Supporting India's Emerging Steel Industry via the Provision of High Quality Raw Materials



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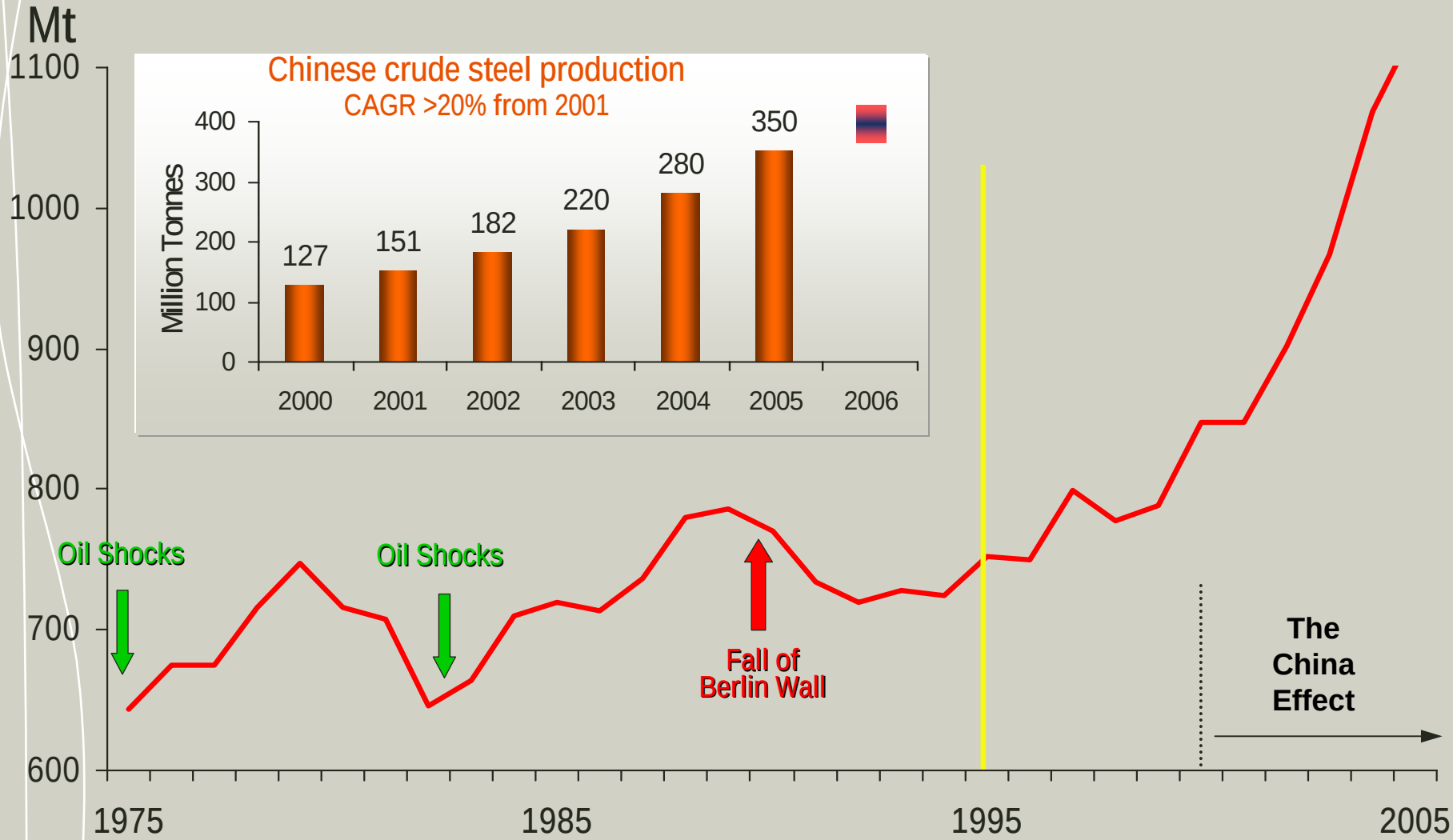
The global steel industry continues to power on led by China



Source IISI, BHP Billiton

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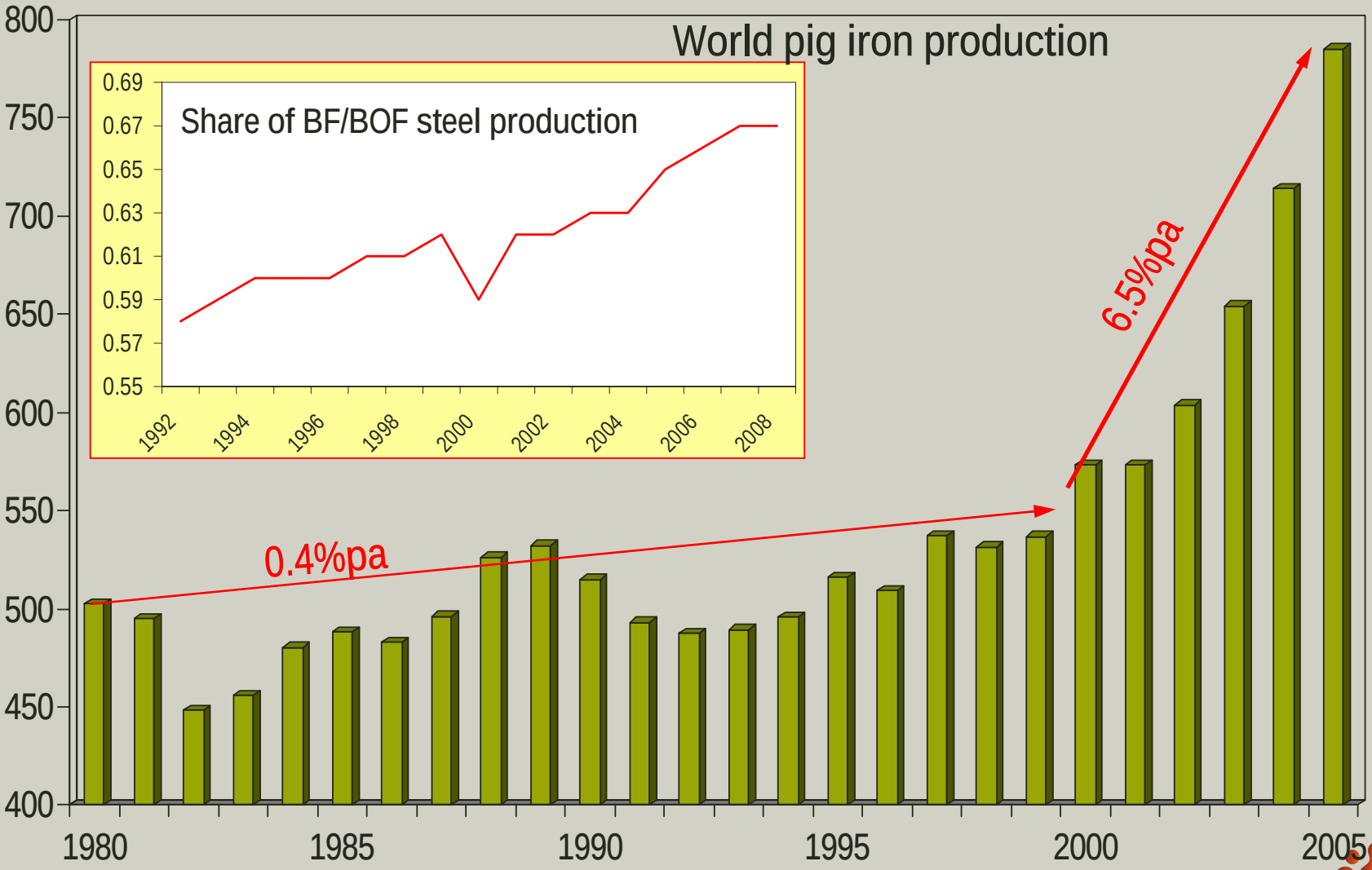
Metallurgical coal based steel production has entered a new growth phase



Source IISI, CRU, BHP Billiton

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China's steel demand sustained strong growth

