

# Uranium: A clear future

Macquarie Australian Conference

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## Information Relating to the US Offer for Rio Tinto plc

BHP Billiton plans to register the offer and sale of securities it would issue to Rio Tinto plc US shareholders and Rio Tinto plc ADS holders by filing with the SEC a Registration Statement (the "Registration Statement"), which will contain a prospectus (the "Prospectus"), as well as other relevant materials. No such materials have yet been filed. This communication is not a substitute for any Registration Statement or Prospectus that BHP Billiton may file with the SEC.

U.S. INVESTORS AND U.S. HOLDERS OF RIO TINTO PLC SECURITIES AND ALL HOLDERS OF RIO TINTO PLC ADSs ARE URGED TO READ ANY REGISTRATION STATEMENT, PROSPECTUS AND ANY OTHER DOCUMENTS MADE AVAILABLE TO THEM AND/OR FILED WITH THE SEC REGARDING THE POTENTIAL TRANSACTION, AS WELL AS ANY AMENDMENTS AND SUPPLEMENTS TO THOSE DOCUMENTS, WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION.

Investors and security holders will be able to obtain a free copy of the Registration Statement and the Prospectus as well as other relevant documents filed with the SEC at the SEC's website (<http://www.sec.gov>), once such documents are filed with the SEC. Copies of such documents may also be obtained from BHP Billiton without charge, once they are filed with the SEC.

# Disclaimer (Continued)

## Information for US Holders of Rio Tinto Limited Shares

BHP Billiton Limited is not required to, and does not plan to, prepare and file with the SEC a registration statement in respect of the Rio Tinto Limited Offer. Accordingly, Rio Tinto Limited shareholders should carefully consider the following:

The Rio Tinto Limited Offer will be an exchange offer made for the securities of a foreign company. Such offer is subject to disclosure requirements of a foreign country that are different from those of the United States. Financial statements included in the document will be prepared in accordance with foreign accounting standards that may not be comparable to the financial statements of United States companies.

## Information Relating to the US Offer for Rio Tinto plc and the Rio Tinto Limited Offer for Rio Tinto shareholders located in the US

It may be difficult for you to enforce your rights and any claim you may have arising under the U.S. federal securities laws, since the issuers are located in a foreign country, and some or all of their officers and directors may be residents of foreign countries. You may not be able to sue a foreign company or its officers or directors in a foreign court for violations of the U.S. securities laws. It may be difficult to compel a foreign company and its affiliates to subject themselves to a U.S. court's judgment.

You should be aware that BHP Billiton may purchase securities of either Rio Tinto plc or Rio Tinto Limited otherwise than under the exchange offer, such as in open market or privately negotiated purchases.

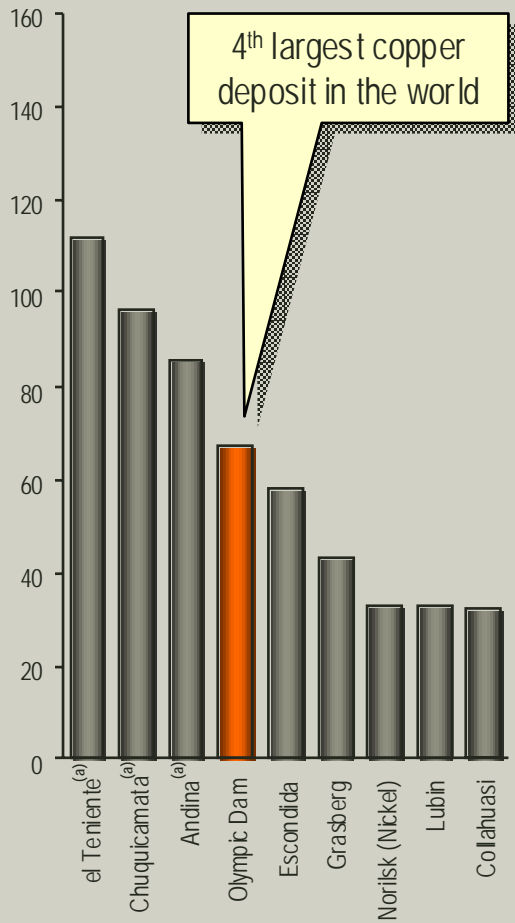
References in this presentation to "\$" are to United States dollars unless otherwise specified.

# Agenda

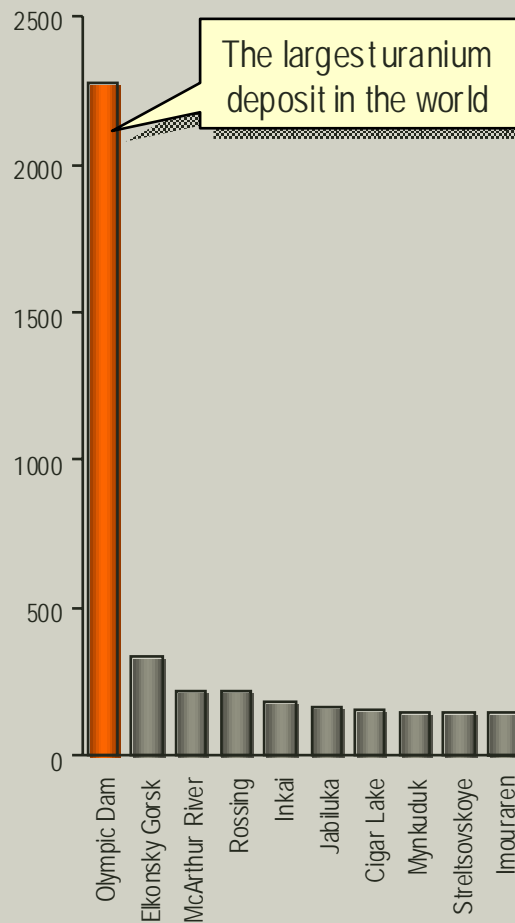
- Olympic Dam is a world class and superior resource
- Strong nuclear demand growth prospects
- Nuclear key to address climate change
- Carbon price rewrites nuclear economics
- China impact in the uranium industry

