

# Benefits of BMA/BHP Billiton Hard Coking Coals to the Chinese Steel Industry

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# The world has changed

*Today we are in a very different environment than 2 years ago;  
the steel world has changed significantly*

Higher global steel demand and hence crude steel  
and pig iron production; over 1 billion tonnes crude steel in 2004

+

Doubling of flat steel prices in 2004; long term higher base prices

+

Steel industry highly profitable; very significant turnaround, e.g.  
Corus EBITDA >US\$1bn; top companies have ROCE's of 35-50%

+

Increasing likelihood that the BF/BOF steelmaking route will increase  
or at least maintain share of steel production; BRICs largely BF based

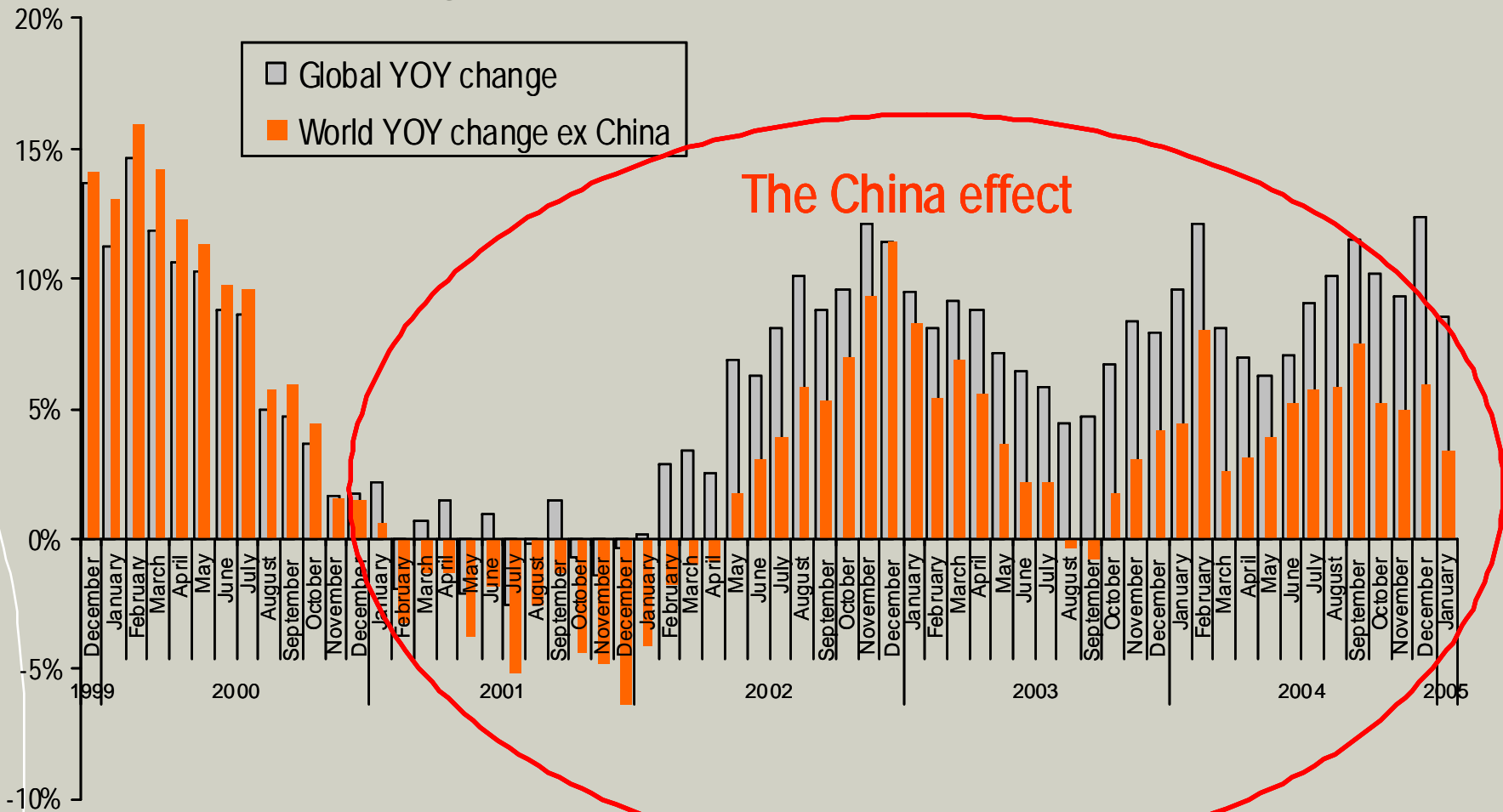
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Steelmakers' investments in new capacity to meet  
growing local demand