Source CISA, BHP Billiton

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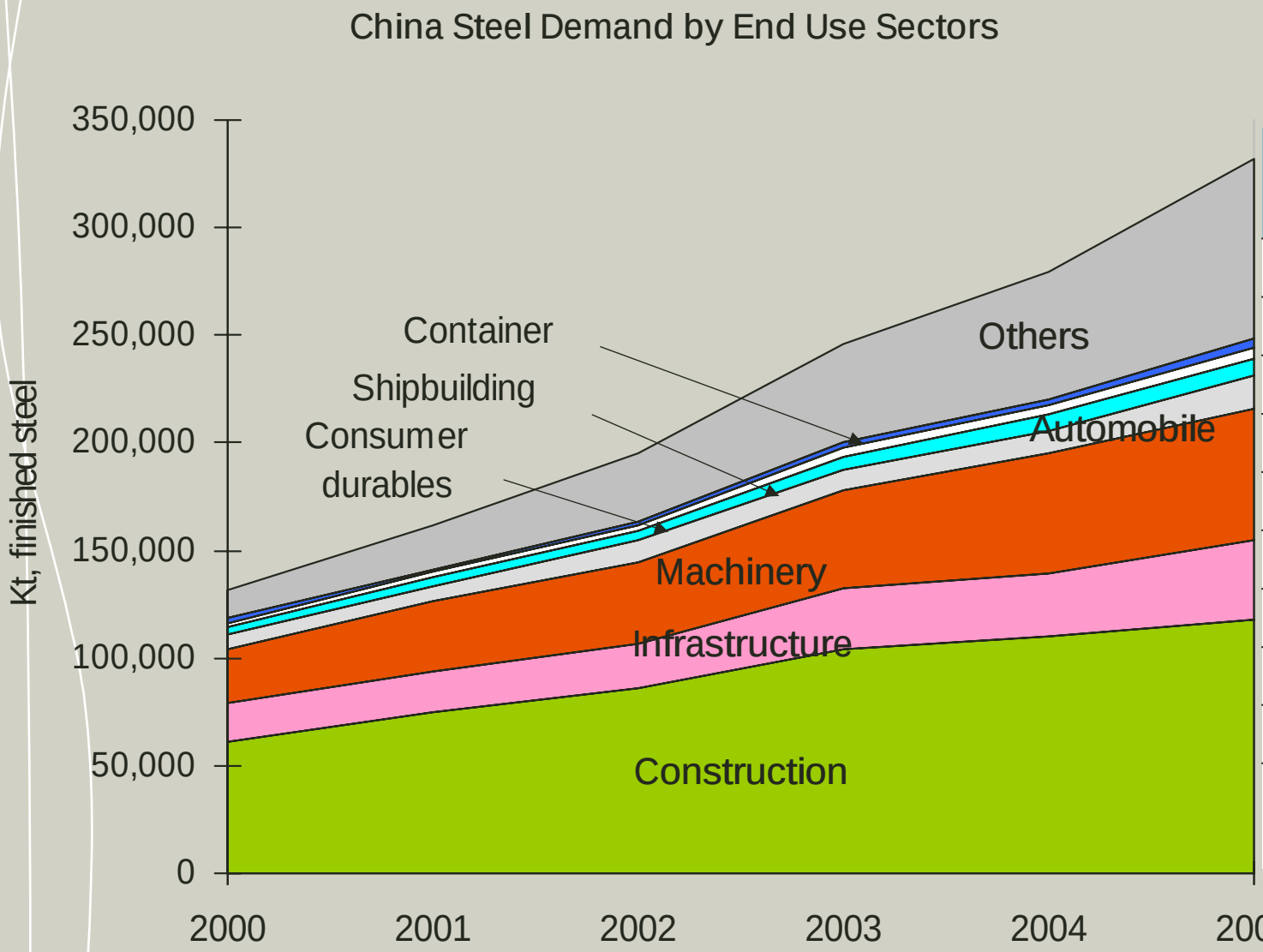
Demand driven by construction, infrastructure & machinery



	CAGR % 00~05
Total	19
Others	40
Container	13
Shipping	21
Cons. Durables	16
Automobile	20
Machinery	19
Infrastructure	16
Construction	14
	2005
Total kg/capita	233

Source IISI, CRU, BHP Billiton

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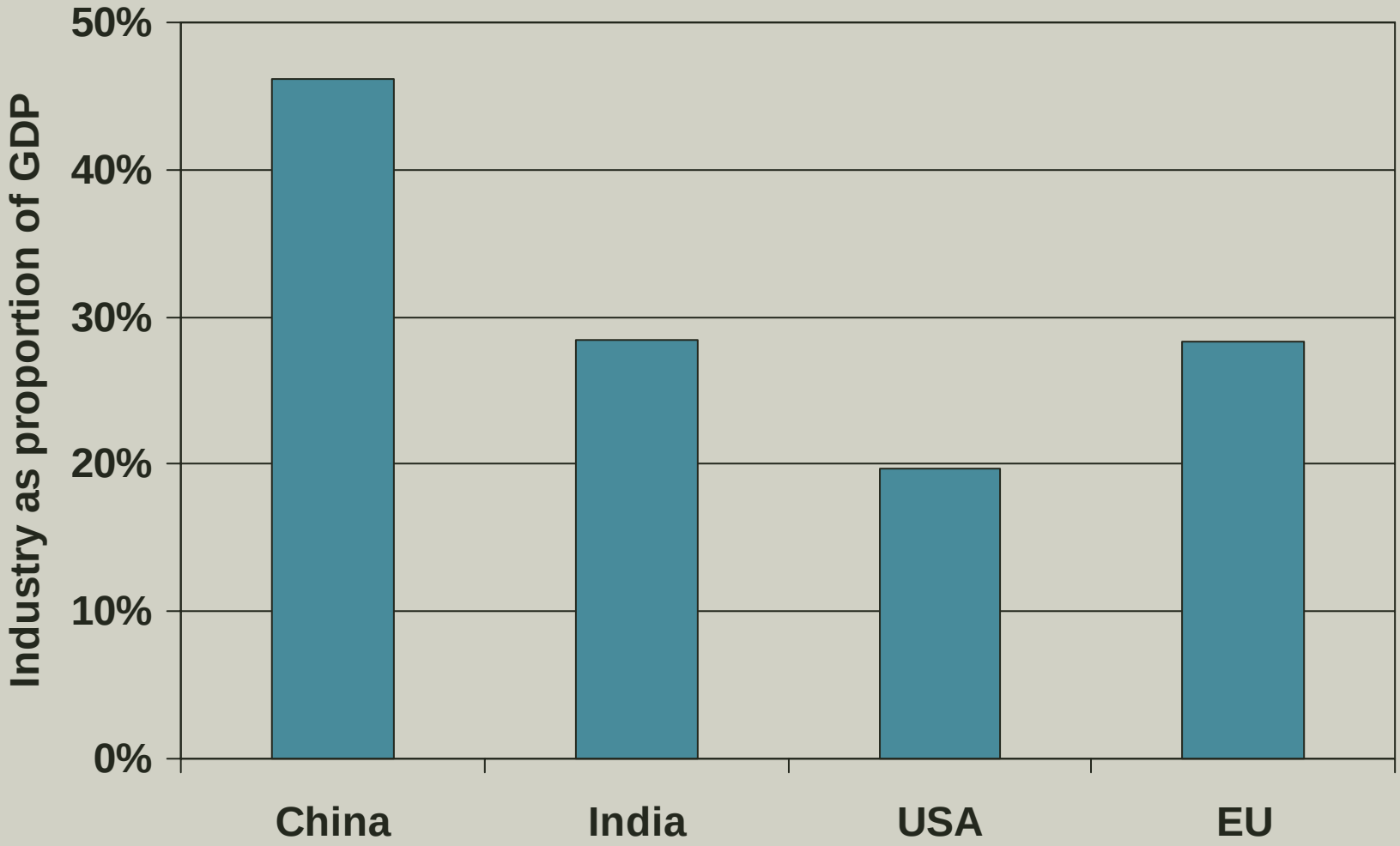
As infrastructure and manufacturing remain very important



Source CRU

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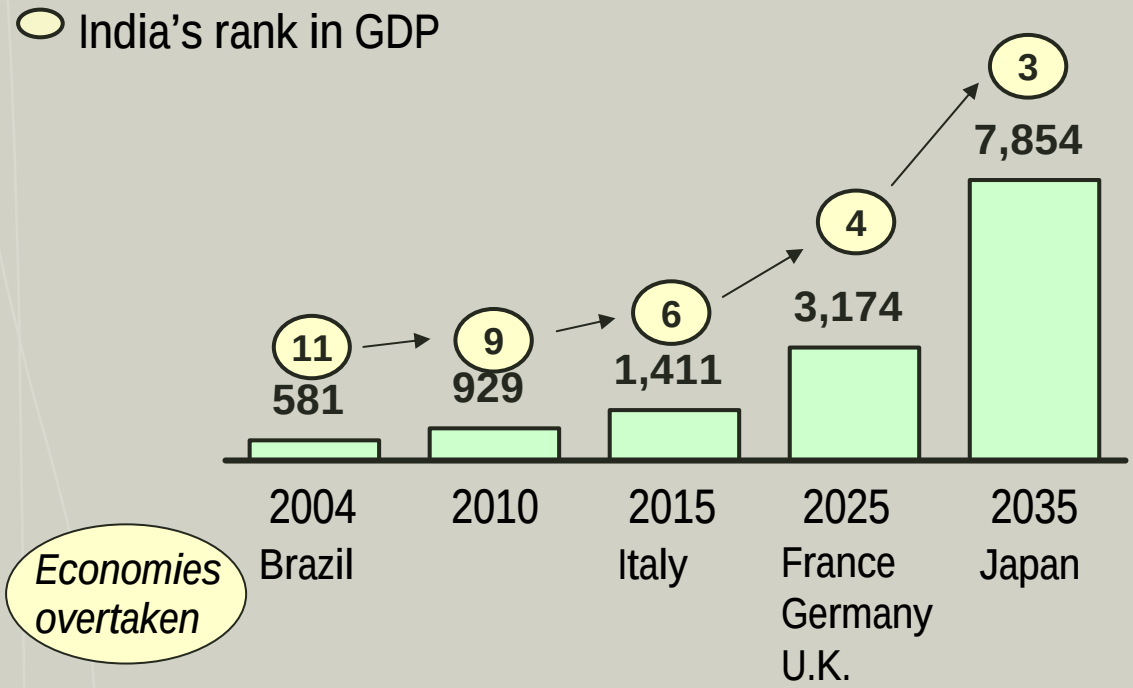
India is set to be an economic super power of the 21st century