# Olympic Dam: A world class resource

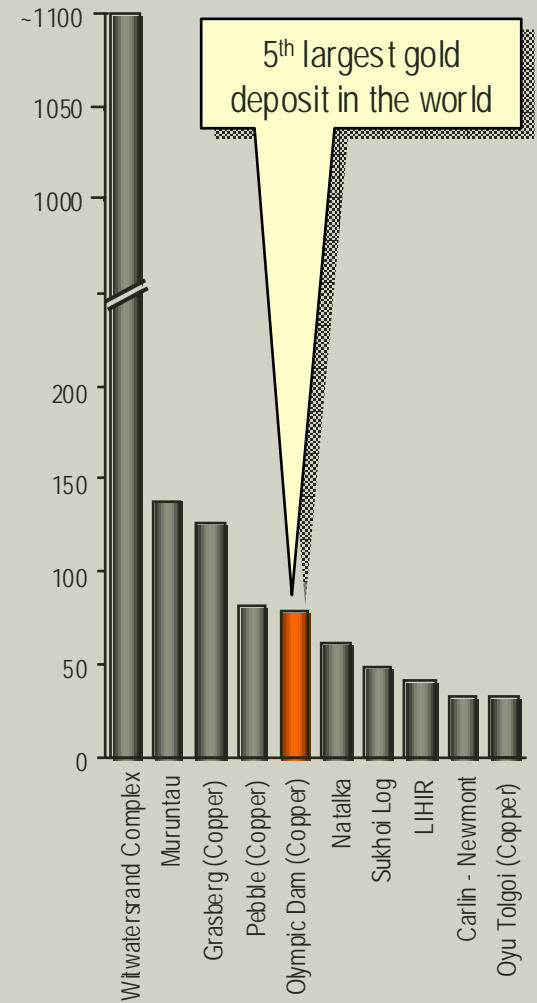
mt Copper



kt U<sub>3</sub>O<sub>8</sub>



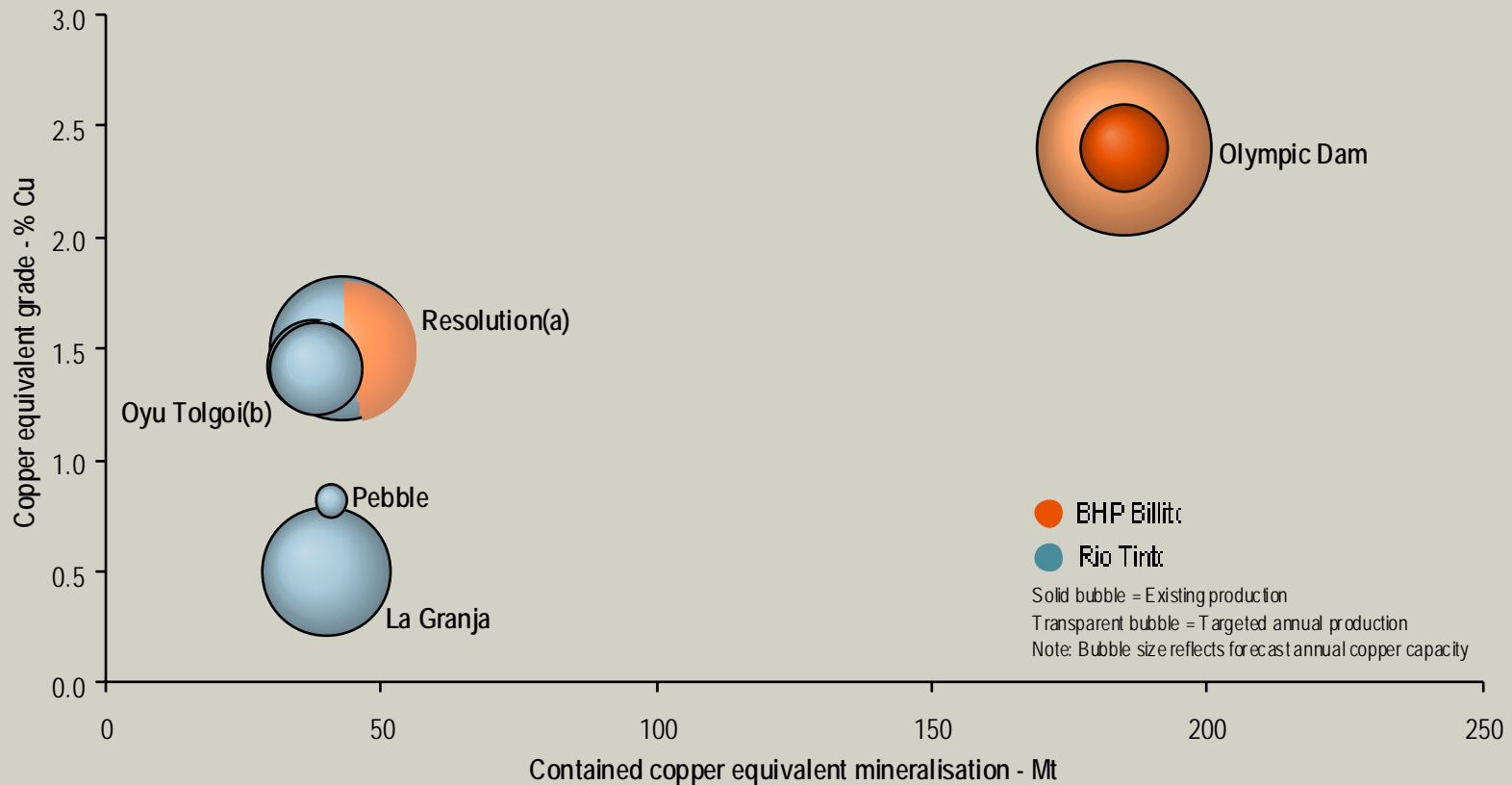
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Sources: Company Annual Reports and press releases (as at 30-Sep-2007).  
 International Atomic Energy Agency  
 Note: Witwatersrand figure is BHP Billiton estimate and is approximate only  
 a) Based on reported resource "inventory".

# Olympic Dam: A world class resource

## Olympic Dam relative to Rio Tinto's undeveloped copper projects



**Notes:**

a) 100% of production shown. Split of bubble 55% Rio Tinto, 45% BHP Billiton.

b) Bubble size reflects Rio Tinto's current 19.9% exposure to Oyu Tolgoi. Rio Tinto has options to increase its ownership interest to 46.6%.

