Base Metals briefing and Chilean site tour

Non-ferrous overview

Andrew Mackenzie Chief Executive Non-ferrous
30 September 2012

bhpbilliton
resourcing the future

Disclaimer

Forward looking statements

This presentation includes forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995 regarding future events, conditions, circumstances and the future financial performance of BHP Billiton, including for capital expenditures, production volumes, project capacity, and schedules for expected production. Often, but not always, forward-looking statements can be identified by the use of the words such as “plans”, “expects”, “expected”, “scheduled”, “estimates”, “intends”, “anticipates”, “believes” or variations of such words and phrases or state that certain actions, events, conditions, circumstances or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved. These forward-looking statements are not guarantees or predictions of future performance, and involve known and unknown risks, uncertainties and other factors, many of which are beyond our control, and which may cause actual results to differ materially from those expressed in the statements contained in this presentation. For more detail on those risks, you should refer to the sections of our annual report on Form 20-F for the year ended 30 June 2012 entitled “Risk factors”, “Forward looking statements” and “Operating and financial review and prospects” filed with the U.S. Securities and Exchange Commission (“SEC”). Any estimates and projections in this presentation are illustrative only. Our actual results may be materially affected by changes in economic or other circumstances which cannot be foreseen. Nothing in this presentation is, or should be relied on as, a promise or representation either as to future results or events or as to the reasonableness of any assumption or view expressly or impliedly contained herein.

Non-IFRS financial information

BHP Billiton results are reported under International Financial Reporting Standards (IFRS) including Underlying EBIT and Underlying EBITDA which are used to measure segment performance. This presentation also includes certain non-IFRS measures including Attributable profit excluding exceptional items, Underlying EBITDA interest coverage, Underlying effective tax rate, Underlying EBIT margin and Underlying return on capital. These measures are used internally by management to assess the performance of our business, make decisions on the allocation of our resources and assess operational management. Non-IFRS measures have not been subject to audit or review

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.

Reliance on third party information

The views expressed in this presentation contain information that has been derived from publicly available sources that have not been independently verified. No representation or warranty is made as to the accuracy, completeness or reliability of the information. This presentation should not be relied upon as a recommendation or forecast by BHP Billiton.

Disclaimer

Mineral Resources

This presentation includes information on Exploration Results (Potential Mineralisation) and Mineral or Coal Resources (inclusive of Ore Reserves). Mineral Resources are compiled by: S O'Connell (MAusIMM) – Olympic Dam, J McElroy (MAusIMM) – Saskatchewan Potash, L Soto (MAusIMM), M Cortes (MAusIMM) and R Preece (FAusIMM) – Escondida mineral district, J Céspedes (MAusIMM) – Cerro Colorado and Spence, R Preece (FAusIMM) – Antamina and Base Metals North America Pinto Valley, and A Edwards (MAusIMM) – Cannington. This is based on Mineral Resource information in the BHP Billiton Annual Reports for 2008 and 2012 for all assets. All reports can be found at www.bhpbilliton.com.

Exploration Targets (Potential Mineralisation) are compiled by: Olympic Dam: M Carew (MAusIMM); Potash: J McElroy (MAusIMM); Escondida, Spence, Cerro Colorado, Base Metals North America Pinto Valley and Resolution: J des Rivieres (IGI); – (Olympic Dam, Potash and Escondida were previously reported in the BHP Billiton's Bank of America Merrill Lynch Global Metals, Mining & Steel Conference Presentation, 15 May 2012, and Spence and Cerro Colorado were previously reported in the BHP Billiton's, Building momentum in Base Metals Presentation, 27 June 2012).

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.

Disclaimer

Mineral Resource classification (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	%
Escondida district	FY2012	4,069 @ 0.72% Cu	4,986 @ 0.57% Cu	12,635 @ 0.47% Cu	16 @ 0.4-0.6% Cu	23 @ 0.4-0.6% Cu	43 @ 0.5-0.6% Cu	57.5
	FY2008	1,819 @ 0.84% Cu	2,984 @0.70% Cu	4,233 @ 0.53% Cu				57.5
Cerro Colorado	FY2012	96 @ 0.66% Cu	317 @ 0.64% Cu	82 @ 0.58% Cu	1.3 @ 0.35-0.45% Cu	1.7 @ 0.35-0.45% Cu	3.2 @ 0.35-0.45% Cu	100
	FY2008	135 @ 0.70% Cu	93 @ 0.62% Cu	129 @ 0.56% Cu				100
Spence	FY2012	232 @ 0.91% Cu	1,315 @ 0.47% Cu	1,260 @ 0.37% Cu	0.8 @ 0.4-0.5% Cu	1.2 @ 0.4-0.5% Cu	1.9 @ 0.4-0.5% Cu	100
	FY2008	196 @ 1.16% Cu	190 @ 0.70% Cu	13 @ 0.43 Cu				100
Antamina	FY2012	169 @ 0.83% Cu 0.6% Zn, 9 g/t Ag 0.03% Mo	990 @ 0.91% Cu 0.6% Zn, 10 g/t Ag 0.02% Mo	706 @ 0.73% Cu 0.4% Zn, 9 g/t Ag 0.01% Mo				33.75
	FY2008	186 @ 0.94% Cu	751 @ 1.01% Cu	585 @ 0.83% Cu				33.75
Base Metals North America Pinto Valley	FY2012	63 @ 0.33% Cu	200 @ 0.35% Cu	6 @ 0.21% Cu	3 @ 0.35-0.45% Cu	4 @ 0.35-0.45% Cu	6 @ 0.35-0.45% Cu	100
	FY2008	515 @ 0.14% Cu	203 @ 0.35% Cu	6 @ 0.21% Cu				100
Resolution	FY2012				2 @ 1.4-1.6% Cu 400 ppm Mo	3 @ 1.5-1.7% Cu, 400 ppm Mo	4 @ 1.3-1.5% Cu 400 ppm Mo	45
Cannington	FY2012	59 @ 211g/t Ag, 5.8% Pb, 3.3% Zn	22 @ 119g/t Ag, 3.8% Pb, 2.5% Zn	17 @ 90g/t Ag, 3.1% Pb, 2.0% Zn				100
Olympic Dam	FY2012	1,474 @ 1.03% Cu, 0.30 kg/t U_3O_8, 0.35 g/tAu	4,843 @ 0.84% Cu, 0.27 kg/t U_3O_8, 0.34 g/tAu	3,259 @ 0.70% Cu, 0.23 kg/t U_3O_8, 0.25 g/tAu	1.2 @ 1.08% Cu	2.4 @ 1.08% Cu	3.6 @ 1.08% Cu	100
Potash	FY2012	0.35-	3,320 @ 25.7% K_2O	131 @ 26.9% K_2O	2.7	5.4	8.1	100

Chilean site tour program

Day 1: Sunday, 30 September 2012	
Welcome and safety induction	Brendan Harris
Non-ferrous overview	Andrew Mackenzie
Well positioned to deliver low risk copper growth	Peter Beaven
Base Metals performance overview	Margaret Beck
Low risk, high return projects	Peter Beaven
Our confidence in the long term outlook for copper	Shaun Verner
Coloso Port site tour	Pedro Damjanic
Chile update	Maria Olivia Recart
Santiago project hub	Carlos Mesquita
Examining the broader portfolio	Peter Beaven
Day 2: Monday, 1 October 2012	
Escondida presentation	Edgar Basto
Escondida site tour	
Day 3: Tuesday, 2 October 2012	
Pampa Norte presentation	Ivan Arriagada
Spence site tour	

Key themes

- A strong, experienced and well established management team
- A high quality and uniquely diversified portfolio
- Building strong momentum in our Base Metals business
- Targeting a substantial reduction in costs
- Our longer term development options

Non-ferrous leadership team

Strong, experienced and well established

Chief Executive Non-ferrous
Andrew Mackenzie

President Base Metals
Peter Beaven

President Diamonds & Specialty Products
Timothy Cutt

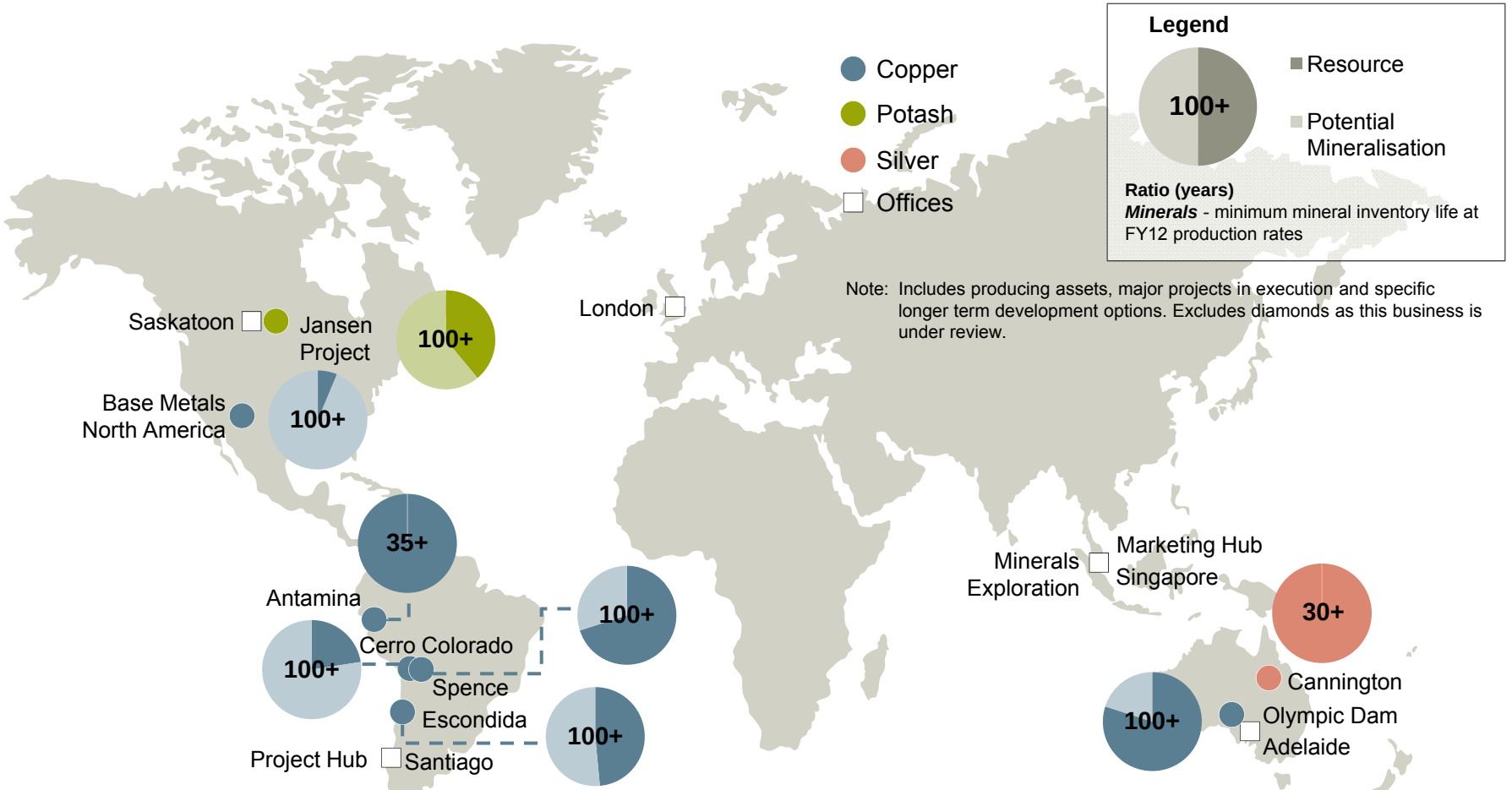
President Uranium
Dean Dalla Valle

President Minerals Exploration
Daniel Malchuk

Head of Group Project Management Services
Philip Montgomery

Project Director Organisation Design Protocol
Stefan Buys

A high quality and uniquely diversified portfolio

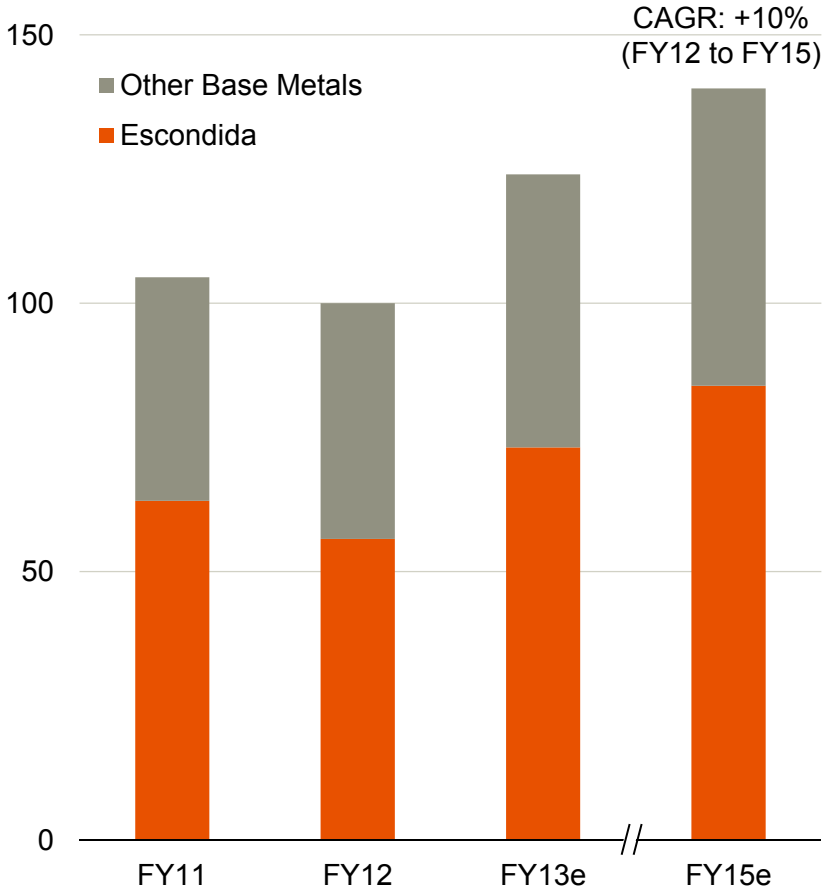


The Inventory Life is estimated from the mineral inventory (sum of Potential Mineralisation and Mineral Resources) stated on a 100% basis. The detailed breakdown of Mineral Resources for all assets are shown in the BHP Billiton FY12 Annual Report. Potential mineralisation values in the pie charts above is the mid case of a range of values that are presented in the Disclaimer slide of this presentation. 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 FY12 production rate (for Potash this is the expected FY20 production rate and for Base Metals North America Pinto Valley it is the nominal production rate) and does not imply that any mine planning has been completed. Refer to disclaimer on slides 3 and 4 as presented on 30 September 2012.

