



# Deutsche Bank BRICS Metals & Mining Conference

**Andrew Mackenzie** Chief Executive Non-Ferrous  
2 November 2011



## Reliance on Third Party Information

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## No Offer of Securities

Nothing in this presentation should be construed as either an offer to sell or a solicitation of an offer to buy or sell BHP Billiton securities in any jurisdiction.

## Non-GAAP Financial Information

BHP Billiton results are reported under International Financial Reporting Standards (IFRS). References to Underlying EBIT and EBITDA exclude any exceptional items. A reconciliation to statutory EBIT is contained within the profit announcement, available at our website [www.bhpbilliton.com](http://www.bhpbilliton.com).

## Exploration Targets and Mineral Resources

This presentation includes information on Exploration Targets (Potential Mineralisation) and Mineral or Coal Resources. Mineral Resources are compiled by: P Whitehouse (MAusIMM) – Western Australian Iron Ore (WAIO) and Samarco, S O’Connell (MAusIMM) – Olympic Dam, A Paul (MAusIMM) – Queensland Coal and Illawarra Coal, T J Kilroe (MAusIMM) – Saskatchewan Potash, and R Preece (FAusIMM) – Escondida mineral district, Cerro Colorado, Spence and Antamina. This is based on Mineral Resource information in the BHP Billiton 2011 Annual Report for all assets which can be found at [www.bhpbilliton.com](http://www.bhpbilliton.com).

Exploration Targets (Potential Mineralisation) are compiled by: WAIO: J Knight (MAIG); Olympic Dam: S O’Connell (MAusIMM); Queensland Coal: A Paul (MAusIMM); Potash: J McElroy (MAusIMM); Escondida: J des Rivieres (IGI) – (reported in BHP Billiton Preliminary Results Presentation, 19 August 2011 and updated for WAIO in its Financial Community Briefing, 27 September 2011).

All information is reported under the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2004’ (the JORC Code) by the above-mentioned persons who are employed by BHP Billiton and have the required qualifications and experience to qualify as Competent Persons for Mineral or Coal Resources or Exploration Results under the JORC Code.

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

Mineral Resource classification and Potential Mineralisation Ranges (100% basis) for each province, where relevant, are contained in Table 1.

**Table 1**

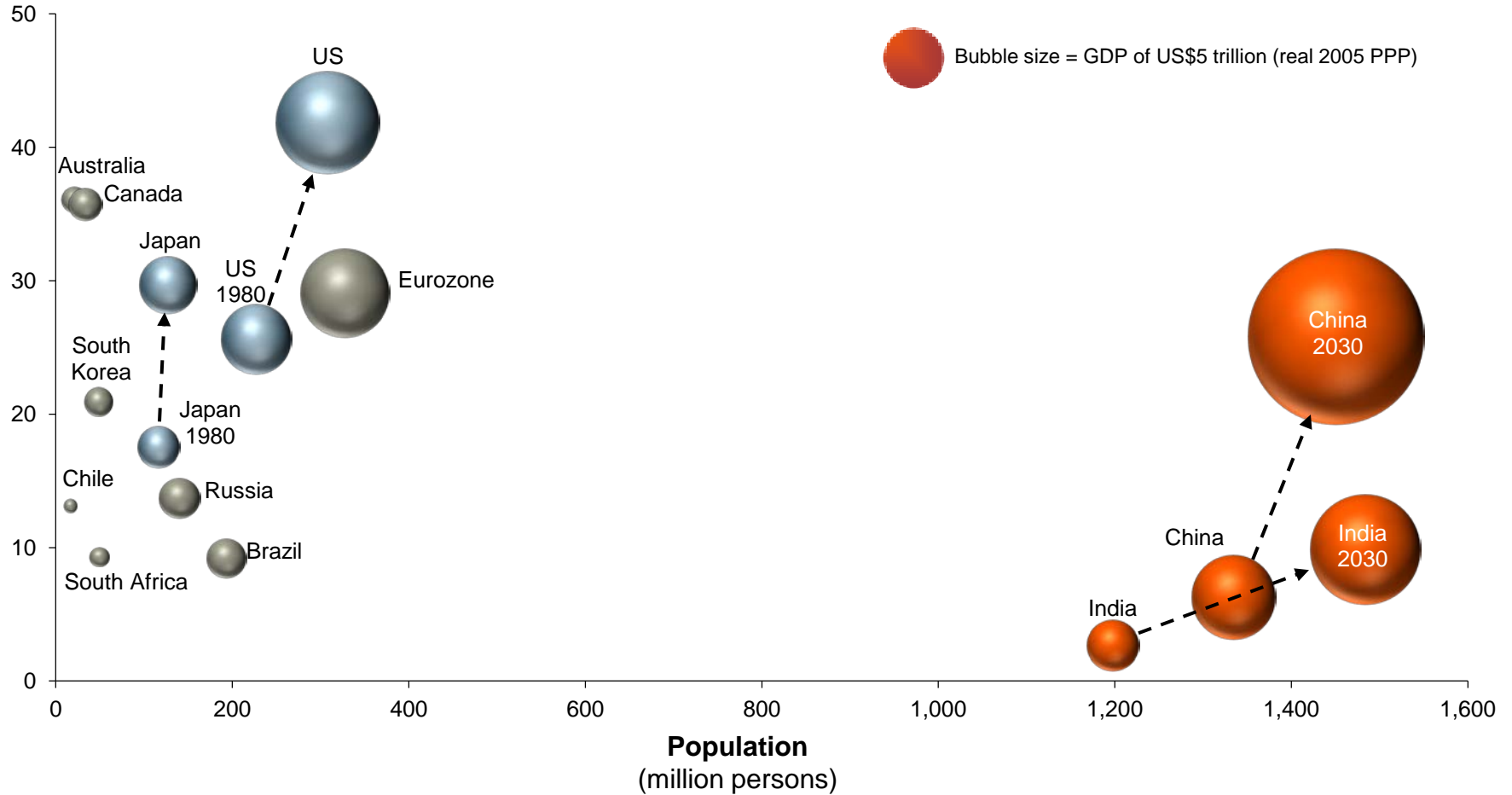
Province	Measured Resource (Mt)	Indicated Resource (Mt)	Inferred Resource (Mt)	Range of Potential Mineralisation (Bt)			BHP Billiton interest %
				Low	Mid	High	
Western Australia Iron Ore	2,210	3,871	13,240	16	32	48	88
Samarco JV	2,200	2,329	1,551				50
Olympic Dam	1,408 @ 1.08% Cu	4,571 @ 0.88% Cu	3,150 @ 0.74% Cu	1.2 @ 1.08% Cu	2.4 @ 1.08% Cu	3.6 @ 1.08% Cu	100
Queensland Coal	2,812	5,293	4,889	14	26	30	55
Illawarra Coal	297	381	503				100
Potash	–	3,250 @ 25.4% K <sub>2</sub> O	119 @ 26.7% K <sub>2</sub> O	2.7	5.4	8.1	100
Escondida	3,102 @ 0.75% Cu	4,670 @ 0.59% Cu	11,730 @ 0.49% Cu	16 @ 0.4-0.6% Cu	23 @ 0.4-0.6% Cu	43 @ 0.5-0.6% Cu	57.5
Cerro Colorado	153 @ 0.65% Cu	188 @ 0.66% Cu	83 @ 0.64% Cu				100
Spence	219 @ 0.99% Cu	118 @ 0.65% Cu	8.2 @ 0.51% Cu				100
Antamina	188 @ 0.85% Cu	1,018 @ 0.92% Cu	708 @ 0.73% Cu				33.75

# Agenda

- Long term supply demand fundamentals remain intact
- Positioned to capture the opportunity, today and tomorrow
- Strong margins and returns reflect the quality of our business
- Our tier 1, diversified resource portfolio generates more options for shareholder value creation
- Developing large, high return, organic growth projects focused on our chosen commodities
- Delivering strong and sustainable production growth

# Long term supply demand fundamentals remain intact

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

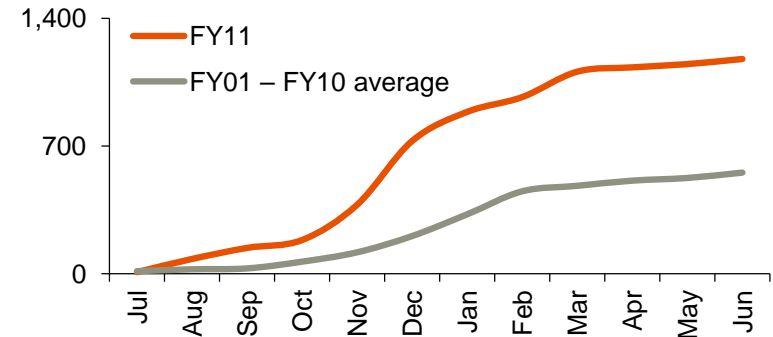


Source: Global Insight; BHP Billiton analysis.  
1. All figures for 2009 unless mentioned otherwise.

# Supply likely to remain constrained

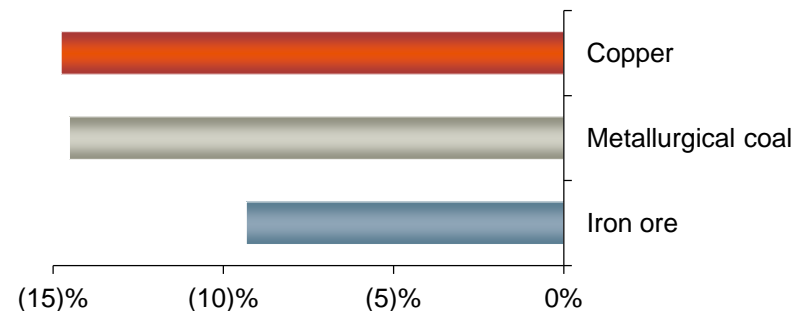
- Short term disruptions to existing supply
  - Queensland metallurgical coal
  - Indian iron ore
  - Chilean copper
  - Middle Eastern/North African oil
- Underdelivery of ambitious growth targets a likely indicator of future performance
  - Cost inflation
  - Tight labour markets
  - Plant and equipment shortages
  - Approvals/regulatory processes
  - Financial liquidity/funding

**Bowen Basin cumulative rainfall**  
(millimetres)



Source: www.bom.gov.au.