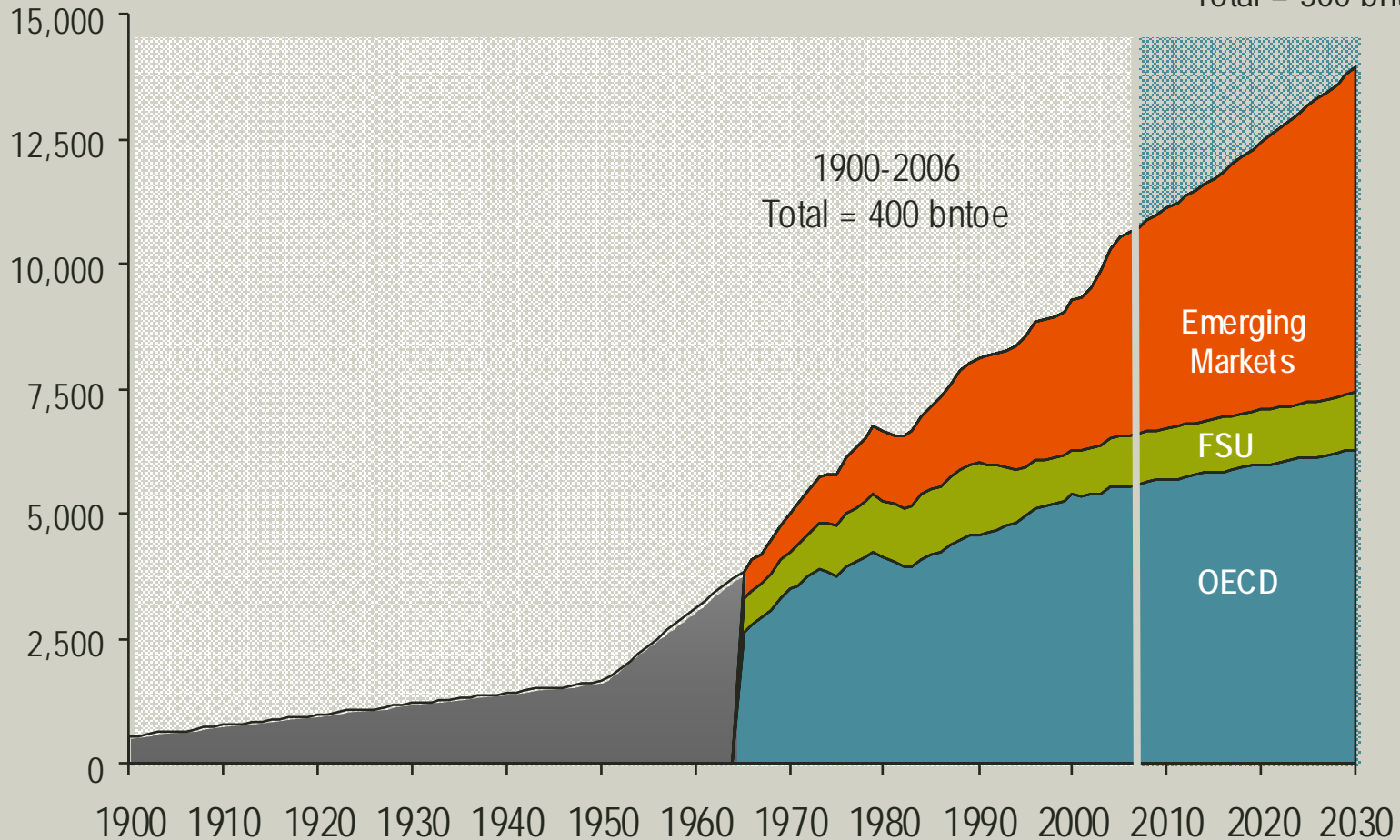
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# The world is well on its way to consuming as much energy in the next 25 years as it has consumed throughout modern history

World Primary Energy Use  
(million tonnes of oil equivalent)

2007-2030  
Total = 300 bntoe\*



\* At a hypothetical world average growth rate of 1% p.a.

Source of data: 1965-2006: BP Statistical Review of World Energy; bntoe = billion tonnes oil equivalent

1900-1965: Derived from Maddison, UK Select Committee on Economic Affairs.

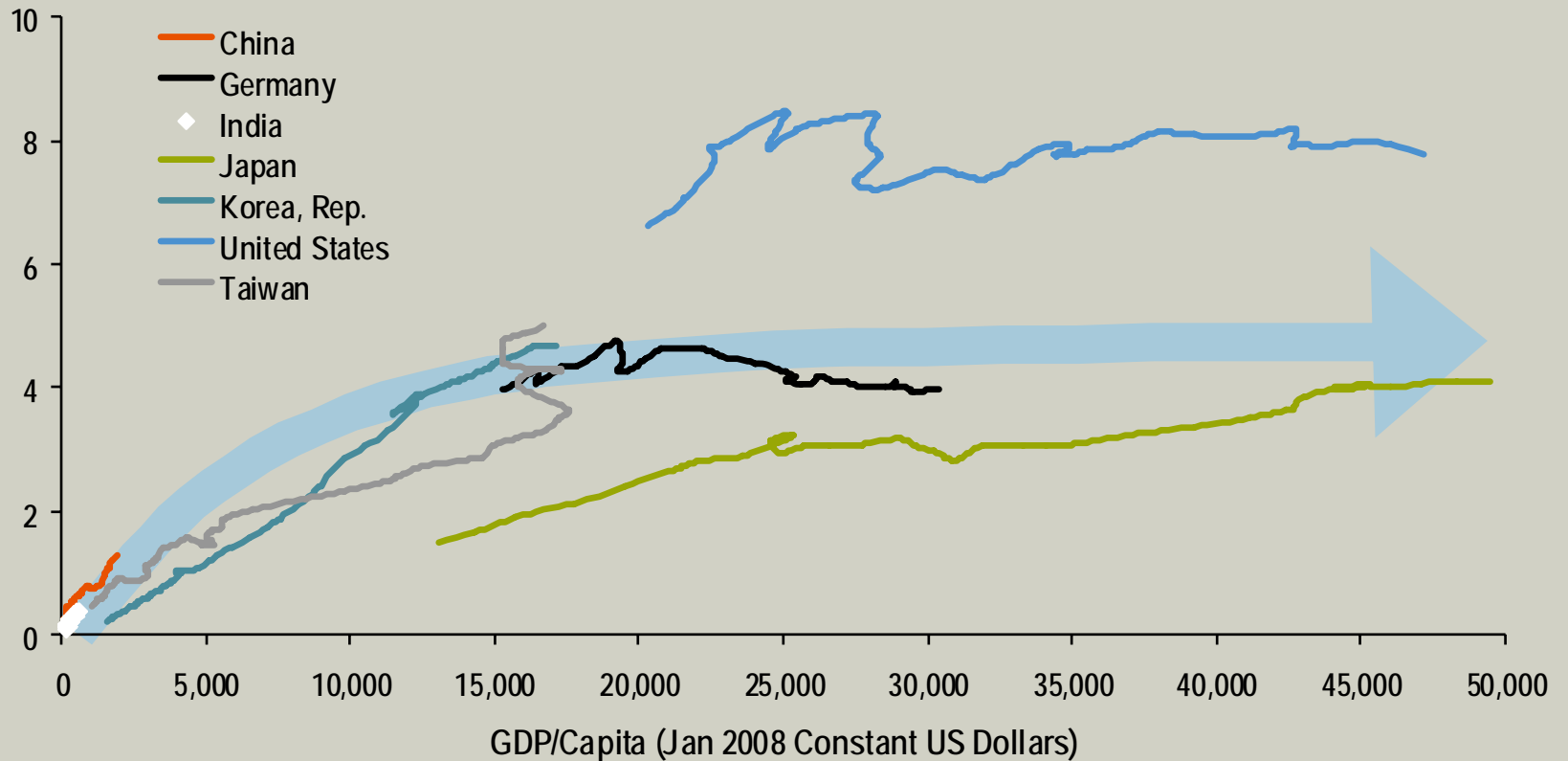
400 bntoe = 600 billion tonnes of hard coal

