



# Developments in the coking coal market

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# Disclaimer (continued)

## Exploration Results, Mineral Resources and Ore Reserves

This presentation includes information on Mineral Resources, which is based on information prepared by the relevant Competent Persons as named in the 2011 Annual Report, and reported under the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (The JORC Code).

All information is compiled under the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2004' (the JORC Code) by Competent Person A Paul (MAusIMM) who is employed by BHP Billiton at the time of reporting and has the required qualifications and experience to estimate and report Mineral Resources under the JORC Code.

The Competent Persons verify that this report is based on and fairly reflects the Mineral Resources information in the supporting documentation and agree with the form and context of the information presented.

Mineral Resource classification for each deposit is presented in Table 1.

Deposit	Measured (million tonnes)	Indicated (million tonnes)	Inferred (million tonnes)
Goonyella Riverside – Broadmeadow	634	934	179
Wards Well		556	582
South Walker Creek	160	174	306
Poitrel	34	50	59
Daunia	105	52	19
Saraji East	23	186	1096
Saraji	684	221.6	111.1
Blackwater	236	683	1354
Gregory Crinum UG	10	140.7	0.3
Norwich Park	223	146	147
Peak Downs – Caval Ridge	697	875	572

# Introduction to BHP Billiton



## Aluminium

Aluminium Operations across all three stages of the value chain

## Base Metals

One of the world's largest producers of silver, lead and copper

## Diamonds & Specialty Products

EKATI Diamond Mine, titanium minerals, Potash development and exploration

## Energy Coal

One of the world's largest producers and marketers of export thermal coal

## Iron Ore

One of the world's premier suppliers of iron ore to the international steel industry

## Manganese

Operations produce a combination of ores, alloys and metal

## Metallurgical Coal

Produce and market high quality hard coking coals for the international steel industry

## Petroleum

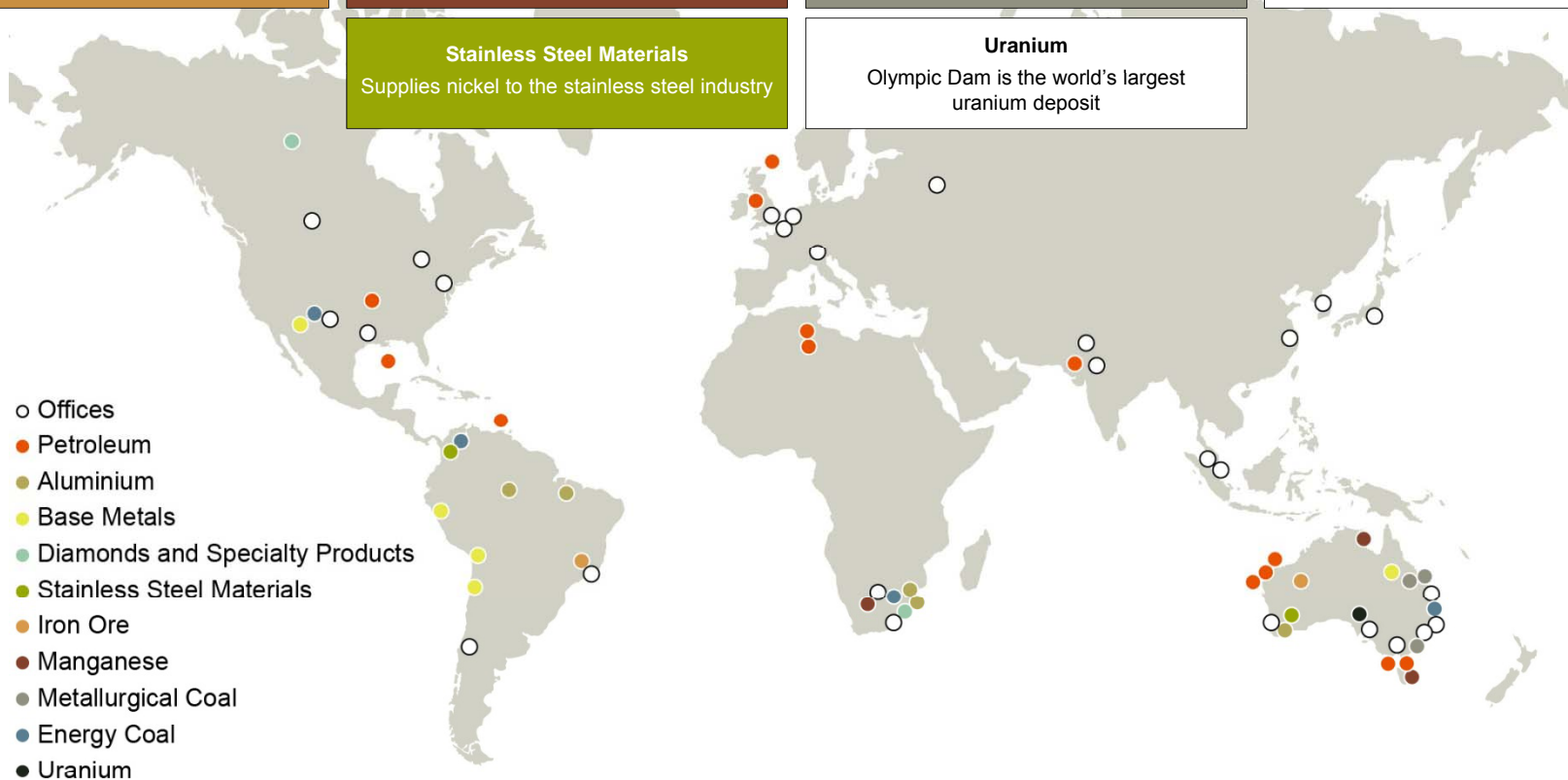
A significant oil and gas exploration and production business

## Stainless Steel Materials

Supplies nickel to the stainless steel industry

## Uranium

Olympic Dam is the world's largest uranium deposit



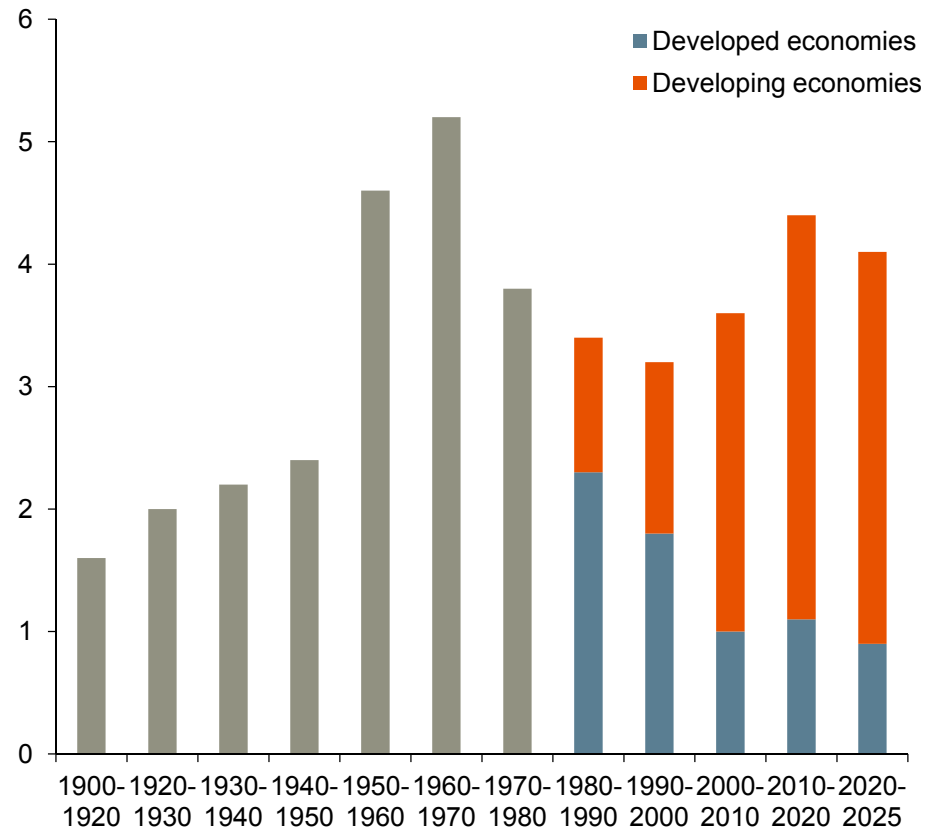
Project and Exploration activities are not shown on this map.

# Agenda

- 1. Macro outlook and steel demand growth**
2. Metallurgical coal supply / demand dynamics – growth options
3. Developments in metallurgical coal price evolution
4. Concluding remarks

# Above trend GDP growth forecast for the next decade despite softer OECD

**Global GDP growth rate**  
(% per annum)



## GDP growth has two main drivers

- Demographic factors including the size and age profile of a population and degree of urbanisation.
- Productivity factors including education, infrastructure and the efficiency of capital allocation.