# China's impact on global steel production

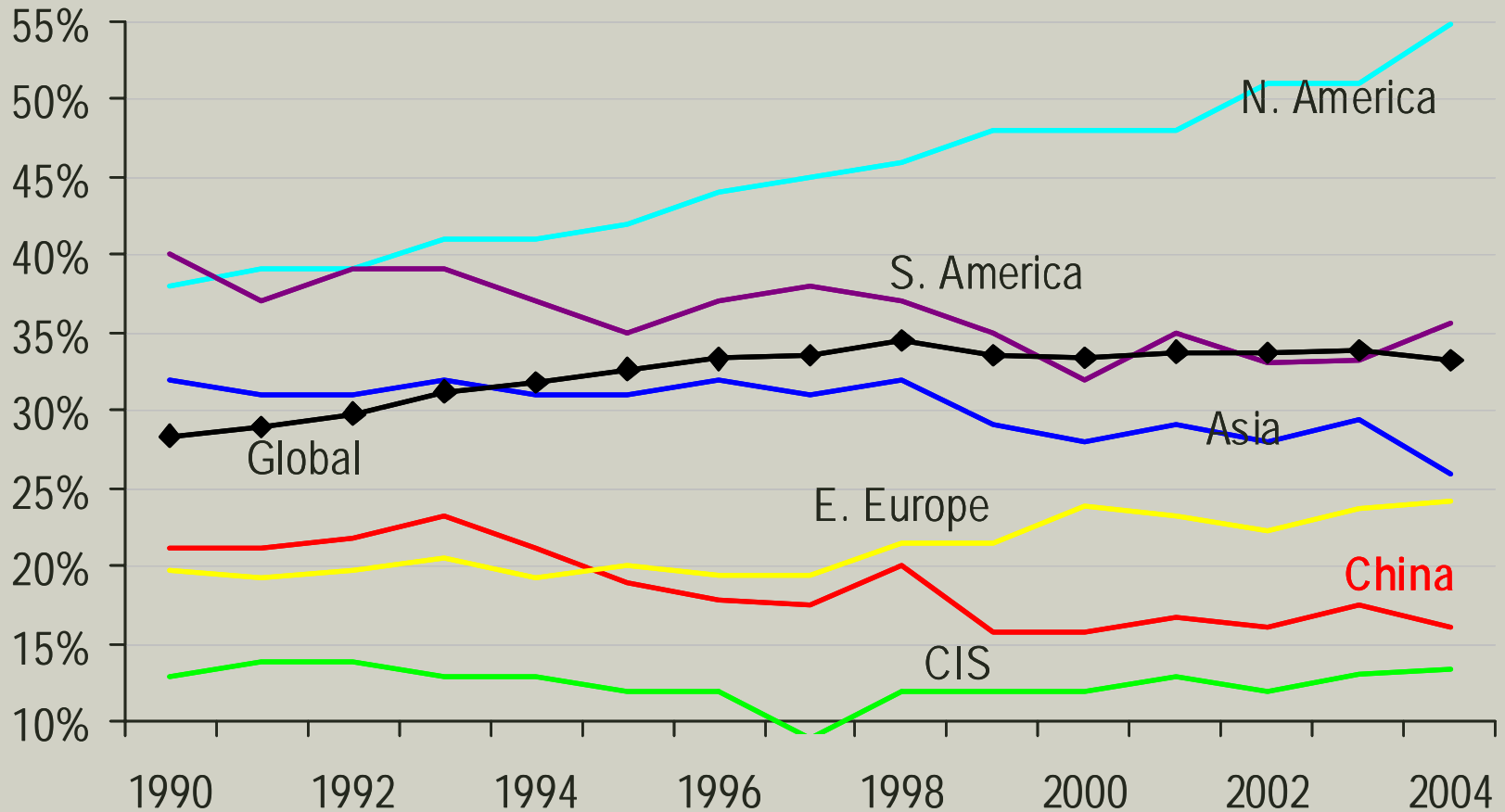
*China's very strong demand growth since 2000 has been a major driver for higher steel production growth rates, with flow-on benefits to other producers*



Source: IISI

# Regional trends by process – EAF production share

***Lack of scrap and high steel demand is driving Asian steelmakers to rely more on the blast furnace/BOF route***



Source: IISI

# Implications of changes on BF hot metal demand

- More efficient steel industry = reduced prompt scrap
- Low production over past 20 years = insufficient scrap pool
- Improved coating technology = longer steel recovery cycle and reduced scrap availability
- Increased “tramp” elements in scrap requiring “virgin” iron units
- Rise in EAF thin slab casting needing >25% “virgin” iron units
- Major growth in countries/regions of low scrap but sufficient raw materials

## Overall impacts

Scrap shortage requiring higher levels of BF-based hot metal in steel production and more high quality coke

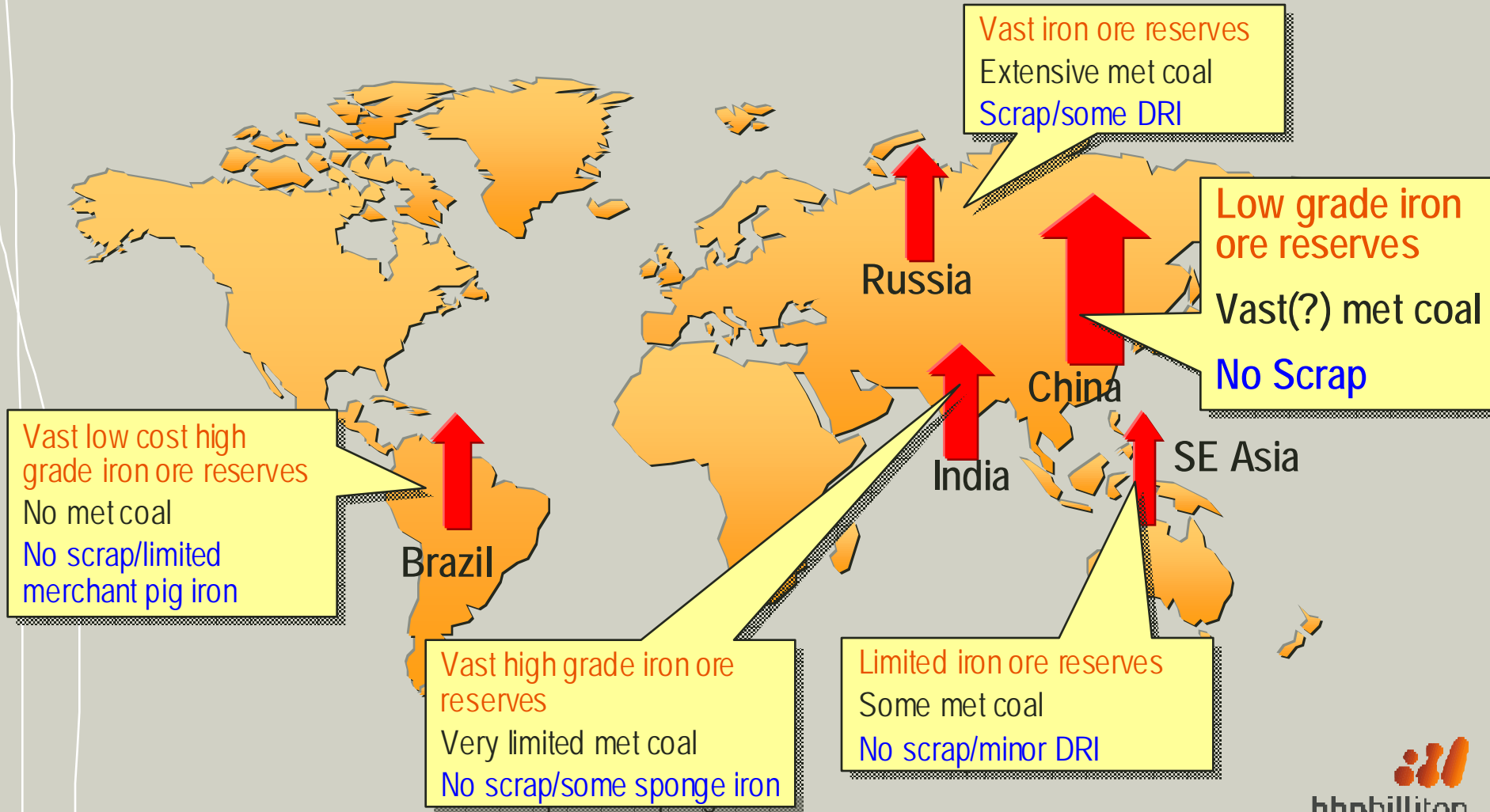
## Key aspects of coke for steel production