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# Primary energy consumption is strongly correlated to economic development

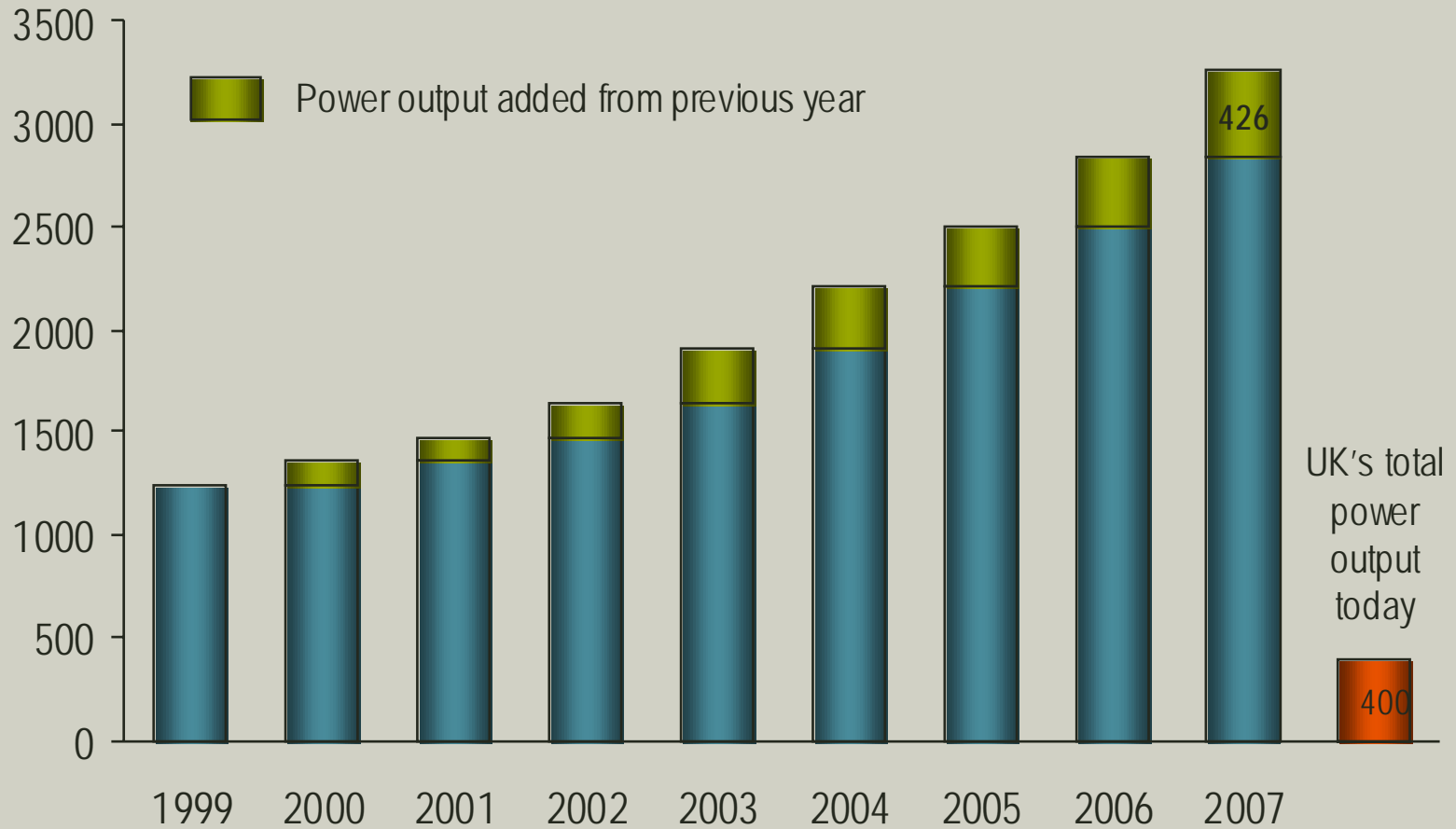
Primary energy use (tonnes of oil equiv/capita)



Source: World Bank, Government Statistics for Taiwan, BP Statistical Review of World Energy (2007)