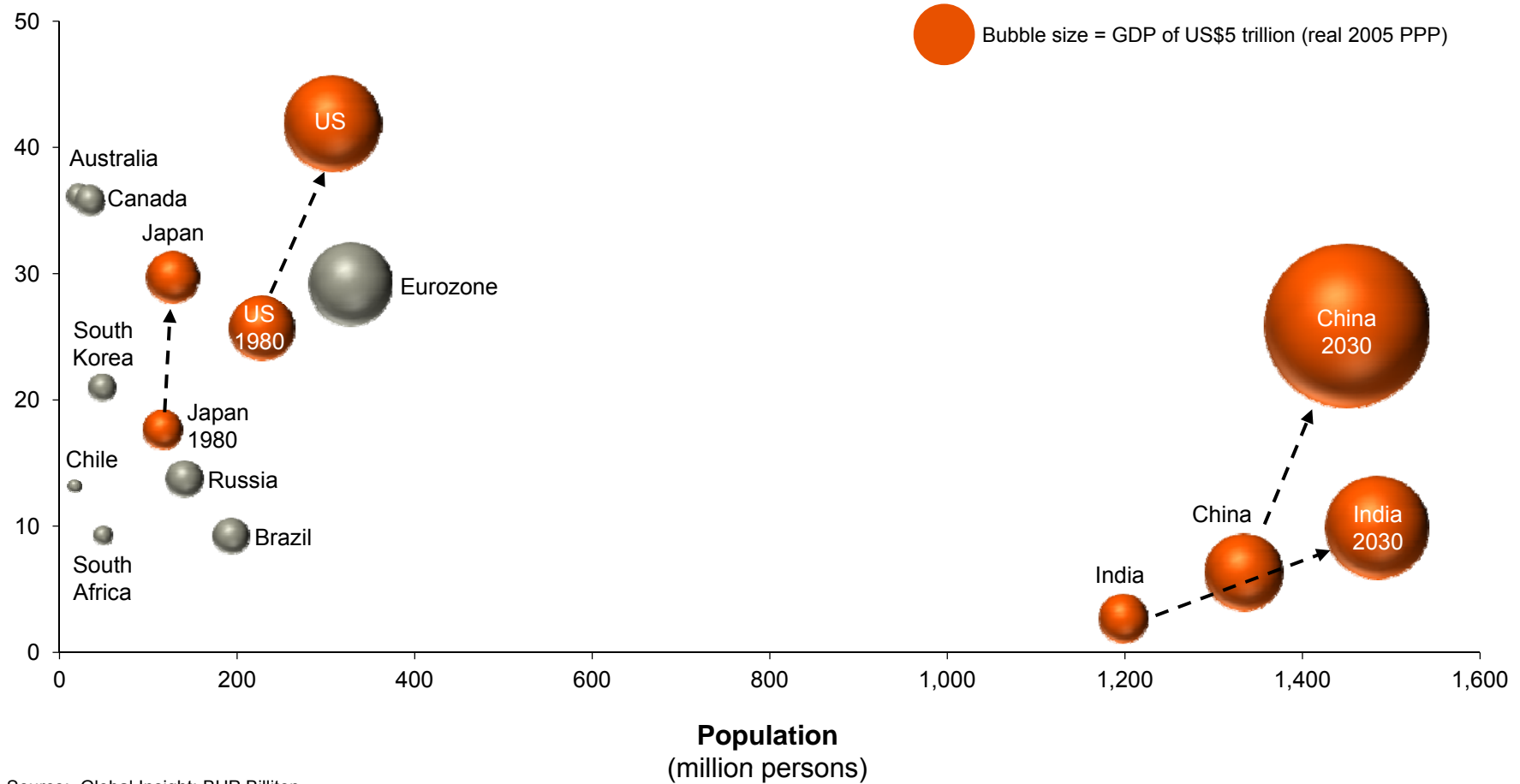
## China will become increasingly influential

- Despite the global financial crisis, global growth rates improved in the last decade.
- Decelerating Chinese growth rates are expected to be offset by the larger size of the Chinese economy.

Source: 1900 to 1980 – J. Bradford De Long (“Estimates of World GDP”, 1998); 1980 to 2010 – IMF World Economic Outlook Database; 2010 to 2025 Forecast – Global Insight.

# Chinese GDP is set to grow substantially to 2030

World GDP per capita<sup>1</sup>  
(US\$000, real 2005 PPP)

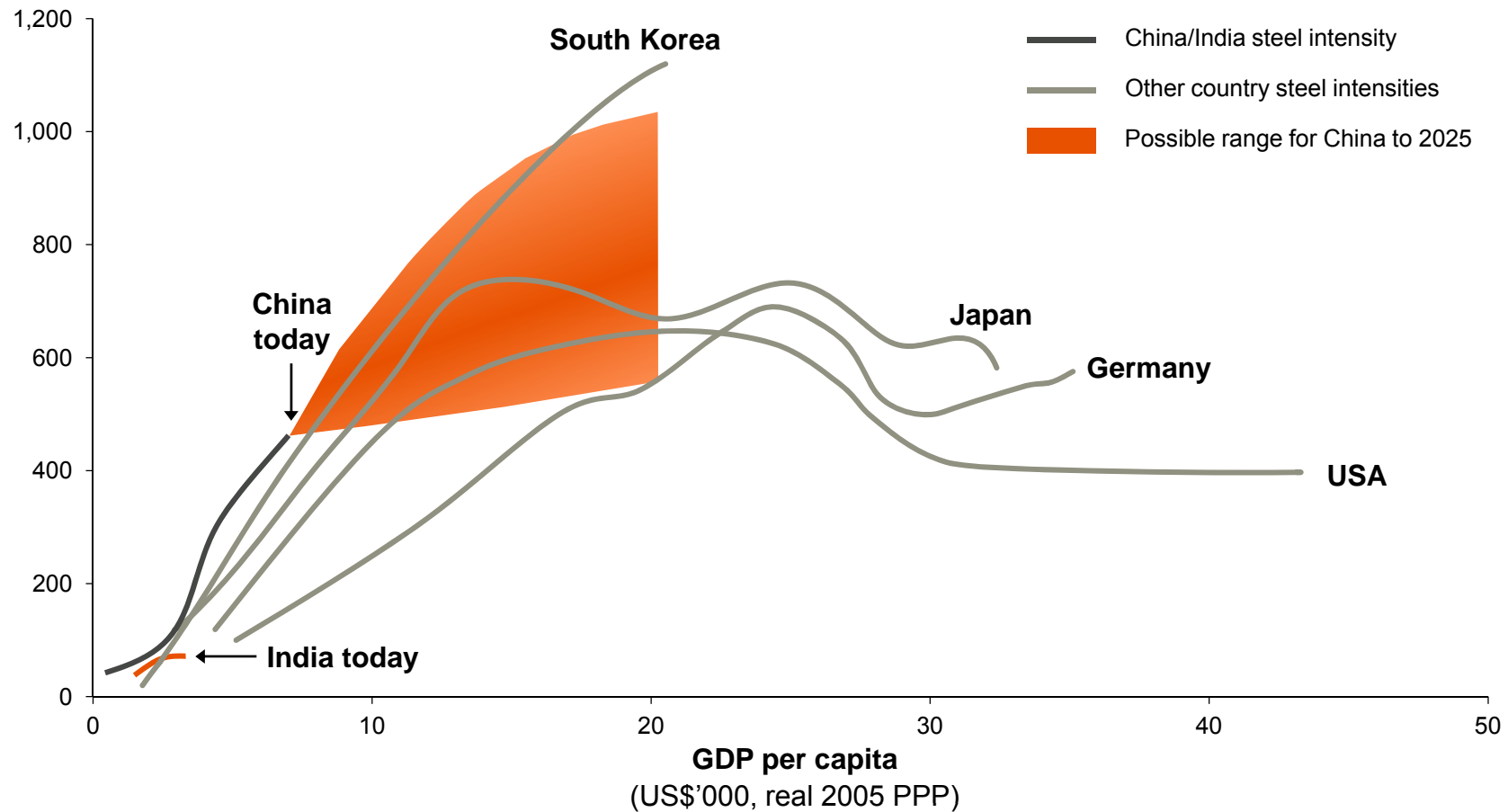


Source: Global Insight; BHP Billiton.