- The blast furnace is fully integrated into the plant energy balance; top gas is an important energy source
- Despite strong gains in alternate fuels (generally PCI), coke remains one of the critical raw materials
- High injection rates have raised the need for high strength, higher quality coke as coke rates have declined
- Major BF relines have seen furnace size increase which has resulted in the need for higher quality coke

***High quality coke is vital for the future of the BF!***

# Future growth led by BRICS

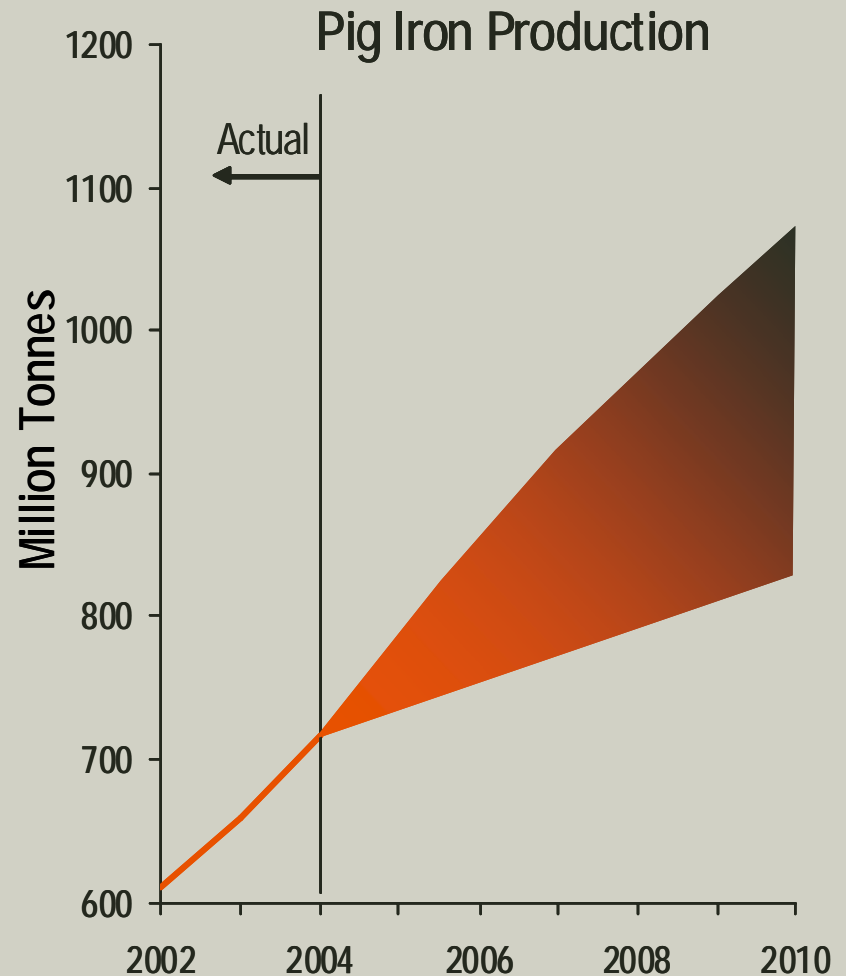
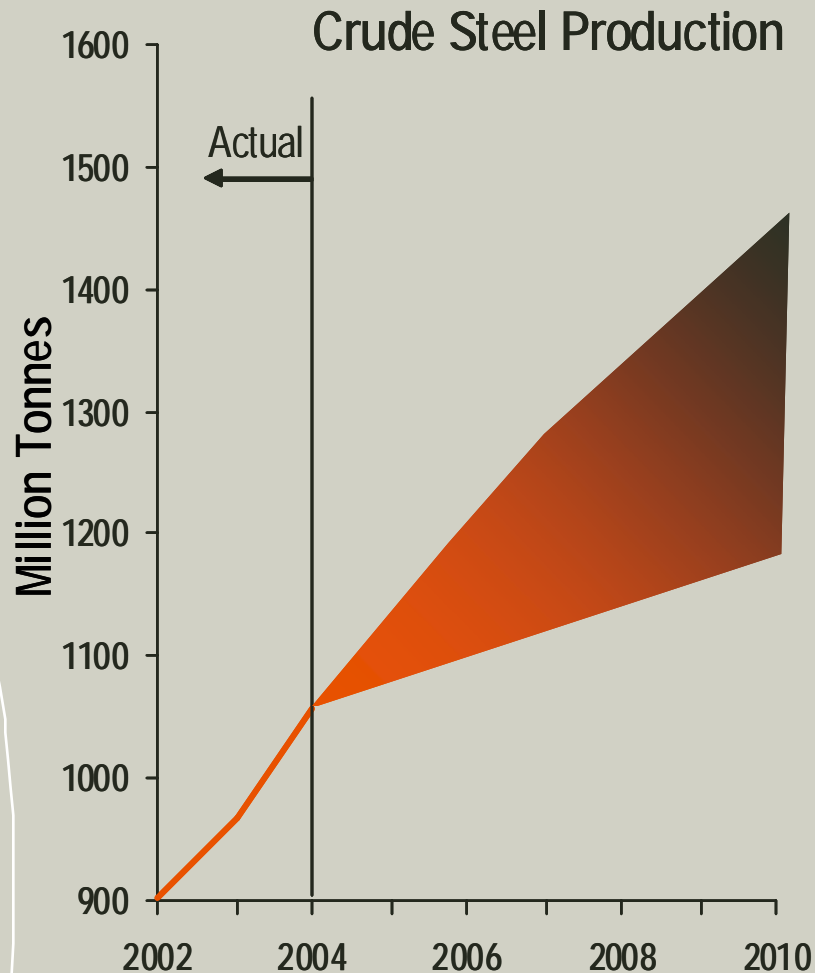
**The world is likely to see increased demand for BF-based ironmaking and hence coke in the short to medium term. China is a major factor in the strong demand growth for coke and hard coking coal.**