# China's annual power output is growing at a rate equivalent to a major European country

## China's Growing Power Output (in billion kWh)

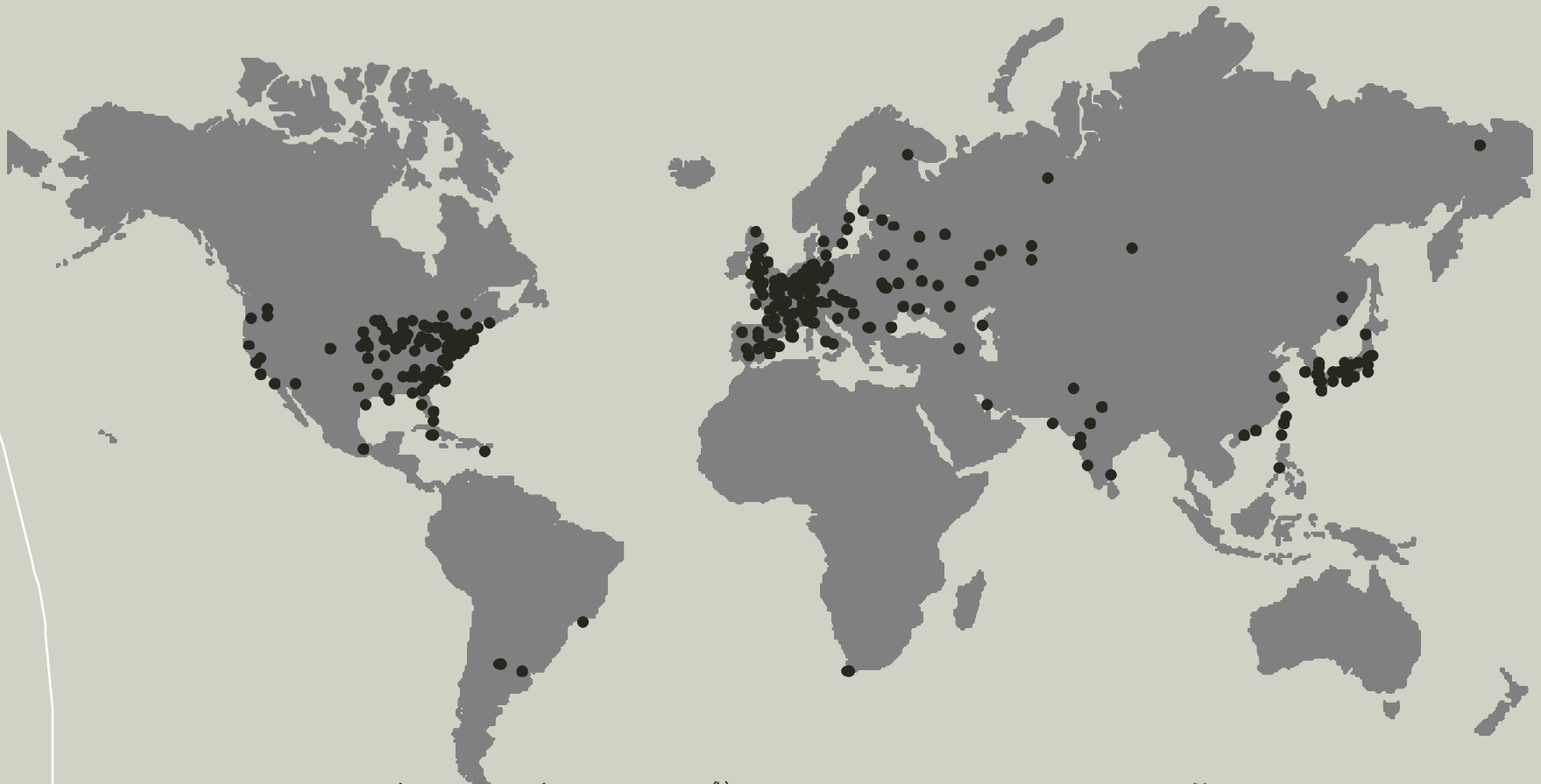


# Energy Issues?

- Power generation and distribution
- Energy efficiency and intensity
- Urban environment and transport
- Emissions

# Olympic Dam: Exposure to strong forecast nuclear demand growth – especially in the East

## Existing operational power plants<sup>(a)</sup>



- Operational (power plants) – 439 reactors<sup>(b)</sup>
- Planned (reactors) – > 94 reactors<sup>(b)</sup>
- Under construction (reactors) – 33 reactors<sup>(b)</sup>
- Proposed (reactors) – > 222 reactors<sup>(b)</sup>

Notes:

a)

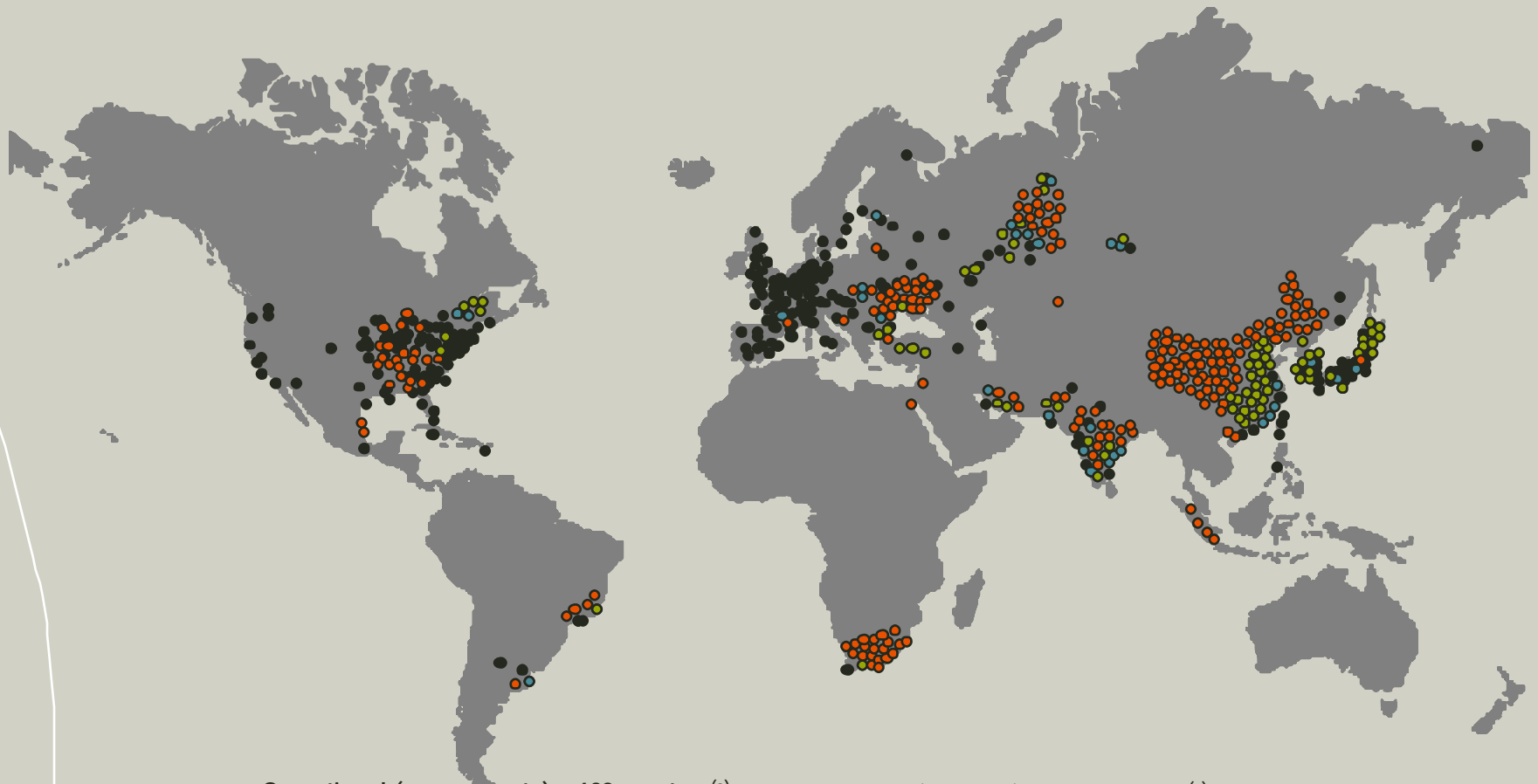
Source: International Nuclear Safety Centre at ANL, Aug-2005 ([www.insc.anl.gov/pwrmaps/world\\_map.pdf](http://www.insc.anl.gov/pwrmaps/world_map.pdf)).

b)

Source: World Nuclear Association ([www.world-nuclear.org/info/reactors.html](http://www.world-nuclear.org/info/reactors.html)), 17-Oct-2007.

