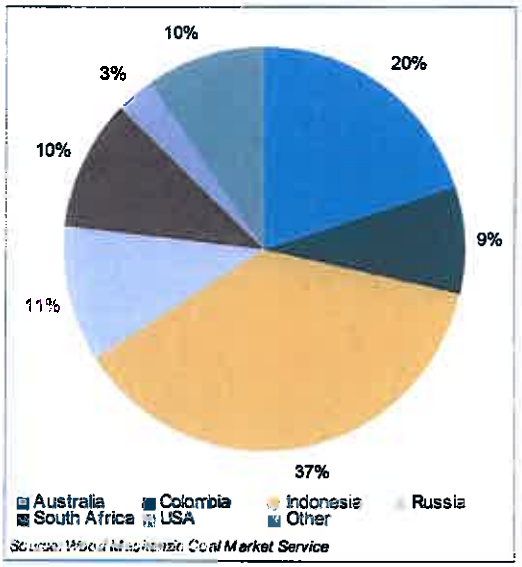
Source: Wood Mackenzie Coal Market Service

World seaborne supply by producing country

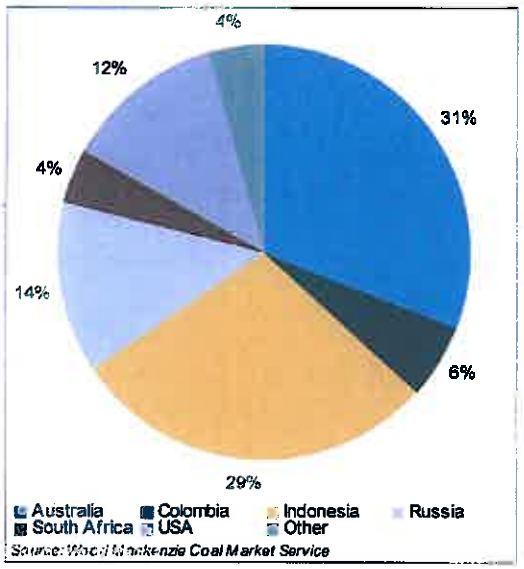


Source: Wood Mackenzie Coal Market Service

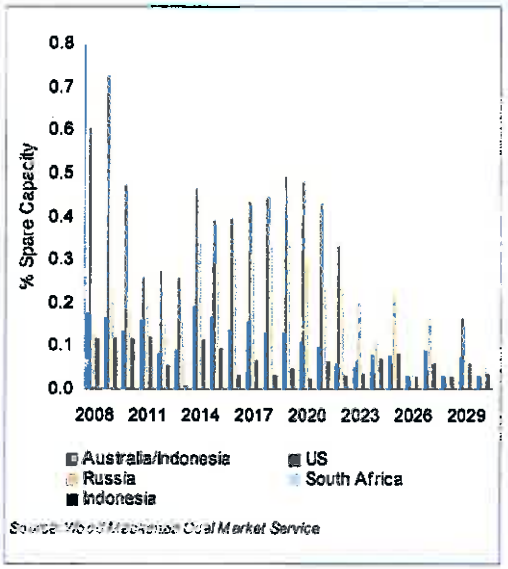
World seaborne supply market share in 2011



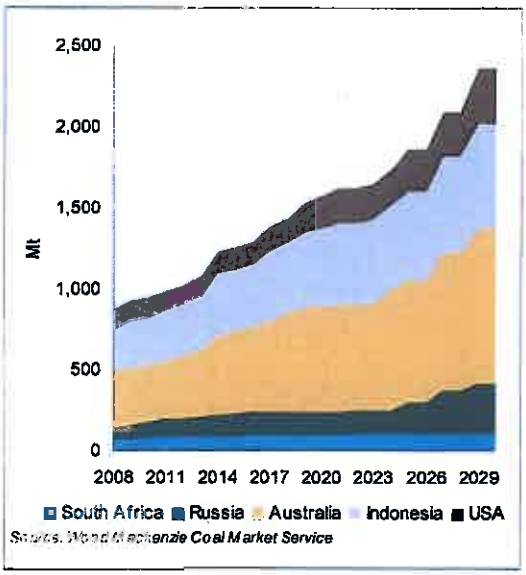
World seaborne supply market share in 2030