1. All figures for 2009 unless mentioned otherwise.

# Economic development is characterised by strong, early phase steel demand growth

**Industrial development and apparent steel consumption<sup>1</sup>**  
(kilogram per capita)

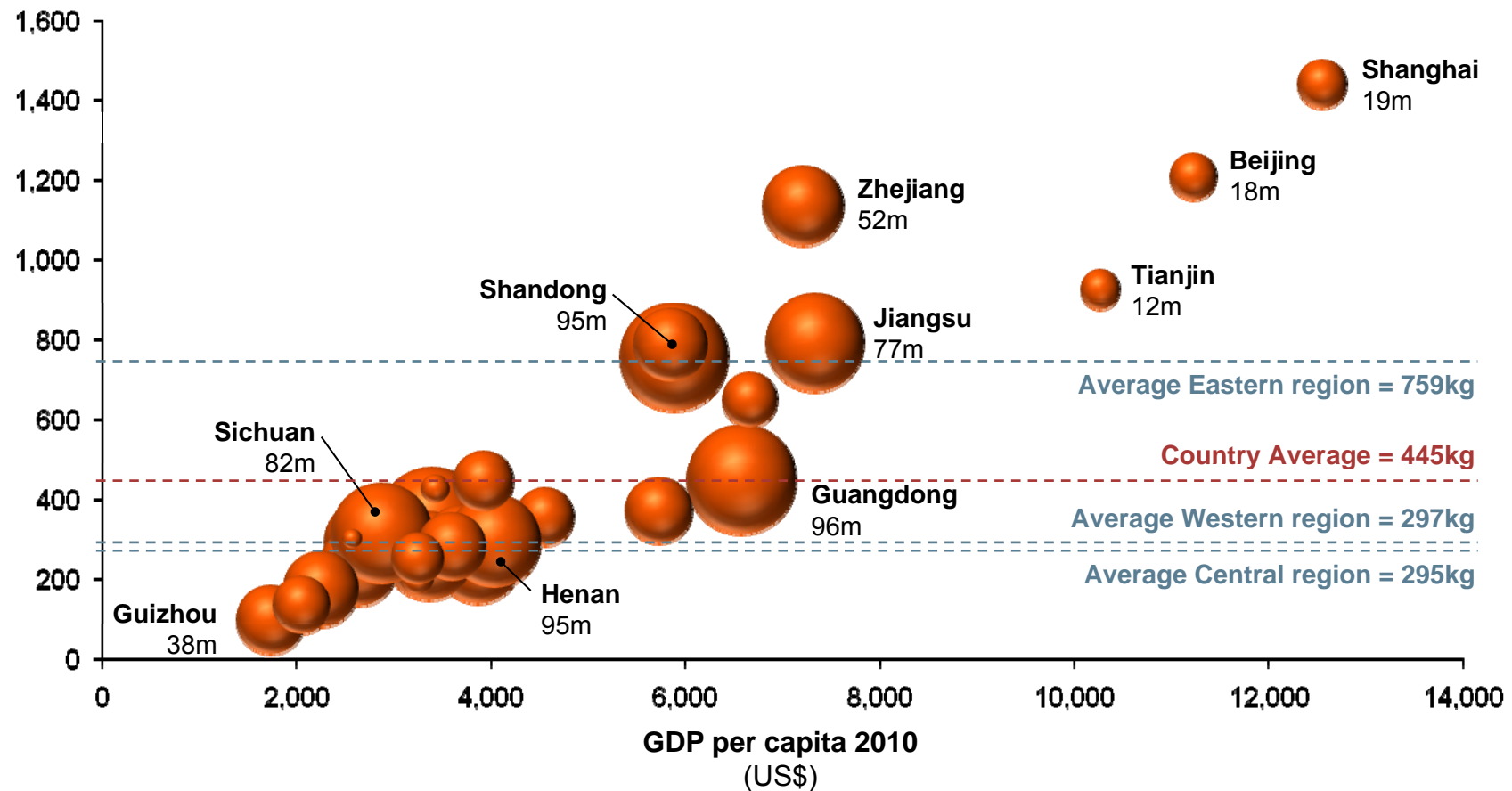


Source: CISA; WSA; Global Insight; JBS; BHP Billiton.  
1. Steel consumption on a crude steel equivalent basis.



# Many large Chinese provinces are still in the early stages of the steel intensity curve

Chinese steel intensity by province versus GDP per capita  
Finished steel consumption per capita 2010 (kilogram)



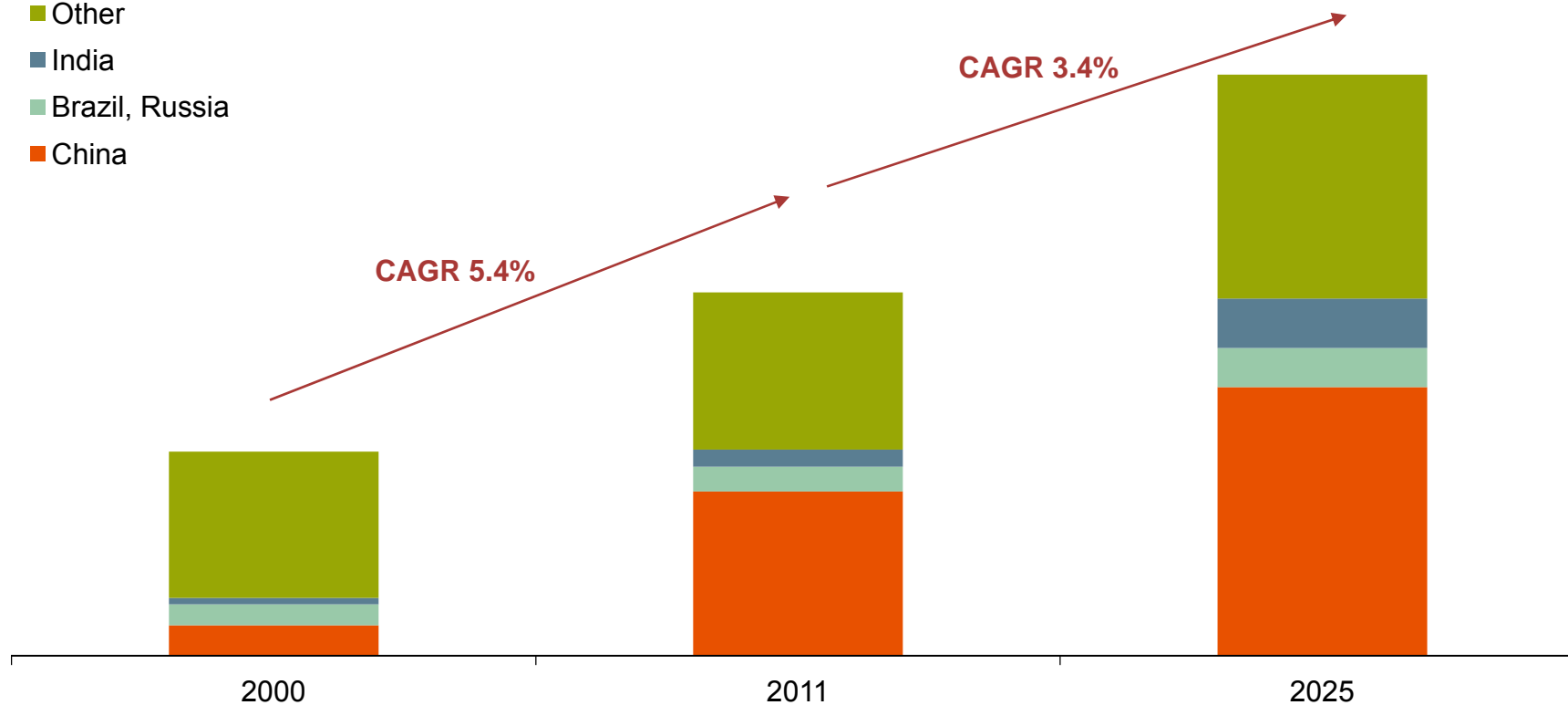
Note: Bubble size reflects 2010 population of each province.  
Source: DRC Report; NBS; BHP Billiton.

# China will account for the bulk of global steel production growth to 2025

## Global crude steel production

(mtpa)

- Other
- India
- Brazil, Russia
- China

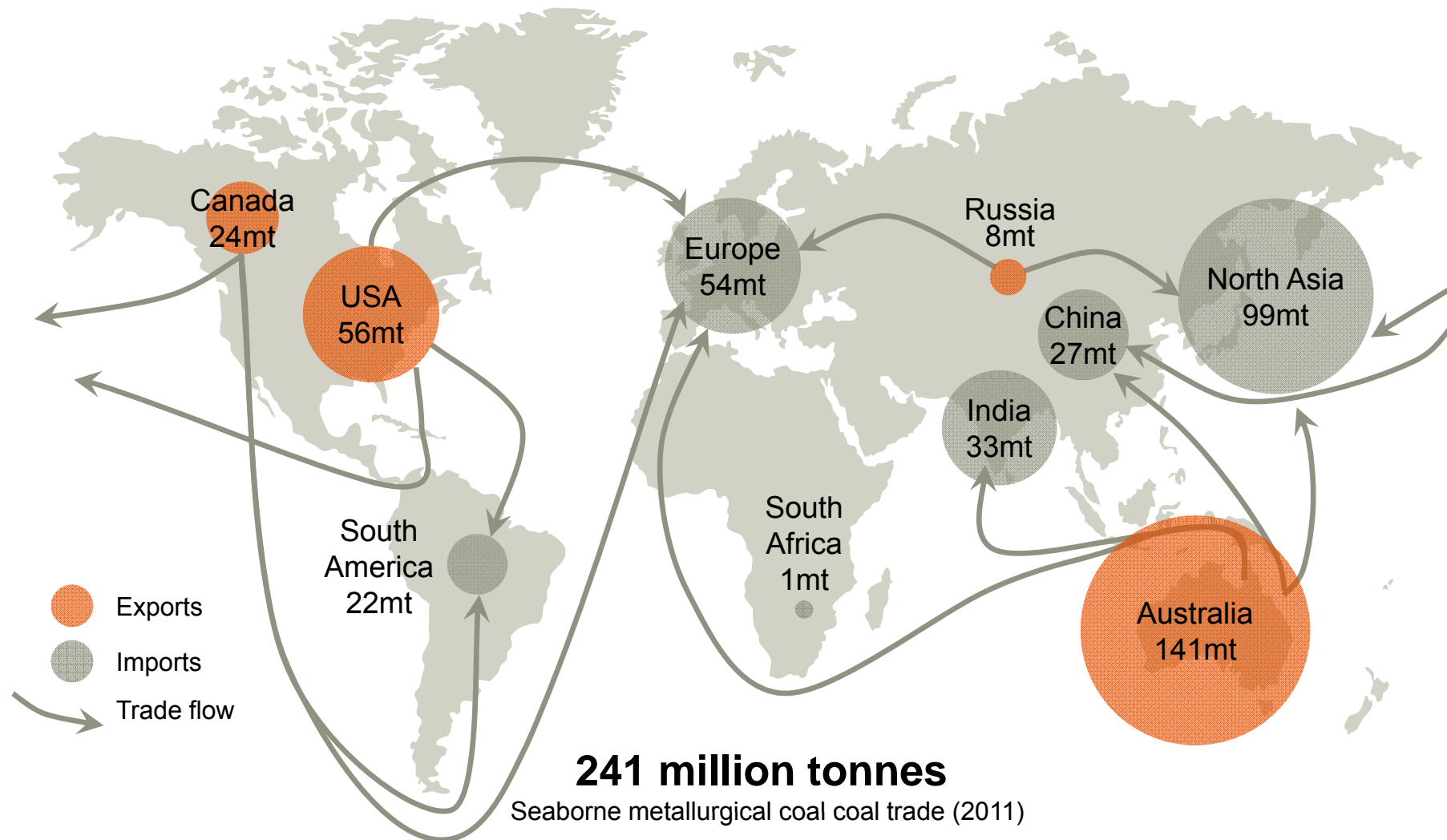


Source: BHP Billiton.