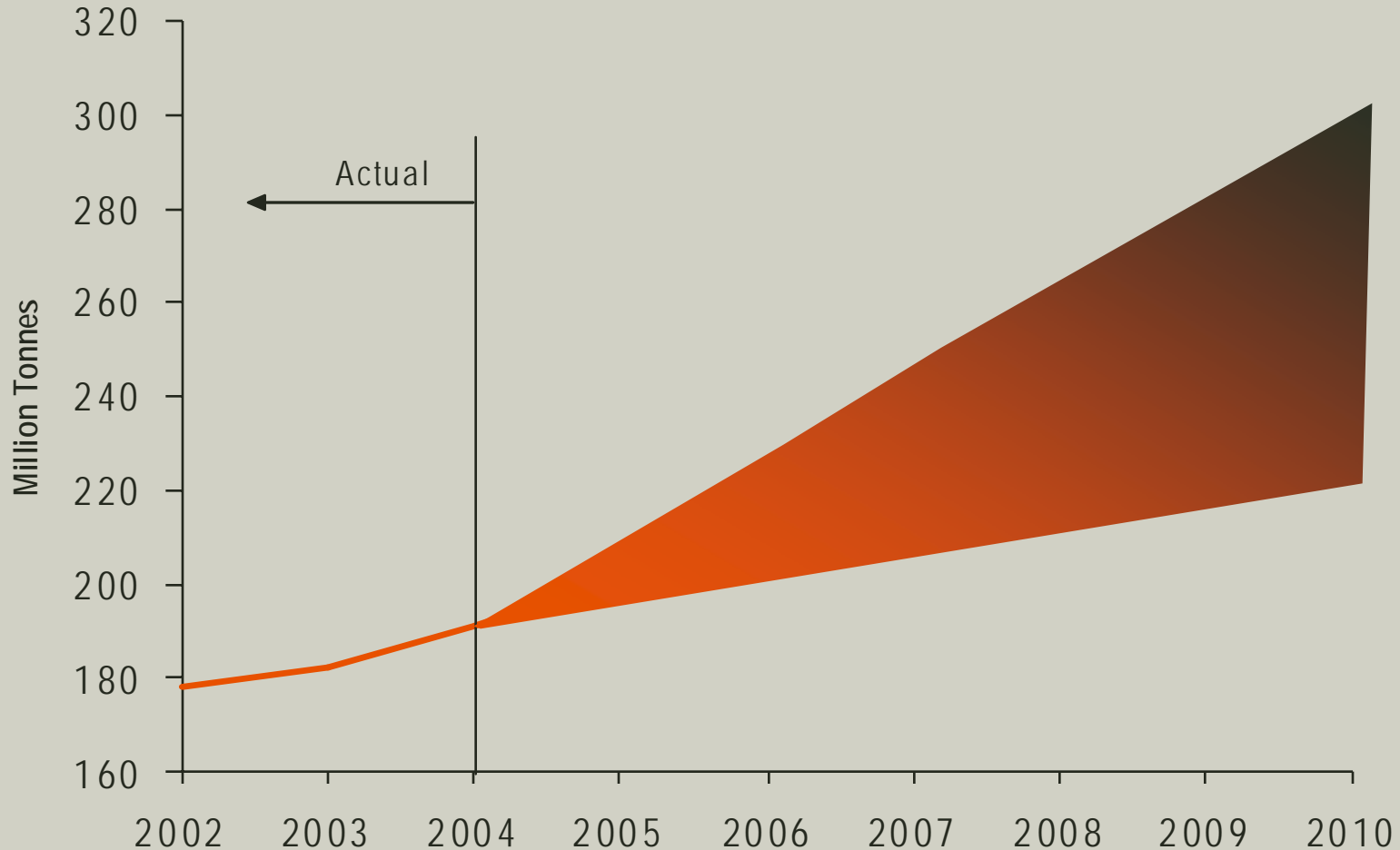
# Global steel outlook, crude steel and pig iron