India is set to become a top four global economy within two decades…

Real GDP*, US$ billion

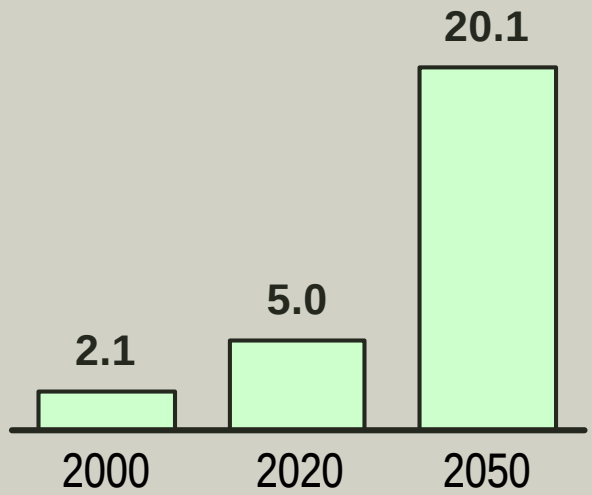


Goldman Sach's BRICs report assumes India GDP growth of ~8% p.a.

Even by conservative estimates of (6% p.a.), India will be top 5 economy by 2025

…and contribute a giant share of the incremental GDP growth amongst major world economies**

Per cent



* Base year 2002

** Major world economies considered are the BRIC and G6 countries

Source: Goldman Sachs

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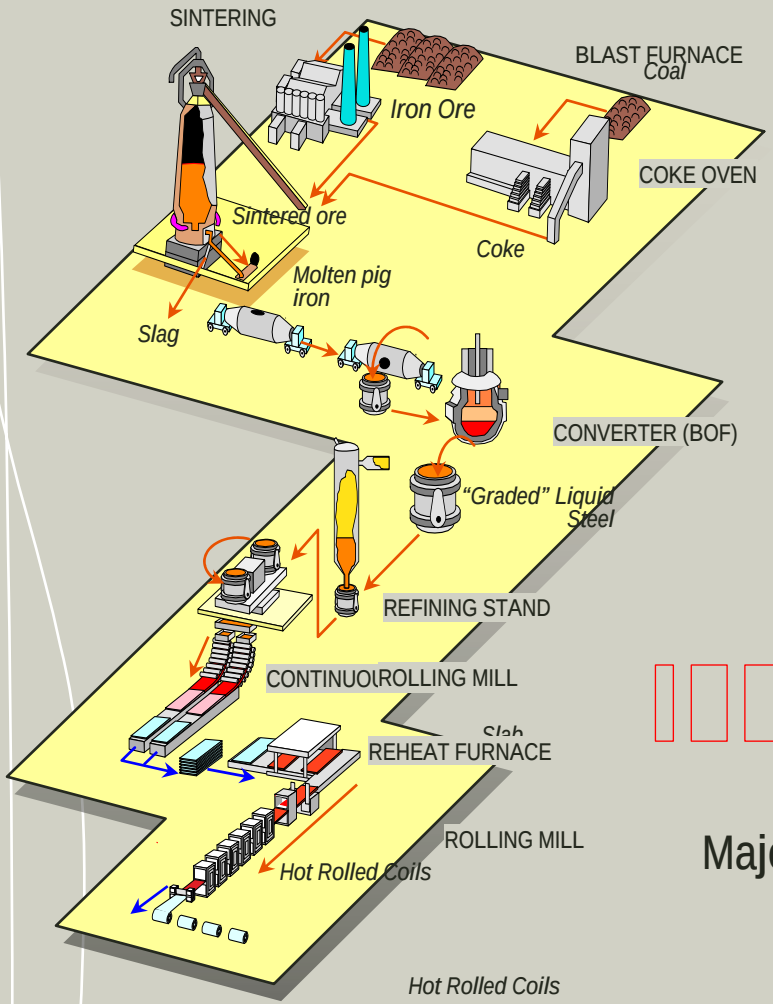
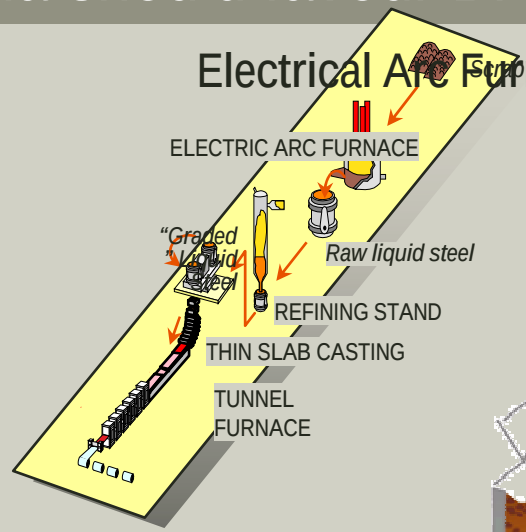
Steelmaking Processes – India should favour BF route

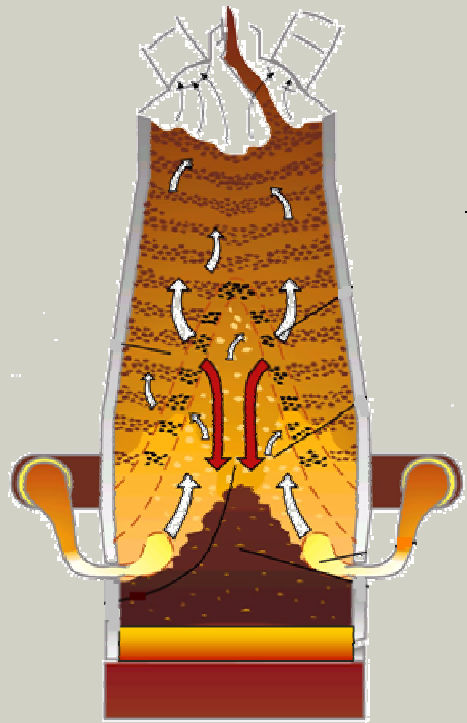
Basic Oxygen Furnace



Electrical Arc Furnace



Major steelmaking route



Liquid flow

Gas flow - coke

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Advantages of BF based steelmaking for India

- Ability to utilise vast Indian iron ore reserves
  - Lump and fines
- Can make full range of steels
  - Construction to Advanced High Strength steels
- Economies of scale
  - MBF to >5,000m^3
- Energy efficiency
  - Significant efficiency gains, greenhouse benefits
  - Further options can be developed
- India well experienced with BF technology

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Meeting India's future steel needs

Requirements

1. Vibrant local steel industry
2. World class domestic mining industry
3. Supplies of excellent hard coking coal

BHP Billiton can provide assistance with 2 and 3 leading to the further development of a successful vibrant steel industry