Building strong near term momentum

- Low risk, high return brownfield projects and the release of latent capacity underpin the strong near term outlook
- Multiple low risk projects on time and on budget
  - two projects (Escondida Ore Access and Antamina Expansion) delivered first production in FY12
  - low complexity Pinto Valley restart expected by end CY12
  - Escondida Organic Growth Project 1 on schedule to be commissioned in CY15
- Total copper production is forecast to grow at a CAGR of +10% to end FY15
  - copper production growth of more than 350 ktpa (BHP Billiton share) to end of FY15

Copper production growth[1]
(index, FY12=100)

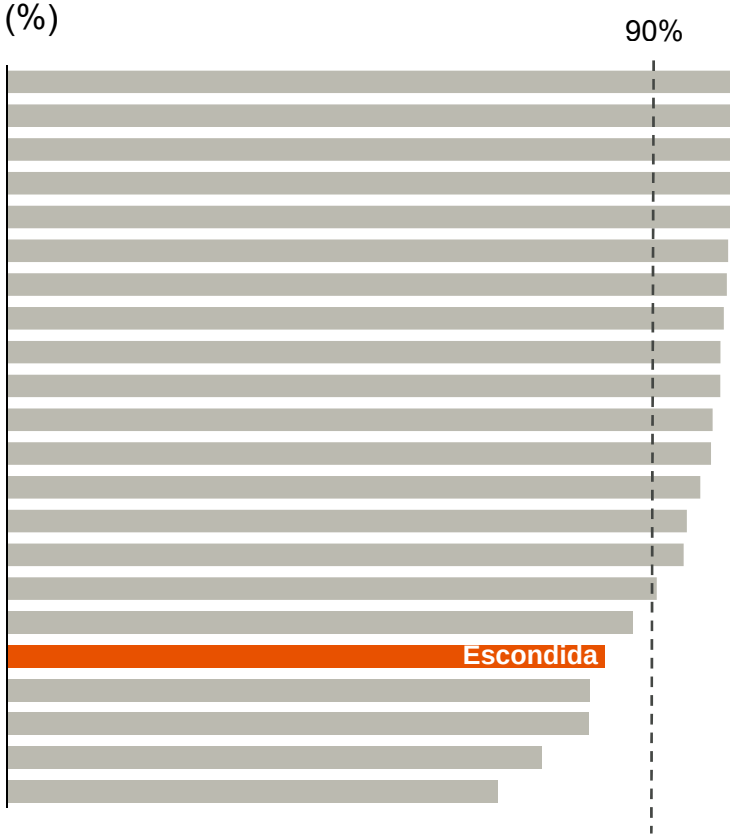


Note: Excludes Uranium CSG.
1. BHP Billiton share.

Targeting a substantial reduction in costs

- Cost inflation continues to impact the global mining industry
- We are committed to reducing costs in FY13
- We will achieve this by
  - diluting our costs over a larger base as substantial latent capacity is released at a number of major operations and recently completed projects ramp-up
  - reducing general overhead costs and our business development spend
  - increasing operating and capital productivity

Effective asset utilisation[1] in FY12



1. Excludes assets where major projects are in commissioning phase or in the process of ramp-up (Worsley, Antamina, WAIO and NSW Energy Coal). Excludes the non-operated Richards Bay Minerals operation, the EKATI diamond mine (both part of the D&SP CSG) and Onshore US (Petroleum CSG). Spence and Cerro Colorado capacity based on forecast annualised production; Manganese Ore and South Africa Coal capacity adjusted for available rail allocation; and Queensland Coal adjusted for the closure of Norwich Park.

Longer term development options

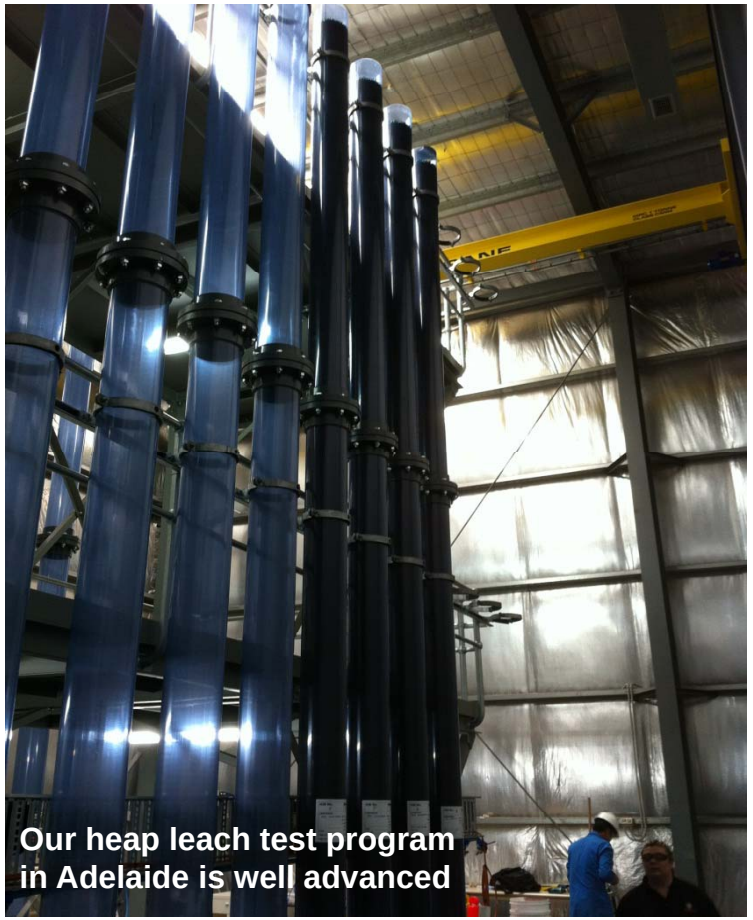
Well placed to meet growing potash demand

- A major presence in the Saskatchewan potash basin
- The longer term outlook for potash remains attractive
- Two shafts that will support at least an 8 mtpa operation at Jansen will be fully excavated by end FY14
- Regulatory approvals are being progressed
  - Saskatchewan Ministry of Environment has approved the EIS
  - mining lease conversions are in progress
- Detailed front-end mine planning and engineering for Jansen is well advanced
  - focus is on reducing project risk and maximising investment returns
  - expected to operate at the very bottom of the global cost curve in its expanded state
  - a modular (two phase) development program is likely to reach full capacity within 10 years of final investment approval
- Final investment decision remains subject to Board approval

Longer term development options

Project economics will determine the way forward at Olympic Dam

- Following a major capital review, we decided to study an alternative, less capital intensive design of the Olympic Dam open pit expansion that involves new technologies
- An alternative design has the potential to substantially improve the economics of the project
  - heap leach and other technological solutions are being studied
- These studies will require extensive analysis
- An investment decision is far from imminent



Our heap leach test program in Adelaide is well advanced

Key themes

- A strong, experienced and well established management team
- A high quality and uniquely diversified portfolio
- Building strong momentum in our Base Metals business
- Targeting a substantial reduction in costs
- Our longer term development options

Well positioned to deliver low risk copper growth

Peter Beaven President Base Metals
30 September 2012

bhpbilliton
resourcing the future

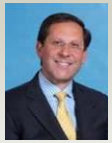
Key themes

- Our confidence in the long term outlook for copper
- A leading producer of Base Metals with a world class resource base
- Strong performance in health, safety, environment and the community
- Targeting significant unit cost savings
- Delivering low risk, high return copper growth
- Our valuable longer term development options
- Our extensive and successful brownfield exploration program

Base Metals Executive Committee

An established, experienced and diverse leadership team

President Base Metals
Peter Beaven



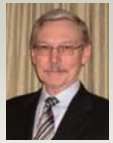
President Pampa Norte
Ivan Arriagada

President Escondida
Edgar Basto

VP Finance
Margaret Beck

President North America
Wayne Isaacs

VP Human Resources
Alex Jaques



VP Strategy and Development
Randy Jones

VP HSEC
Stephen Kittel

VP Major Projects
Carlos Mesquita

VP External Affairs
Maria Olivia Recart

President Cannington
Laura Tyler

VP Marketing
Shaun Verner

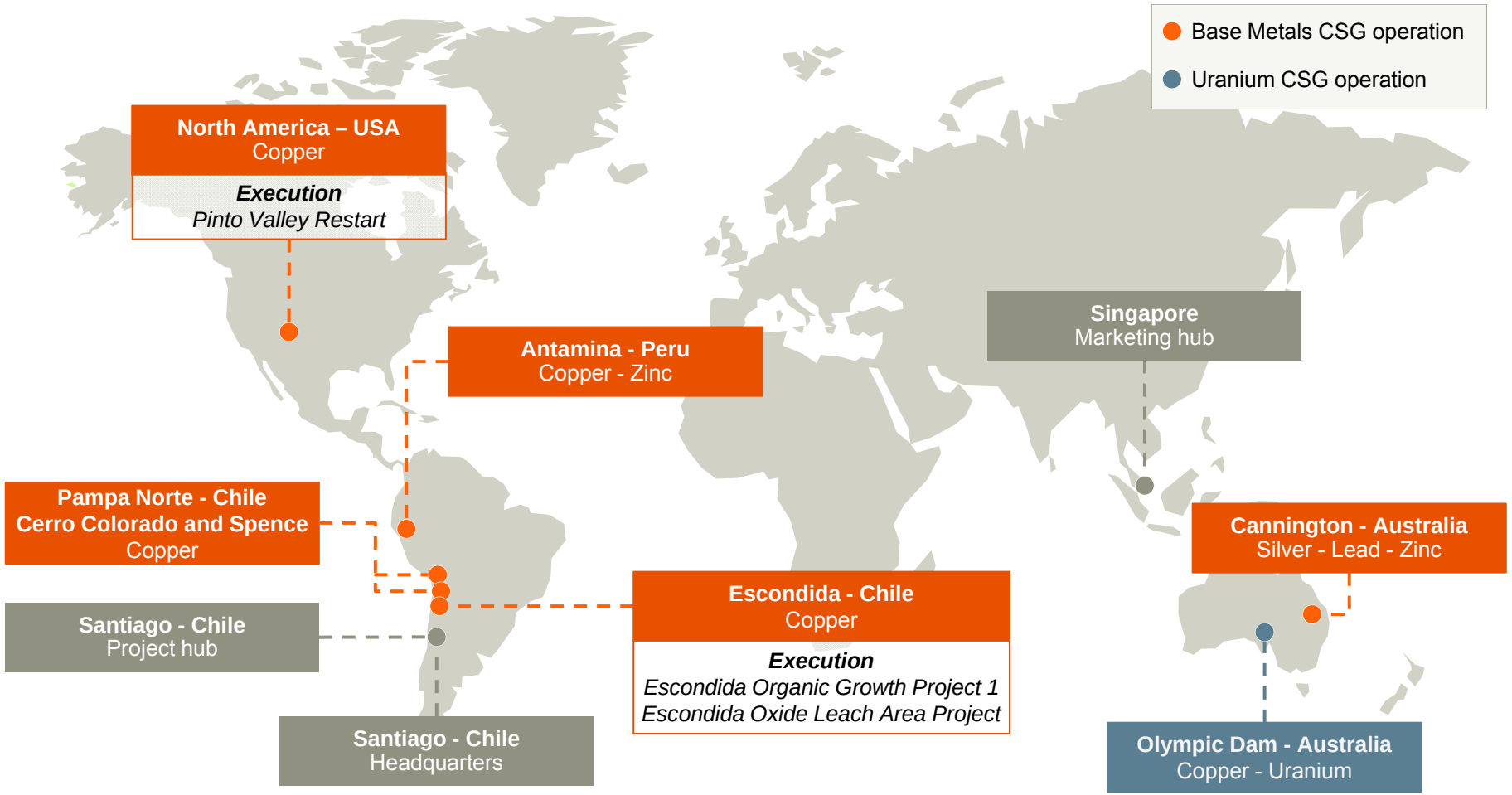
Base Metals – an important driver of value