**Major growth anticipated, with China remaining a major factor**



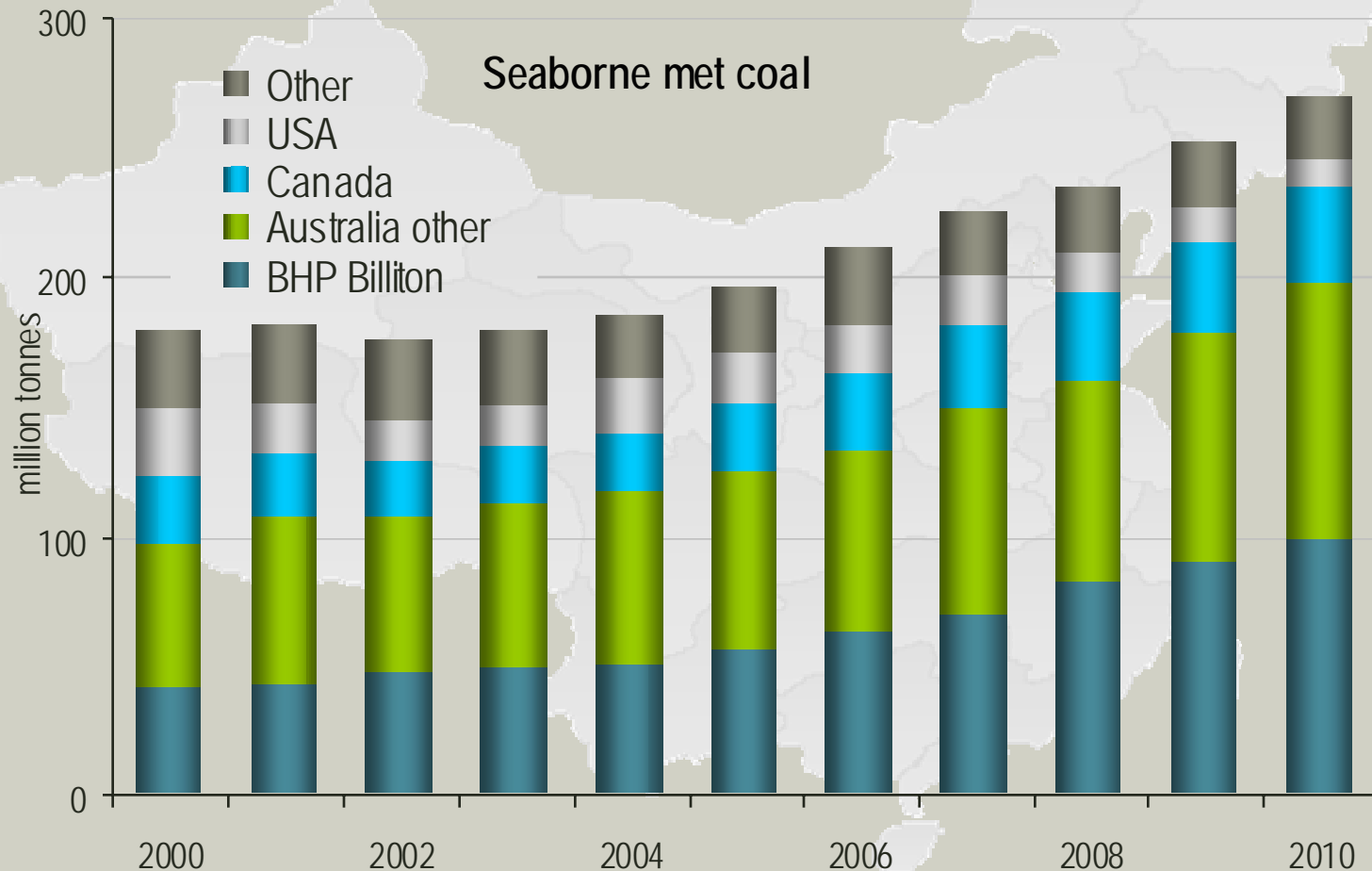
# Seaborne metallurgical coal demand

***Demand for metallurgical coal (hard coking coal in particular) will follow the pig iron trend, growing strongly in the medium term***



# Estimated future supply increases

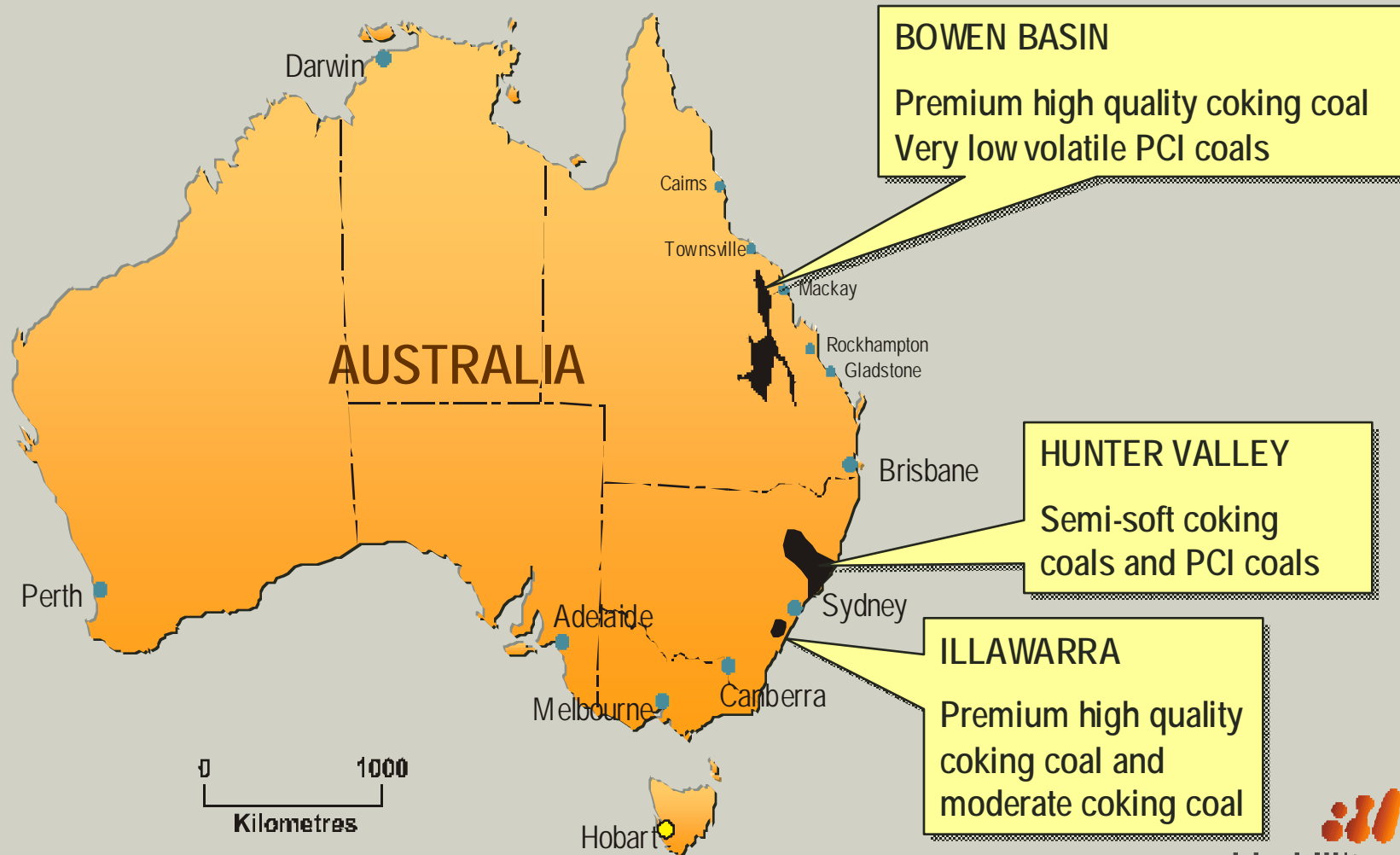
**The medium to long term demand gap can be filled. Australia and BHP Billiton will be major contributors. In the short term, high priced coals from e.g. USA have been drawn back into the market.**