Forecast spare port capacity for major exporters



Planned and forecast port capacity growth

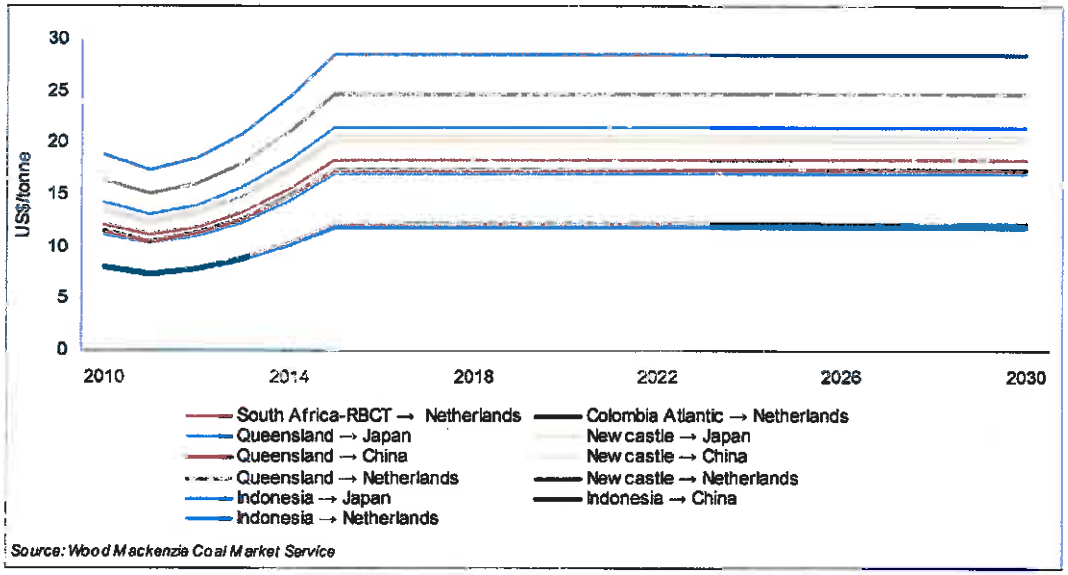


Ocean freight

This projected expansion in bulk freight supply will continue to cause the softening of ocean freight rates in the next few years, despite the expected growth in demand. After accounting for deletions and slippages, the 2011 vessel fleet will show a net increase of about 75 MDWT. This will put downward pressure on ocean freight rates through 2013.

The order book indicates supply will moderate from 2013 to 2014. Scrapping older vessels will increase over the next two years as governments, port control authorities and shippers restrict their use. However, as the market continues to respond to changing demand patterns, we expect continued volatility and, in the longer term, upward pressure on ocean freight rates.

Ocean freight rate assumptions - international coal trade



Source: Wood Mackenzie Coal Market Service

Price forecast

Our outlook for seaborne thermal coal prices can be discussed in three consecutive phases. Phase I, from 2011 to 2013, is basically an extension of current dynamics with slightly tight supply and port capacity facing slowly growing global demand, particularly in India – prices strengthen.

Phase II, from 2014 to 2020, starts out with a significant boost in supply and export capacity in the Pacific markets as well as in the Chinese domestic markets as projects initiated in the last several years begin to come on line. This includes up to 600 Mt of railroad infrastructure being brought online in China that allows for domestic supply to reach markets in the southeastern part of the country. This expansion leads to an extended period when neither supply nor port capacity are seriously challenged, even though demand continues to grow in the Pacific – therefore prices soften from today's levels on a constant dollar basis. Indonesia and Australia remain, by far, the largest global seaborne thermal suppliers, and the US maintains its role as a swing supplier during this period. FOB prices in particular will face increased competition between coal suppliers. CFR prices will not decline as much, as freight rates will strengthen from the currently depressed levels during this time frame.