**Underdelivery of production forecasts<sup>1</sup>**  
(%)

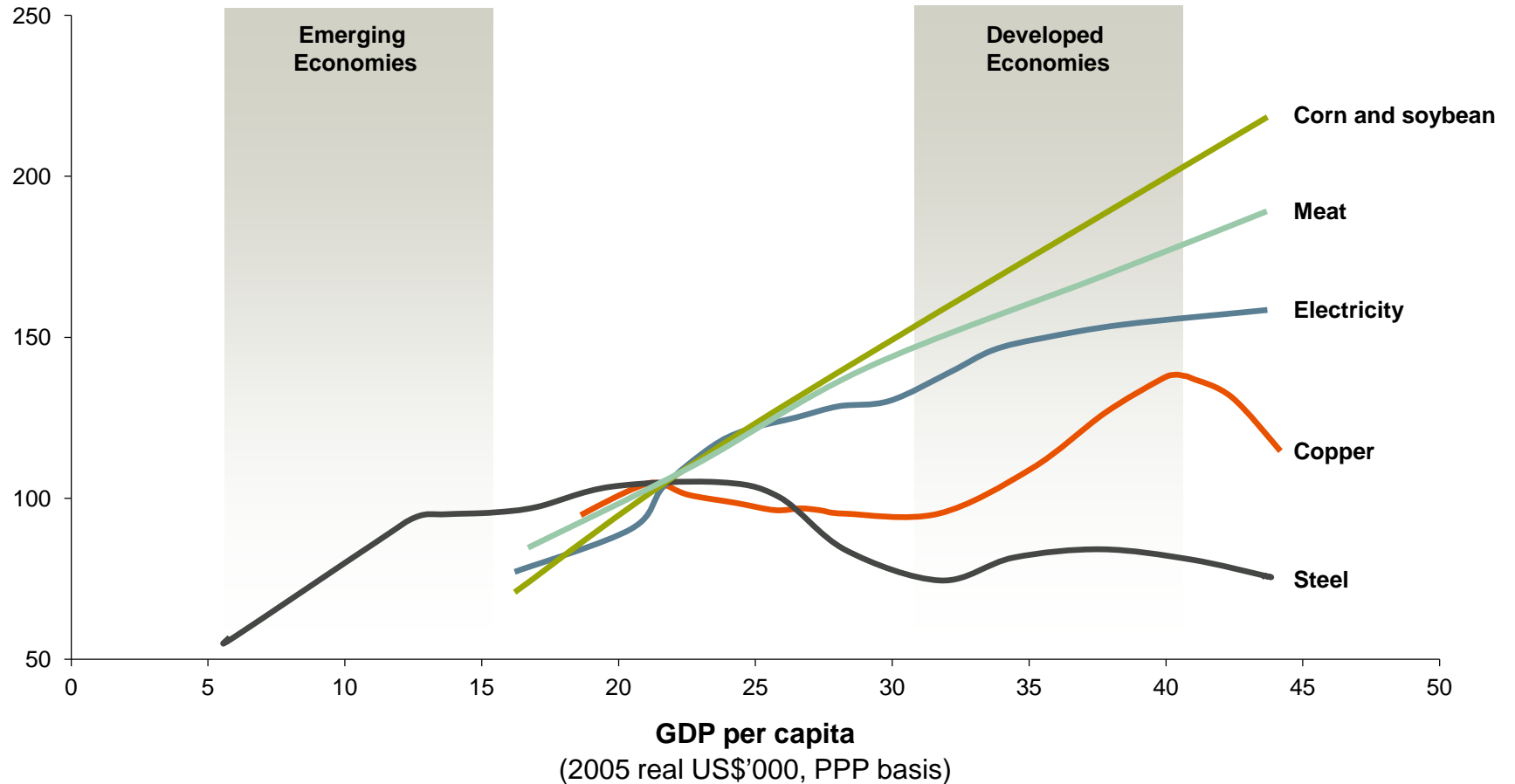


Source: Macquarie Commodities Research, August 2011.

1. Denotes shortfall in global CY11 production as forecast by Macquarie Commodities Research in August 2011 compared with June 2008. Production refers to seaborne iron ore, seaborne metallurgical coal (ex-USA supply) and mined copper (including SX-EW production).

# Commodity intensity evolves with economic development

## USA (Demand Index<sup>1</sup>)



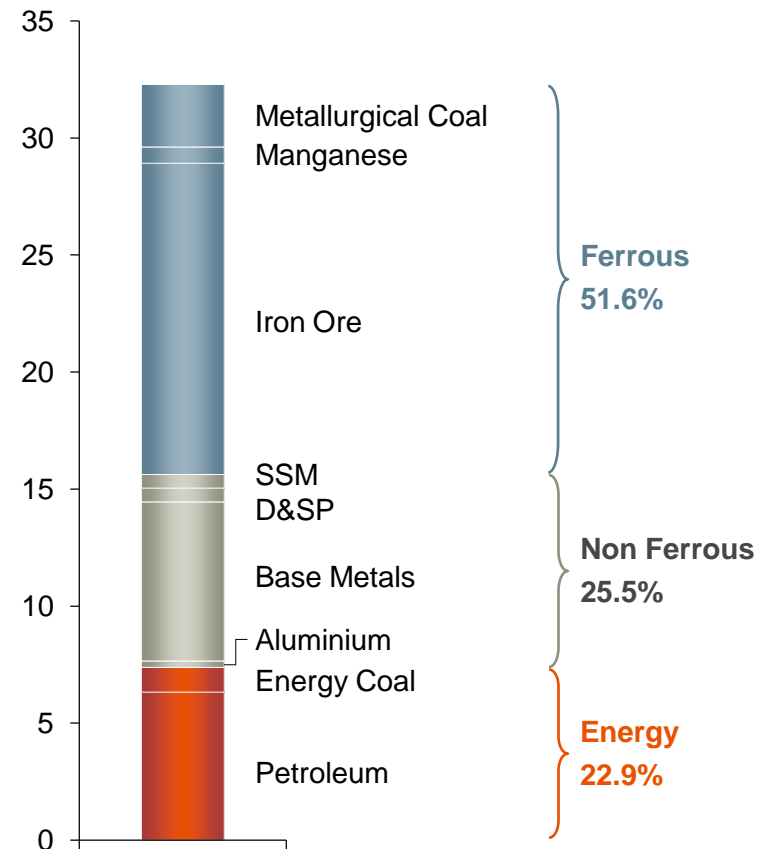
Source: World Bank; Brook Hunt; CRU; IISI; Global Insight; CISA; worldsteel; JBS; IEA; BHP Billiton analysis.

1. The demand intensity index represents the volume consumption per capita consumption, 1968 as 100 for each of the commodities.

# Positioned to capture the opportunity, today and tomorrow

- Ferrous generates the most significant proportion of our Underlying EBIT today, consistent with the steel intensive nature of early stage Chinese economic growth
- Our uniquely diversified portfolio ensures our earnings mix will evolve as developing world demand matures
- Jansen (potash), Olympic Dam (copper, gold, uranium) and our shale gas investments further position us for that evolution in commodities demand

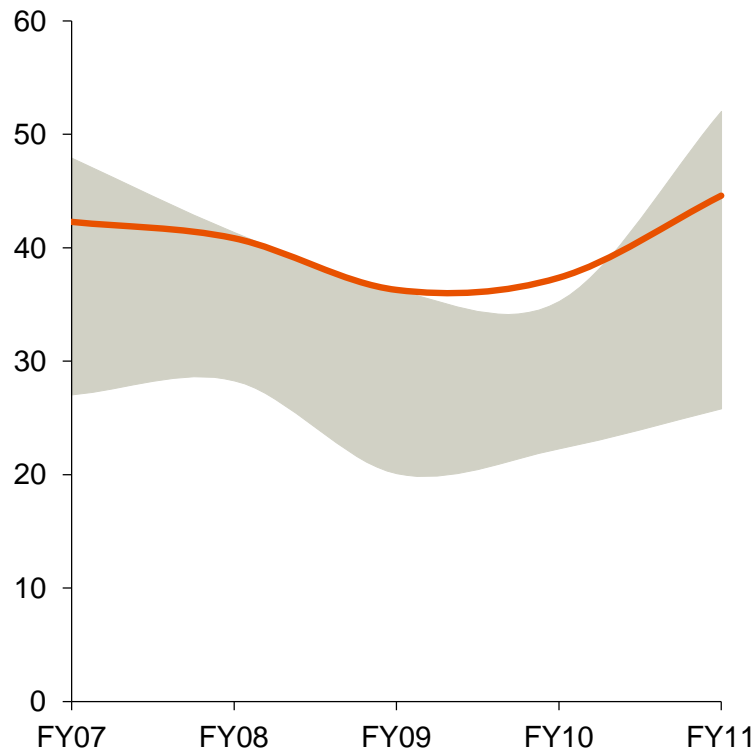
**Underlying EBIT<sup>1</sup>**  
(FY11, US\$ billion)



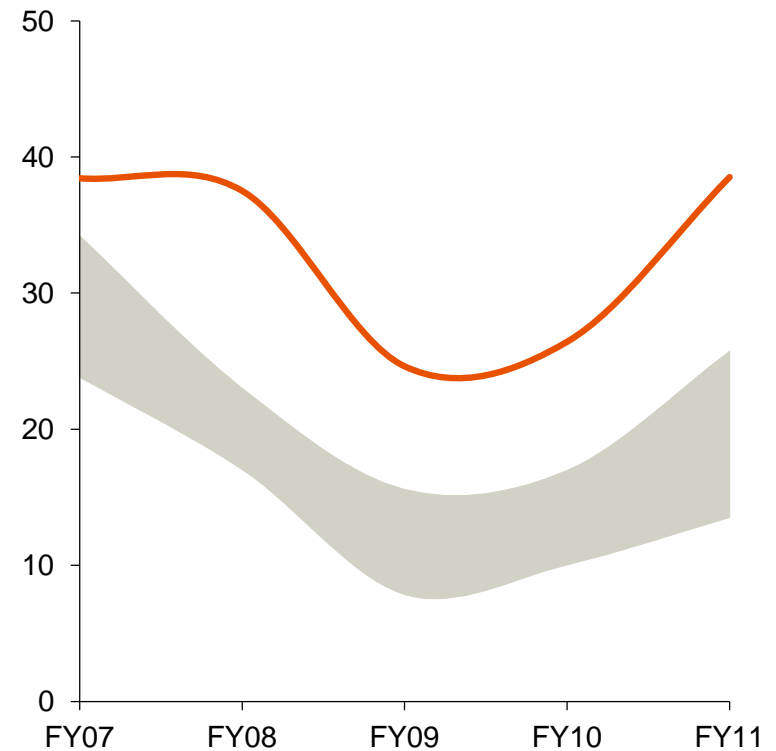
1. Excludes third party trading activities.