# Agenda

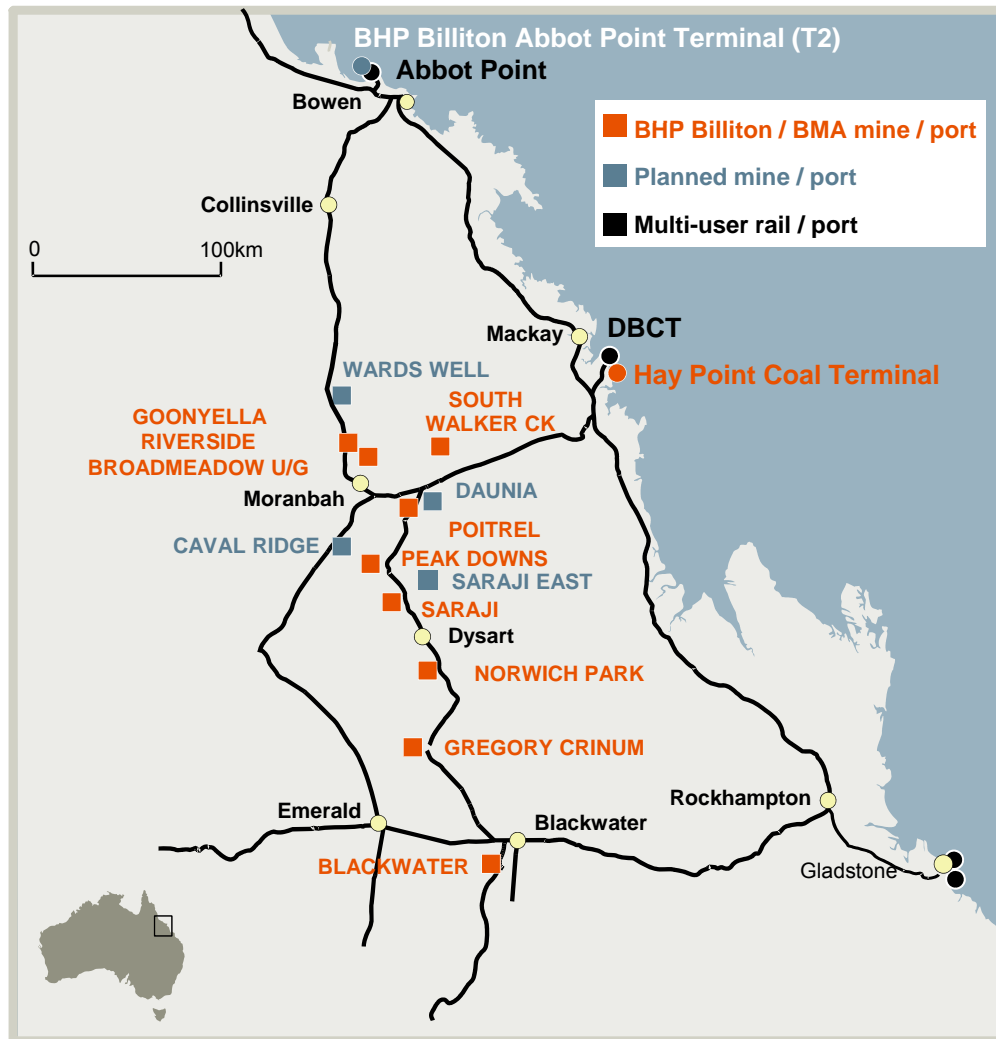
1. Macro outlook and steel demand growth
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# Global metallurgical coal trade



Source: Wood Mackenzie 2011 data.

# The supply response for coking coal has been limited by infrastructure...



Source: BHP Billiton, Wood Mackenzie.

## Queensland

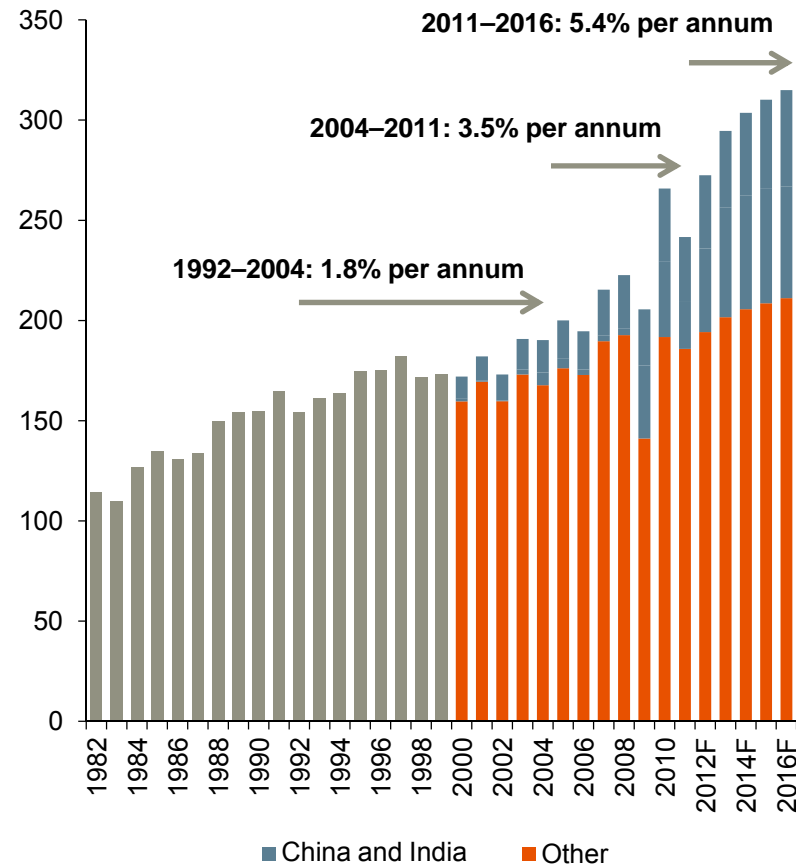
- Queensland has the world's best quality and largest reserves of coking coal.
- Complex port/rail ownership has limited production growth to a ten year CAGR of 4.9%.

## Other Basins

- Mongolia, Mozambique and Russia development is also limited by infrastructure.
- Remote locations, uncertain regulations and high costs of capital limits willingness to invest.

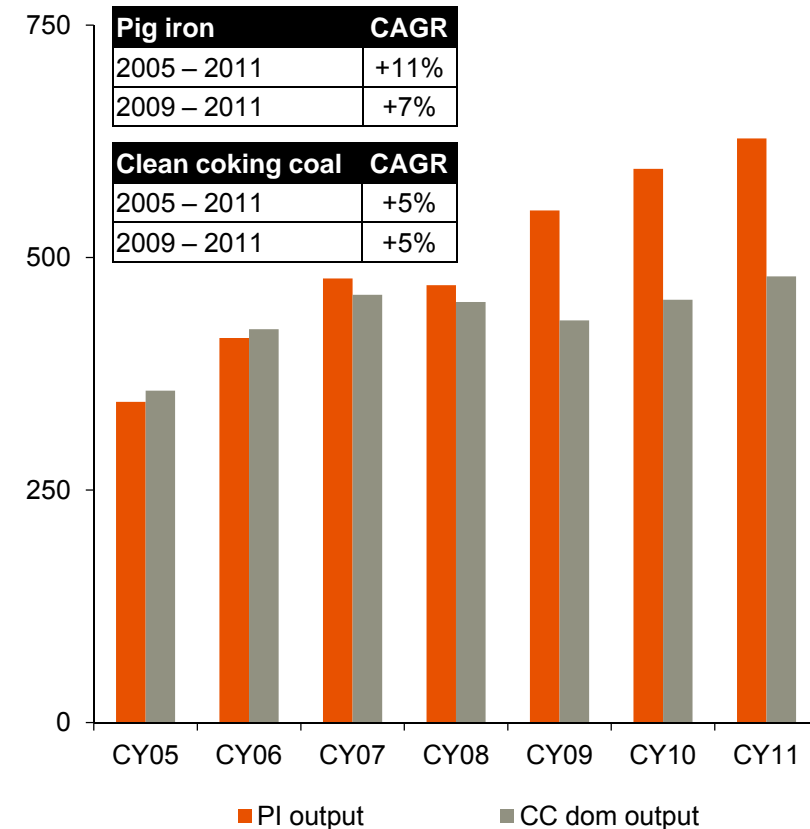
# Seaborne traded coal growing in response to stronger demand

**Annual seaborne coking coal trade**  
(million tonnes)



Source: IEA; Macquarie Bank.

**Chinese production**  
(million tonnes)



Sources: GTIS; WSA; China Customs.