# Olympic Dam: Exposure to strong forecast nuclear demand growth – especially in the East

Existing operational power plants and future development of nuclear power reactors<sup>(a),(b)</sup>



- Operational (power plants) – 439 reactors<sup>(c)</sup>
- Planned (reactors) – > 94 reactors<sup>(c)</sup>
- Under construction (reactors) – 33 reactors<sup>(c)</sup>
- Proposed (reactors) – > 222 reactors<sup>(c)</sup>

Notes:

a) Location of reactors that are planned, under construction, and proposed is by country, but does not necessarily show their exact geographical location in a country.

b) Source: International Nuclear Safety Centre at ANL, Aug-2005 ([www.insc.anl.gov/pwrmaps/world\\_map.pdf](http://www.insc.anl.gov/pwrmaps/world_map.pdf)).

c) Source: World Nuclear Association ([www.world-nuclear.org/info/reactors.html](http://www.world-nuclear.org/info/reactors.html)), 17-Oct-2007.





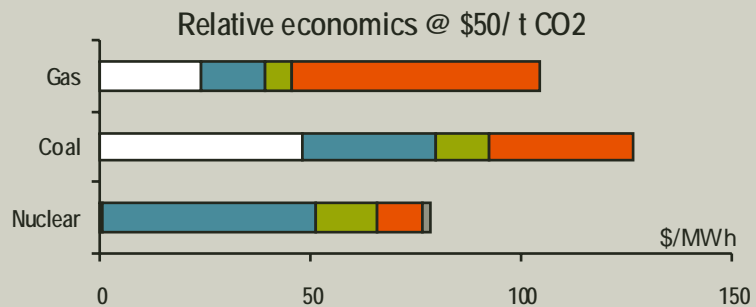
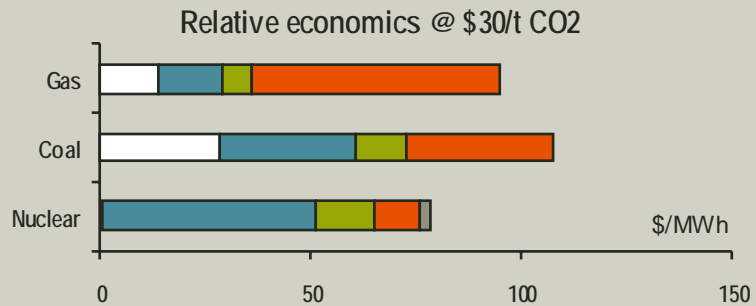
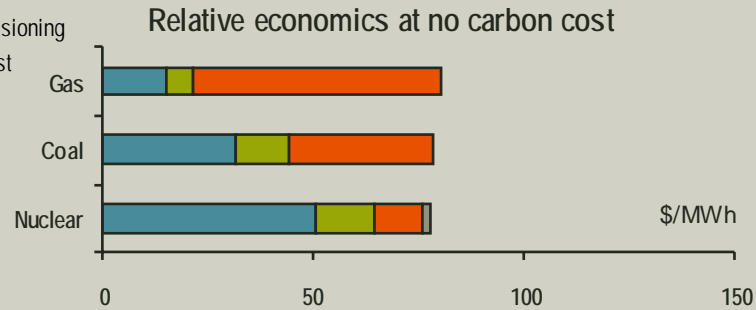
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# Carbon price rewrites nuclear economics

- Capital cost
- O&M cost
- Fuel cost
- Decommissioning
- Carbon cost

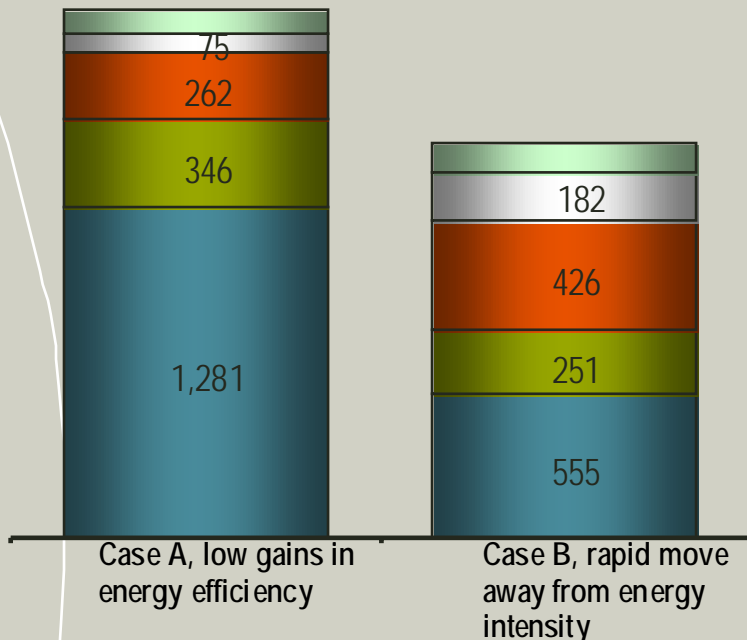


- Nuclear power is competitive with other generation technologies at current prices
- At carbon cost of \$50/ t CO2, the carbon cost of coal fired generation is on par with the capital cost for nuclear
- These are indicators for the “western” world. Developments in other industries, such as Alumina, have proven that the Chinese are capable of substantially decreasing both lead-time and capital cost on construction, significantly reducing the issue of the substantial capital cost of nuclear power

# What if China goes nuclear?

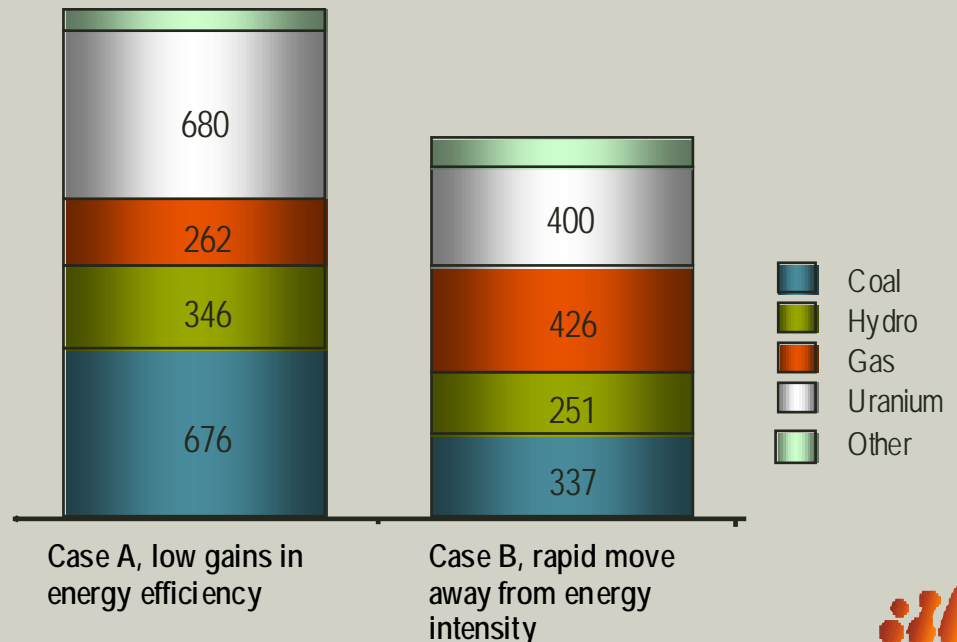
## Traditional China 2030 electricity demand