# Strong margins and returns reflect the quality of our business

## Underlying EBIT margin<sup>1</sup> (%)



## Underlying return on capital (%)



— BHP Billiton

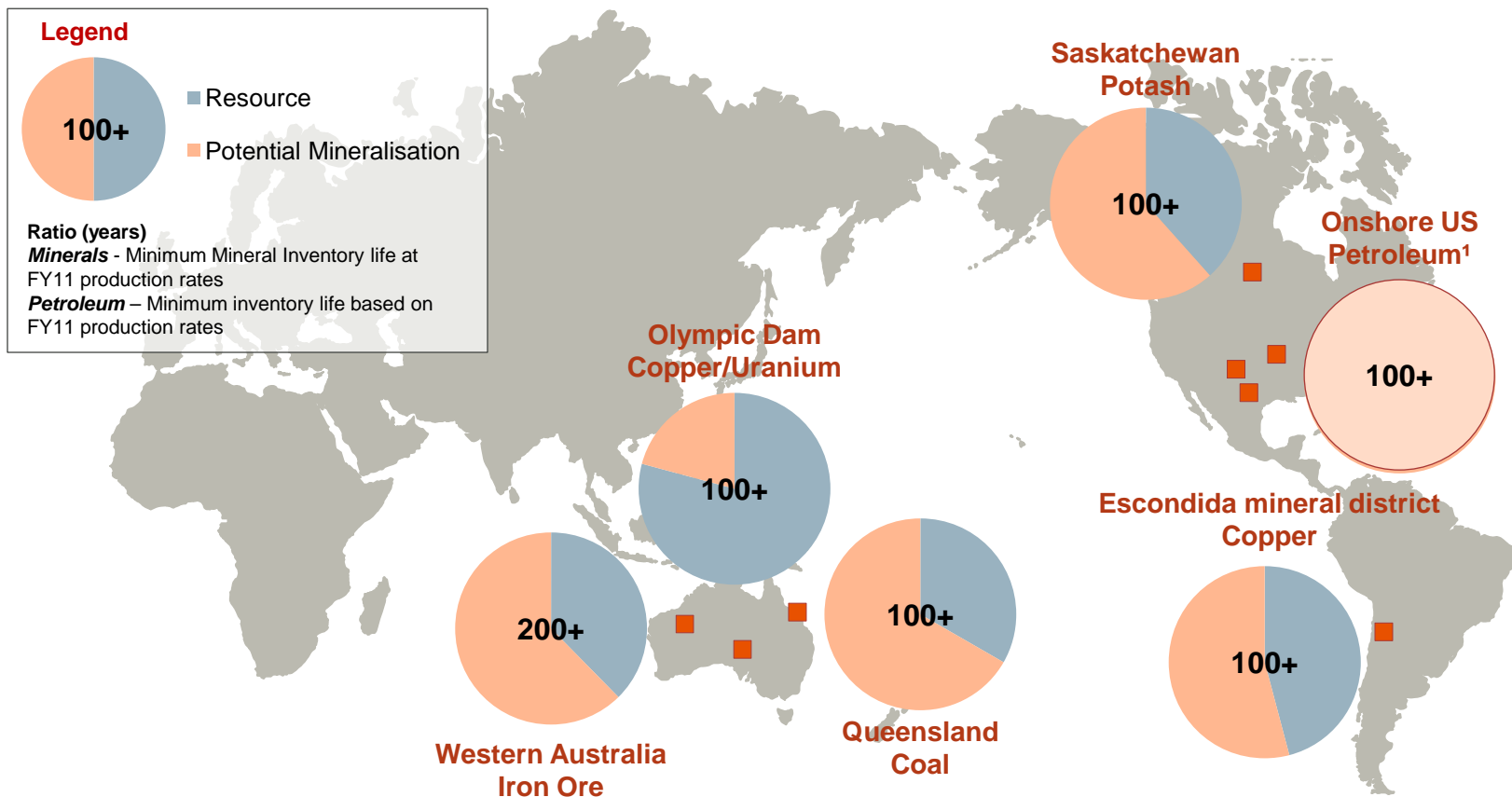
— Peer group

1. Includes third party trading activities.

Note: Peer group includes Rio Tinto, Vale, Anglo American and Xstrata.

Source: Annual Reports, press releases and BHP Billiton analysis.

# Our tier 1, diversified resource portfolio generates more options for shareholder value creation



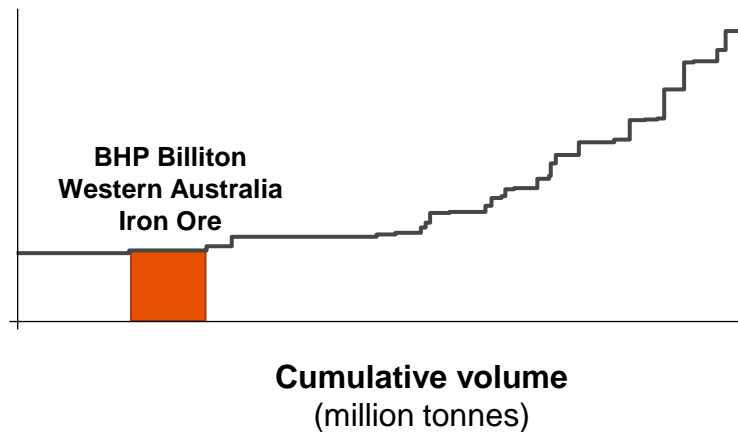
The Inventory Life is estimated from the Mineral Inventory (sum of Potential Mineralisation and Mineral Resources) stated on a 100% basis. The detailed breakdown of Mineral Resources for all assets are shown in the FY11 Annual Report. The range of Potential Mineralisation is estimated from geological information including boreholes, outcrops and geophysical information. The potential quantity is conceptual in nature, there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource. It should not be expected that the quality of the Potential Mineralisation is equivalent to that of the Mineral Resource. The Minimum Mineral Inventory or Inventory Life in years is the Mineral Inventory divided by the FY11 production rate (for Potash this is the expected FY20 production rate) and does not imply that any mine planning has been completed. In Mineral Provinces (e.g. Pilbara, Bowen Basin) the inventory life of individual mines may be more or less than the number stated above. Refer to disclaimer on slide 3 as presented on 2 November 2011.

1. Includes interests in the Fayetteville shale and Petrohawk Energy Corporation. Petroleum Reserves (Proved and Probable) are defined according to US SEC definitions. Petroleum Contingent Resources are 2C resources defined according to the Society of Petroleum Engineers Petroleum Resource Management System (SPE PRMS). Petrohawk Proved Reserves and Risked Potential Resources from Petrohawk public statements.

# A large, low cost and ideally located iron ore business with significant expansion potential

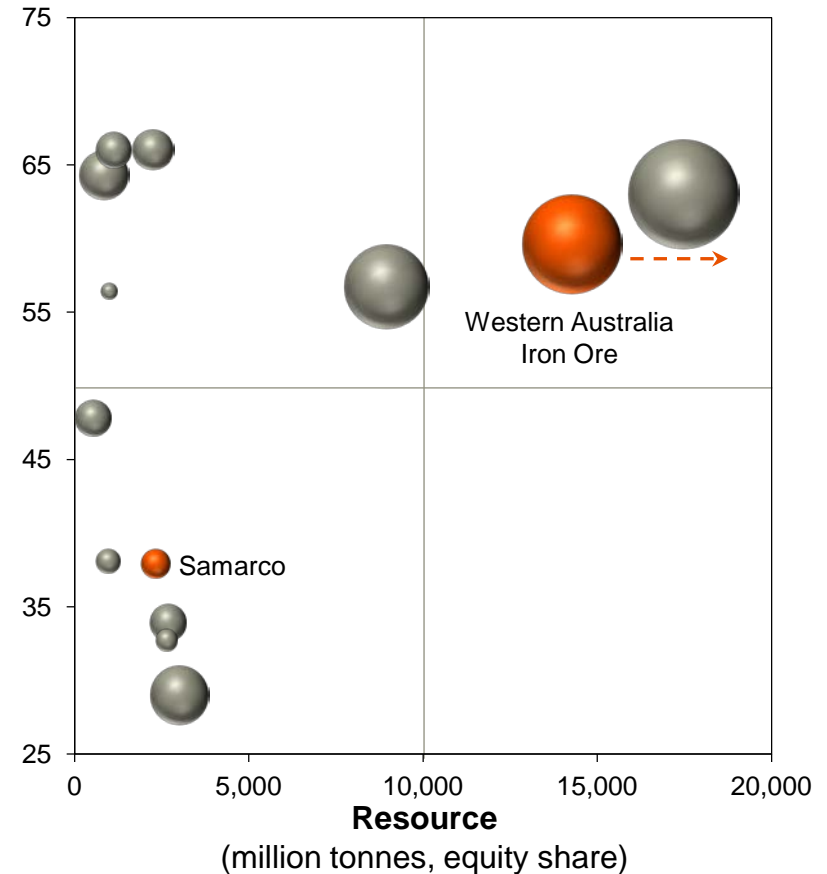
- Our WAIO resource represents a significant competitive advantage
- Total mineral resource of approximately 19 billion tonnes in addition to between 16 and 48 billion tonnes of potential mineralisation within 250 km (100% basis)
- Our hub based, modular development model will leverage long life infrastructure and drive strong investment returns

**Iron ore cost curve – fines**  
(US\$ per tonne, CIF China equivalent basis)



Source: Macquarie Research, March 2011.