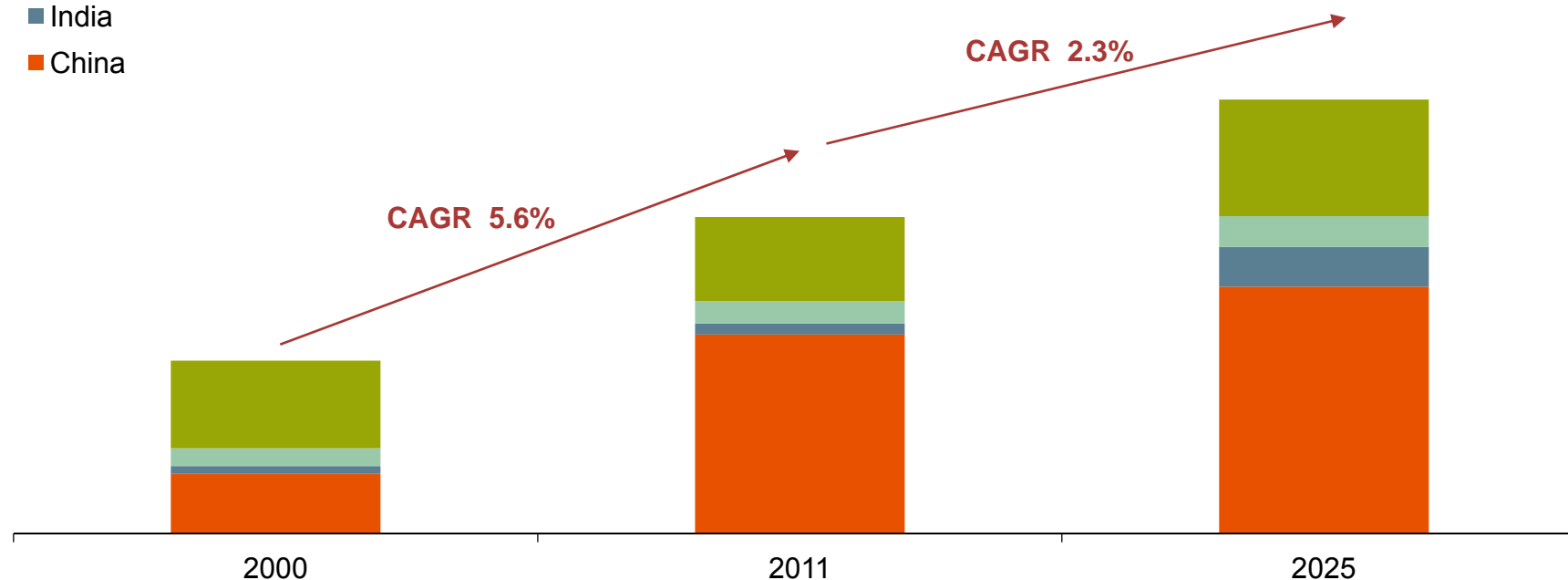
Note: Apparent Clean Coal production equals coal consumption minus imports plus exports, including coal in coke exports.

# China and India will account for the bulk of global met coal demand growth to 2025

Global metallurgical coal demand  
(mtpa)

- Other
- Brazil, Russia
- India
- China

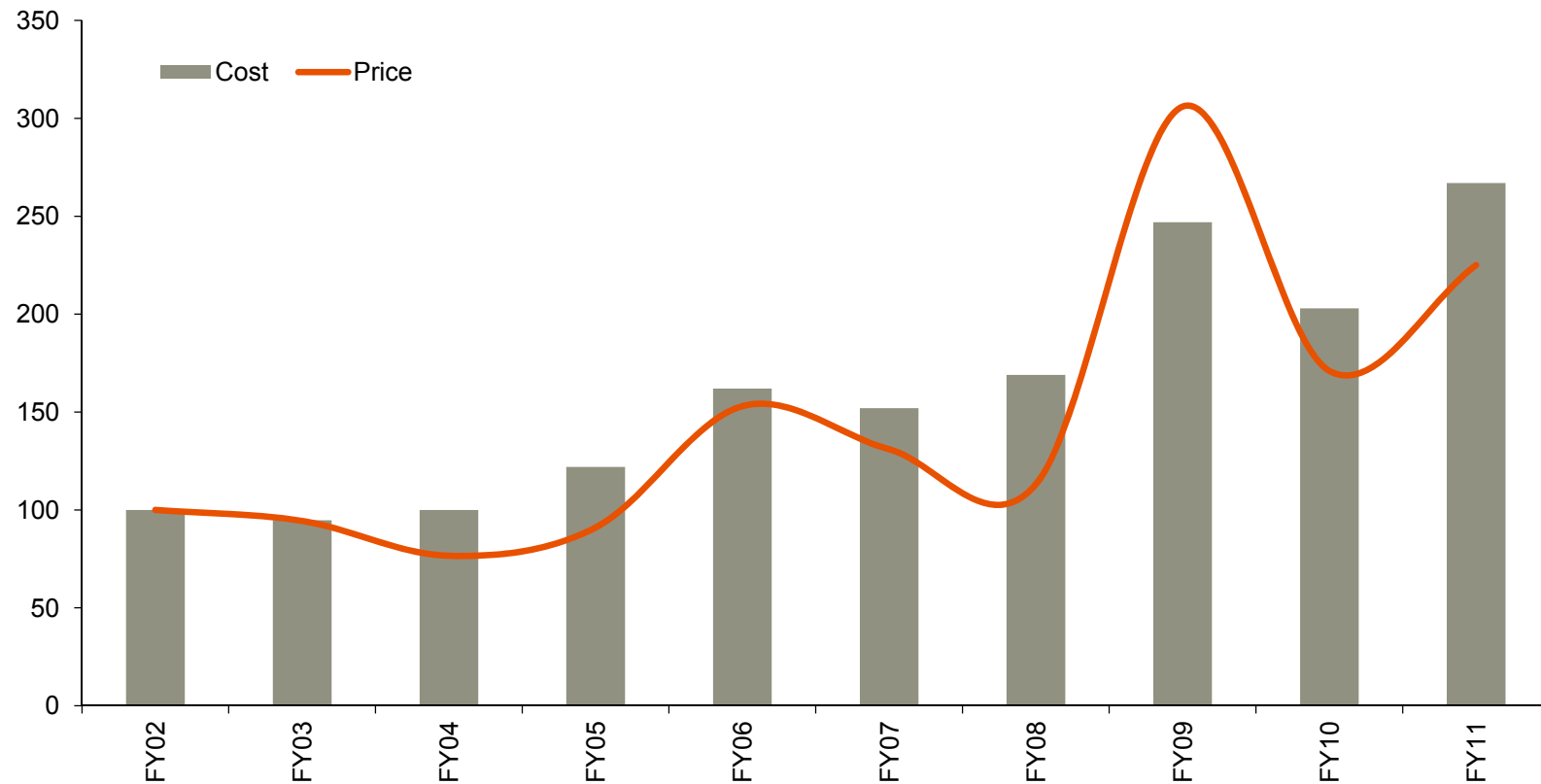
Seaborne demand	CAGR
2000 - 2011	2.4%
2011 - 2025	4.9%



Source: BHP Billiton.

# Rising costs impact development decisions

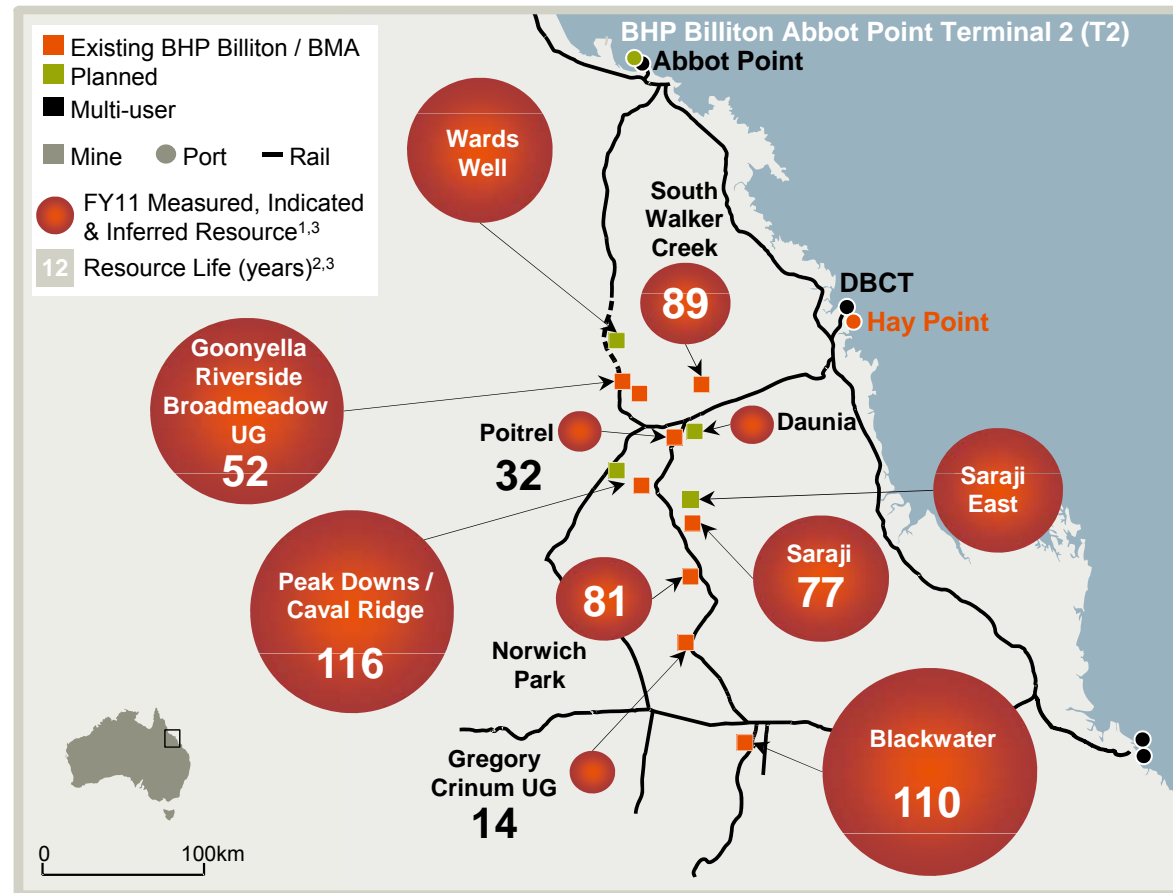
**BHP Billiton hard coking coal cost versus price**  
(2002 Index = 100)



Source: BHP Billiton.