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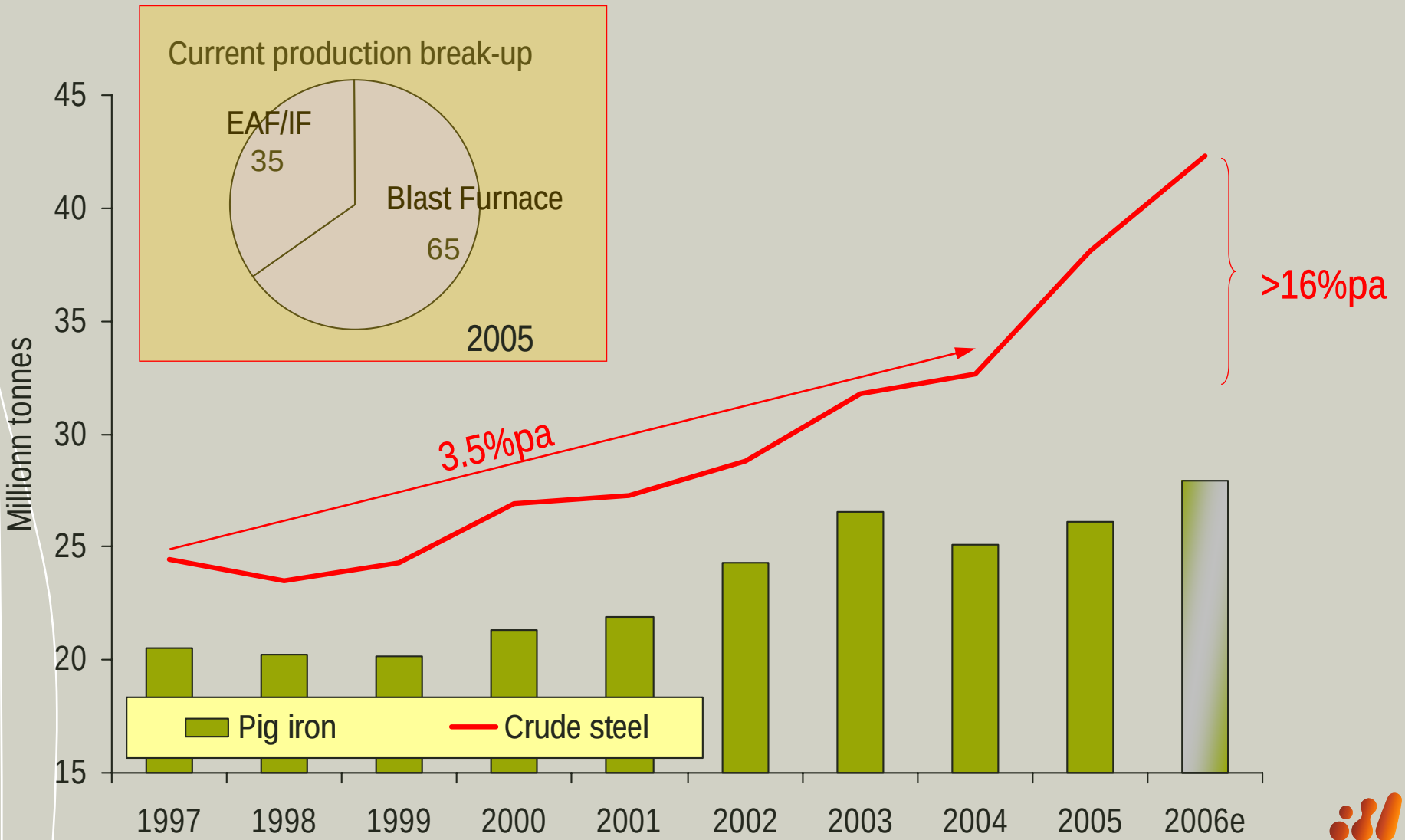
India's steel production has also grown…accelerating??



Source IISI, BHP Billiton

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Indian steel industry structure – predominantly private

	Players	Production Mtpa 2005	Technical/ equipment	Products and Markets
ISP	SAIL	4.9	Complex production flow (Blast furnaced → Basic oxygen → Furnace → Casting Rolling	Wide variety of flat and long products including higher value-added products
	Bhilai	4.1		
	Bokaro	2.0		
	Durgapur	1.8		
	Rourkela	4.5		
	TISCO	4		Domestic and International
	RINL			Control 50% of steel production
Steel Majors	ESSAR	3	EAF/ Planning Corex unit	Mainly high value flat products
	JVSL	2.4	Corex / Blast Furnace	
	ISPAT	2.4	EAF / Blast Furnace	Domestic and International
	OTHERs/EAF*	8.8	Small EAF units	
MBF	Pig iron unit – 15	2.5	Blast Furnace producing pig iron	Castings, foundries, rolling mills
Sponge Iron/Rollers	Sponge Iron – 31	10	Single production line (/Electric Arc Furnace/ Induction Furnace → Rolling) or just Hot Rolling	Mainly long products of low quality
	Re-rolling – 2080	22.8		
	HR – 7	6		
	CR – 59	3.6		
	GP/GC – 14	1.4		
	TIN plating – 2	0.18		

Source India steel, JPC

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Benefits from world class domestic mining industry

- Deep understanding of resource through state of the art exploration
- World class mining technologies
- Maximum utilisation of natural resources
- Environment and community development
- Infrastructure development
- Taxes and royalties to the state
- Merchant ore market promotes downstream industries
- Competitive downstream industries

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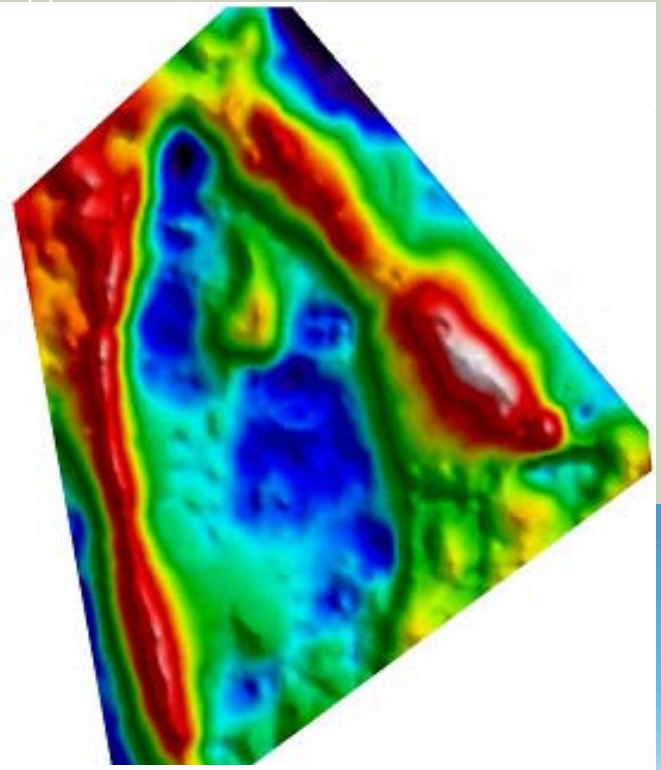
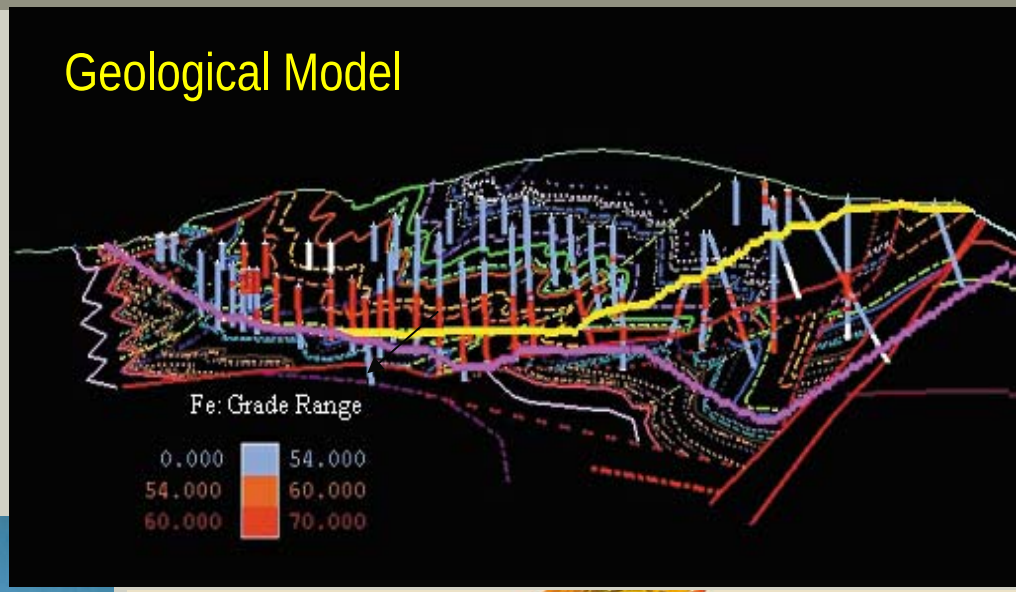
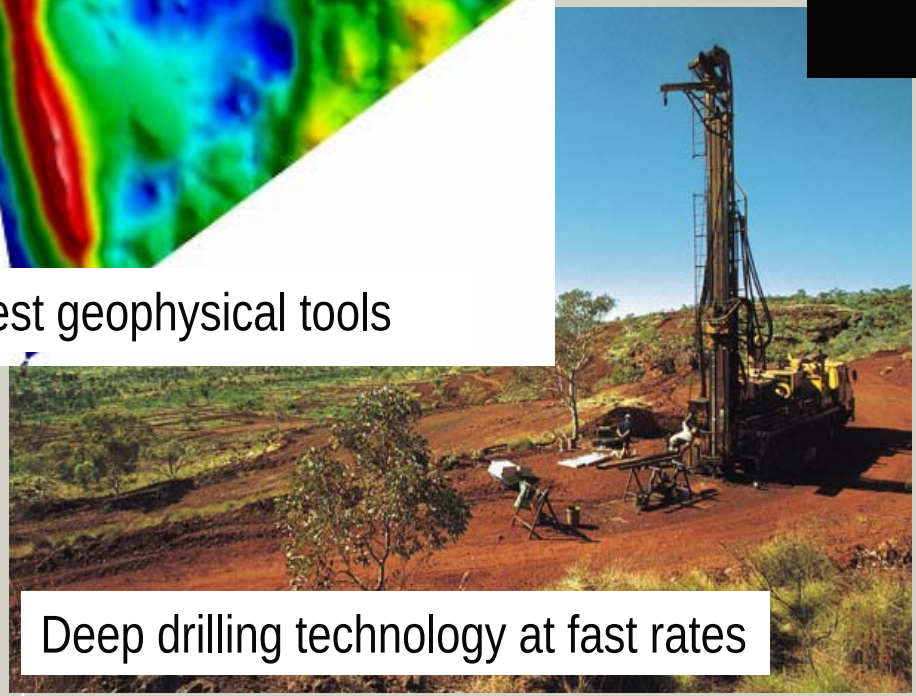
Ensuring iron ore resources are maximised