**Global iron ore deposits<sup>1</sup>**  
(average Fe grade, %)



Source: Annual Reports, press releases and BHP Billiton FY11 Annual Report. Refer to disclaimer on slide 3 as presented on 2 November 2011.

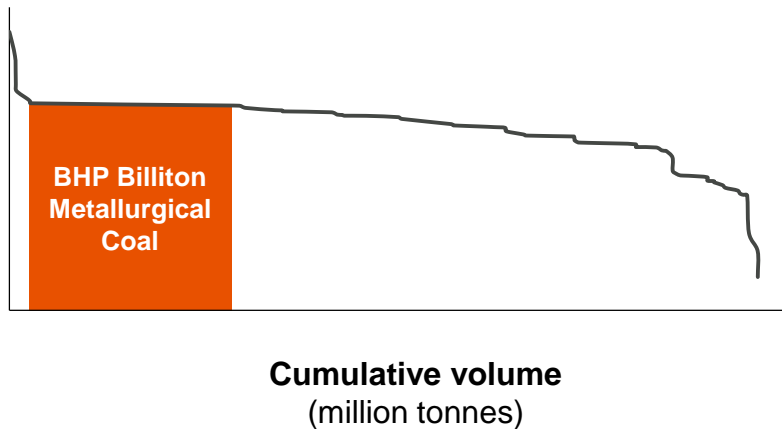
Note: Bubble size represents estimated annual equity production from current operations and approved projects only.

1. Based on a selection of iron ore peers that provides a fair representation of the industry. Excludes Vale.

# The leading metallurgical coal business

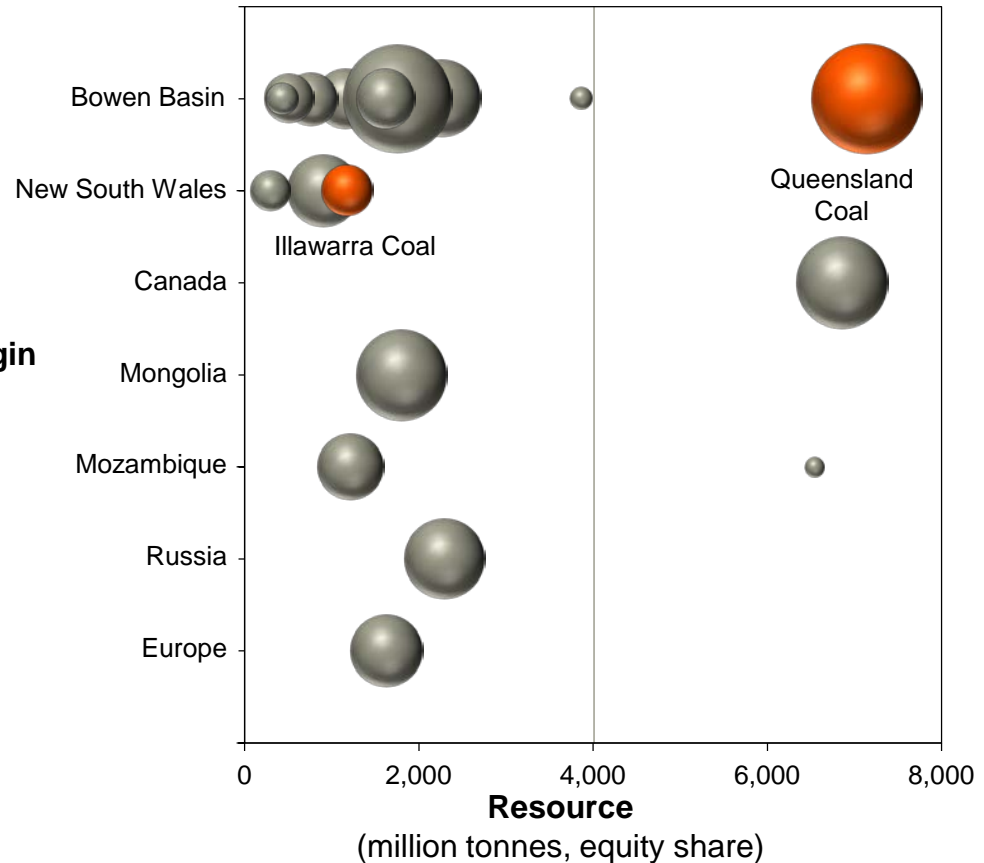
- Our Queensland Coal business is tier 1 in all respects
- Large, high quality hard coking coal resources are valuable given their scarcity and strong underlying demand fundamentals
- Our IndoMet Coal project provides us with another high quality option

## Seaborne metallurgical coal producer operating margin (2016, US\$ per tonne FOB)



Source: Wood Mackenzie and BHP Billiton.  
 Note: Based on internal production profile at weighted average Wood Mackenzie operating margin for BHP Billiton Metallurgical Coal assets. Metallurgical coal prices used (real): US\$200/t (HCC), US\$150/t (WCC), US\$90/t (Thermal). Exchange rates relative to the US\$: A\$ 1.30, C\$ 1.04, CNY 5.2, BWP 7.2, R 8, NZ\$ 1.65, RBL 27.5, VND 23,170.

## Global metallurgical coal deposits<sup>1</sup> (by basin)



Source: Annual Reports, press releases and BHP Billiton FY11 Annual Report. Refer to disclaimer on slide 3 as presented on 2 November 2011.

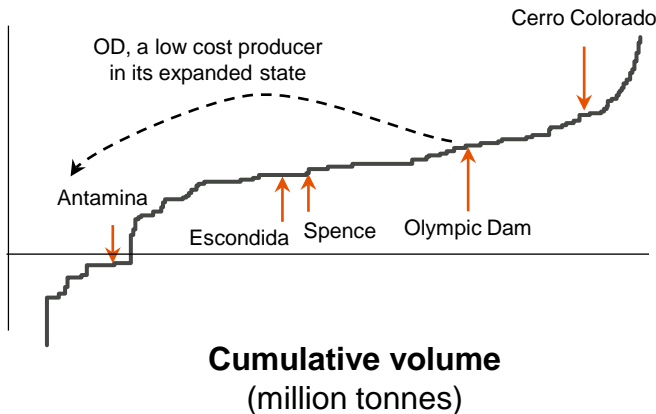
Note: Bubble size represents estimated annual equity production from current operations and approved projects only.

1. Based on a selection of metallurgical coal peers that provides a fair representation of the industry.

# Large and expandable Base Metals assets

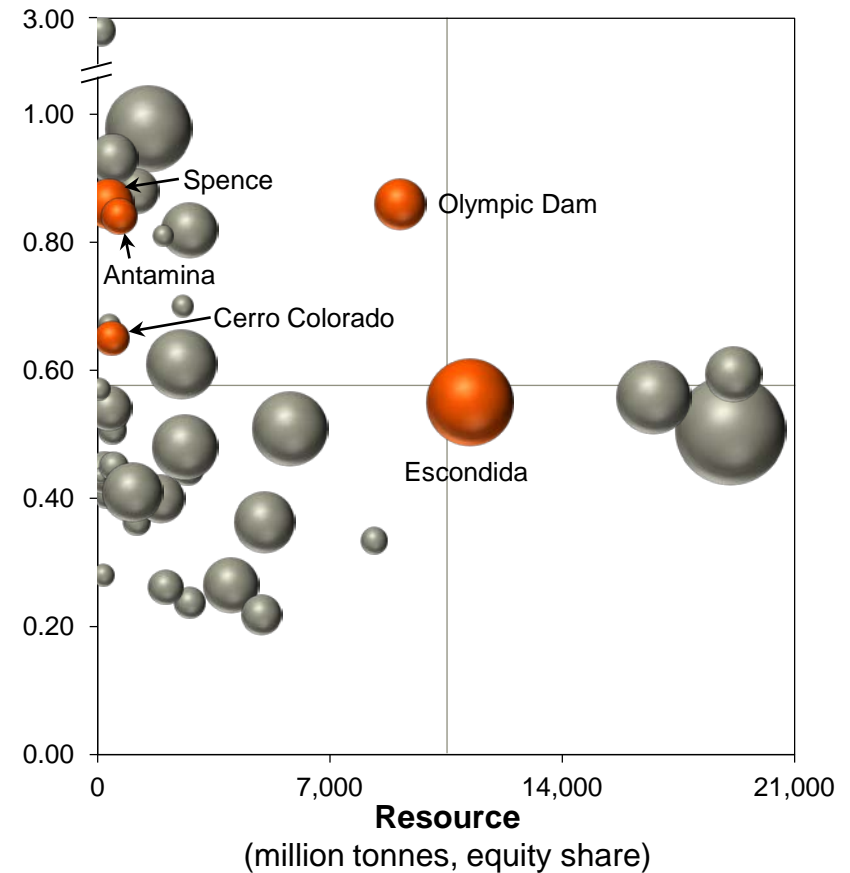
- Long life assets in the South American copper belt
- Tier 1 resources support long term, modular expansion
- Olympic Dam, a low cost producer in its expanded state

## C1 cash cost (US cents per pound Cu)



Source: Brook Hunt Q3 2011, 2010 C1 cash cost (normal costing).