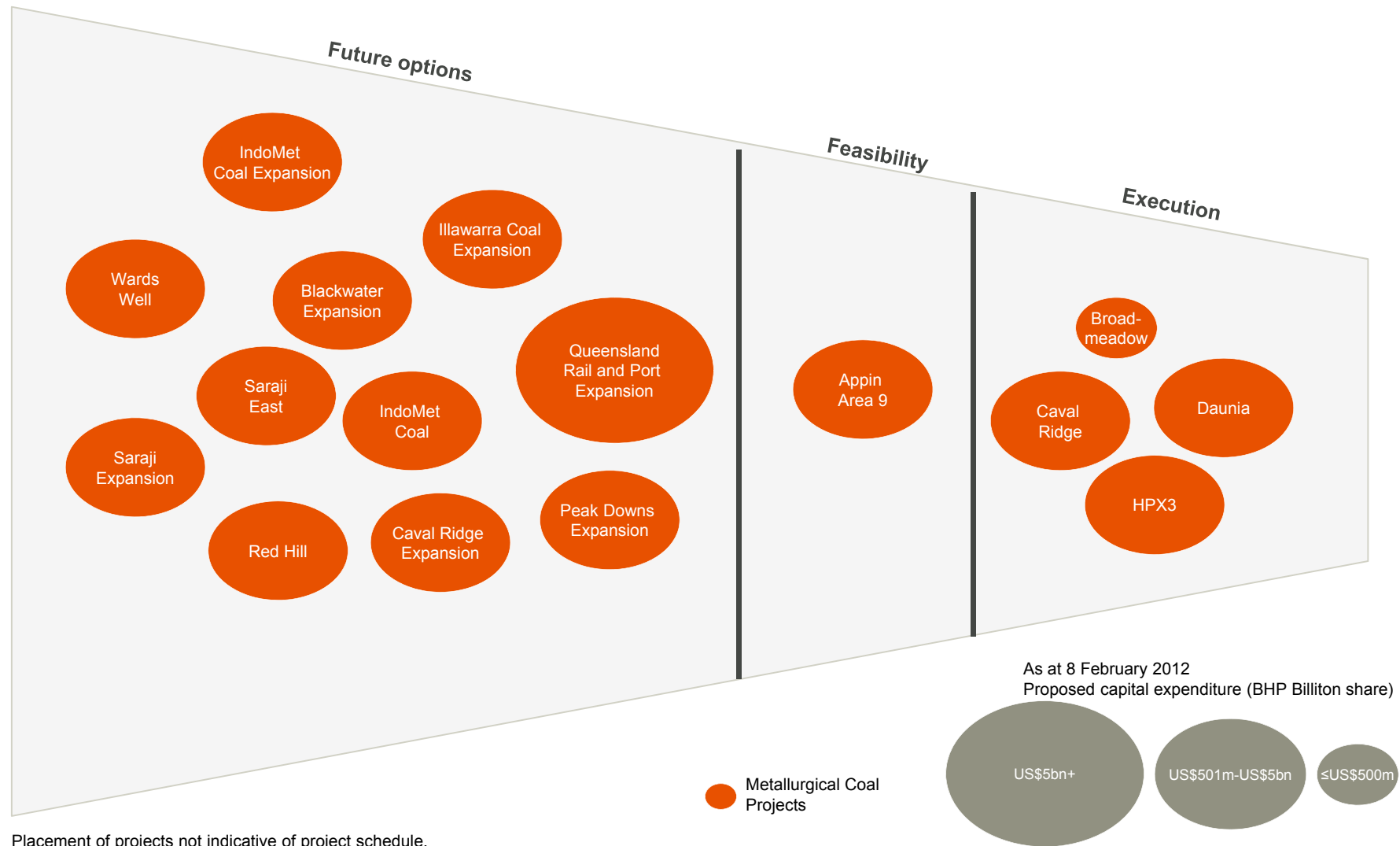


# We are well positioned in the Bowen Basin



1. Bubble size depicts relative coal resource size on a 100% basis. On an equity basis, as at end June 2011, BMA/BMC's Marketable coal reserves total 1,284mt, Measured plus Indicated plus Inferred coal resources total 7,143mt. FY11 production was 25.8mt on BHP Billiton share basis.
2. 'Resource Life' is indicative only and is calculated on the basis of  $[(\text{Total Resource} \times \text{Estimated Saleable Conversion Factor}) / \text{current mining rate}]$ .
3. The resource information in this slide was compiled from the BHP Billiton 2011 Annual Report by Andrew Paul, a Member of the AusIMM and full time employee of BMA who has sufficient experience to qualify as a Competent Person and who consents to publication of the estimates in the form and context in which they appear above. A full listing of Competent Persons, Professional affiliation current employment status, and resource classification is provided in the Disclaimer Slide.

# We have a strong portfolio of metallurgical coal growth options

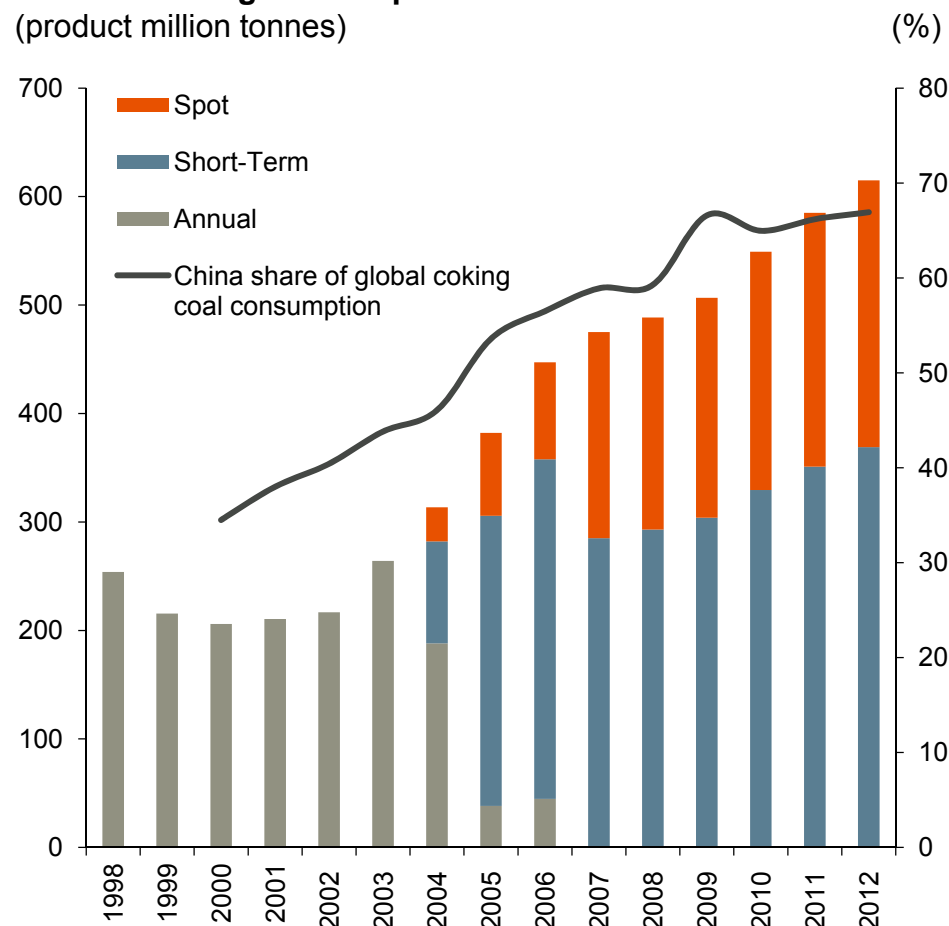


# Agenda

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# China growing and driving the evolution

**China metallurgical coal production**  
(product million tonnes)



Source: Fenwei-Metcoal production; BHP Billiton.

## An evolving Chinese market

China has taken a lead in developing the coking coal market:

### Pricing

- Evolved to shorter terms, supported by reliable indices.

### Physical transaction platform

- Opened in Taiyuan in February 2012.

### Forward markets

- Coke futures launched in April 2011. Coking coal futures to follow in 2012.