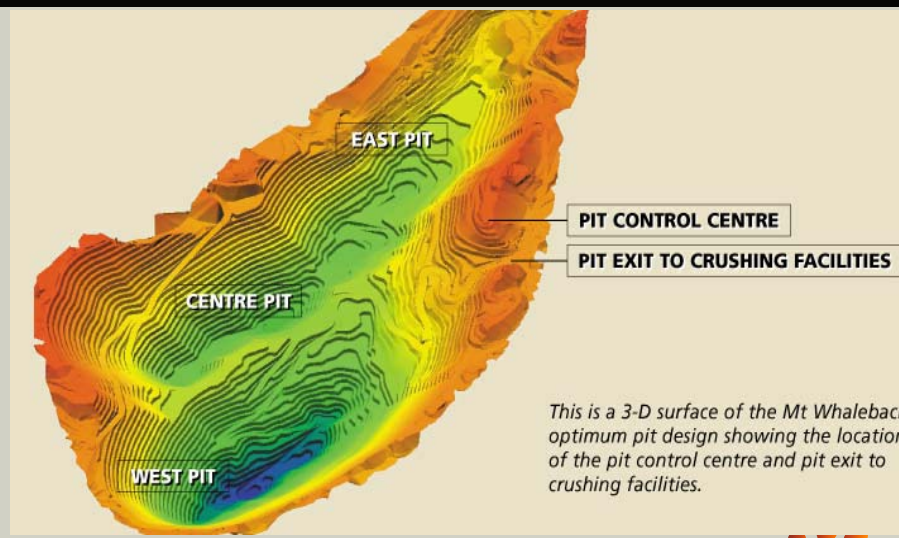


Latest geophysical tools





Deep drilling technology at fast rates



Detailed Mine Planning

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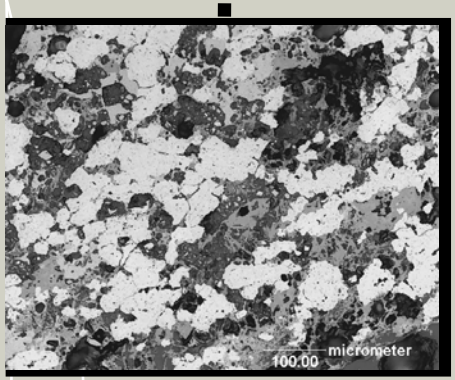
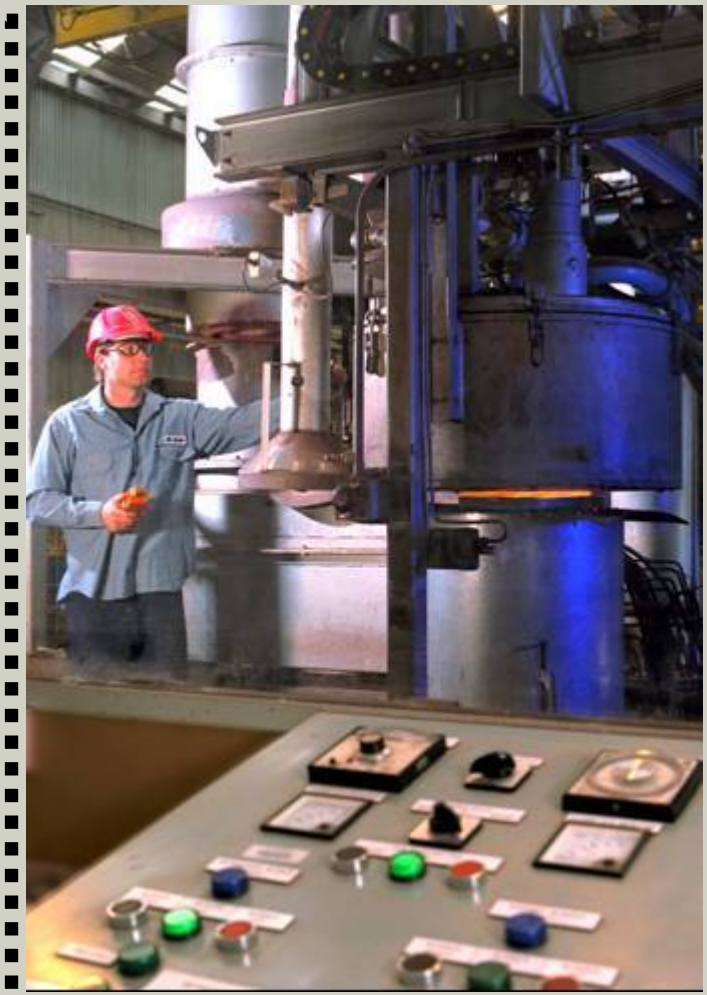
Developing world class technology for resource understanding



Fundamental studies are designed to understand the link between:

- GEOLOGY, the genesis and dispersal of ore types in the ground,
- MINERALOGY, the type and dispersal of mineral phases within the ore,
- the fundamental PROPERTIES of the ore , and
- its BEHAVIOUR in use

giving the greatest potential for extracting the maximum value from the ore in sinter and ironmaking.



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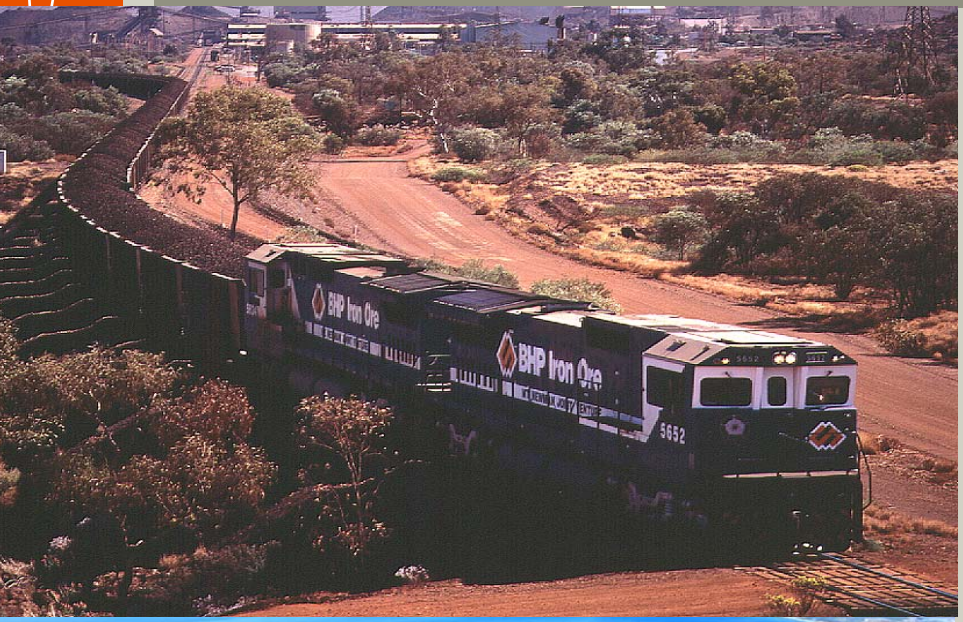
Resource companies develop/operate world class infrastructure



- Logistics key to mineral utilisation and evacuation
- Dedicated heavy haul freight railways
- World record for longest and heaviest freight trains
- Transports 100 Mtpa on a single line
- World class port infrastructure

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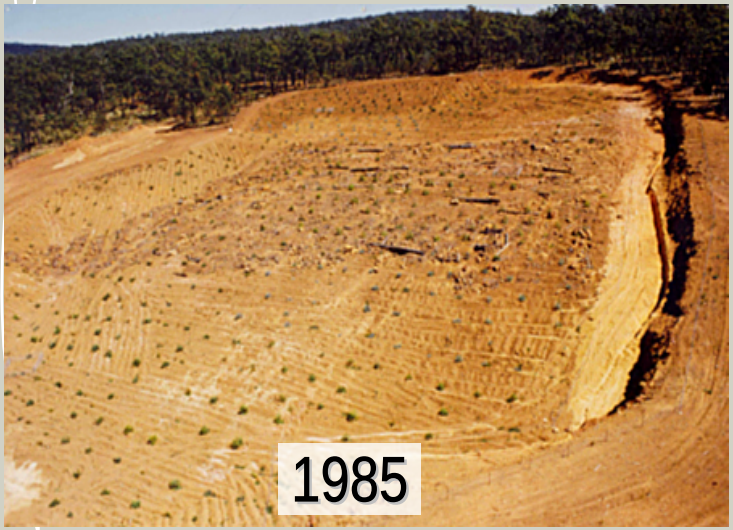
Proving mining in a responsible environmental friendly manner