Committed to copper	Copper remains a particularly attractive industry for BHP Billiton
Well positioned	Base Metals is well positioned with a diversified portfolio of high quality assets in established and stable geographies
Delivering performance	Strong operating and project capability which is enhanced by our Santiago project hub
Operating excellence	Our systems and processes represent a major competitive advantage that will underpin low risk, high return copper growth for the Group

"Substantial mineralisation totalling 27.1 bt[1] and a significant commitment to Andean copper belt exploration will ensure BHP Billiton remains a leading and highly competitive producer in the long term"

1. BHP Billiton 2012 Annual report. Refer to disclaimer slides 3 and 4 as presented on 30 September 2012.

Geographically diverse Base Metals business

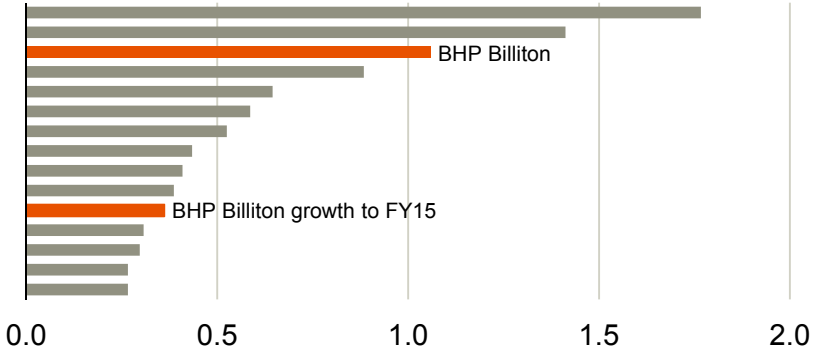


Note: Includes producing assets and major projects in execution.

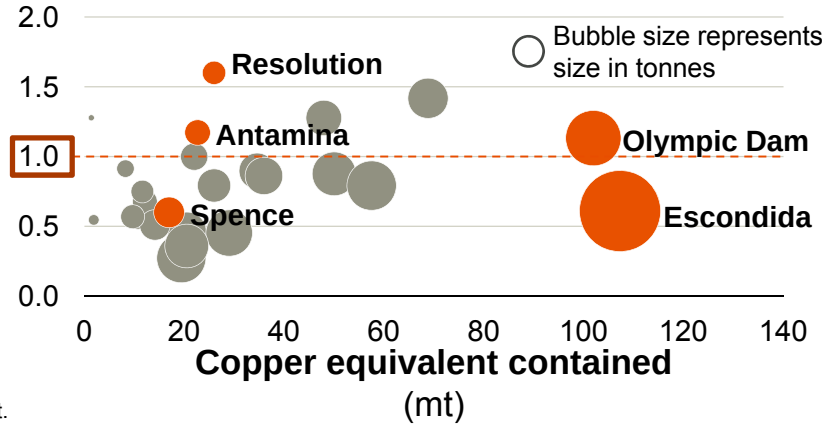
A leading copper producer

- Third largest global copper producer
  - operator of Escondida, the world's largest copper mine
- Copper production growth over the next three years is significant in the context of the global industry
- Over 95% increase in total contained copper resource base since FY08[1]
- Underpins longer term production profile
- Extensive greenfield exploration land position in the Andean region

A significant producer
(CY11 contained copper production, mt)



Substantial footprint for growth[1]
(% copper equivalent)



Sources: Wood Mackenzie, Annual Reports, press releases and BHP Billiton FY12 Annual Report.
Refer to disclaimer on slides 3 and 4 as presented on 30 September 2012 for information regarding BHP Billiton resources and potential mineralisation.

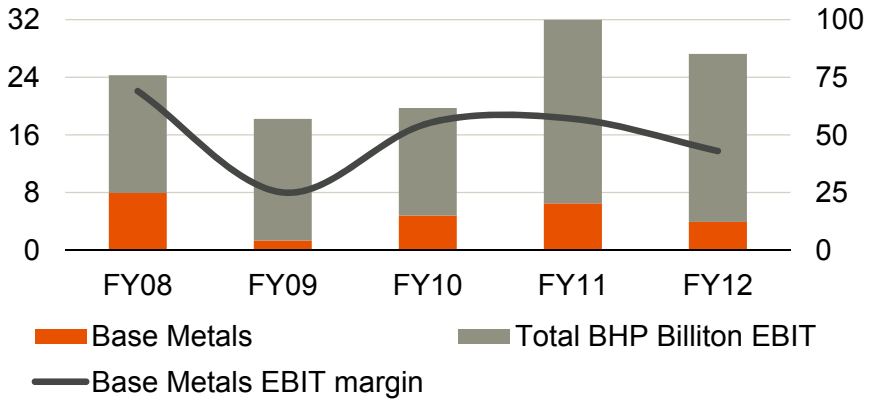
1. Based on top 20 copper deposits, information was obtained from the BHP Billiton FY12 Annual Report for BHP Billiton resources and from Brook Hunt data for the remainder. Resolution is based on the mid case for potential mineralisation, factored for conversion to resources. Grades are inclusive of by-product credits, adjusted for metal recovery. Copper equivalent units based on three month average spot prices. Refer to disclaimer on slides 3 and 4 as presented on 30 September 2012 for reported by-product grades.

Base Metals - a major contributor to BHP Billiton

- Significant component of the BHP Billiton portfolio
- Headquartered in Santiago, employing over 8,000 people in five different countries
- Over the last five years Base Metals has contributed
  - US$25 billion of Underlying EBIT[1], representing 20% of total BHP Billiton Underlying EBIT
  - US$20.6 billion of net operating cash flow[1] representing 19% of total BHP Billiton net operating cash flow
  - 16% of total BHP Billiton copper equivalent production

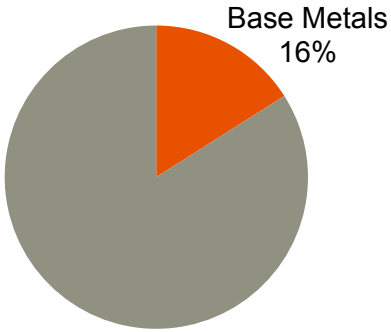
Contribution to BHP Billiton[1]

(US$ billion) (EBIT margin %)



Production[2]

(five year average, copper equivalent units, %)



1. Excludes Uranium CSG and includes third party products.
2. Excludes Uranium CSG and third party products. Copper equivalent units based on FY12 average prices where available.

Strong performance in health, safety, environment and the community

Health

- Focus on reducing exposure to silica, noise and acid mist
- Monitoring and managing fatigue

Safety

- Material Risk Management
- Job Safety Observation
- Field leadership

Environment

- Reduce environmental footprint (energy and water efficiency)
- Abatement curves for energy, water and carbon

Community

- Focus on improving quality of life indicators
- Escondida Foundation
- Antamina Fund
- Invested in excess of US$250 million in local communities over the last five years

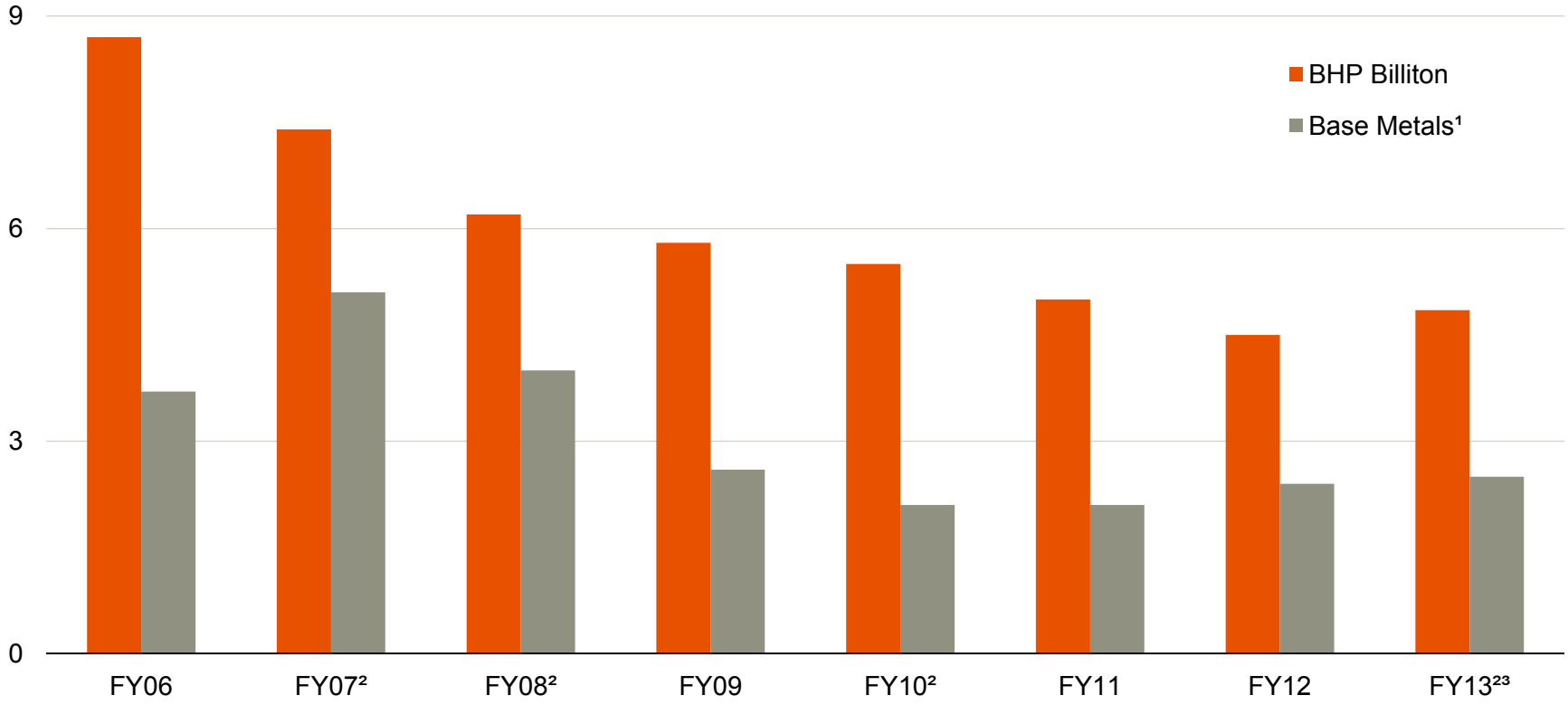

Escondida


Cerro Colorado


Japan School – Antofagasta

Safety is a core value for BHP Billiton

Total Recordable Injury Frequency (TRIF)
(number of recordable injuries per million hours worked)

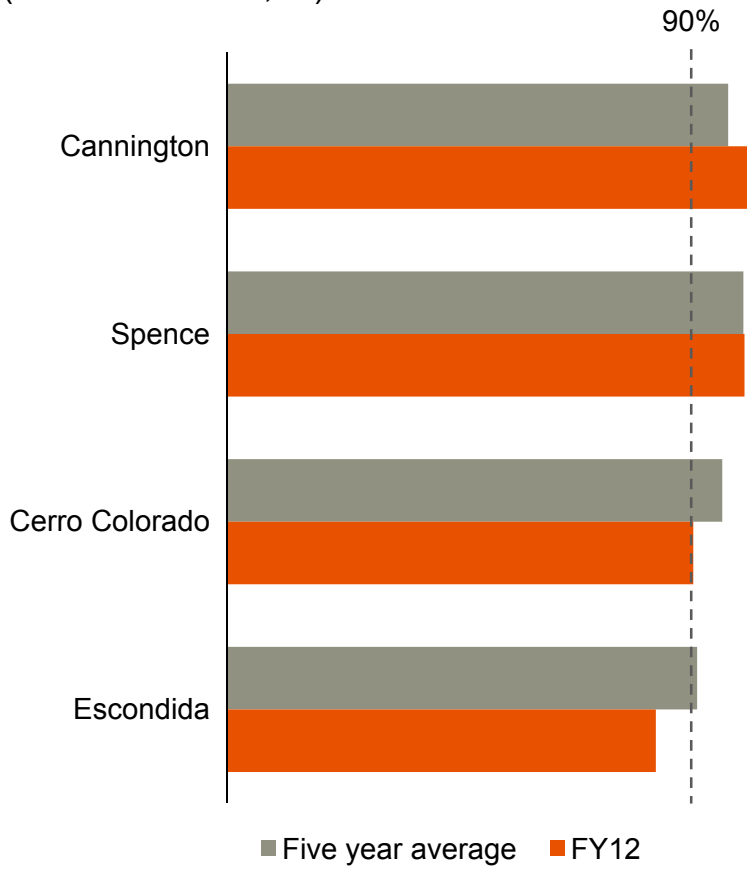


1. Excludes Uranium CSG.
2. Indicates fatalities occurred in the Base Metals Customer Sector Group during the reporting period.
3. TRIF up until 31 August 2012.