2,054	1,532
<b>4%</b>	<b>12%</b>
17	42



## Nuclear China electricity demand 2030 – *what if*

2,054	1,532	GW Installed
<b>33%</b>	<b>26%</b>	<b>% Nuclear</b>
150	88	Ktpa U308



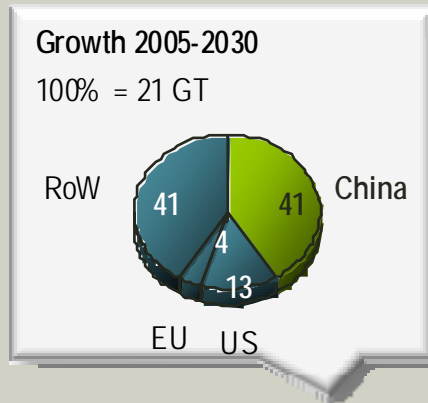
\*Including wind, biomass, oil, etc

\*\* Include power sector and non-power sector thermal coal use (excluding coking coal)

Source: NDRC power plant project database; Interviews: expert interviews; BHP Billiton; team analysis

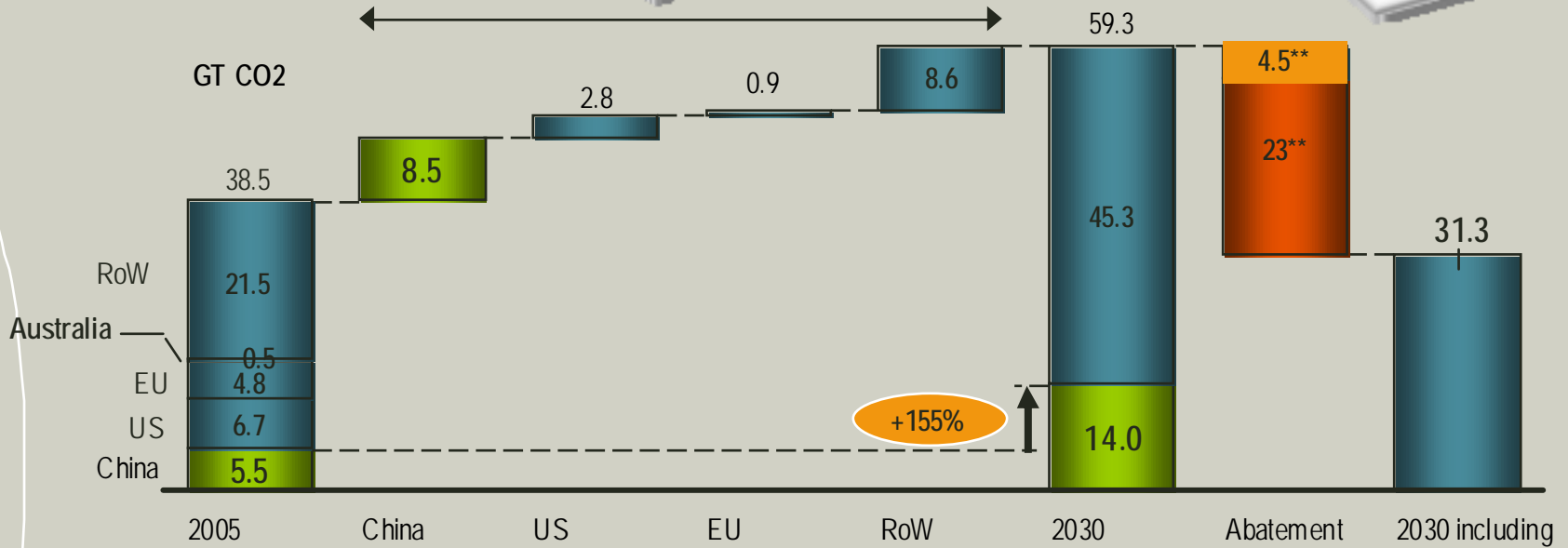
# Impact of carbon emissions

## Global green house gas emissions growth and abatement requirements (GT CO<sub>2</sub>e\*)



Ave = 7.5GT CO<sub>2</sub>e emission acceptable from China in 2030 (+36% Higher than 2005 level)

Approach	Impact GT	Cost \$/tCO <sub>2</sub> e
CCS	2.7	15
DSM	2.4	-12
<b>China Nuclear</b>	<b>0.8 – 4.5</b>	3
Other**	1.5	-24



\* Total emissions, including green house gas emissions from non-power sectors

\*\* Total global abatement requirement based on need to minimize global warming to 2-3° Celsius

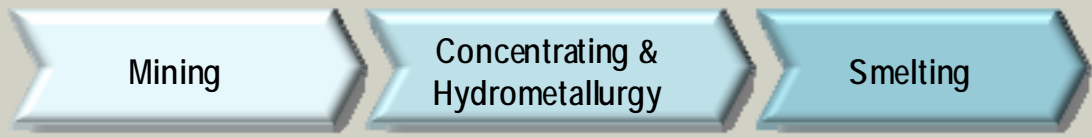
Source: WRI; IEA; Team analysis

# China has been predictable in re-writing capital intensity and delivery

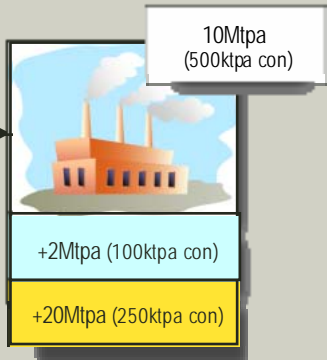
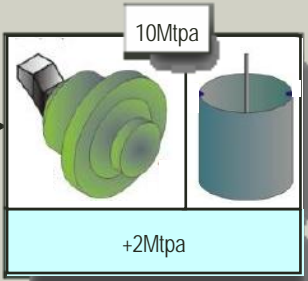
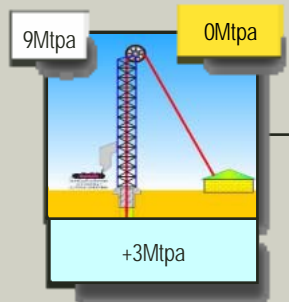
	China	Western Benchmark
Alumina refinery Shangdong province	10x 300mw power stations and 3500kt/yr alumina refinery – construction time 10 months	40 Months +
East Hope Alumina	800kt/yr alumina refinery – construction time 10 months	40 Months +
Jinbei Alumina	400kt/yr alumina refinery – construction time 14 months	40 Months +
Kaiman alumina	400kt/yr alumina refinery – construction time 10 months	40 Months +
Copper smelters	40 Months, Greenfields US\$1000-1300/t installed capacity Detailed engineering through commissioning	60-66 Months US\$3000-US\$5000/t installed capacity