Source: BHP Billiton, Public Announcements

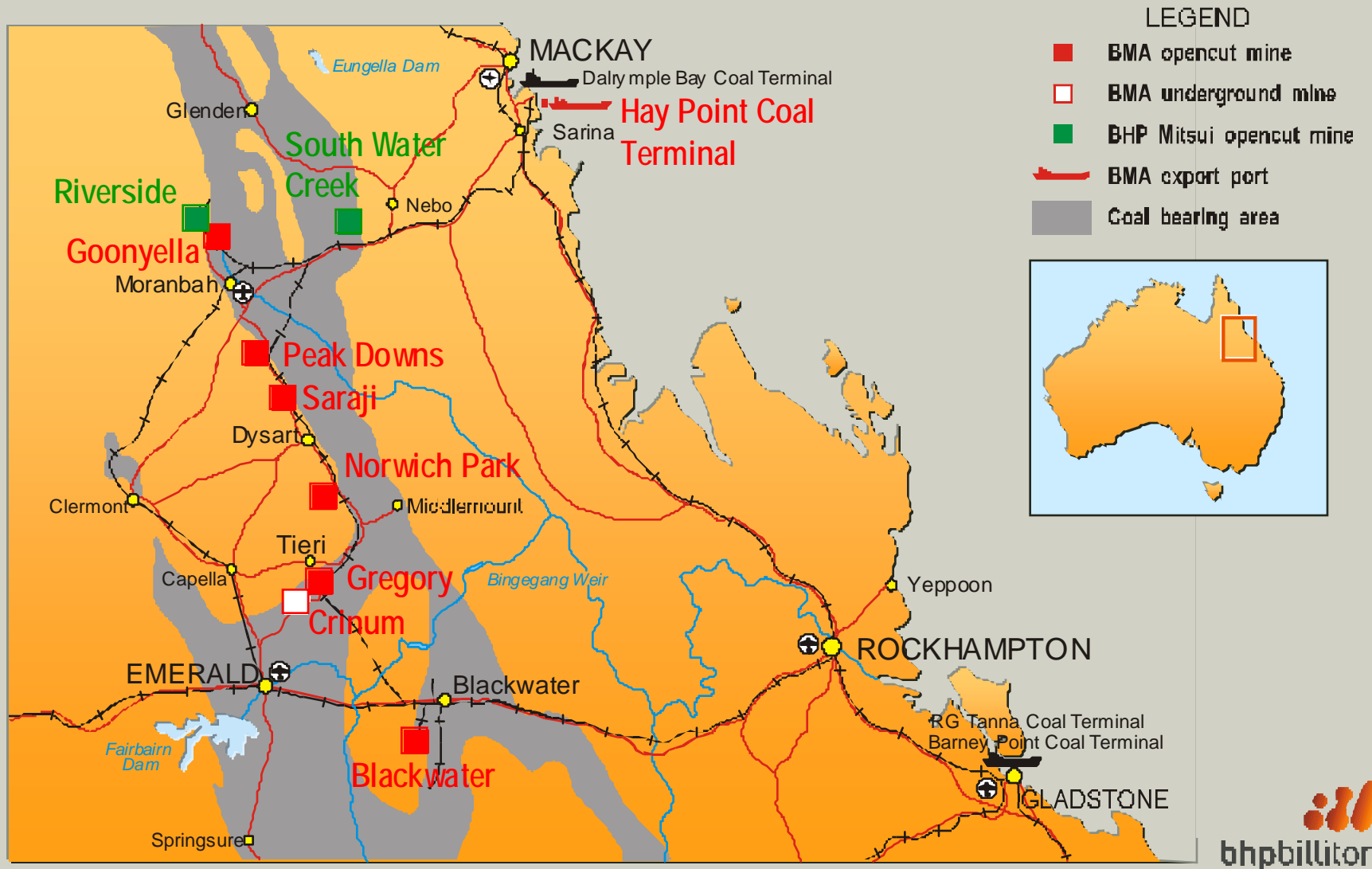
# Australian metallurgical coal producing regions