Strong recovery underway at Escondida

- Strong operating performance over past five years, however in FY12 Escondida was affected by temporary challenges including industrial action and wet weather
  - the reversal of one-off events expected in FY13
- Recovery in ore grade and milling rates at Escondida illustrated by the sharp increase in production in the June 2012 quarter
  - continued improvement in volumes consistent with the mine plan will benefit unit costs in FY13
  - low cost, high margin volume growth associated with expansion projects will further leverage economies of scale throughout FY13

Strong operating performance
(asset utilisation[1], %)



1. Antamina is not shown as the expansion project in FY12 was in the process of ramp-up. Spence and Cerro Colorado capacity based on forecast annualised production.

Base Metals performance overview

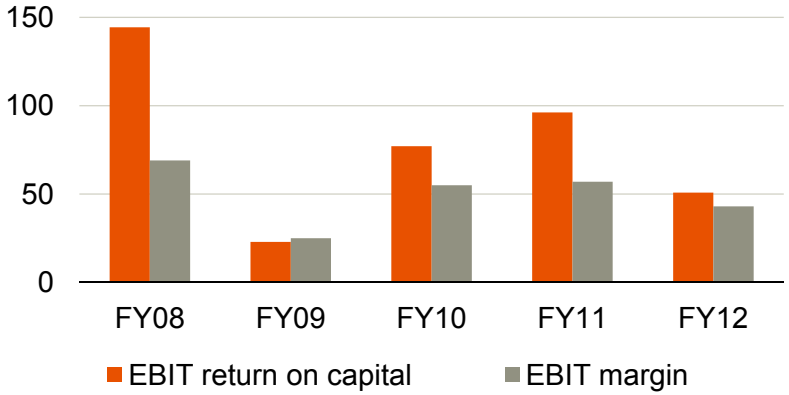
Margaret Beck VP Finance
30 September 2012

bhpbilliton
resourcing the future

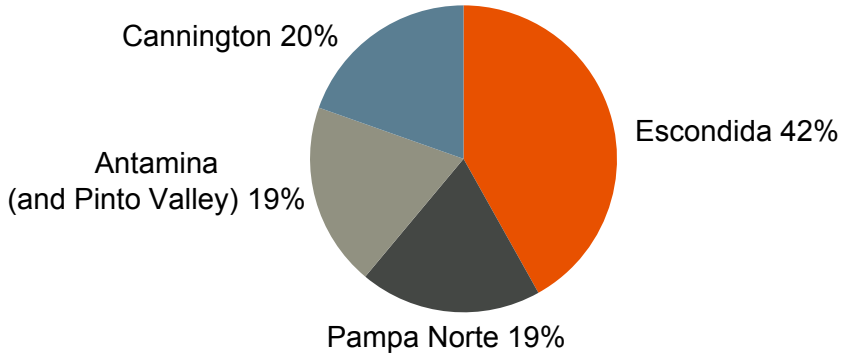
A high margin business with strong returns

- EBIT contribution from assets diversified by product, country and process
- Over the last five years Base Metals has generated
  - an average EBIT margin of approximately 50%
  - an average EBIT RoC of over 75%
- In FY12 Base Metals contributed 14% of BHP Billiton's Underlying EBIT despite:
  - being negatively affected by industrial action and wet weather
  - copper grades at Escondida reaching an inflection point in the mine plan; and
  - a more than US$900 million reduction in the contribution associated with provisional pricing

Strong and stable margins and returns[1]
(%)



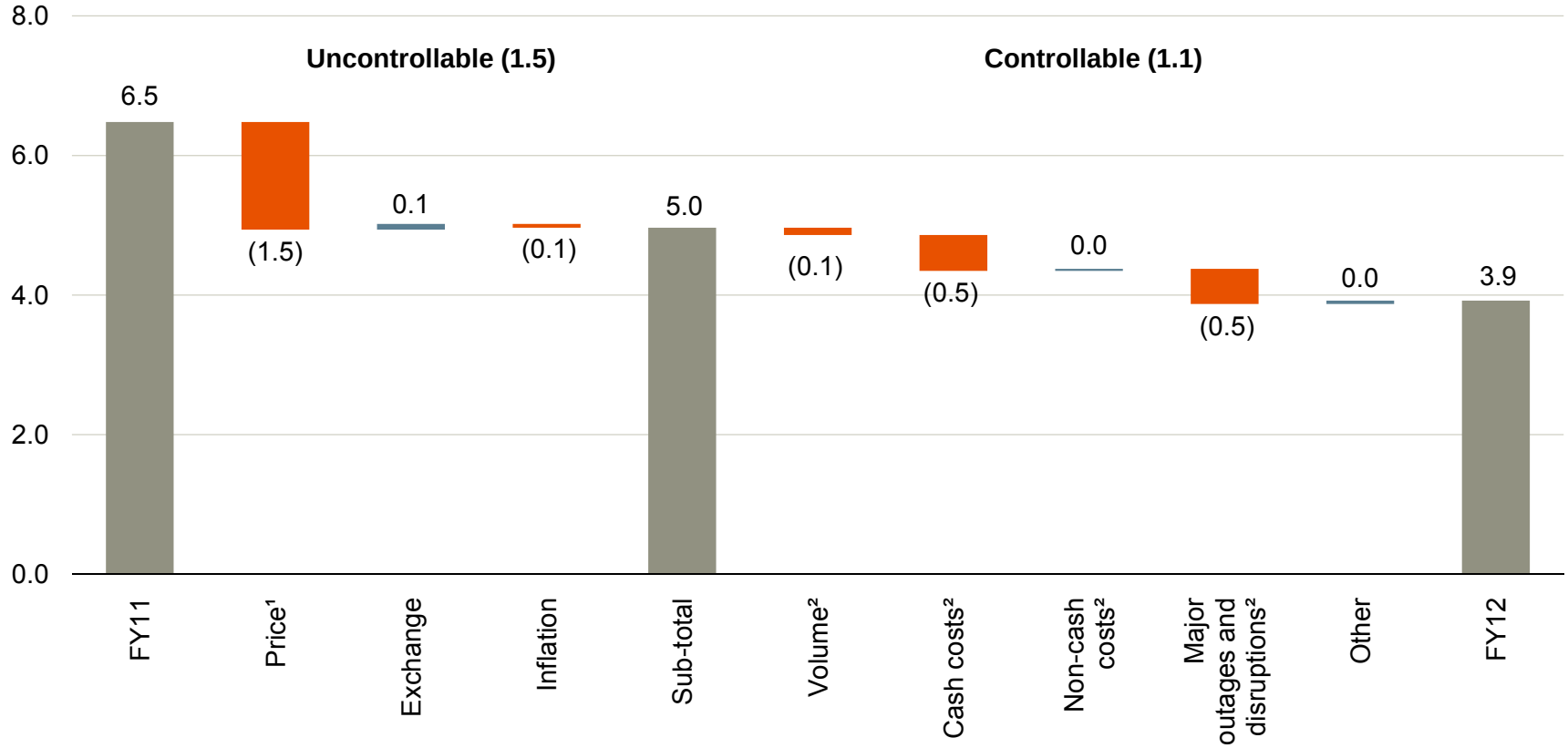
FY12 EBIT contribution by asset
(Underlying EBIT[2])



1. Excludes Uranium CSG and third party trading activities.
2. Excludes exploration and business development and divisional activities.

Underlying EBIT analysis

EBIT variance
(FY12 versus FY11, US$ billion)

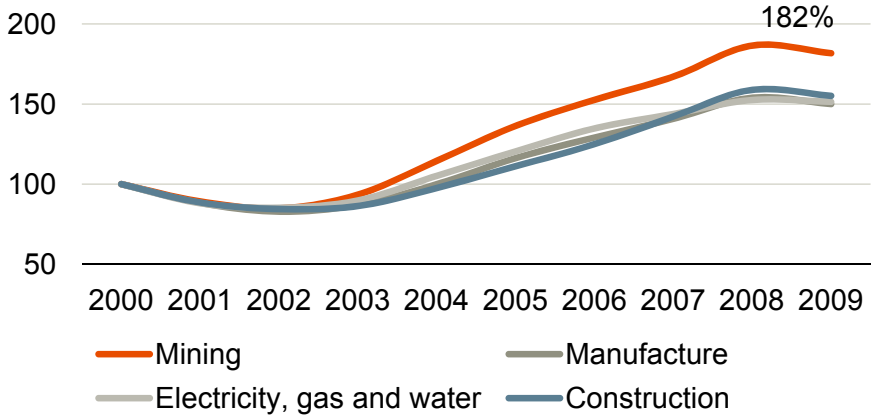


Note: Excludes Uranium CSG.
1. Includes net impact of price-linked costs.
2. The impact of wet weather and industrial action at Escondida has been excluded from Volume, Cash costs and Non-cash costs variance; included in Major outages and disruptions.

Unit costs affected by one-off events and a heated labour market

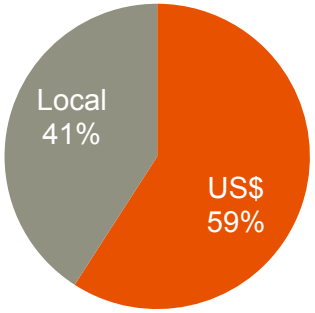
- Copper unit cash costs increased by 20% in FY12
- Higher costs driven by
  - pressure on labour costs due to tight market in Chile
  - increased acid and fuel prices
  - higher strip ratio at Spence
  - impact of lower volumes on a substantial fixed cost base
    - › industrial action at Escondida
    - › lower grade at Escondida

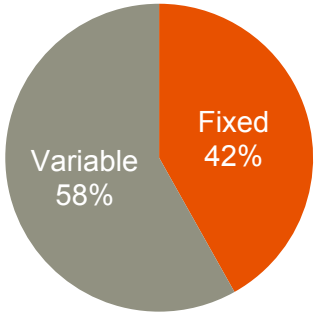
Chilean labour cost by industry
(index, 2000=100)



Source: COCHILCO; Fundacion Chile; Brook Hunt.

Base Metals Chilean copper assets breakdown
(FY12 cash costs, %)

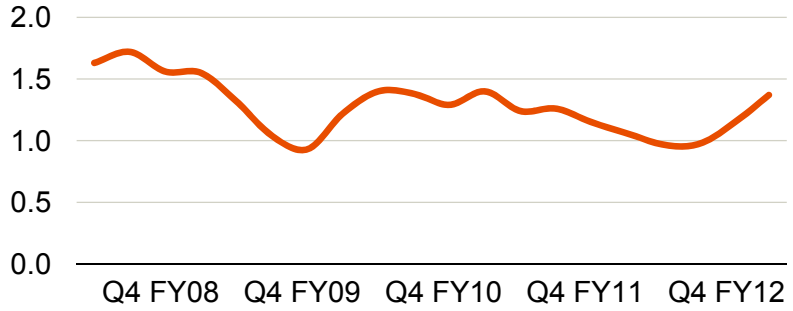




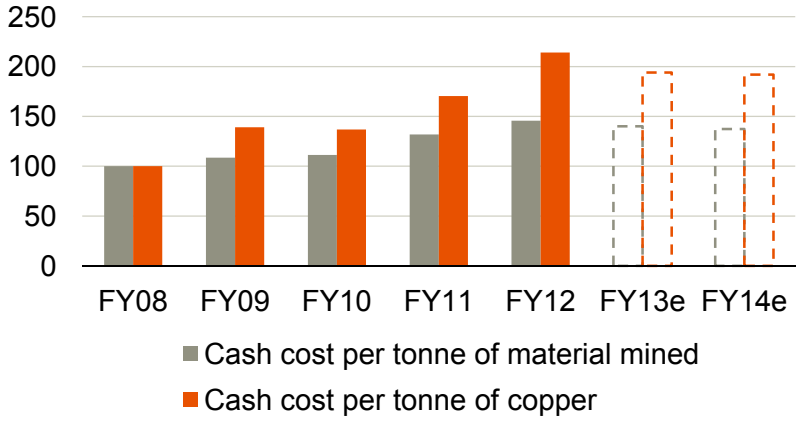
Targeting significant unit cost savings

- Economies of scale benefits
  - Escondida Ore Access will underpin higher average grades
  - debottlenecking projects will improve throughput
- Reversal of one-off costs incurred in FY12
  - industrial action
  - crushing and conveying maintenance
  - reduction of study and exploration costs
- A substantial reduction in operating costs and non-essential expenditure is targeted in FY13
  - improvements identified through benchmarking with plans in place to close the gaps
- However, challenges remain
  - continued tight labour market in Chile
  - high power costs due to dependence on imported fossil fuels
  - cost of water will increase with transition to desalinated water

Escondida's average copper grade
(% copper)