## Global copper deposits<sup>1</sup> (Cu grade excluding by-products<sup>1</sup>, %)

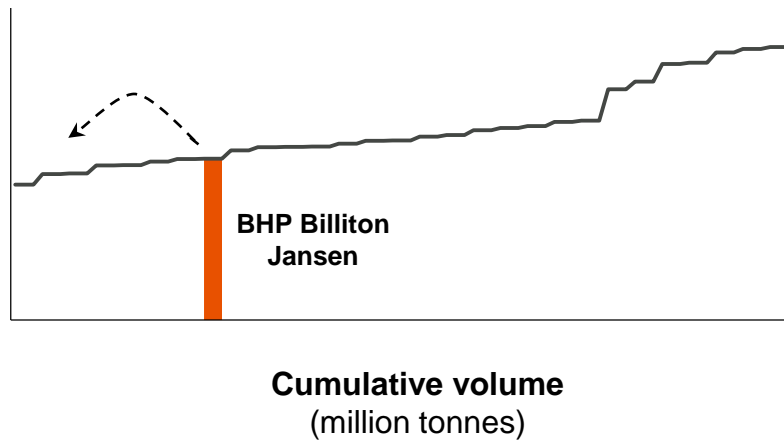


Source: Annual Reports, press releases and BHP Billiton FY11 Annual Report. Refer to disclaimer on slide 3 as presented on 2 November 2011.  
Note: Bubble size represents estimated annual equity metal production from current operations and approved projects only.  
1. Based on a selection of copper peers that provides a fair representation of the industry. Grades not inclusive of by-product credits which can be significant, particularly in the case of poly-metallic resources such as Olympic Dam.

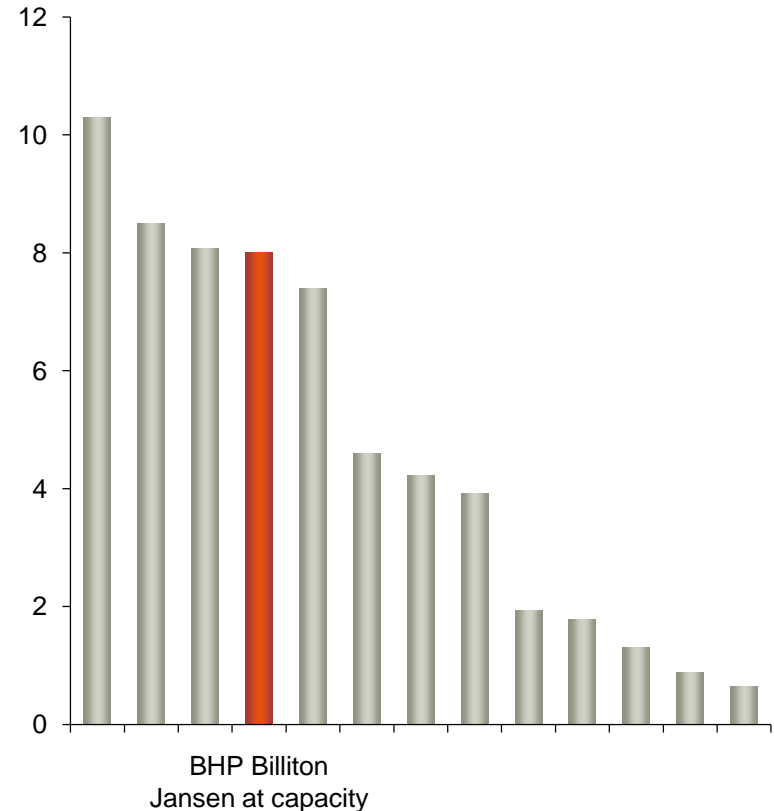
# Developing a world class presence in potash

- A large presence in the world's major potash basin
- 3 billion tonnes of resource identified at Jansen to date<sup>1</sup>
- Significant mineralisation potential at other project and exploration areas
- Large, modern Jansen mine to be a low cost producer

**Export cost curve**  
(2020, US\$ per tonne FOB)



**Prospective Jansen production in the context of major producers' total current production**  
(million tonnes product, equity share)



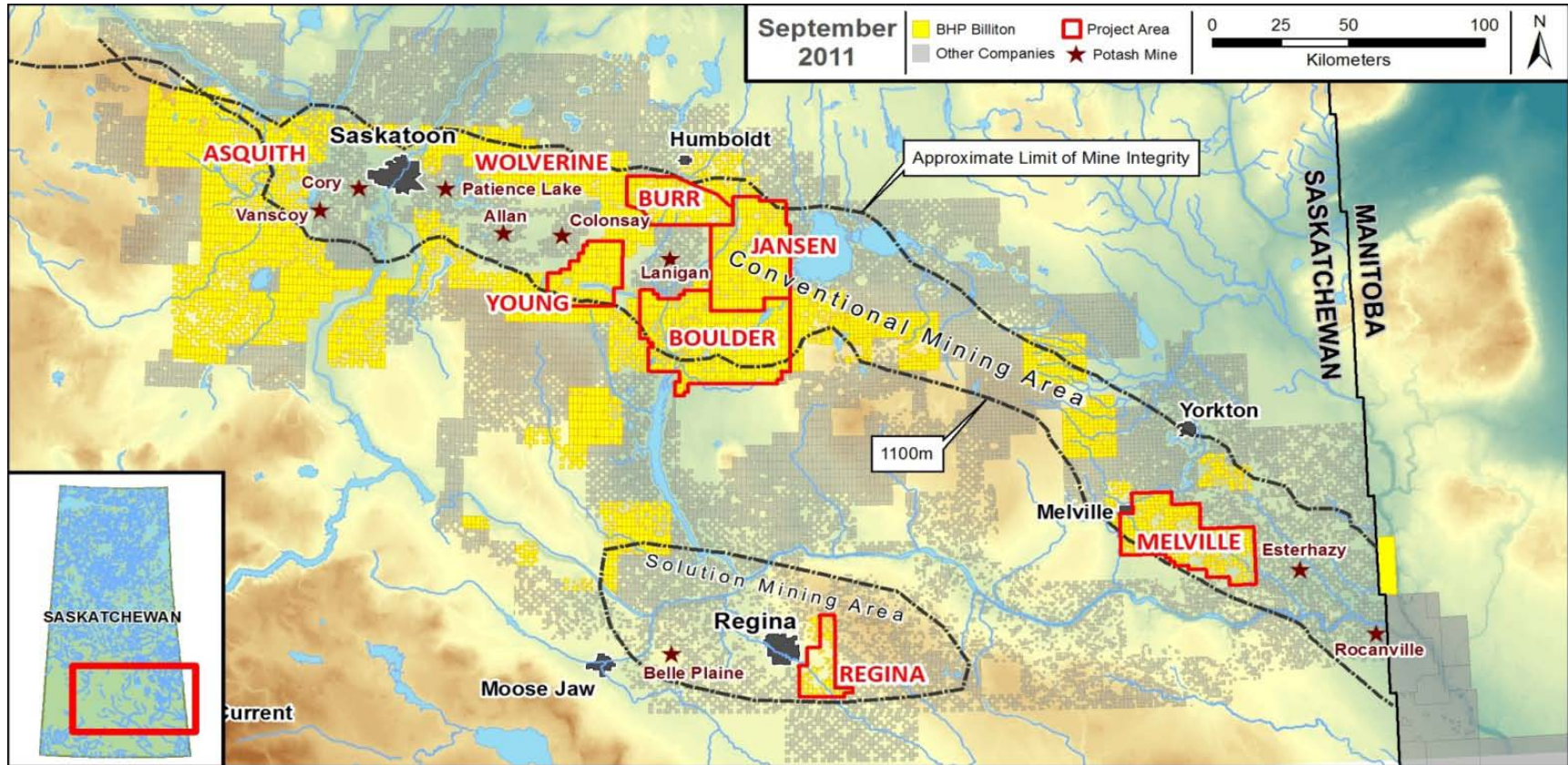
Source: CRU and BHP Billiton analysis.