**Key hard coking coal producing regions are the Bowen Basin in Queensland and the Illawarra in NSW. Major expansion potential is centred on Queensland.**



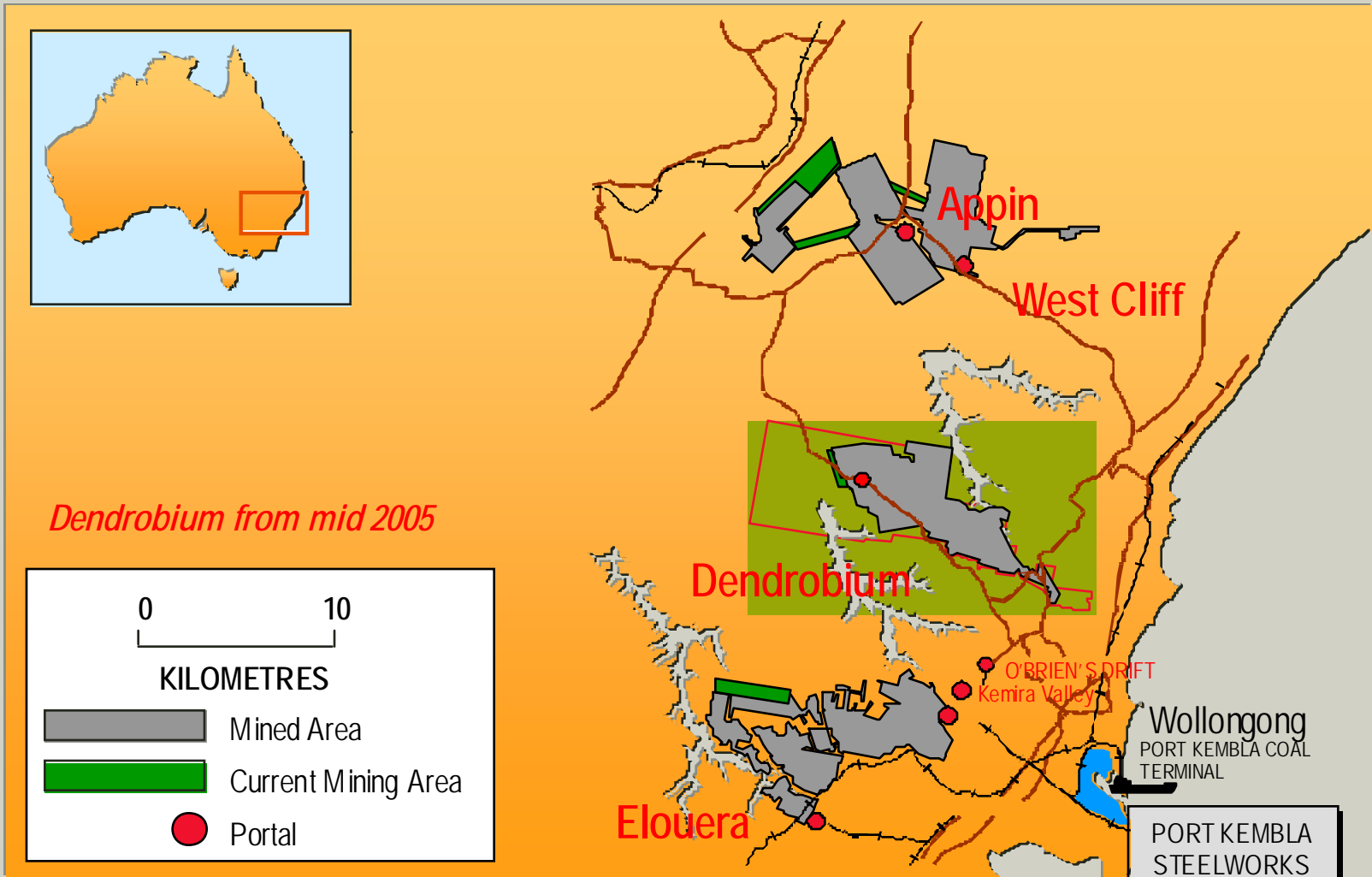
# BHP Billiton Queensland coal operations

**BHP Billiton has excellent reserves of hard coking coal and its own port (Hay Point)**



# BHP Billiton Illawarra coal operations

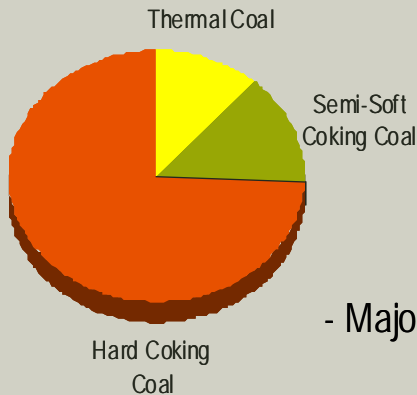
***Illawarra produces hard coking coal from underground longwall mines and supplies mainly the Bluescope Port Kembla steelworks***



# High value incremental growth to ~100 Mtpa capacity

**BHP Billiton will expand capacity to 100 million tonnes per annum; mainly hard coking coal**

**Expansion: 42 Mtpa**



- 70% hard coking coal
- 15% semi soft coking coal
- 15% thermal coal

- Majority brownfields

**58 Mtpa\***



**FY04**

**Approved  
~10 Mtpa**



Dendrobium  
Q Coal 52-57Mtpa  
(inc. Broadmeadow)  
Q Coal 57-59Mtpa

**Pre Feas  
~14 Mtpa**



Maruwai  
Illawarra Expn.  
Q Coal (BMA & BMC, ie: Poitrel)

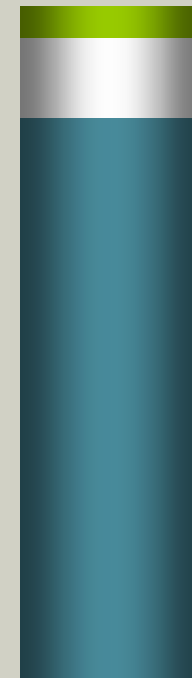
**Concept  
~18 Mtpa**



Various Q Coal  
Projects (BMA & BMC)