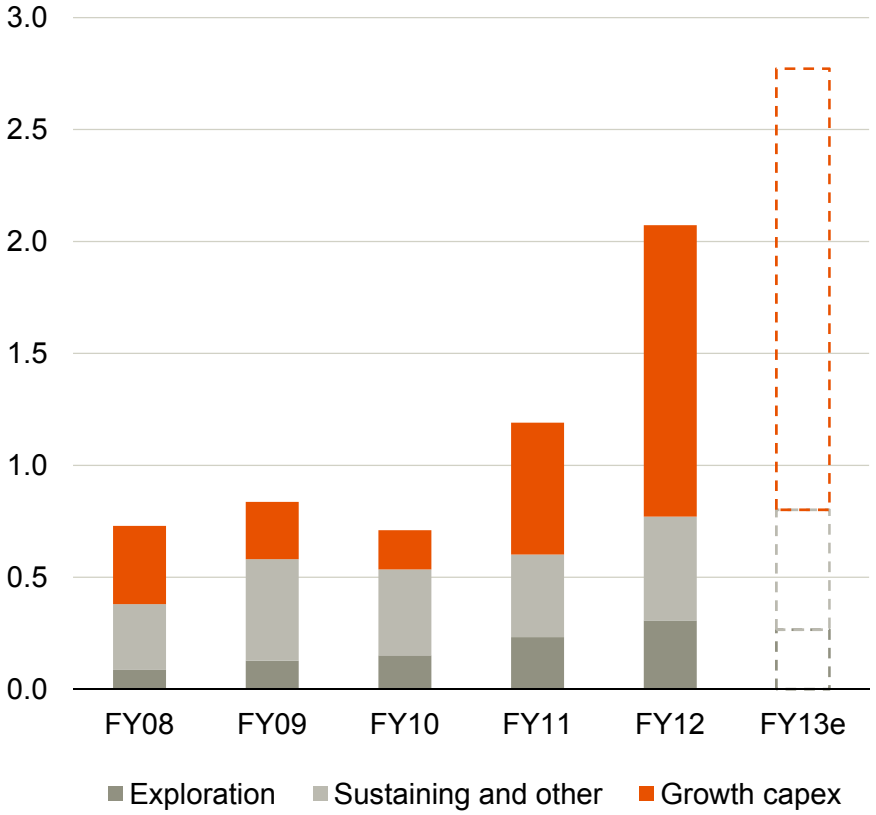
Grade has a significant influence on unit costs
(index, FY08=100)



Continued investment in high return growth

- Investment in growth to accelerate in FY13 as high return projects (OGP1 and OLAP) progress
- Sustaining capital spend is predictable
  - due to focus on downstream processes
  - targeting a reduction in FY13
- Exploration expense peaked in FY12
  - significant brownfield exploration success
  - focused greenfield exploration program
  - overall reduction targeted in FY13

Increasing Base Metals capex supports production growth[1]
(investment, US$ billion)



1. Excludes Uranium CSG.

Low risk, high return projects

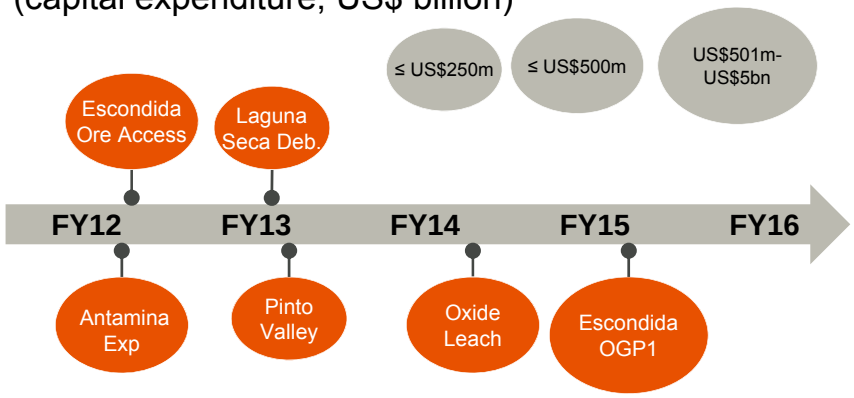
bhpbilliton
resourcing the future

Peter Beaven President Base Metals
30 September 2012

Delivering low risk, brownfield volume growth

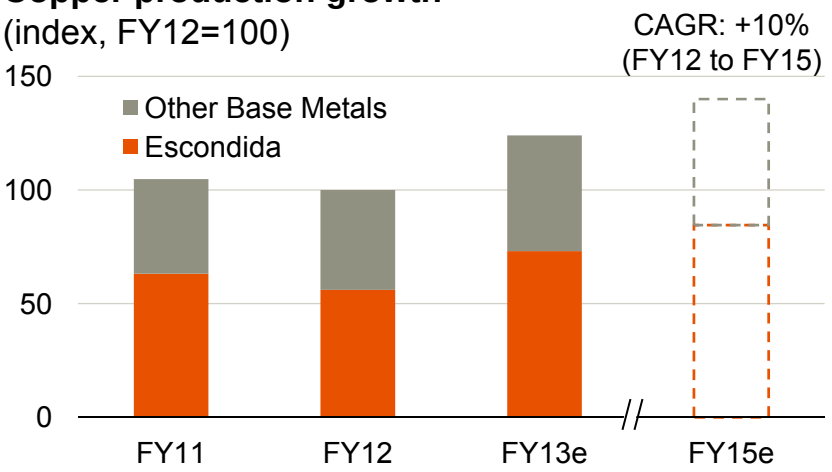
- Two projects achieved first production in FY12
  - Antamina Expansion increased processing capacity by 38% to 130 ktpd
  - Escondida Ore Access enables the mine plan to access to high grade ore (+1% copper)
- Laguna Seca Debottlenecking was completed at the end of September 2012 and increases processing capacity by 15 ktpd at Escondida
- Low risk projects in execution will sustain strong momentum
  - Escondida Oxide Leach substantially extends cathode production
  - OGP1 sustains an elevated level of copper production at Escondida over the remainder of the decade
  - low complexity Pinto Valley restart will deliver 60 ktpa of copper in concentrate

Projects completed and in execution[1]
(capital expenditure, US$ billion)



(timing of first production)

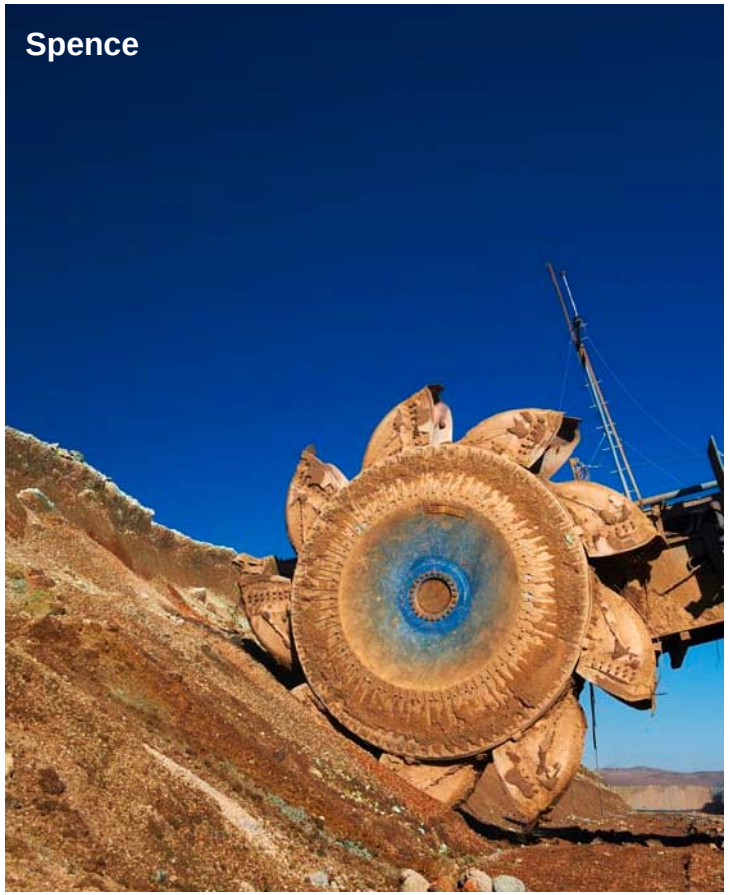
Copper production growth[2]
(index, FY12=100)



1. Relates to projects in execution highlighted on slide. Note some projects are completed.
2. BHP Billiton share.

Valuable longer term development options

- Progressing pre-feasibility studies for the Spence Hypogene project
  - exploitation of an extensive hypogene resource of more than 2 bt ore[1]
  - potential development of 95 ktpa concentrator to deliver 150 - 200 ktpa of low cost copper production over the first ten years
- Cannington open-cut studies underway
  - significant near surface resource of 22 mt[2]
  - could extend mine life by more than 20 years
- Escondida post OGP1
  - substantial resources support additional concentrate and cathode production
- Antamina further debottlenecking
  - existing SAG capacity of 210 ktpd compared to current throughput of 140 ktpd

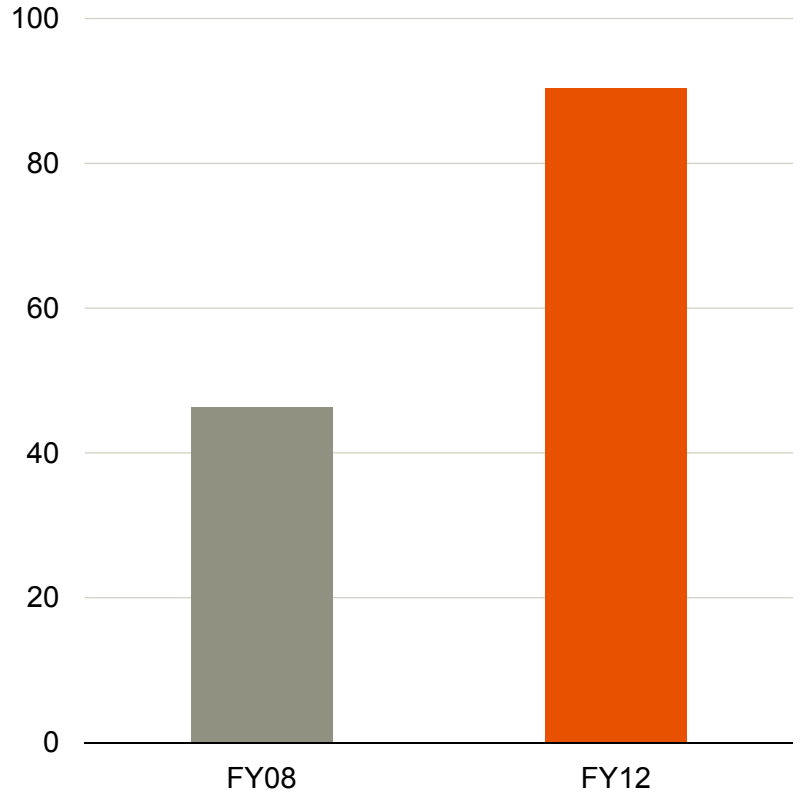


1. Open pit limit for declared Sulphide Mineral Resource as reported in BHP Billiton 2012 Annual report. Refer Table 1 on slide 4 as presented on 30 September 2012.
2. Cannington open cut Mineral Resources of 22 mt is included in Table 1 on slide 4 as presented on 30 September 2012.

Significant brownfield exploration success

- Extensive brownfield exploration program at all of our sites
  - approximately 1.5 million metres drilled over the past five years
- Successful exploration has increased our resource base
  - 95% increase in total contained copper since FY08[1]
  - discoveries converted into resources at Pampa Escondida, Escondida Este, Cerro Colorado, Spence hypogene and Antamina
  - doubling in Escondida mineral district resource at a discovery cost of US$0.001 per pound
  - 388% increase in Pampa Norte resource at a discovery cost of US$0.003 per pound
- High quality resource base with 27.1 bt @ 0.55% copper[2]

BHP Billiton's contained copper resource base has increased by over 95% since FY08[1]



1. After depletion. Excludes Cannington and Uranium CSG.
2. BHP Billiton 2012 Annual report. Refer to disclaimer slides 3 and 4 as presented on 30 September 2012.