1. BHP Billiton FY11 Annual Report. Refer to disclaimer on slide 3 as presented on 2 November 2011.

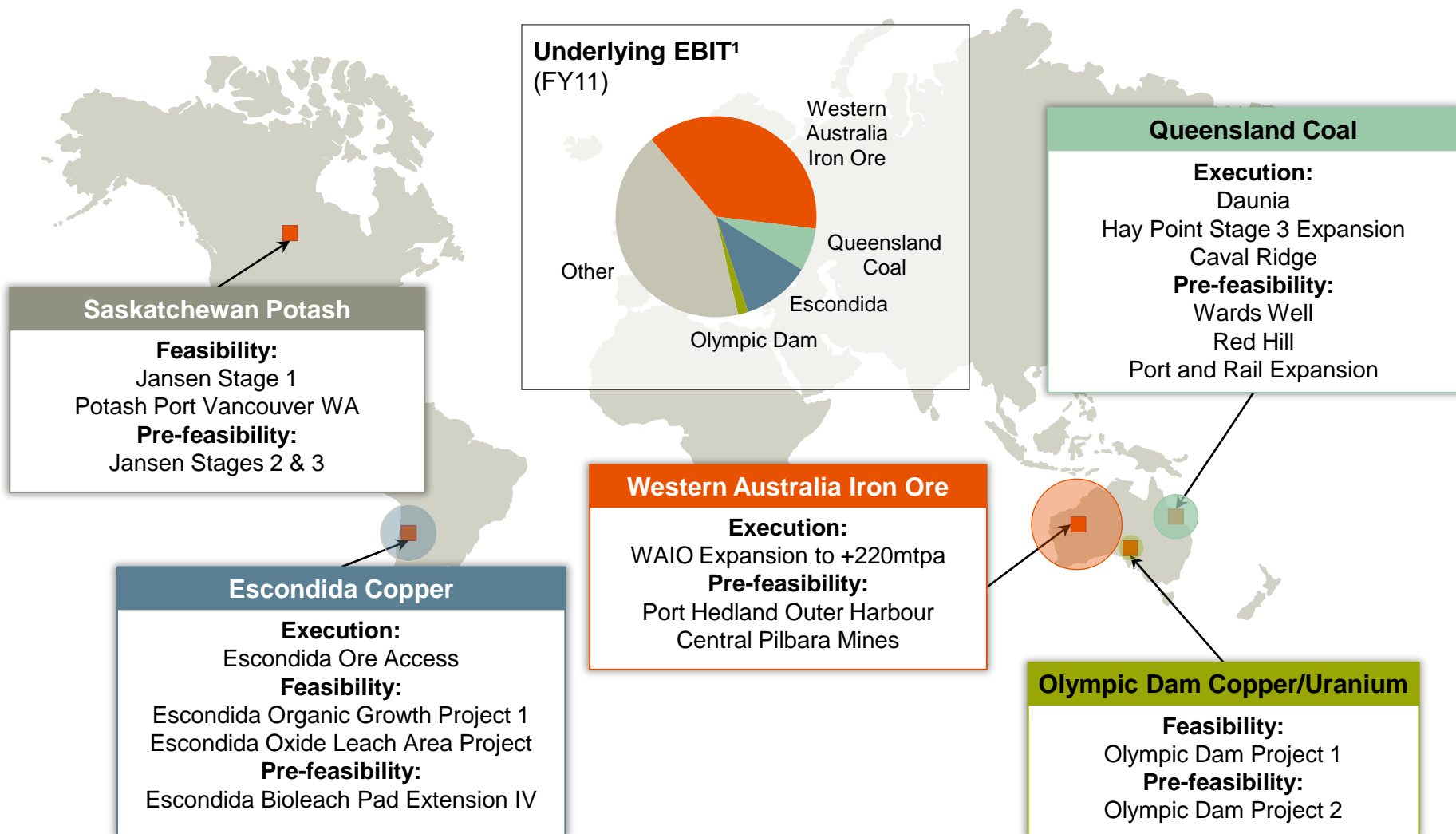
Source: Annual Reports, Company Presentations, BHP Billiton.

Note: All forms of potash included.

# Comprehensive exploration program delivers resource growth and multiple project options



# Developing large, high return, organic growth projects focused on our chosen commodities



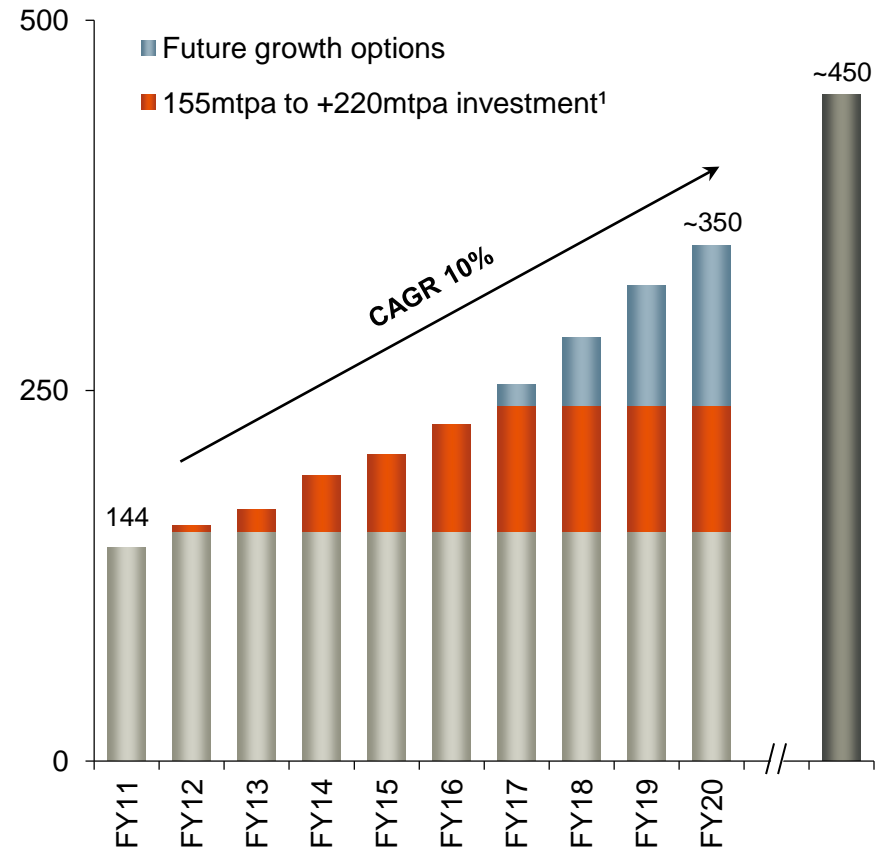
1. Excludes third party trading activities.

Note: All projects remain under review until such time as they are sanctioned for execution.

# Developing Western Australia Iron Ore (WAIO) to its full potential

- Benefiting from our 'invest through the cycle' strategy
- Record annualised shipments of 173 mtpa reported in the first quarter of FY2012
- Projects in execution and future debottlenecking will fully utilise our allocated inner harbour capacity of 240 mtpa at Port Hedland
- Our outer harbour development studies are well advanced and will unlock additional capacity to 350 mtpa, and beyond
  - PER/Draft EIS submitted to relevant Government authorities on 18 April 2011
  - Seeking Board approval end CY2012
- Ultimate objective: 450 mtpa

**WAIO production profile**  
(million tonnes, 100%)

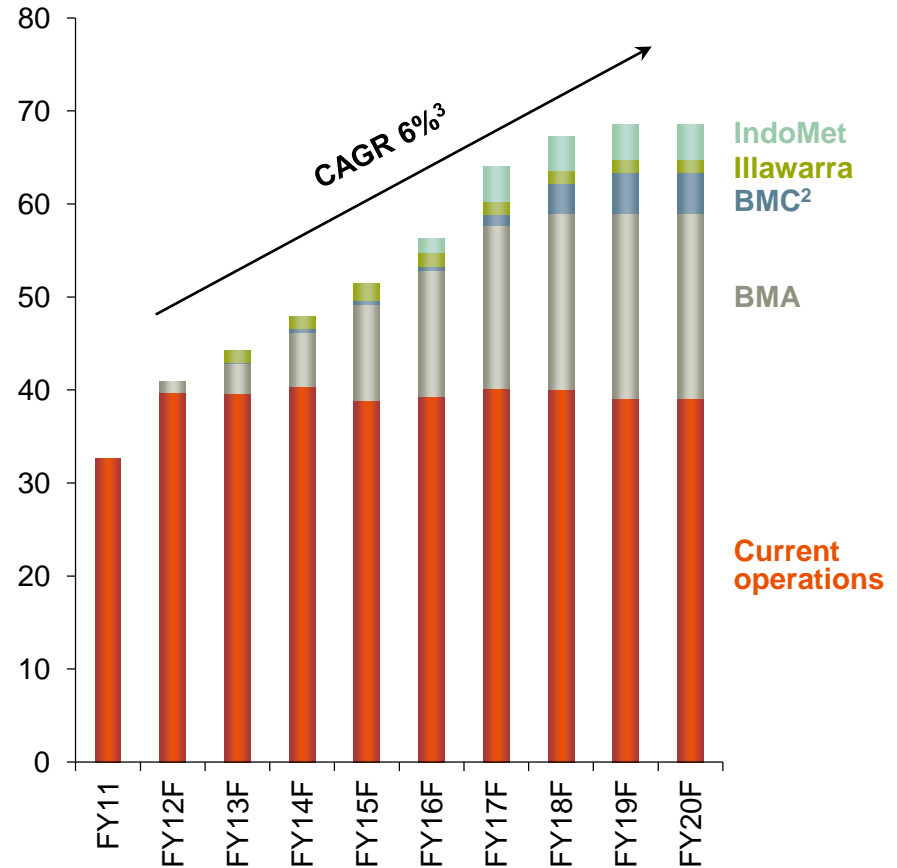


1. Including approved expansion to 220mtpa and debottlenecking incremental investment to 240mtpa.

# Caval Ridge – one of our long life, high margin and expandable metallurgical coal projects

- US\$4.2 billion (100% basis) investment commitment announced this week
- 8 mtpa high quality hard coking coal mine
  - 5.5 mtpa greenfield Caval Ridge mine
  - 2.5 mtpa expansion of Peak Downs
- 60+<sup>1</sup> years resource life at initial rate
- Rapid, low cost expansion option to 10 mtpa
- Margin in top quartile of seaborne metallurgical coal producers
- Targeting project completion in CY2014
- Port capacity available via previously approved expansion of Hay Point (HPX3)

**Metallurgical coal production**  
(million tonnes, BHP Billiton share<sup>2</sup>)



1. Based upon the Coal Resources compiled from the BHP Billiton 2011 Annual Report by A. Paul (MAusIMM) and should be read together with, and subject to, the notes set out in the Annual Report, which can be found at [www.bhpbilliton.com](http://www.bhpbilliton.com). Refer to disclaimer on slide 3 as presented on 2 November 2011. The Caval Ridge Coal Resource is incorporated into the Peak Downs Resource reported as of 30 June 2011 that is composed of: Measured Resource 697Mt; Indicated Resources 875Mt, Inferred Resources 572Mt on a 100% basis.