- Indonesia
- Illawarra
- Queensland

**~100 Mtpa**



**FY10**

\*All production figures are quoted on a 100% equity basis

# Queensland Coal: to 57 Mtpa expansion for mid 2005

- Capital cost US\$90 million (BHP Billiton share)
- 132 Mbcm of contract stripping – additional operating cost over ~ 2 years
- Additional mobile mining equipment - Norwich Park, Peak Downs, Saraji and Goonyella
- Improvements to Saraji, Peak Downs prep plants
- Broadmeadow (3.6 Mtpa) - start-up mid 2005
- Queensland Rail - +8 Mtpa capacity contracted + a further 8 Mtpa for continued growth

Producing coal at Broadmeadow June 2004



Peak Downs mobile mining equipment



*Note: All numbers are 100% equity basis, unless otherwise specified*



# Further expansions underway

## Queensland Coal: 57 Mtpa to 59 Mtpa for 2nd half 2006

- Hay Point Coal Terminal Expansion +6 Mtpa (34 Mtpa to 40 Mtpa)
- 32 Mbcm contract stripping at Saraji
- Capital cost US\$175M (100%)
- ~US\$100M of the capital cost is to allow further expansions of the Hay Point port



## Illawarra Coal: 7 Mtpa to 14 Mtpa

- Dendrobium – Start up mid 2005 (3.6 Mtpa). Incremental expansion +0.6 Mtpa under review
- New West Cliff longwall in production
- Future growth will focus initially on de-bottlenecking at Appin & West Cliff
- Additional longwall unit under review



*Note: All numbers are 100% equity basis, unless otherwise specified*

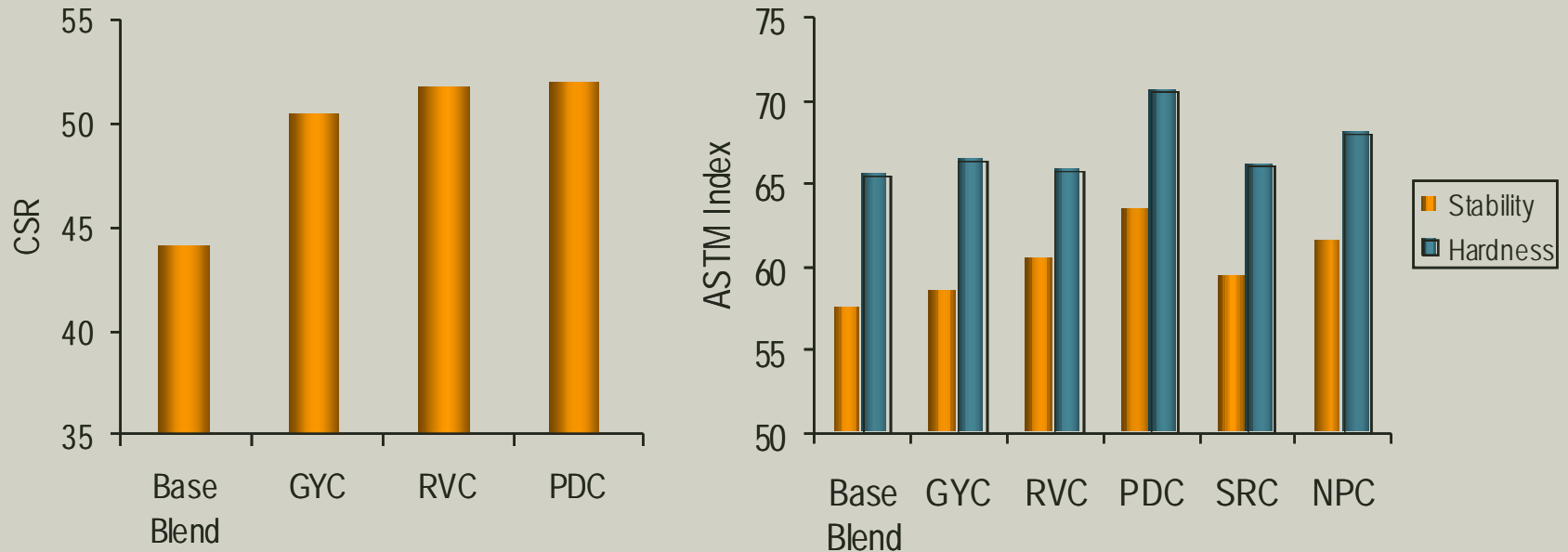
# Maruwai discovery: potential coking coal province

- The Maruwai discovery is located in Central/East Kalimantan and contains a range of coals
- BHP Billiton's vision is for a long term integrated basin development
- Expect to start with high quality HCC development of up to 5 Mtpa and grow
- River barging likely transport option
- Contractor operation likely
- Pre-Feasibility Study recently completed
- Expect to complete Feasibility Study end 2005



# Benefits of high quality HCC in Chinese blends

***Addition of BHP Billiton hard coking coals have been found to increase CSR and strength in a range of blends***



- Replacement of a high quality Chinese HCC with BHP Billiton HCCs
  - Increase in CSR
  - Increase in stability
  - Rank relationship maintained

## Summary

- The global met coal world has changed due to higher demand for BF based steel and hence metallurgical coke
- Increasing demand and challenges from the BF have raised the bar for coke quality, requiring increased levels of hard coking coal
- The current market tightness is anticipated to last for some time due to infrastructure constraints and difficulties in expanding rapidly
- BHP Billiton is fully committed to meeting the growing market for metallurgical coal, targeting 100 million tonnes by 2010
- BHP Billiton is fully committed to the Chinese market
- The use of Australian hard coking coal in Chinese blends can improve coke quality and BF performance