BHP Billiton Awarded “Company of the Year” in the Business in the Community Awards, 2005

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Trends in global met coal demand

- New BF capacity and associated coke capacity planned
  - China, India, Brazil & new integrated steel capacity in Asia eg Korea, Thailand
  - Significant relined and enlarged BF capacity planned
  - New batteries Japan, Korea – remove reliance on merchant market
- Changes to seaborne balance due to declines in domestic production
  - Germany
  - USA, esp. low volatile HCC
- Rise of China as an important met coal importer in medium term
  - New coastal capacity favouring seaborne imports
- Move away from SSCC to HCC
  - Larger, and high BF productivity requiring increased levels of high quality HCC
  - Kyoto supporting moves to lower fuel rates = move away from SSCC to HCC

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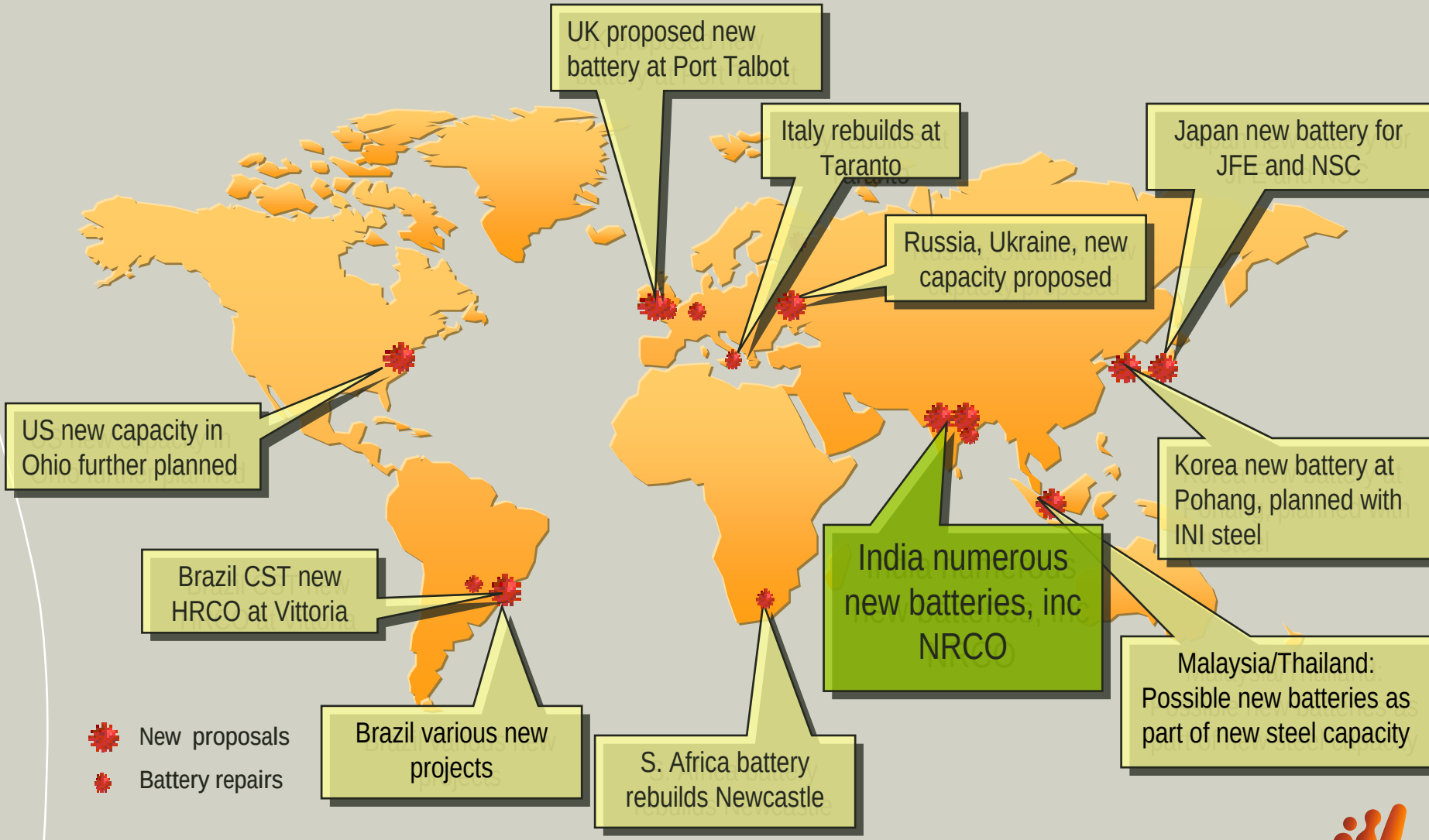
Traditional and new steelmakers are building / refurbishing and planning new coke capacity



Source Market sources and announcements

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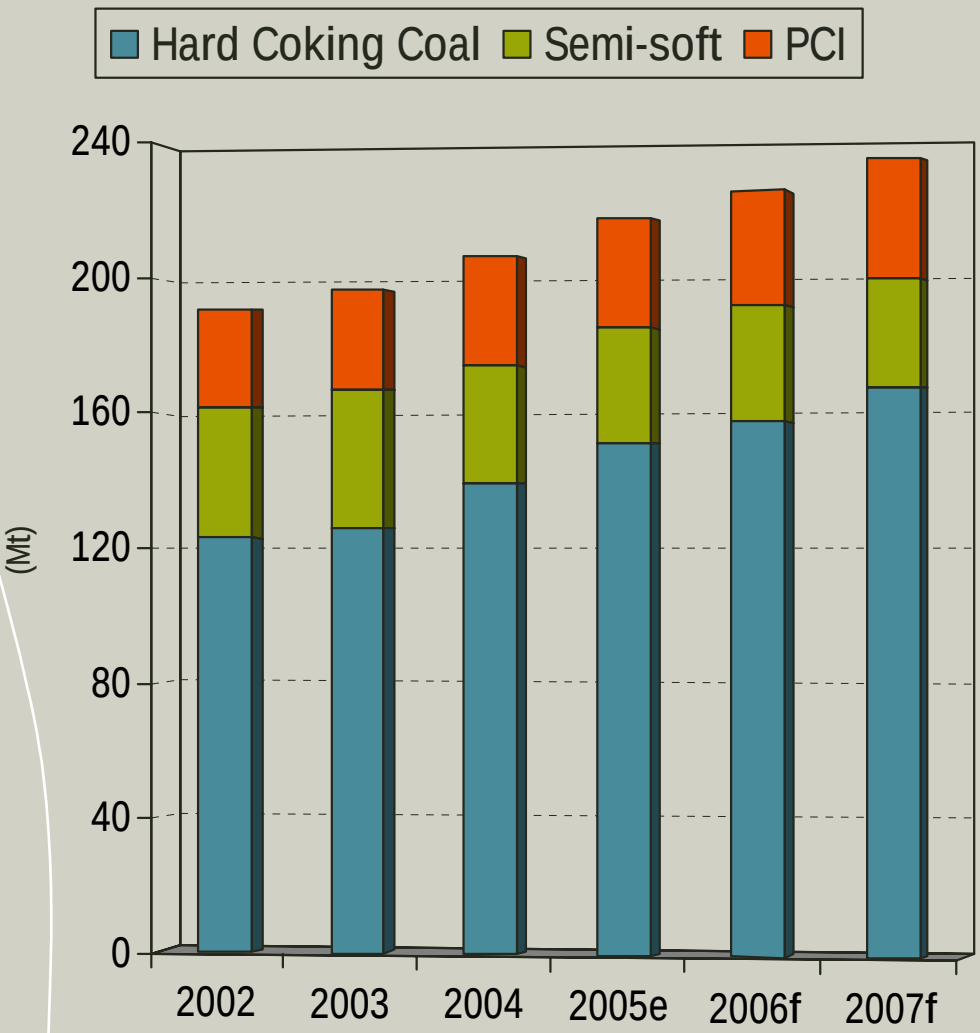
Global Increase in met coal demand 2006 - 2007

Total met coal increase 2004 - 7 approx 25Mt or (5%pa)



PCI total increase +4Mt, (5.0%pa)

Semi-soft decrease -3Mt, (-3%pa)

Hard coking coal increase + 28Mt, (6.1%pa)

Source McCloskey, CRU, industry sources, BHP Billiton

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Major met coal issues for India

- Need to import as local coals universally high ash
- New larger capacity BF's will require high quality coke
- Better coke needed in future due to
  - Increased PCI use to world practices
  - Strong increase in BF productivity
- New HRCO will still require hard coking coals
- Will stamp charging produce coke suitable for large high productivity BF's at >2.5t/m^3.day??