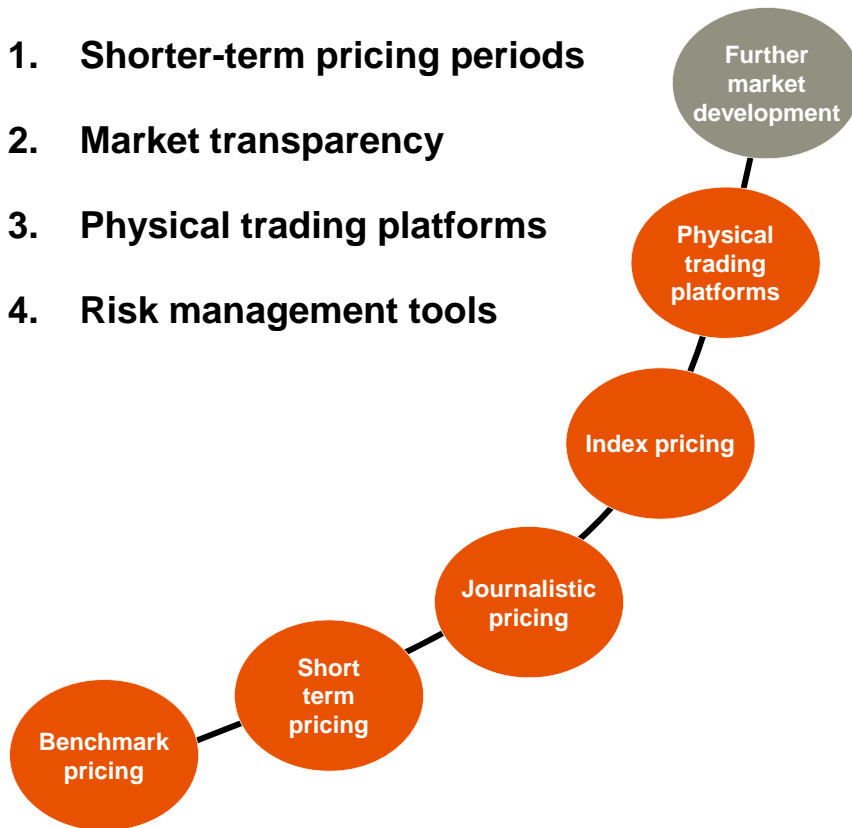
### Adjacent markets

- Similar developments in iron ore and the steel market.

# Commodity evolution has several key features

Chinese metallurgical coal/steel industries have so far developed in line with other commodities:

1. **Shorter-term pricing periods**
2. **Market transparency**
3. **Physical trading platforms**
4. **Risk management tools**

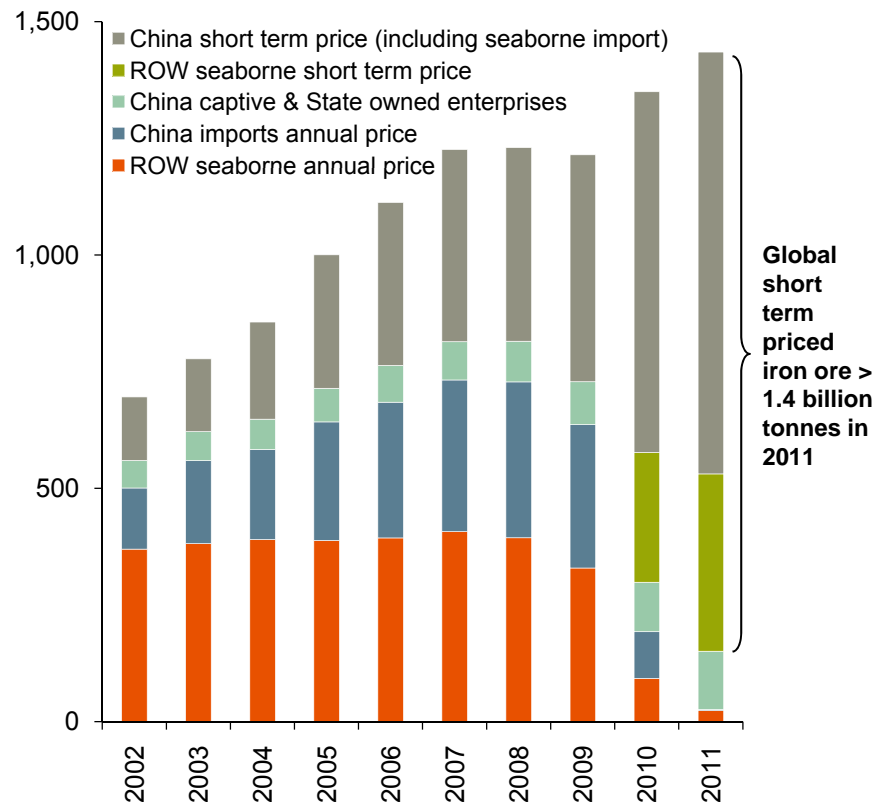


Commodity	Established index	Product differentiation
Crude oil	Yes	Yes
Energy coal	Yes	Yes
Copper	Yes	No
Aluminium	Yes	No
Nickel	Yes	No
Gold	Yes	No
Soybeans	Yes	Yes
Corn	Yes	Yes
Coffee	Yes	Yes
Freight	Yes	Yes
Iron ore	Yes	Yes
Steel (including scrap)	Establishing	Yes
Metallurgical coal	Establishing	Yes
Manganese ore	Establishing	Yes

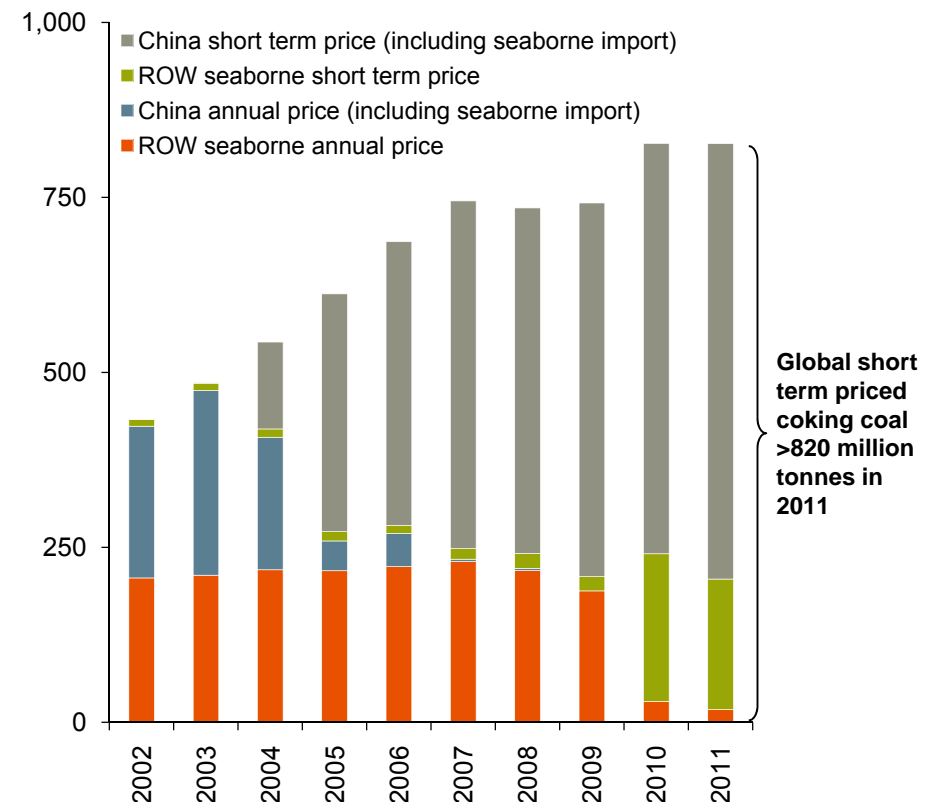
Source: BHP Billiton.

# Rising spot sales and shorter term pricing a feature of recent years

**Seaborne and China iron ore demand**  
(million tonnes)



**Seaborne and China coking coal demand**  
(million tonnes)

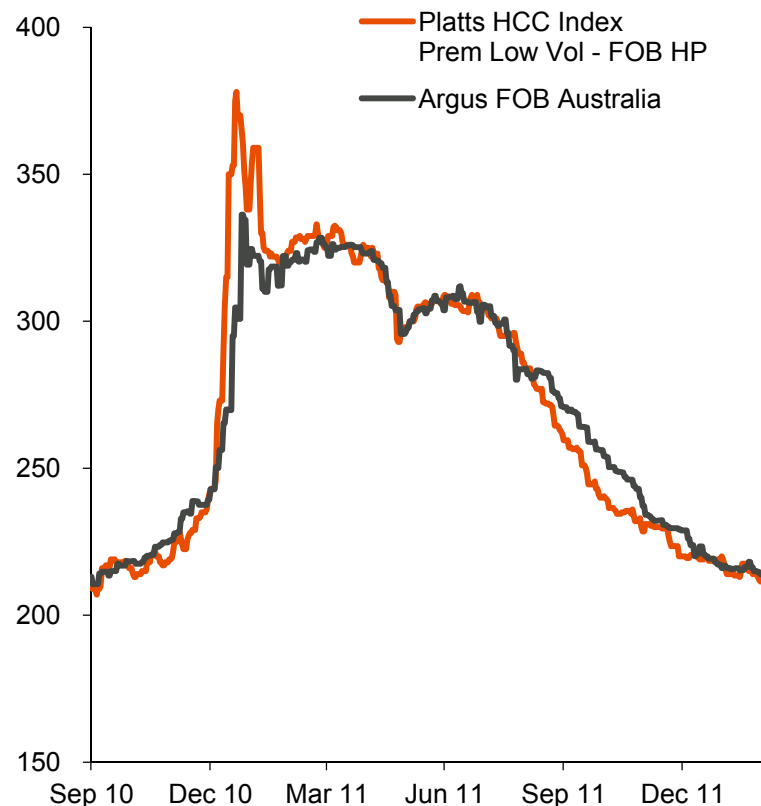


Note: Years are shown in CY basis.

Source: BCG analysis; CRU; Trade data; BHP Billiton.