Focused commitment to greenfield exploration

- Extensive Andean greenfield exploration land position in the most prospective areas
  - approximately 17,000 km^2 in Chile
  - approximately 11,000 km^2 in southern and central Peru
- Ramping up activity on a number of multi-year exploration programs aimed at testing porphyry copper targets
- Diverse exploration portfolio, with a range of target types and exploration maturity
- More than 50,000 metres of drilling planned during FY13
- Ongoing generative activities aimed at sustaining and building long term exploration pipeline, including third party commercial deals and title applications

Chilean and Peruvian landholding

Key themes

- Our confidence in the long term outlook for copper
- A leading producer of Base Metals with a world class resource base
- Strong performance in health, safety, environment and the community
- Targeting significant unit cost savings
- Delivering low risk, high return copper growth
- Our valuable longer term development options
- Our extensive and successful brownfield exploration program

Our confidence in the long term outlook for copper

Shaun Verner Vice President Base Metals Marketing
30 September 2012

bhpbilliton
resourcing the future

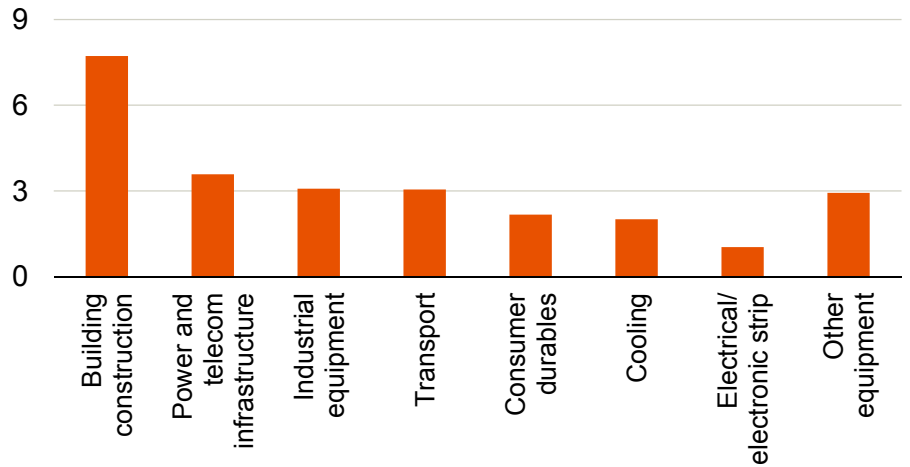
A centralised approach

- Marketing is centralised across commodities providing a coordinated view. Our responsibilities include
  - selling our products and purchasing all major raw materials
  - managing the supply chain for our products, from asset to market; and raw materials, from suppliers to asset
  - managing credit and price risk associated with the revenue line
  - achieving market clearing prices for our products
  - defining our view of long term market fundamentals
- Marketing volumes in FY12 (contained metal)
  - copper concentrates: 710 kt
  - copper cathodes: 760 kt
  - lead (silver) concentrates: 240 kt
  - zinc concentrates: 110 kt

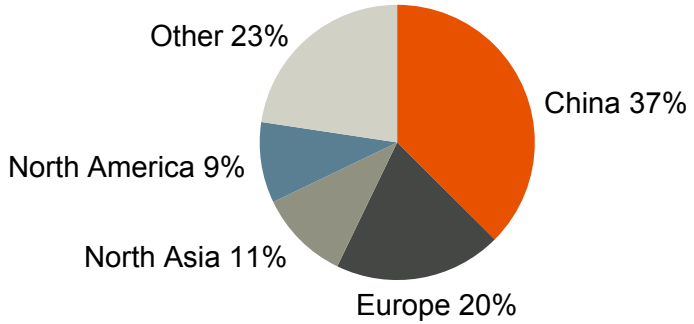
Demand drivers are diverse across both geography and sector

- Copper demand is dominated by construction, power and electrical applications which have low substitution risk
- Demand is driven by both investment and consumption led growth
  - urbanisation
  - floor space per capita
  - consumables
  - replacement demand
- China is the most significant market, however growth is geographically diverse
  - developing economies need copper in metals intensive construction and infrastructure investment phase
  - developed economies need copper across a wide range of applications in consumption phase

Demand by key sector 2011
(mtpa)



Demand by region 2011



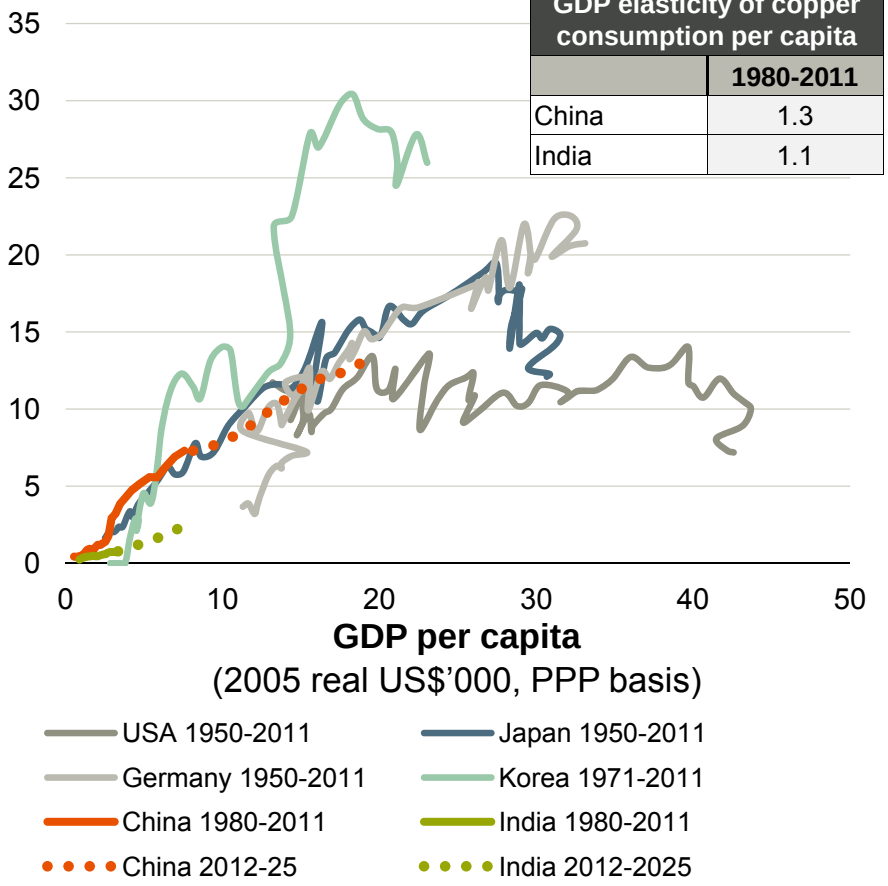
Source: ICA; CRU International; IWCC.

Demand evolves with economic development

- Emerging economic growth will transition from being investment to consumption led
- Copper plateaus later in the industrialisation cycle when compared with the infrastructure driven commodities
- China and India are still in the early stages of development
- Chinese semis[1] intensity per capita driven by increasing urbanisation, increasing wealth and replacement demand
- Intensity per capita driven primarily by domestic consumption but exports continue to play a part

Copper semis intensity per capita
(kg/capita)

GDP elasticity of copper consumption per capita	
	1980-2011
China	1.3
India	1.1



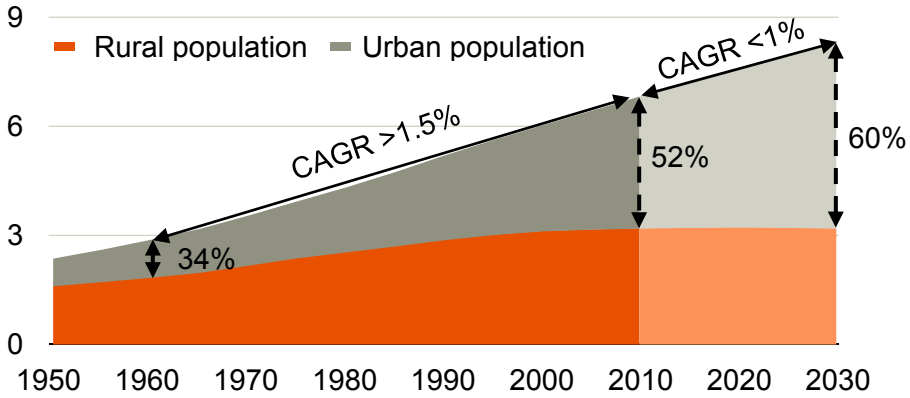
1. Semi fabricated products.

Source: BHP Billiton; World Bank; CRU.

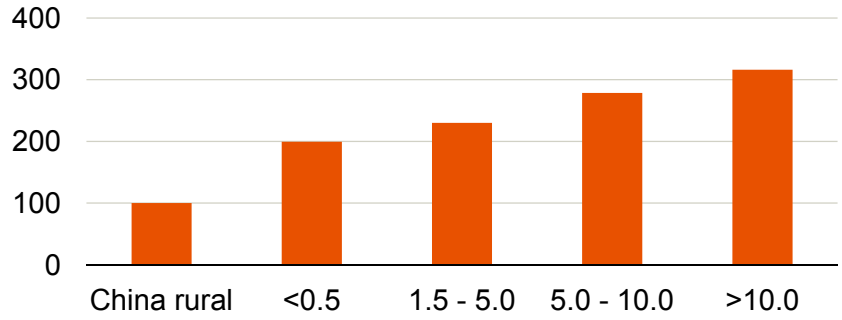
Long term drivers of demand remain intact

- Global population growth has continued, as has growth in the share of urban population
- Urban population is expected to grow globally from 3.6 billion (2010) to 4.3 billion (2020) to 5.0 billion (2030)
- Rural population is expected to remain flat from 2010
- Per capita wealth increases more quickly in urban environments
- Commodity demand growth is set to continue as urban populations increase
- Chinese copper intensity doubles from rural to smallest urban centre; and more than triples from rural to large urban centre

Urbanisation is the key driver of global demand
(billion people)



Copper intensity increases with urbanisation
(index value)



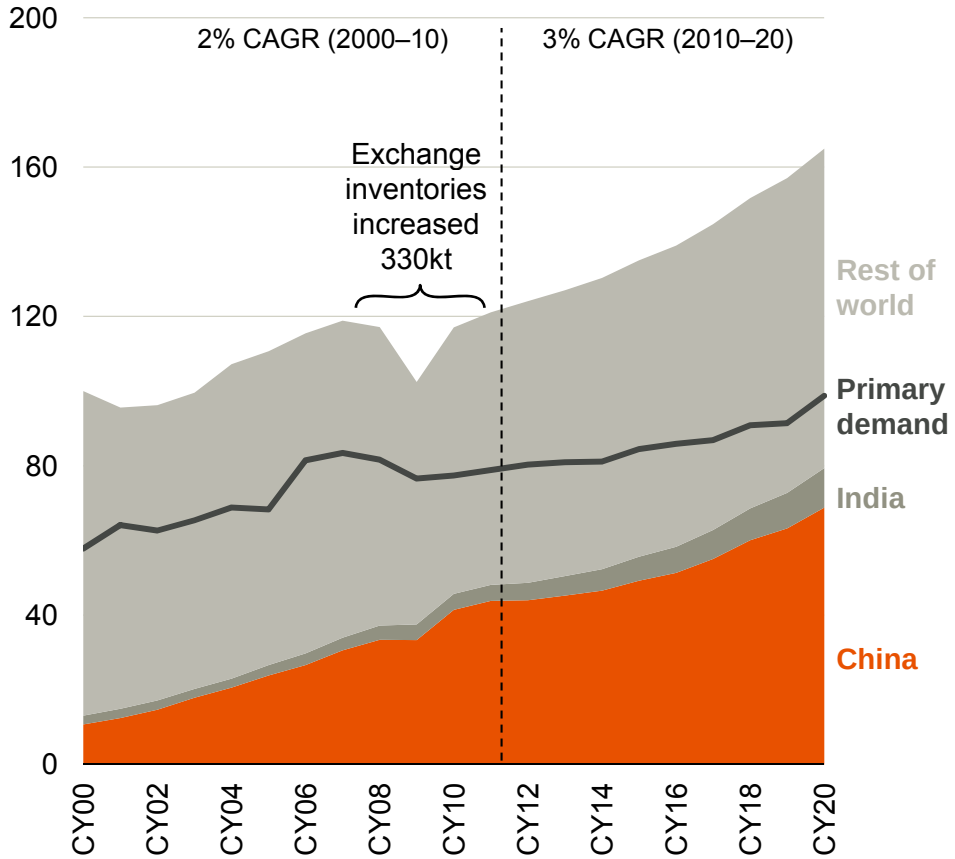
China urban city population size
(million people)

Source: United Nations (Population Division, Department of Economic and Social Affairs).

Strong primary demand growth expected despite increasing secondary supply

- Total semis demand expected to grow at 3% CAGR over the next decade
- Primary drivers will be China at approximately 5% CAGR and India at approximately 10% CAGR
- Rest of world demand growth is balanced between developing economies in Asia, Africa and Latin America and maturing demand profiles in Europe and North Asia
- Despite increasing secondary supply, primary demand growth remains robust

Copper semis demand
(index, 2000=100)

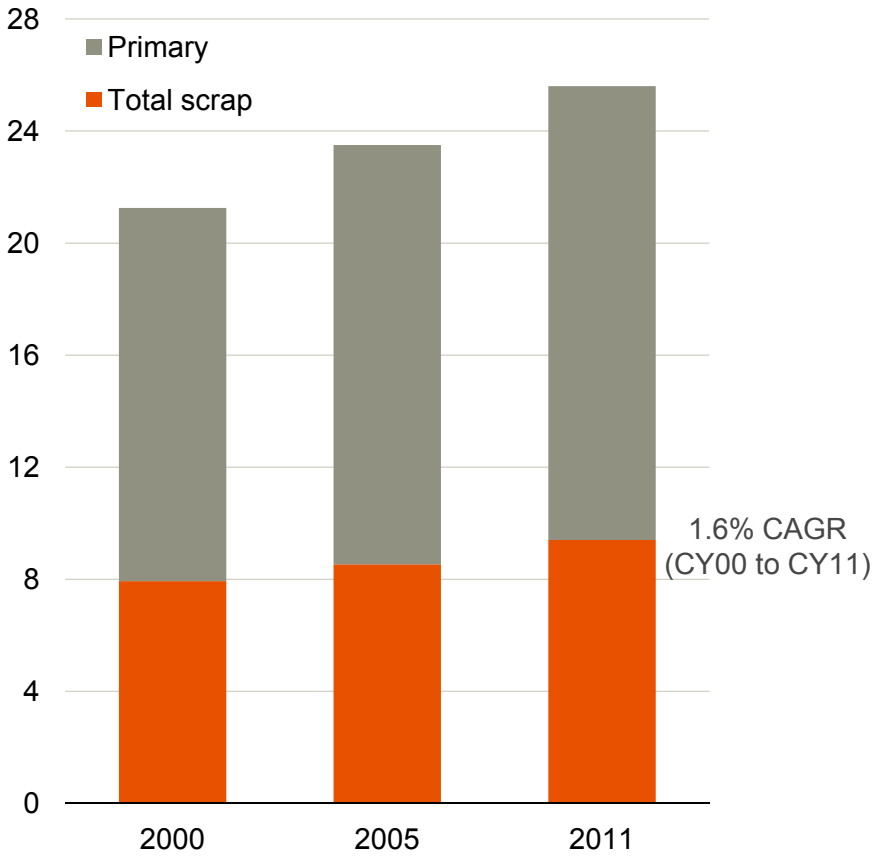


Source: ICA, CRU; Wood Mackenzie.