2. BMC shown on 100% basis. BHP Billiton interest in saleable production is 80%.

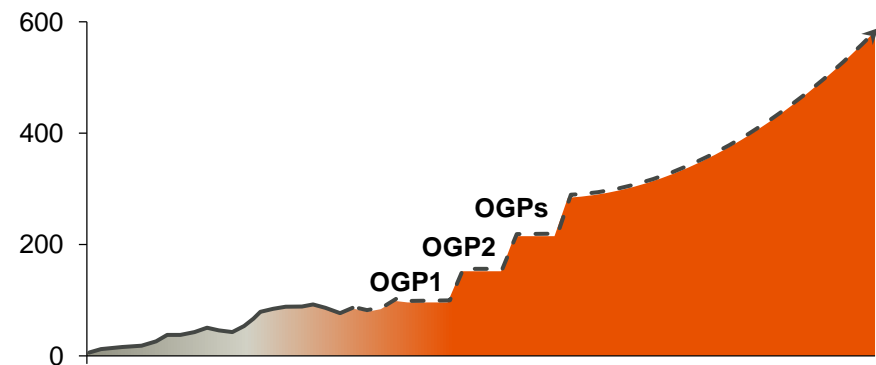
3. CAGR refers to FY10 production as a more representative year.

# Escondida – the world's leading copper mine

- 129% increase in the Escondida Mineral Resource reported in CY2011<sup>1</sup>
- Escondida Ore Access project establishes the pathway to higher grades and production in FY2013 and beyond
- Potential to significantly increase throughput rates with a modular approach to expansion
- Large SAG mills will leverage proven technologies and standardised designs



## Escondida ore processing capacity (million tonnes per annum)



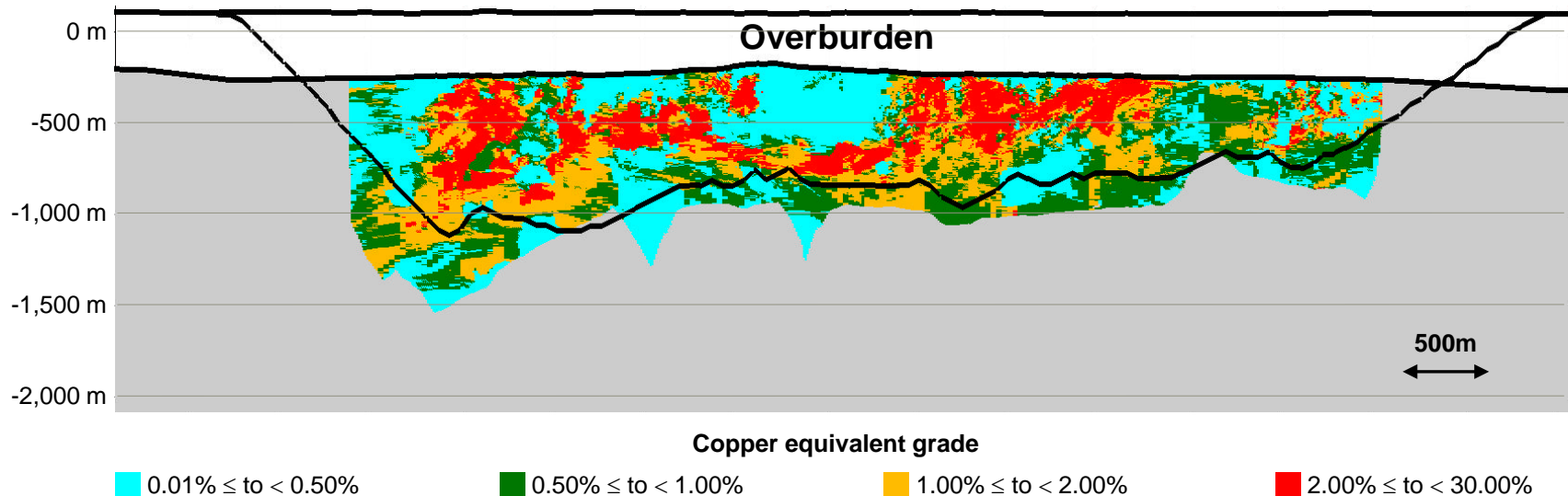
Note: Conceptual representation of our conveyor belt of growth options.

1. Competent Person: Richard Preece (FAusIMM,). The Mineral Resources reported here on 100% basis were compiled from the BHP Billiton 2011 Annual Report by R. Preece and should be read together with, and subject to, the notes set out in the Annual Report, which can be found at [www.bhpbilliton.com](http://www.bhpbilliton.com). This information is reported under the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2004' (the JORC Code) by the above named Competent Persons who is employed by BHP Billiton and has the required qualifications and experience to estimate and report Mineral Resources under the JORC Code. Richard Preece verifies that this report is based on, and fairly reflects, the Mineral Resources information in the supporting documentation and agrees with the form and context information presented. The 2011 Mineral Resources, reported as of 30 June 2011 are composed of: Measured Resources 3.1Bt @ 0.75% Cu; Indicated Resources 4.7Bt @ 0.59% Cu; and Inferred Resources 11.7Bt @ 0.49% Cu and include the Escondida, Pampa Escondida, and Pinta Verde mineral deposits.

# Olympic Dam Project will maximise returns from a truly unique and world class resource

- Environmental Impact Statement approved by State and Federal Governments and new indenture agreement signed with the South Australian Government in October
- Open pit could extract up to 85% of the total resource (~79 million tonnes of contained copper) compared to ~10% with the existing underground configuration
- Open pit strip ratios will decline in the decades to come, while grades will remain robust
- Potential to produce ~750,000 tpa of copper, and beyond
- Recent US\$1.2 billion investment pre-commitment, majority of which remains conditional on indenture agreement approval by parliament. Targeting sanction mid CY2012

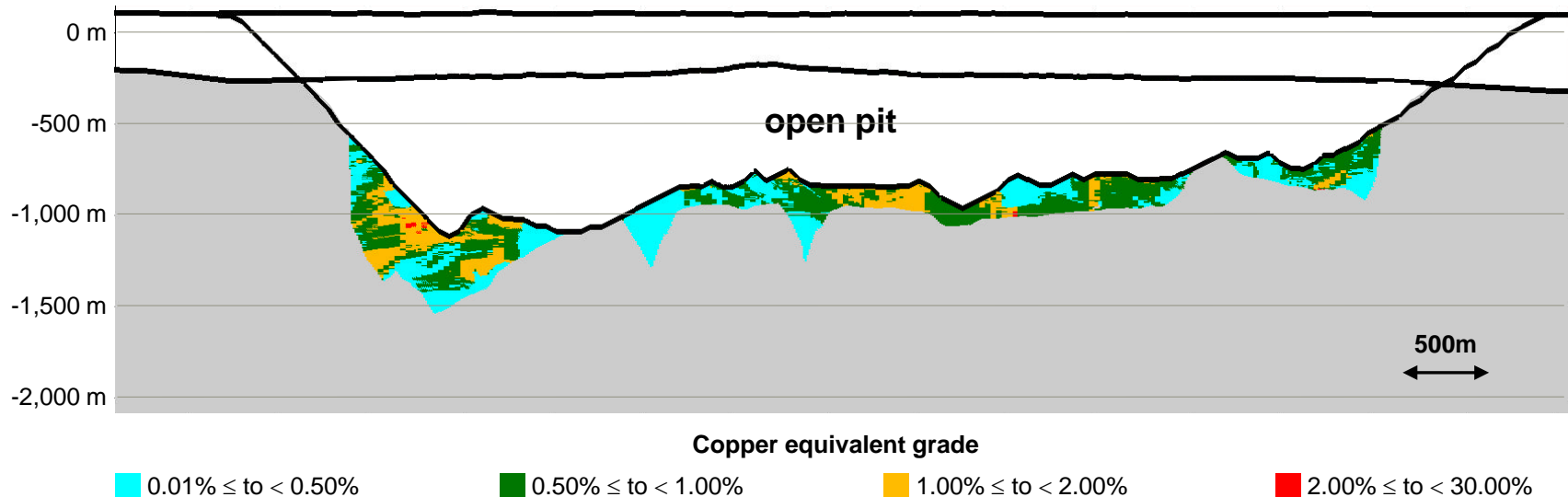
## Olympic Dam ore body long section



# Olympic Dam Project will maximise returns from a truly unique and world class resource

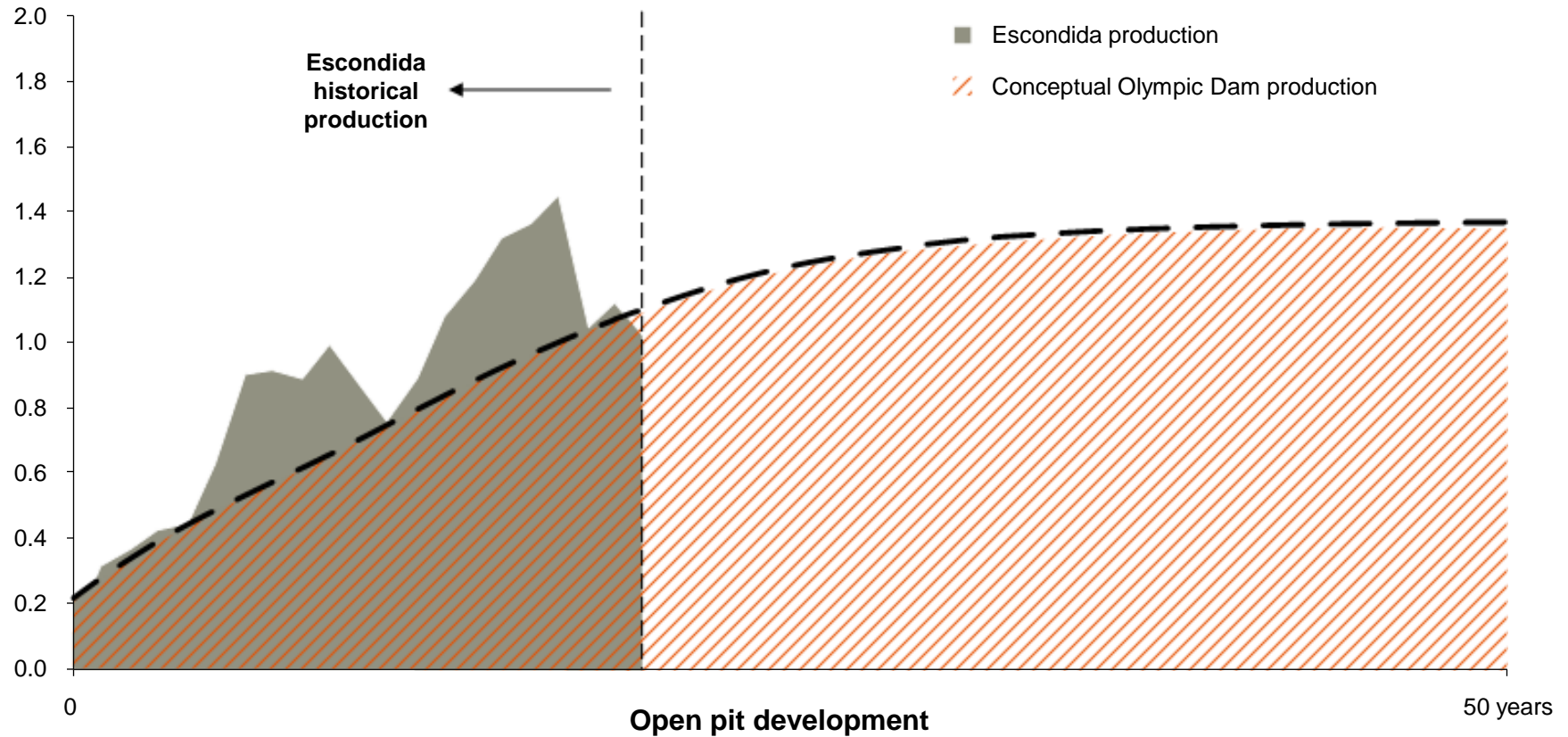
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## Olympic Dam ore body long section