# Olympic Dam well positioned to meet energy demand

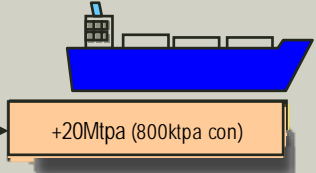
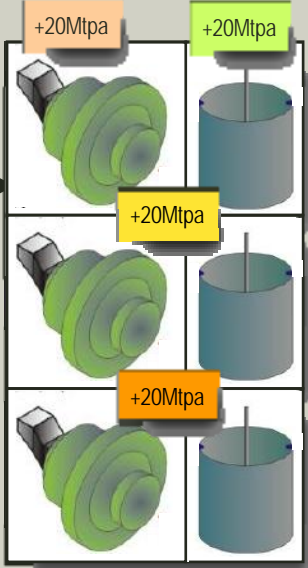
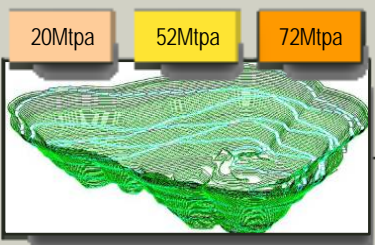
## CONCEPTUAL



Brownfields



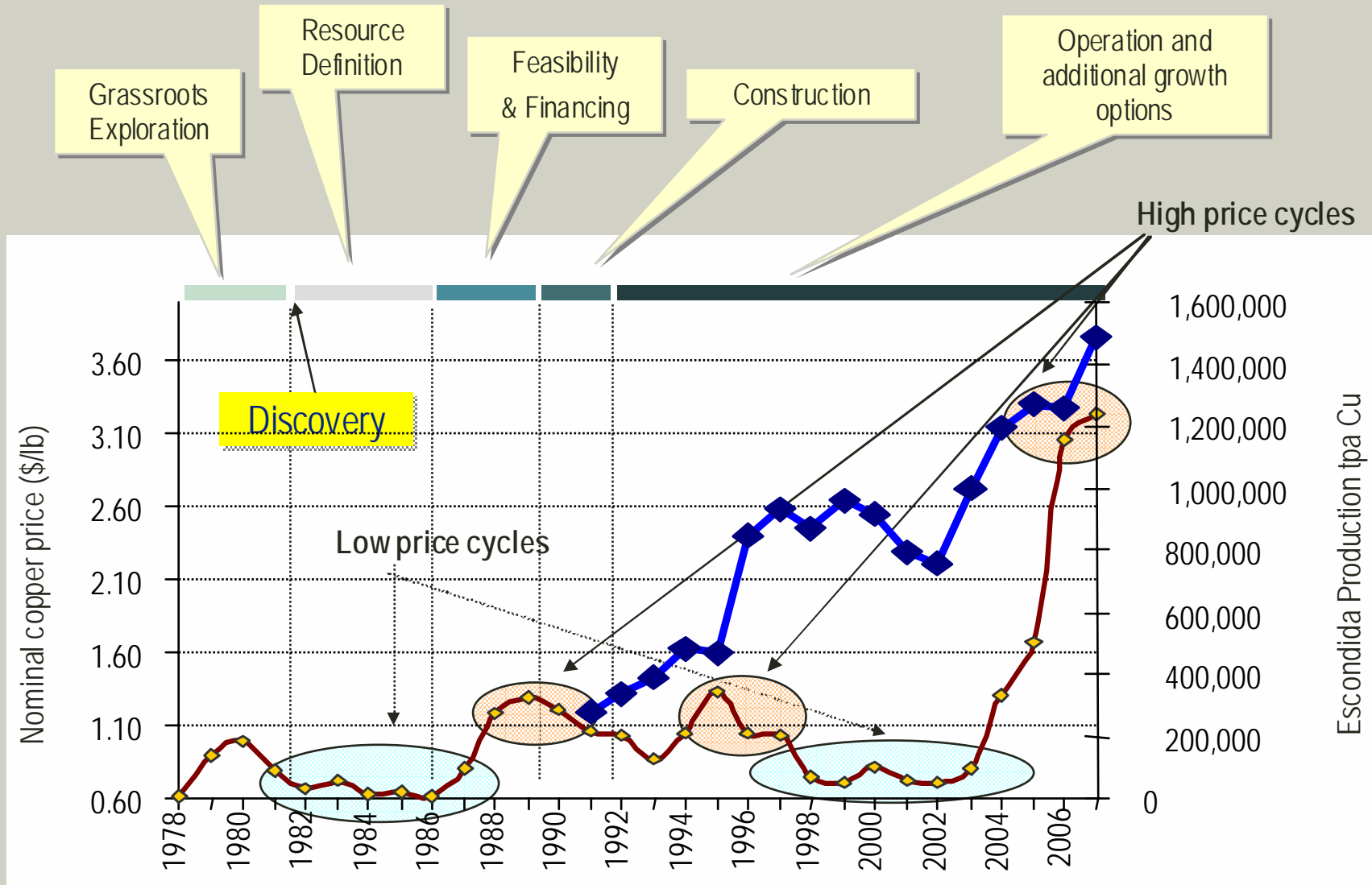
Greenfields



Notes: Unless specified all capacities are in tonnes of ore.  
Actual timing of Underground phase out is not yet determined

Stages	Output		
	Cu (ktpa)	U <sub>3</sub> O <sub>8</sub> (ktpa)	Au (kozpa)
0 Current	180	4	100
1 Optimise current configuration	200	4.5	120
2 Develop open pit production build Greenfield concentrator sell excess concentrate	350	4.5	400
3 Add Hydrometallurgy circuit	350	9	400
4 Expand open pit add Greenfield concentrator and hydrometallurgy circuits and expand smelter capacity	540	14	600
5 Further expansion of open pit, build new concentrator and hydrometallurgy circuit Sell excess concentrate	730	19	800
+ Further growth opportunities			

# Mining investment cycle: Escondida case study



# The world at night