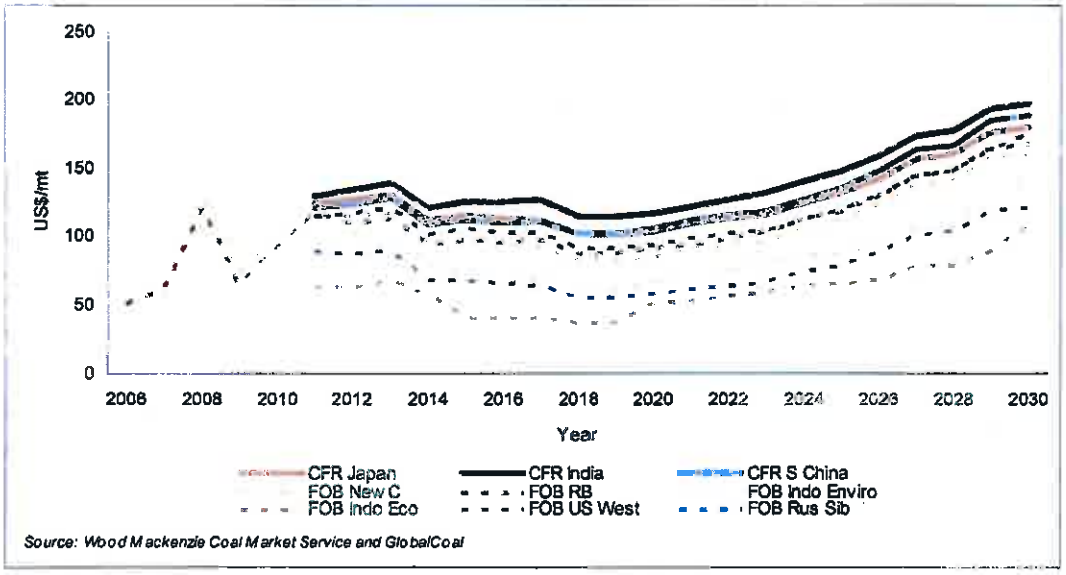
In Phase III, we expect Chinese domestic thermal coal supply to begin to fall behind the energy requirements needed to sustain Chinese economic growth. Seaborne thermal coal demand begins to grow at a rate of 80 to 100 Mtpa eventually reaching over 2.1 Btpa, globally, by 2030. Meeting this demand will require large, continuing and costly development of both supply and support infrastructure including the likely need to develop coal basins as yet not fully explored. Additional resources are required from mature and emerging basins in Australia, Indonesia, Russia, South Africa, and Colombia. Further, the US becomes a major player in export markets during this time. Prices, by the end of Phase III are projected to be 45% higher than today's level in constant US 2010 dollars, and likely volatile with such large demand growth per annum.

Pacific Basin benchmark prices (real 2010 US$/tonne)

Year	2011	2012	2013	2014	2015	2020	2025	2030
CFR Japan @ 6,000 Kcal/kg NAR	125.59	127.36	131.46	112.16	116.43	104.57	132.14	180.31
CFR India West Coast @ 6,000 Kcal/kg NAR	129.62	134.58	139.72	121.59	126.72	117.09	148.72	197.88
CFR Southern China @ 6,000 Kcal/kg NAR	121.79	123.74	128.25	108.77	112.26	105.97	136.44	188.76
FOB Newcastle @ 6,322 Kcal/kg GAR	113.82	114.75	117.29	95.44	96.79	84.92	113.06	161.39
FOB Richards Bay @ 6,303 Kcal/kg GAR	117.21	109.79	113.83	94.47	97.37	91.53	119.33	168.03
FOB Indonesia EnviroCoal Type @ 5,105 Kcal/kg GAR	87.75	88.72	94.32	84.21	68.10	66.95	87.95	146.09
FOB Indonesia EcoCoal @ 4,029 Kcal/kg GAR	63.04	63.69	67.62	57.17	40.97	50.26	65.19	107.33
FOB USA, West Coast @ 5,141 Kcal/Kg GAR	88.71	87.60	88.53	88.42	88.09	57.94	79.81	121.04
FOB Russia, Siberia @ 6,839 Kcal/Kg GAR	115.49	117.08	120.85	101.60	106.17	94.32	119.86	175.52