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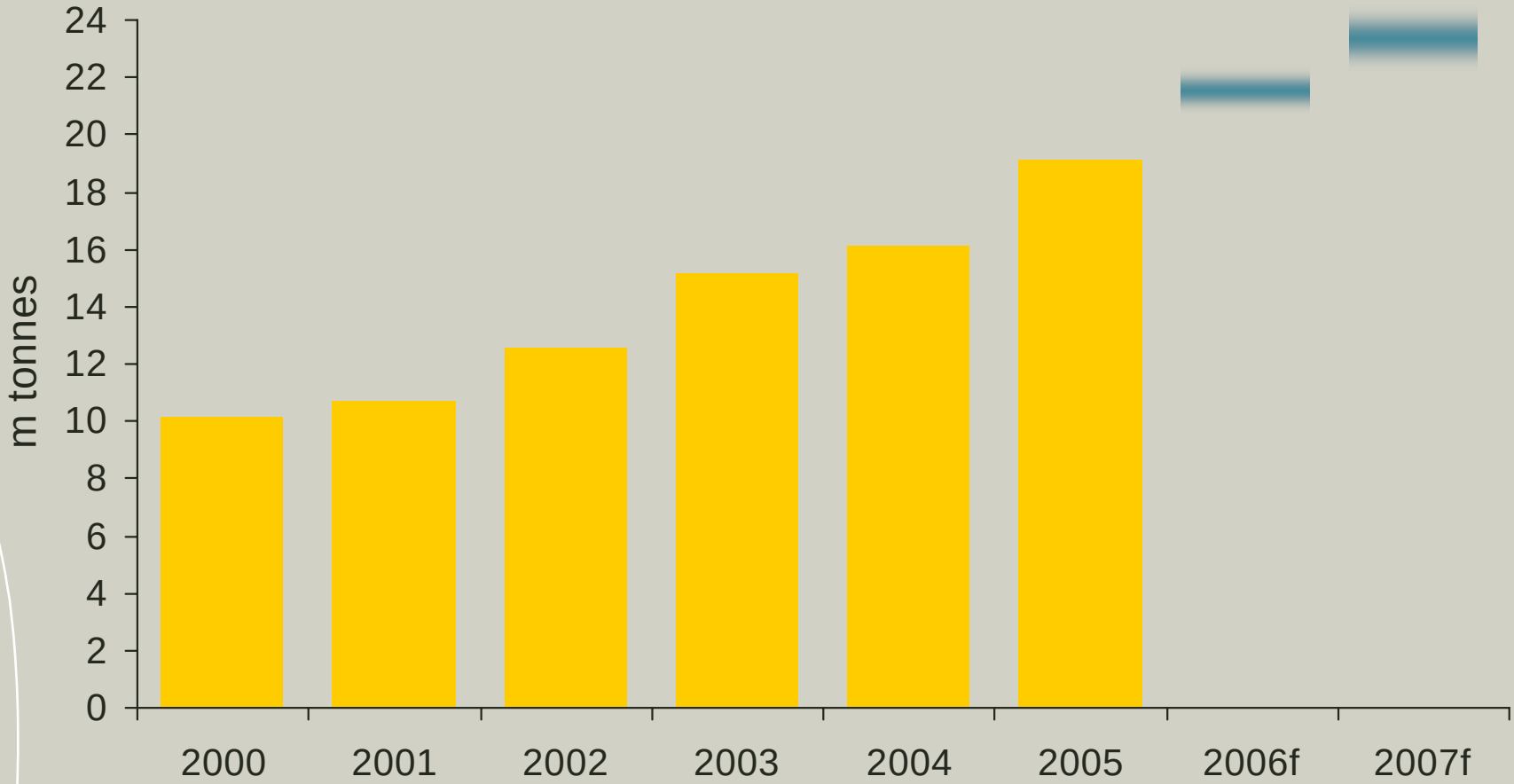
India’s met coal demand will continue to rise



Source: Trade statistics, CRU, McCloskey, BHP Billiton

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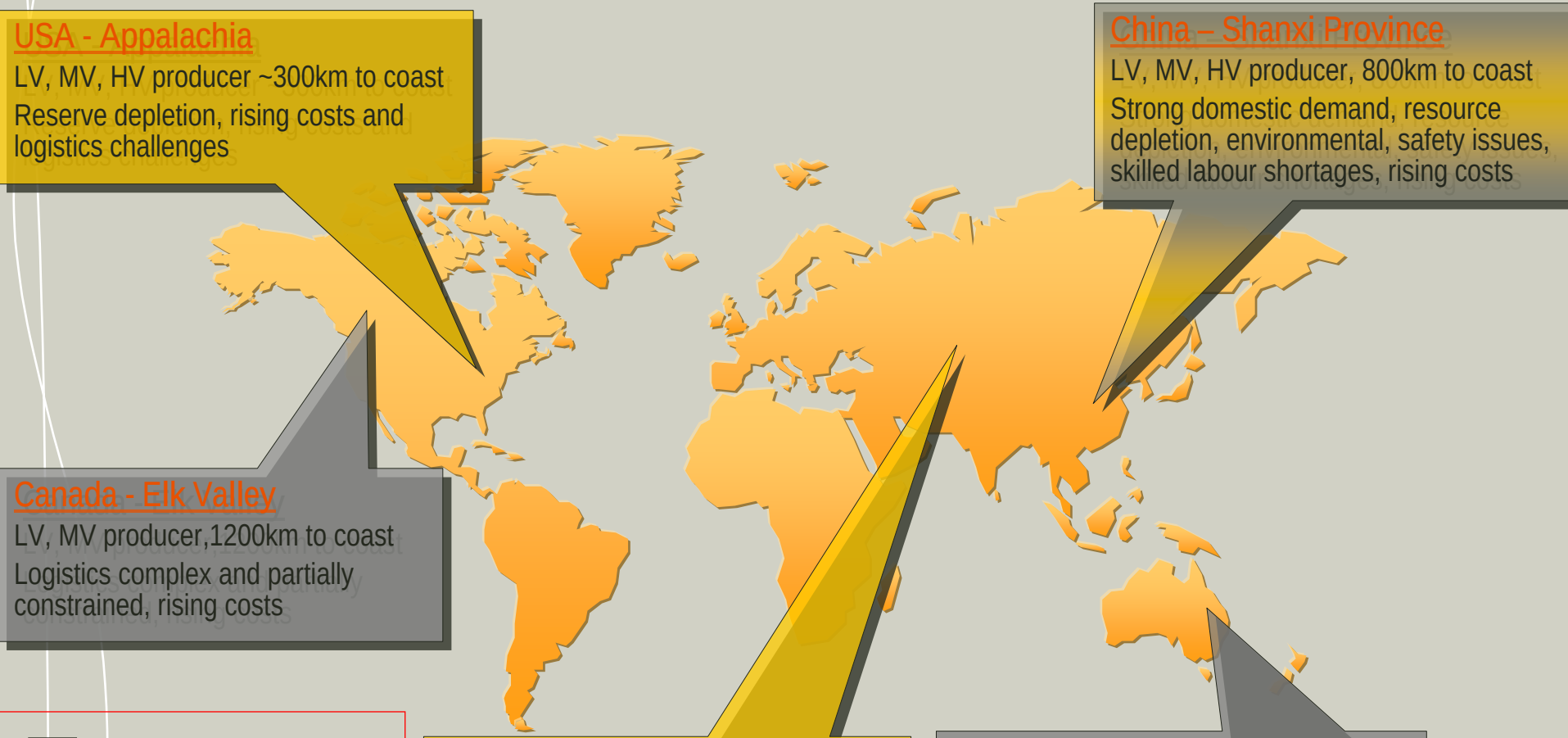
Major high quality global met coal producing regions



USA - Appalachia

LV, MV, HV producer ~300km to coast

Reserve depletion, rising costs and logistics challenges

China – Shanxi Province

LV, MV, HV producer, 800km to coast

Strong domestic demand, resource depletion, environmental, safety issues, skilled labour shortages, rising costs

Canada - Elk Valley

LV, MV producer,1200km to coast

Logistics complex and partially constrained, rising costs

Russia - Kuzbass

LV, MV, HV producer ~4000km to coast

Limitations on infrastructure, dependent on subsidised rail transportation

Strong domestic demand

Australia – Bowen Basin

LV, MV, HV producer ~300km to coast

Shortages of skilled labour, input costs rising, commissioning delays, port capacity