Secondary supply is increasing, but China remains short copper units

- While the size of the future scrap pool has increased significantly, the contribution of secondary units to global copper supply has only experienced modest growth
- Secondary supply from recycling is a function of product life-cycle, collection rates and recovery rates
- In China the recycling rate is already higher than the rest of the world due to a lower cost base and extensive collection infrastructure
- Chinese collection and recovery rates are expected to increase marginally over the coming decade
- This is offset by an extension to life-cycles in power infrastructure and construction applications
- Despite an increasing share of demand satisfied by secondary supply, China remains short copper units and primary supply is required

Scrap contribution to global copper supply
(mt)

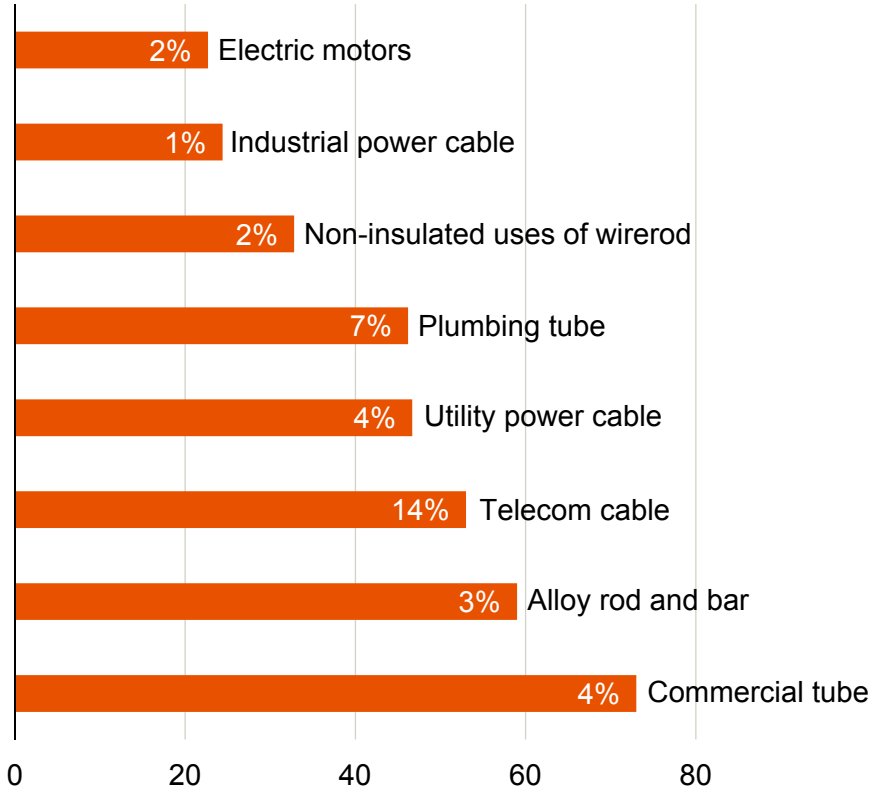


Source: Wood Mackenzie; CRU.

Copper: a material of choice and substitution risk is lower in key market sectors

- Overall substitution tonnage loss remains small at approximately 2% of the global market
- Limited impact in high volume sectors (wire, cable and electrical applications)
- Even at a price ratio of 4:1 between copper:aluminium, substitution has not significantly increased penetration
- Copper is the material of choice
  - it is energy efficient and carbon sensitive in a rising energy cost environment
- Detailed analysis shows that the copper industry is also evolving to defend market share

Substitution losses by product
(% share of product market lost in 2011)



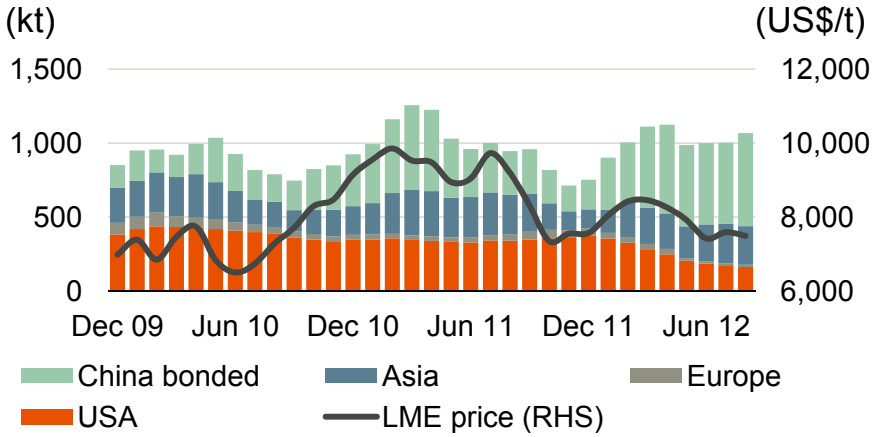
Substitution tonnage loss in 2011
(thousand tonnes)

Source: ICA; CRU International.

Exchange stocks are low, Chinese bonded stocks fill the gap

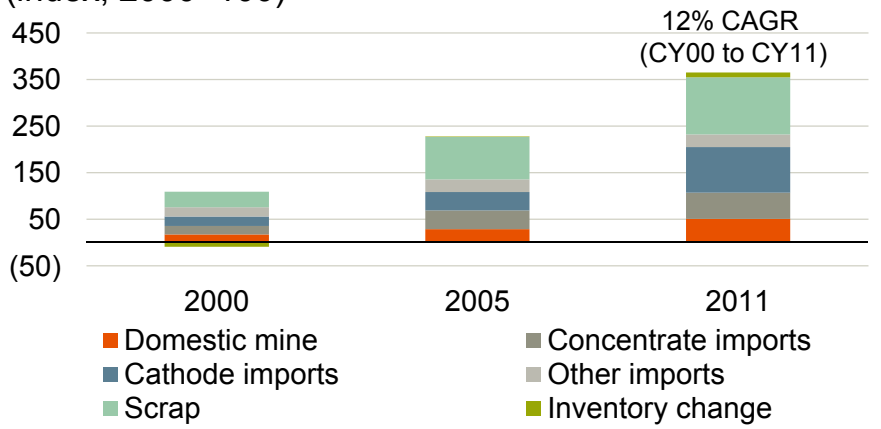
- Exchange stocks are at historically low levels as a percentage of demand, representing less than two weeks of global consumption
- The historical relationship between exchange stocks and price has broken down
- Shanghai bonded stocks have become more prominent as
  - China's proportion of global demand has increased
  - spot demand versus long term contract demand in other regions has decreased
- Stocking and de-stocking cycles both drive and respond to the SHFE/LME price arbitrage

Copper exchange/bonded stocks versus price



Underlying Chinese demand is strong

(index, 2000=100)

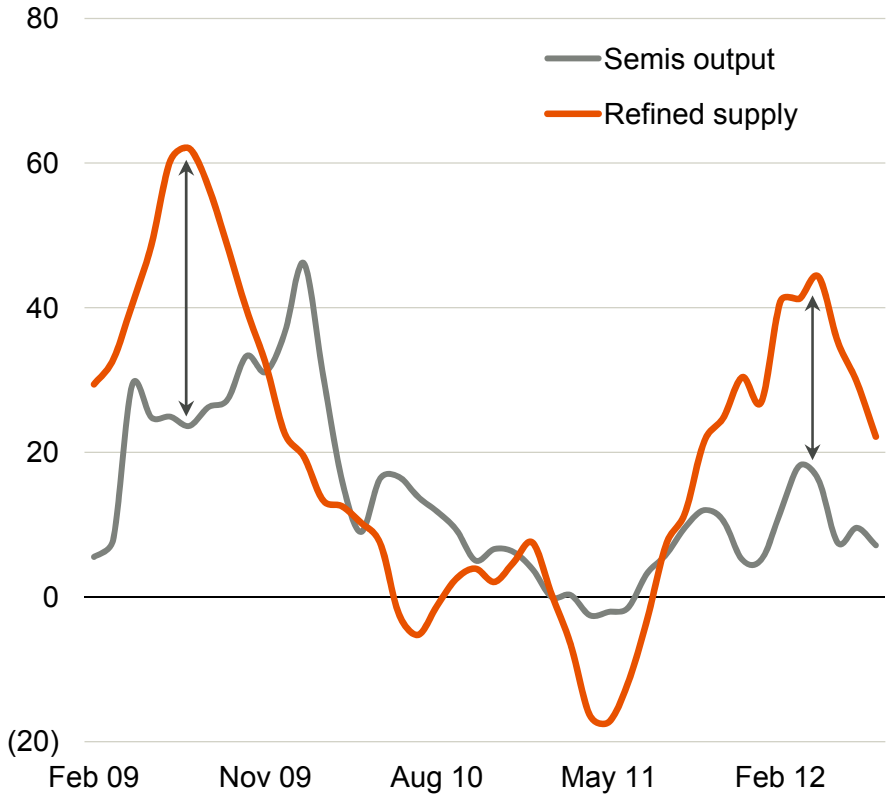


Source: LME; SHFE; Comex; NBS; China Customs.

Short term cyclical stock changes are not indicative of long term demand trends

- Chinese refined metal purchasing patterns are volatile
- Refined supply from domestic production and imports tend to peak and trough on downstream demand expectations, often amplifying short term inventory flow
- China is the most active spot market globally, but long term contracts are now more prevalent
- Consumers, traders and producers have different drivers for activity
- The long term demand trend for copper units is very positive, but short term volatility will continue

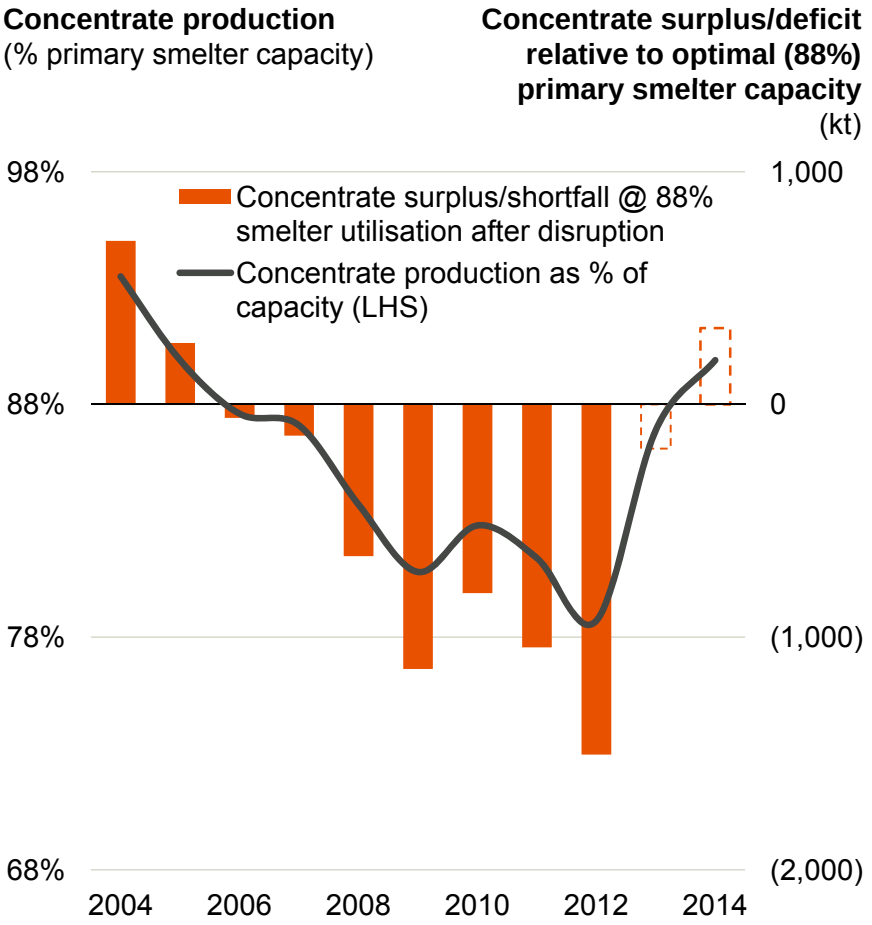
Chinese inventory cycle creates short term volatility
(% change YoY, 3 month moving average)



Source: NBS; China Customs; BHP Billiton analysis.