Source: Wood Mackenzie Coal Market Service

Pacific Basin benchmark prices (real 2010 US$/tonne)



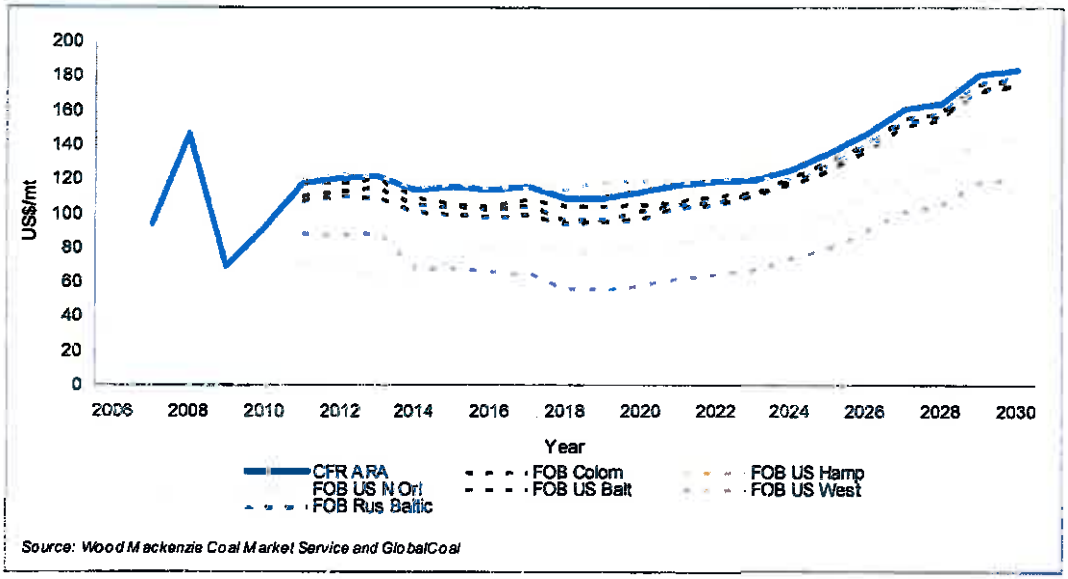
Source: Wood Mackenzie Coal Market Service and GlobalCoal

Atlantic Basin benchmark prices (real 2010 US$/tonne)

Description	2011	2012	2013	2014	2015	2020	2025	2030
CFR ARA @ 6,000 Kcal/Kg NAR	118.30	121.40	121.89	114.57	116.03	113.65	136.06	183.97
FOB Colombia, Puerto Bolivar @ 6,232 Kcal/Kg GAR	107.88	110.36	109.41	101.62	99.56	97.70	127.83	175.63
FOB USA, Newport News @ 7,140 Kcal/kg GAR	120.05	122.81	121.76	114.82	117.36	119.12	128.42	179.96
FOB USA, New Orleans @ 6,174 Kcal/kg GAR	71.56	69.75	64.05	64.67	72.61	80.76	98.47	144.82
FOB USA, Baltimore @ 7,222 Kcal/Kg GAR	118.26	118.64	119.88	110.40	105.27	105.76	124.69	175.06
FOB Richards Bay @ 6,303 Kcal/kg GAR	117.21	109.79	113.83	94.47	97.37	91.53	119.33	168.03
FOB Russia, Baltic @ 6,839 Kcal/Kg GAR	110.59	113.72	115.19	105.84	104.63	101.43	129.86	178.41

Source: Wood Mackenzie Coal Market Service

Atlantic Basin benchmark prices (real 2010 US$/tonne)



Source: Wood Mackenzie Coal Market Service and GlobalCoal

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