Predominantly export

Predominantly domestic

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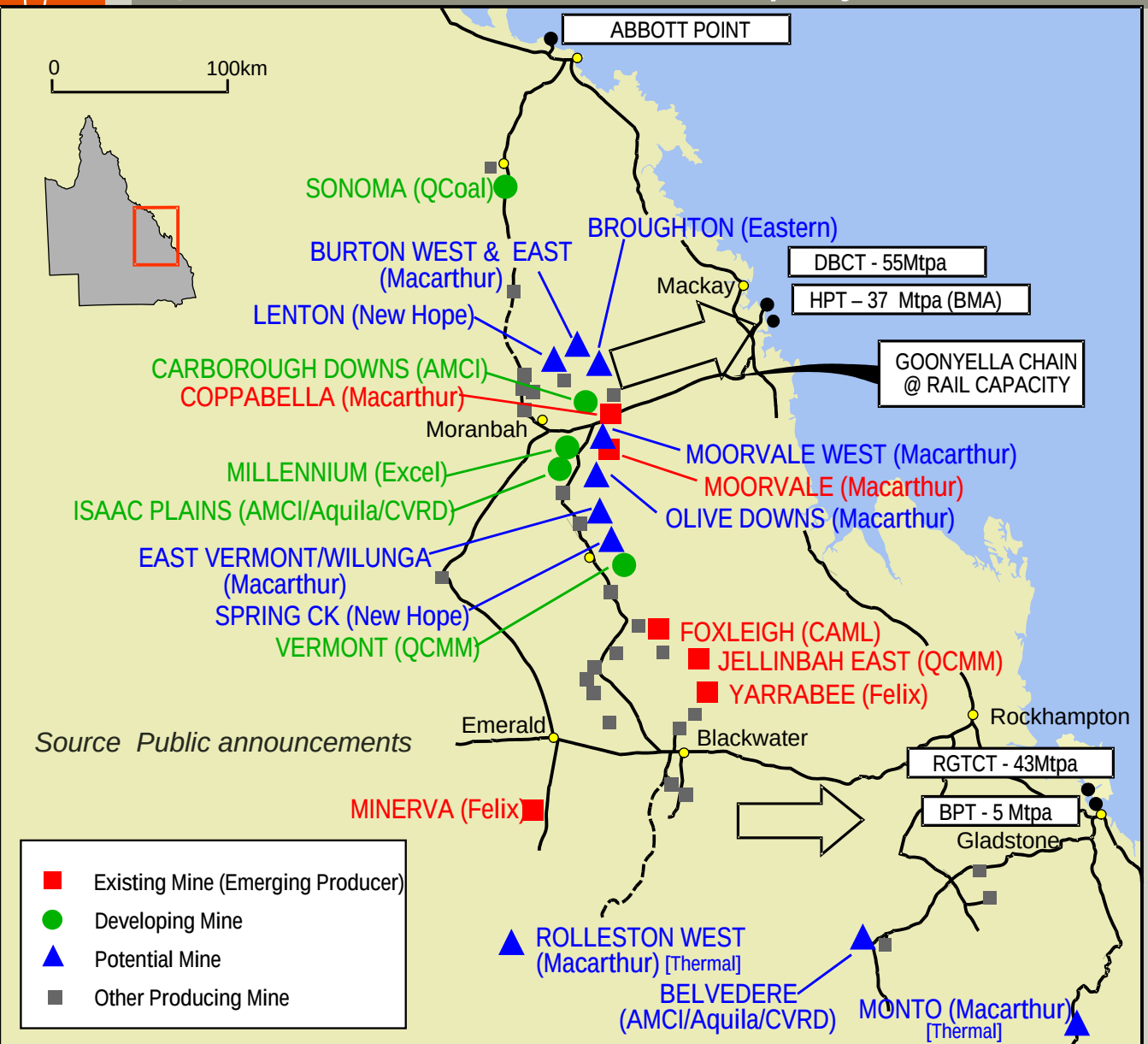
Queensland selected new projects



Source Public announcements

Australia and Canada

Majority of new projects are WCC/SSCC and PCI coals

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Met Coal Supply Outlook to 2007

- **Australia** (62% of global total)
  - Exports up strongly
  - Further additional supply from Hail Creek, Dendrobrium, Broadmeadows other HCC
  - Brownfield creep/expansions
  - Delayed new capacity expansions
- **Canada** (16% of global total)
  - Exports increasing from 2004/5
  - New capacity NE British Columbia, but mainly PCI, WCC or poorer HCC
  - Ramp up Alberta, Cheviot, Grande Cache
  - Possible restarts - brownfield expansions
- **USA** (12% of global total)
  - Difficult to predict after rise in 2004/5
  - Outlook further decline, ~ 3-5Mt by 2007
  - Possible decrease in HV – power linked
  - High cost producer

Source:- McCloskey, Barlow Jonker, industry sources

- **China**
  - Little HCC exported
  - Probable shortage of domestic HCC in future
  - Counterbalance high domestic demand with export desires – China first
  - Shanxi Province key - hard to predict
- **Russia**
  - Exports predicted to rise to 2007
  - Domestic demand growth/supply tightening
  - Most HCC owned by steelmakers
  - Further potential, but domestic demand rising exports secondary – price sensitive
  - Production costs low but very low rail freights vital

Key Takeaways

- Continued importance of Australia especially in better quality HCC
- Port throughput not mine production the key to export volumes in near term
- Supply becoming more volatile

Port and rail capacity is the key in the short term

Russia – rising demand

Kuzbass

Ports – limited spare capacity, long rail hauls

Canada

Elk Valley & NE British Columbia

Ports – Roberts Bank limited, Ridley spare capacity

US – rising demand

Central & Southern Appalachia

Ports – limited expansions, rail, logistics limitations

Australia - Queensland

Bowen Basin

Ports – DBCT, Hay Point at capacity, limited at Gladstone

Australia - NSW

Illawarra coalfield

Ports – spare capacity

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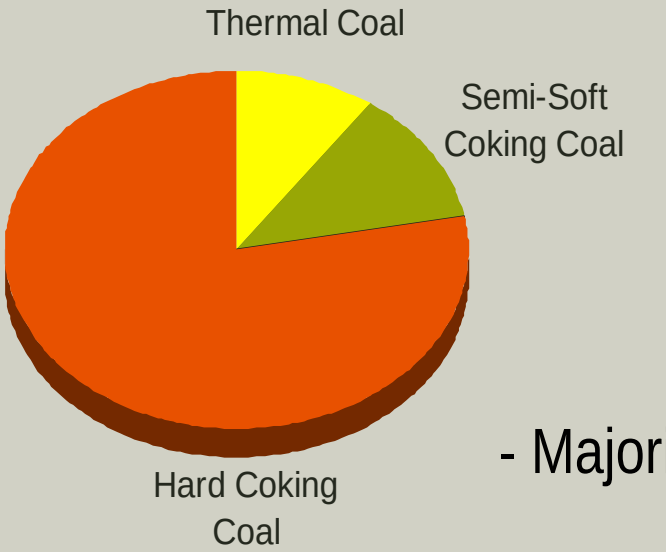
BHP Billiton has numerous growth opportunities to meet market demand

BHP Billiton Bowen Basin expansions contribute the majority of the growth, predominantly high quality hard coking coal announced Q3 2004



- 75% hard coking coal
- 12% semi soft coking coal
- 13% thermal coal

- Majority brownfields

Capacity growth based on:-

- brown & greenfield expansions in Bowen Basin
- replacement new longwall and potential expansions in Illawarra
- new coking coal basin in Kalimantan, Maruwai

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BHP Billiton's expansion progress
Queensland – Bowen Basin

- Queensland Stage 1 expansion from 52 to 57 Mtpa completed
- Queensland Stage 2 (to 59 Mtpa) underway & due by 2nd half 2006
- Broadmeadow long wall commenced production August 2005
- Poitrel open cut approved and under construction
- Expansion of capacity at Hay Point Coal Terminal on track :
  - Phase 1 to 40 Mtpa (+6) by 2nd half 2006 – underway
  - Phase 2 to 44 Mtpa by 1st qtr 2007 – announced
  - Phases 3&4 to 55-57 Mtpa – being assessed & environ approvals sought.

- Currently evaluating range of further options for expansion subject to market demand and constraints imposed by the current environment
  - resource shortages, lack of skills people and significant cost pressures

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BHP Billiton's expansion progress
Broadmeadow – commenced production August 2005

BHP Billiton's expansion progress
Poitrel mine

Crushing station

Surge bin

Ultra-fines microcell tanks

Poitrel rail loop

Note: Poitrel mine is a JV with infrastructure sharing

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BHP Billiton's expansion progress
Expansion of existing operations

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BHP Billiton's expansion progress
Illawarra and Maruwai

- Dendrobrium UG mine commenced production April 2005

- Further expansion options at Illawarra under feasibility study
- Maruwai moved into feasibility study stage.

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Concluding Remarks

- The global steel industry remains on a fast growth track, is India joining in?
- The challenges of meeting India's "need for steel" can be met with the support of local and major resources companies such as BHP Billiton
- Development of India's vast iron ore resources would benefit from state of the art exploration, mining and resource utilisation technologies
- BF based steelmaking is the optimal solution for India's steel needs requiring imported met coal
- The outlook for met coal esp. hard coking coal is strong and challenges to meet market demand are faced by all major producing regions
- BHP Billiton are fully committed to meeting the growth for coking coal, delivering India the confidence and assurance for its future steel needs

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