# Developments in metallurgical coal evolution outside China – indices

**A comparison of Platts and Argus hard coking coal prices (US\$/t)**



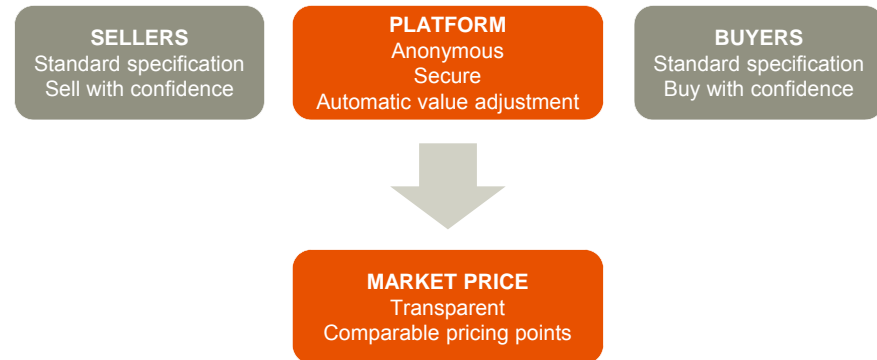
**A comparison of current coking coal indices (excluding China)**

Index	Locations	Product range
Argus	FOB Australia CFR China CFR India FOB Hampton Roads	Australian Hard Coking US Low-Mid Vol US High Vol
Energy Publishing	FOB Australia FOB Hampton Roads	Australian Hard Coking US High Vol
McCloskey	FOB Australia FOB Hampton Roads	Australia Hard Coking US High Vol
Platts	FOB Australia CFR China CFR India	Premium Low Vol HCC 64 Mid Vol HCC PD Region
TSI (proposed)	FOB Australia	Premium Hard Coking Hard Coking

# Developments in metallurgical coal evolution outside China – physical transaction platform

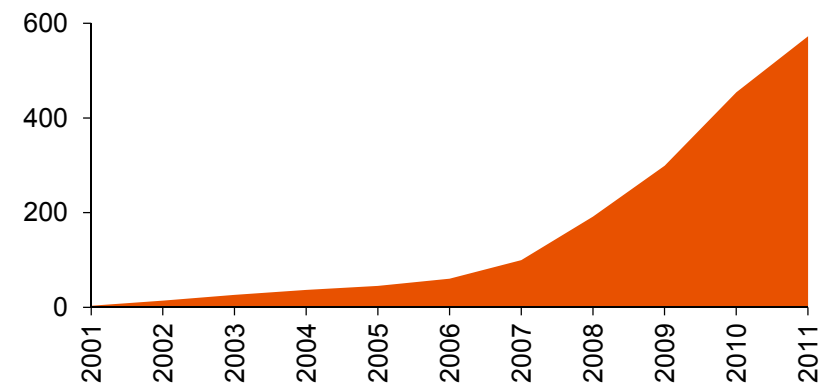
- Benefits from anonymous participation and visible pricing outcomes
- Captures spot transactions and establishes price
- Market can observe and compare transaction points
- GlobalCOAL is a physical transaction platform which has brought liquidity and transparency to the thermal coal market
- It is based on three straightforward elements:
  1. Standard contract (SCoTA)
  2. Screen transactions
  3. Market data generation

## A simple model



## Cumulative volume of thermal coal brokered on a SCoTA basis

(million tonnes)

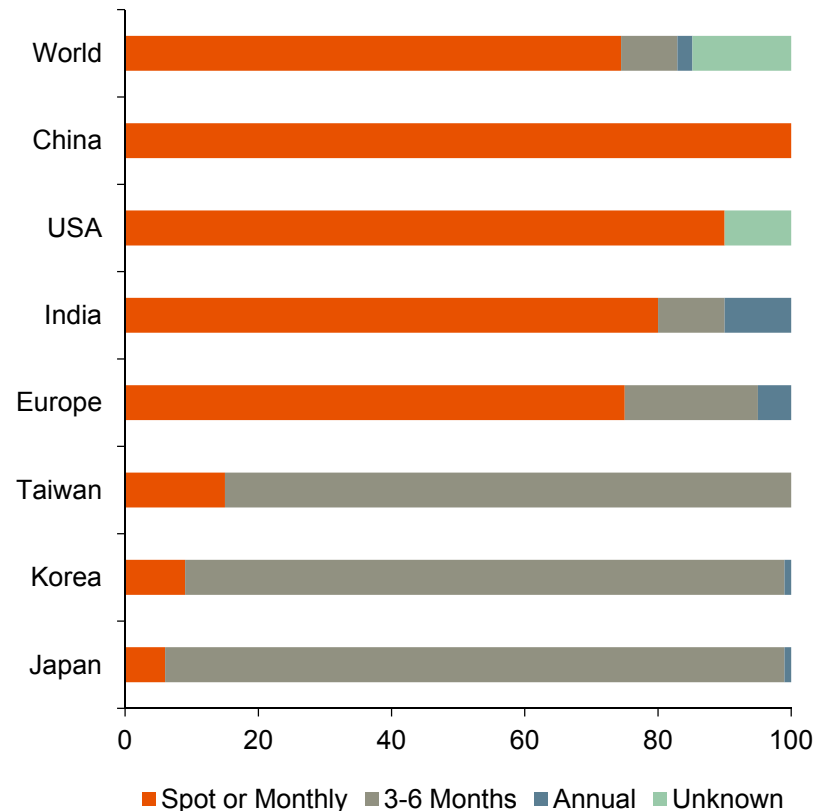


Source: globalCOAL.



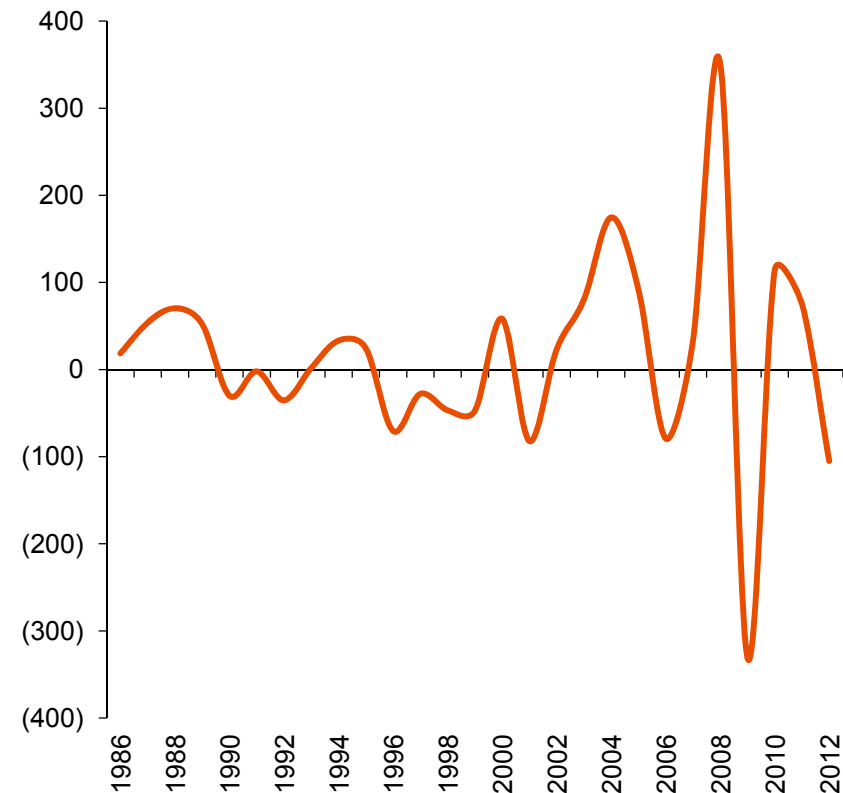
# Adjacent markets evolving – steel

**Estimated<sup>1</sup> share of various steel pricing terms  
(2012, %)**



1. Best estimate based on publicly available information.  
Source: Tex, Japan (JISF); Europe (Eurometal, Credit Suisse); Korea (Morgan Stanley, BHP Billiton); Taiwan, India, China (BHP Billiton).

**Average annual change in HR coil spot price  
(FOB Japan, US\$/tonne)**



Source: CRU.

# Results of more transparent pricing mechanisms

## Benefits of a shorter term price mechanism

- Market players can enjoy prices truly **reflective** of supply and demand conditions
- No “**dead-lock**” on pricing when there are major disparate views on the market
- Mitigates **non-performance on contracts** when spot versus benchmark differentials are large

## Allows individual buyers and sellers to focus on other aspects of relationship

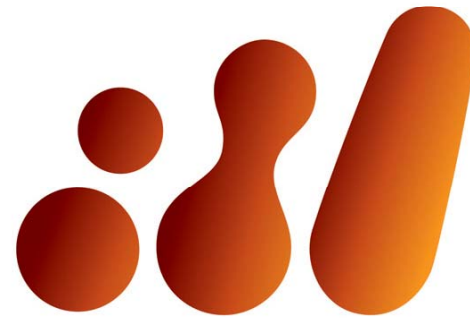
- Differentials for the specific commodities based around value-in-use
- Product quality and consistency
- Logistics

## Customer / producer relationships are important

- Either short or long term volume contracts available
- Customer focus continues

# Concluding remarks

- The developing world will continue to power global GDP
- Chinese economic growth will remain strong and will underpin world steel production growth
- The global coking coal industry will be increasingly driven by developments in China and India
- The Chinese coking coal industry has evolved markedly in the last eight years: shorter-term pricing, market transparency and a physical transaction platform
- Coking coal is following the same path of market evolution as other commodities – differentiation and product complexity is not a barrier
- The ex-China pricing mechanism for metallurgical coal is also in transition



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