Concentrate availability is recovering but disruptions and delays will continue

- The global copper concentrate market is transitioning from a period of structural deficit towards a more balanced market
- TCRCs have more recently been driven by scarcity of concentrate
- Key sensitivity relates to potential for supply disruptions (average ~800 ktpa lost production over past five years)
- Forecast surplus continues to decline and be deferred as supply growth falls short of expectations
- China remains the location for lowest cost smelting but they continue to rely on approximately 3 mtpa of copper cathode
- Concentrate qualities are becoming more complex and premium concentrate such as Escondida will become increasingly valuable

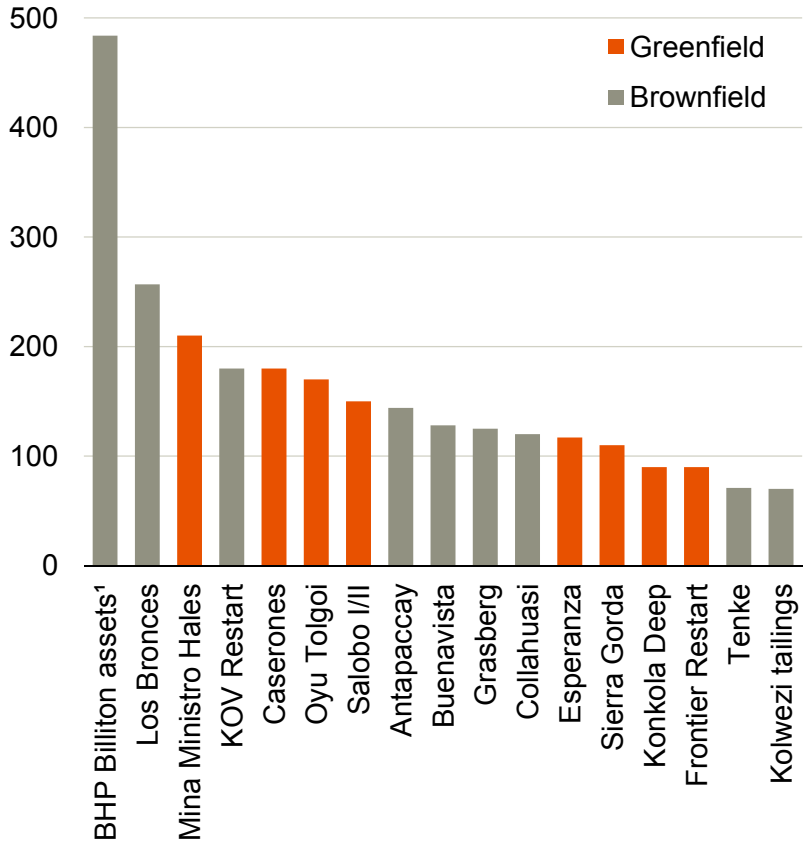


Source: Wood Mackenzie, CRU
Note: The Wood Mackenzie methodology for deriving the outlook is the added or subtracted requirement for copper-in-concentrate over and above the base case plus highly probable plus an allocation from probable projects.

Structural challenges remain in the longer term despite the short term potential for the market to rebalance

- In addition to the strong near term volume growth expected in our own portfolio, higher prices have incentivised a supply response from the industry
  - a number of new projects have or are scheduled to deliver new production in the short term
- This could lead to the curtailment of higher cost operations or an increase in exchange stocks

A selection of growth projects
(average incremental production, ktpa)

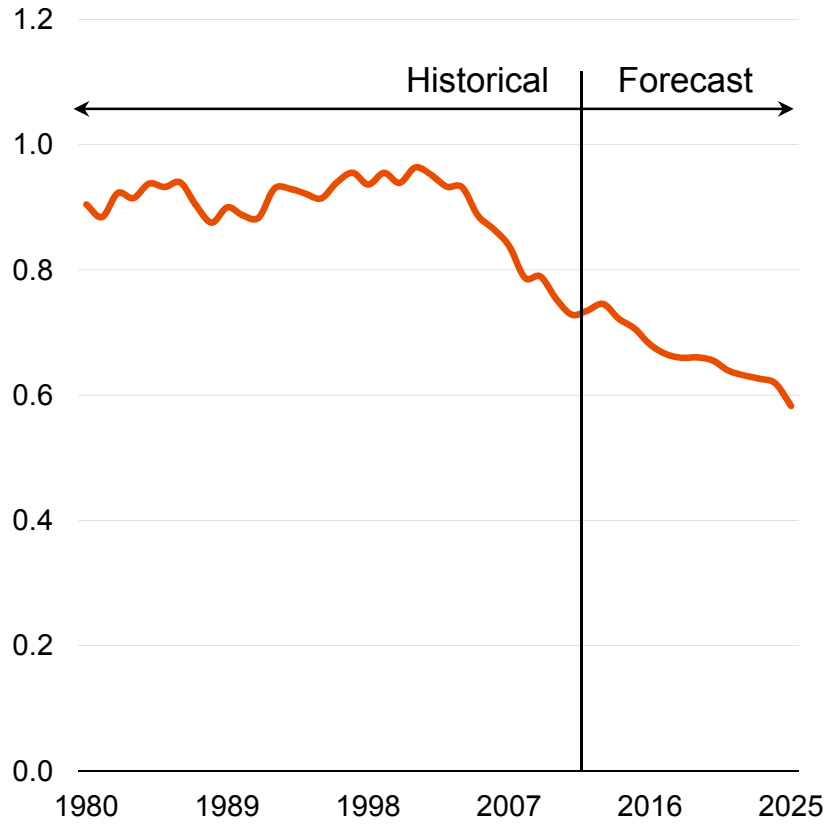


Source: Wood Mackenzie. BHP Billiton assets shown on 100% basis.
1. BHP Billiton Base Metals Assets, 100% basis for Escondida and Antamina.

Supply-side challenges: grade decline a major constraint

- Copper grades have declined at an average rate of 2.8% per annum over the last decade
- Lower grades have an impact on productivity, increasing costs as production decreases
- New discoveries have not been able to reverse the long term trend
- At the same time new technologies and improved processes have unlocked value in lower grade resources but at a higher cost

Industry average head grade
(% copper in process feed)

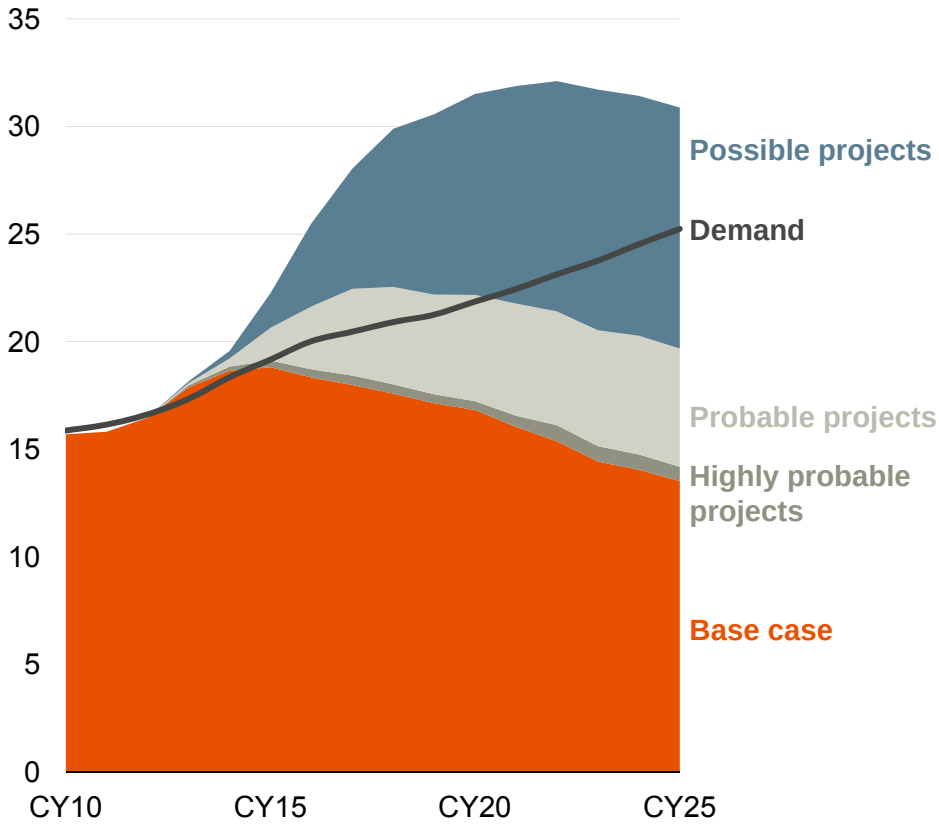


Source: Wood Mackenzie, Q2 2012 update.

Resource depletion infers that significant inducement of new supply is required

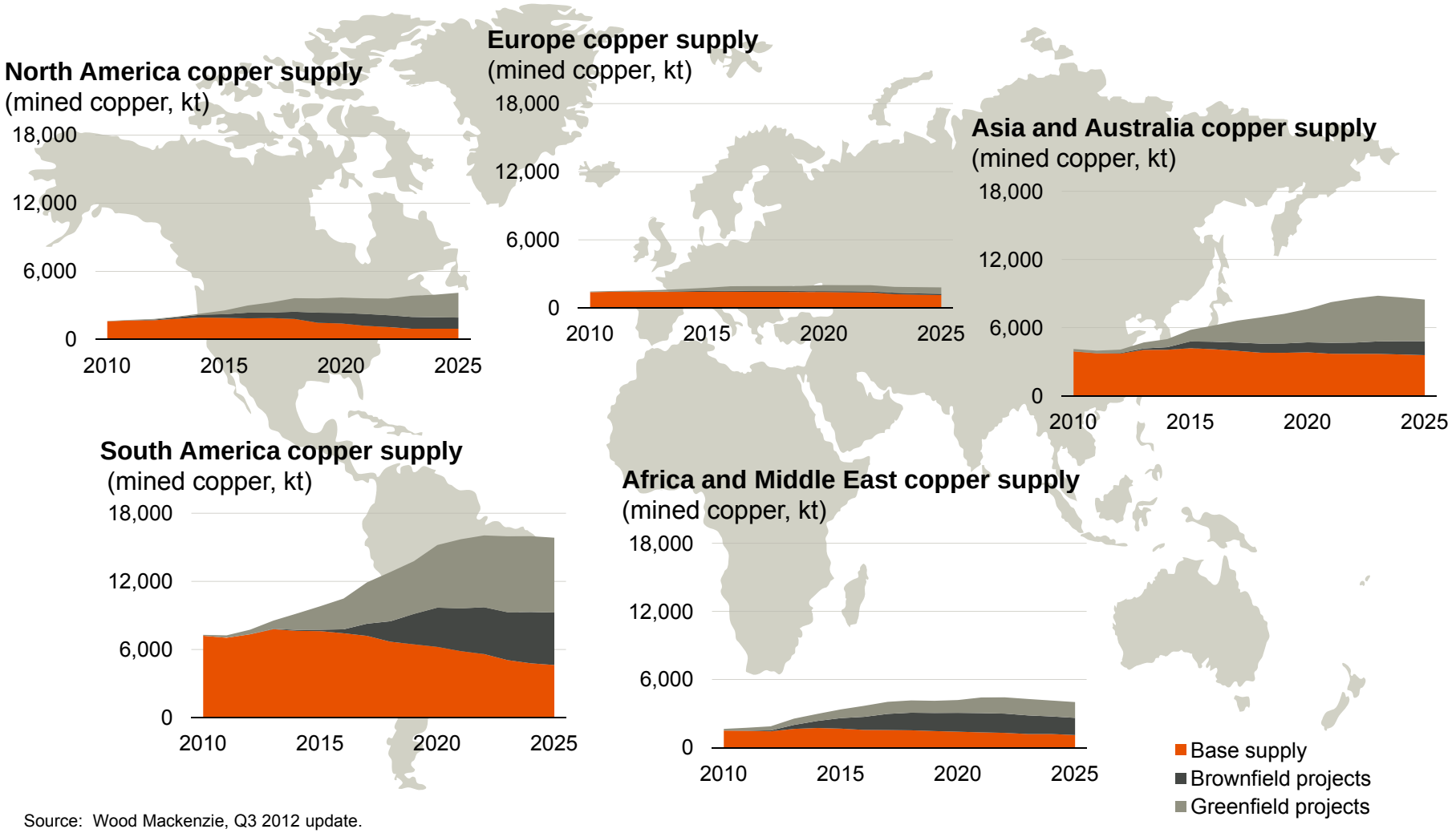
- Current production will continue to decline due to depletion of resources and lower ore grades
- Resource nationalisation, environmental regulations, capital and operating expenditure escalation, infrastructure constraints and taxation/royalty increases continue to challenge the supply response
- Substantial investment in brownfield and greenfield capacity will be required to cover the demand gap
- Therefore, on average, prices will need to remain high enough to induce new supply

Copper mine production
(mt)



Source: Wood Mackenzie, Q2 2012 update.

South America will provide the majority of additional supply, albeit with greenfield risk



Source: Wood Mackenzie, Q3 2012 update.

Base Metals key themes

- A strong, experienced and well established management team
- A high quality and uniquely diversified portfolio
- Building strong momentum in our Base Metals business
- Targeting a substantial reduction in costs
- Our longer term development options


bhpbilliton
resourcing the future