# Olympic Dam will follow a similar path to the successful development of Escondida

**Copper production**  
(million tonnes per annum)

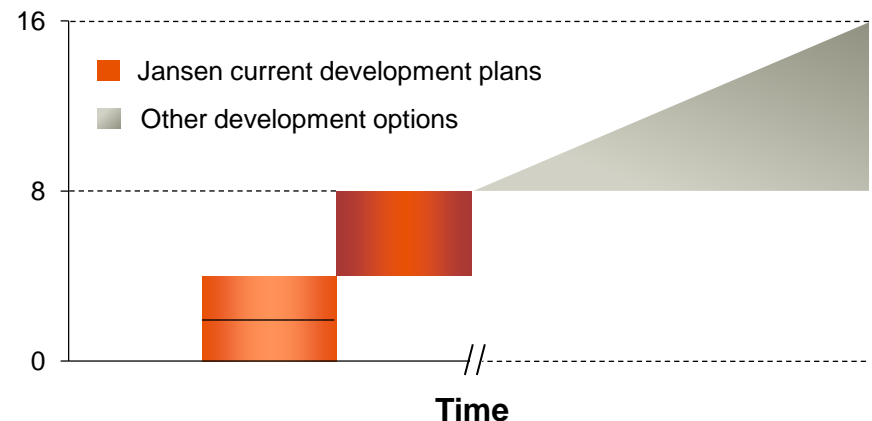


# Developing a world class potash business

- Jansen is BHP Billiton's most advanced potash project
  - US\$1.2 billion committed to date
  - Conventional underground mine to implement innovative processing techniques
  - To be built in phases to reach a total of 8 mtpa capacity within 10 years
  - First production expected in CY2015
- Intensive project selection and definition process combined with a comprehensive exploration program underpins a commitment to grow this business to 16 mtpa, and beyond



**BHP Billiton potash production profile**  
(KCI million tonnes per annum)

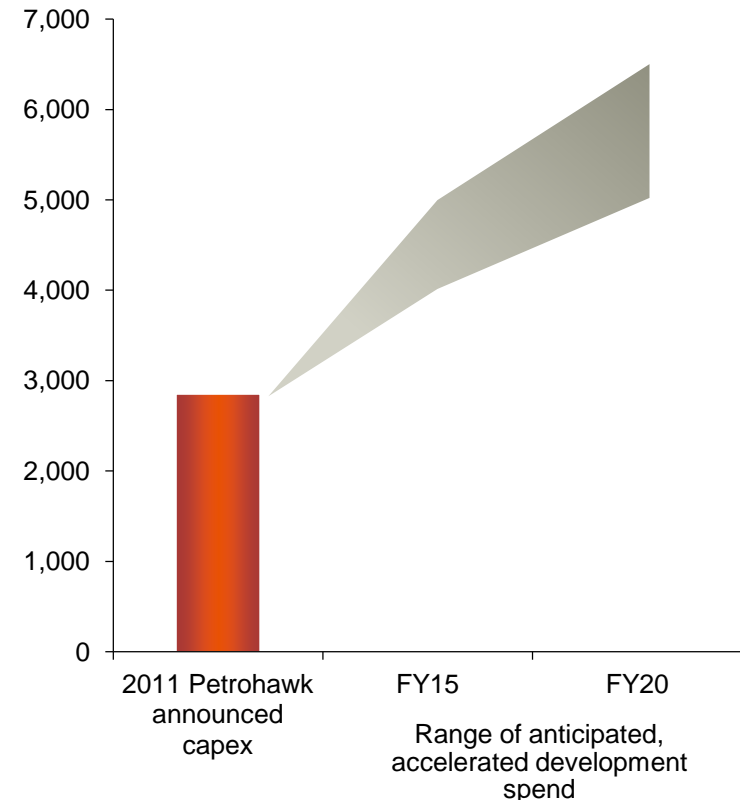


Note: Conceptual representation of our conveyor belt of growth options.

# Petrohawk – a substantial resource acquisition

- Total enterprise value of ~US\$15.1 billion<sup>1</sup>
- Natural gas is a preferred fuel in a low carbon world
- Complements our recent Fayetteville shale acquisition and adds to portfolio diversity
- Significant increase in Petroleum resources
- Leverages our cost of capital advantage and financial capacity to accelerate production growth

**Acceleration of Petrohawk's development spend**  
(US\$ million net, real)

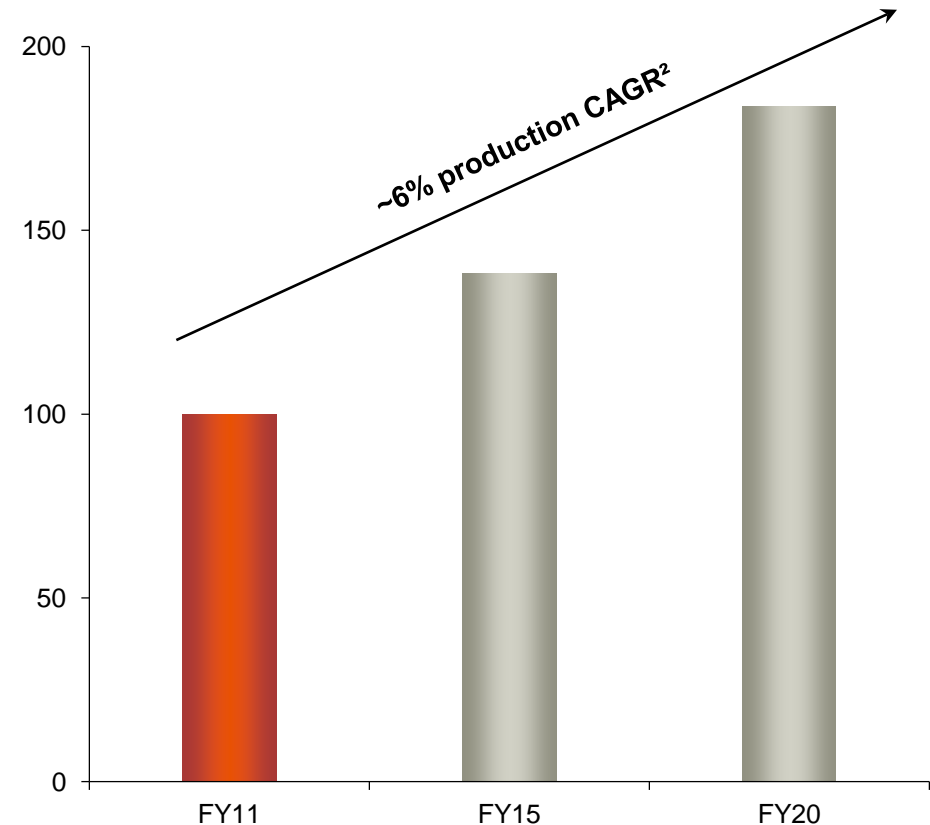


<sup>1</sup> Includes debt as at 30 June 2011 of approximately US\$3.8 billion less approximately US\$800 million proceeds from sale of midstream assets; does not include penalties associated with the early retirement of Petrohawk's debt facilities.

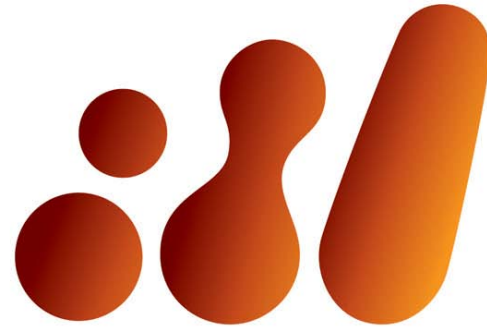
# Delivering strong and sustainable production growth

- Long term supply demand fundamentals remain intact
- Positioned to capture the opportunity, today and tomorrow
- Strong margins and returns reflect the quality of our business
- World class resource base + low cost position = superior investment returns
- Developing a suite of large scale, high return, organic growth projects

## Long term production growth (copper equivalent units<sup>1</sup>)



1. Production from continuing operations converted to copper equivalent units based on long term consensus price estimates where available. Indexed to 100 from FY11.
2. Production CAGR from FY11 to FY20. Includes production growth from Petrohawk Energy Corporation.



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resourcing the future