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6 October 2014

To: Australian Securities Exchange  
New York Stock Exchange

cc: London Stock Exchange  
JSE Limited

**IRON ORE BRIEFING AND WESTERN AUSTRALIA IRON ORE SITE TOUR**

Jimmy Wilson, President, Iron Ore will host an Iron Ore briefing and a Western Australia Iron Ore (**WAIO**) site tour on Monday 6 October 2014, Tuesday 7 October 2014 and Wednesday 8 October 2014.

A copy of the materials to be presented is attached.

Further information on BHP Billiton can be found at: [www.bhpbilliton.com](http://www.bhpbilliton.com).

**Nicole Duncan**  
Company Secretary

# NEWS RELEASE

**Release Time** IMMEDIATE

**Date** 6 October 2014

**Number** 17/14

## **COST REDUCTIONS AND CAPITAL EFFICIENT GROWTH AT WAIO**

BHP Billiton President Iron Ore, Jimmy Wilson, today announced plans to cut unit costs at Western Australia Iron Ore (WAIO) by at least 25 per cent and the potential to increase capacity there by 65 million tonnes per year at a very low capital cost.

Mr Wilson outlined BHP Billiton's view of the long-term supply and demand trends in the iron ore market.

"We continue to see healthy demand growth for iron ore in the mid-term as Chinese steel production is expected to increase by approximately 25 per cent to between 1.0 and 1.1 billion tonnes in the early to mid-2020s," he said.

"Meanwhile, steel production growth in other emerging economies is outpacing China as those nations urbanise and industrialise. We expect to see a compound annual growth rate for global steel production of between 2.5 and 3.0 per cent between now and 2030.

"Unsurprisingly, high prices over the last decade created the incentives needed for new entrants to join the market and traditional producers to substantially increase supply. As a result, growth in seaborne supply is expected to exceed growth in demand over the short to medium term.

"In anticipation of this transition, we turned our focus from major supply chain investment to productivity, cost reduction and capital efficient growth more than two years ago."

Mr Wilson highlighted the quality and footprint of the WAIO operations which consist of the four main joint ventures Mt Newman, Yandi, Mt Goldsworthy and Jumblebar.

"We have the strongest resource position in Western Australia and the quality of our ore bodies will help us sustain strong margins over the long term. We have already significantly cut the cost of production at WAIO and plan to go further," he said.

"We expect unit cash costs<sup>1</sup> of less than US\$20 per tonne<sup>2</sup> in the medium term, a reduction of more than 25 per cent on the average achieved in the 2014 financial year.

"Our reserves are concentrated around our four major mining hubs which will support a lower level of sustaining capital expenditure than required by our peers. With annual sustaining

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<sup>1</sup> Excludes freight and royalties

<sup>2</sup> Based on real 2014 terms, AUD:USD of 0.91

capex of approximately US\$5 per tonne over the next five years, we aim to be the lowest cost supplier to China on an all-in cash basis.”

Mr Wilson also said BHP Billiton could add 65 million tonnes of capacity at WAIO at a capital intensity of approximately US\$30 per annual tonne, taking total system capacity from 225 Mtpa to 290 Mtpa by the end of the 2017 financial year.

“The economics of further increasing our production are compelling. We completed our major supply chain investments some time ago and have since focussed on using BHP Billiton’s benchmarking systems to improve the performance of our equipment by systematically tackling the bottlenecks,” he said.

“We now expect to increase WAIO mine capacity to 275 Mtpa without the need for additional fixed plant investment. Beyond that, the Inner Harbour Debottlenecking and Jimblebar Phase 2 projects<sup>3</sup> will help us to reach 290 Mtpa of supply chain capacity at low capital cost.”

This week the Company is hosting investors and analysts on a tour of major hubs supporting WAIO operations, including Jimblebar, Yandi and Port Hedland.

Further information on BHP Billiton can be found at: [www.bhpbilliton.com](http://www.bhpbilliton.com).

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<sup>3</sup> Not Board approved

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Newman



# Safely growing production while lowering costs

**Jimmy Wilson**  
President Iron Ore  
6 October 2014



# Disclaimer

## Forward-looking statements

This release contains forward-looking statements, including statements regarding: trends in commodity prices and currency exchange rates; demand for commodities; plans, strategies and objectives of management; closure or divestment of certain operations or facilities (including associated costs); anticipated production or construction commencement dates; capital costs and scheduling; operating costs and shortages of materials and skilled employees; anticipated productive lives of projects, mines and facilities; provisions and contingent liabilities; tax and regulatory developments.

Forward-looking statements can be identified by the use of terminology such as 'intend', 'aim', 'project', 'anticipate', 'estimate', 'plan', 'believe', 'expect', 'may', 'should', 'will', 'continue', 'annualised' or similar words. These statements discuss future expectations concerning the results of operations or financial condition, or provide other forward-looking statements.

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 release. Readers are cautioned not to put undue reliance on forward-looking statements.

For example, our future revenues from our operations, projects or mines described in this release will be based, in part, upon the market price of the minerals, metals or petroleum produced, which may vary significantly from current levels. These variations, if materially adverse, may affect the timing or the feasibility of the development of a particular project, the expansion of certain facilities or mines, or the continuation of existing operations.

Other factors that may affect the actual construction or production commencement dates, costs or production output and anticipated lives of operations, mines or facilities include our ability to profitably produce and transport the minerals, petroleum and/or metals extracted to applicable markets; the impact of foreign currency exchange rates on the market prices of the minerals, petroleum or metals we produce; activities of government authorities in some of the countries where we are exploring or developing these projects, facilities or mines, including increases in taxes, changes in environmental and other regulations and political uncertainty; labour unrest; and other factors identified in the risk factors discussed in BHP Billiton's filings with the U.S. Securities and Exchange Commission (the "SEC") (including in Annual Reports on Form 20-F) which are available on the SEC's website at [www.sec.gov](http://www.sec.gov).

Except as required by applicable regulations or by law, the Group does not undertake any obligation to publicly update or review any forward-looking statements, whether as a result of new information or future events.

## 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 release may also include certain non-IFRS measures including Underlying attributable profit, Underlying basic earnings per share, Underlying EBITDA interest coverage, Adjusted effective tax rate, Underlying EBIT margin, Underlying EBITDA margin, Underlying return on capital, Free cash flow, Net debt and Net operating assets. 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 and should not be considered as an indication of or alternative to an IFRS measure of profitability, financial performance or liquidity.

## No offer of securities

Nothing in this release should be construed as either an offer to sell or a solicitation of an offer to buy or sell BHP Billiton securities or securities in the new company (if the demerger is implemented) in any jurisdiction, or be treated or relied upon as a recommendation or advice by BHP Billiton.

## Reliance on third-party information

The views expressed in this release 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 release should not be relied upon as a recommendation or forecast by BHP Billiton.

# Disclaimer

## Ore Reserves, Mineral Resources and Exploration Targets

The information in this presentation that relates to the FY2014 Western Australia Iron Ore (WAIO) Ore Reserves, Mineral Resources (inclusive of Ore Reserves), Exploration Targets, and Samarco Ore Reserves and Mineral Resources (inclusive of Ore Reserves) was first reported by the Company in compliance with the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012' ('The JORC Code 2012 Edition') in market releases dated as follows:

BHP Billiton Operational Review for the Year Ended 30 June 2014 – 23 July 2014 (WAIO Mineral Resources); BHP Billiton Unlocking Shareholder Value Presentation – 19 August 2014 (WAIO Exploration Targets); and 2014 BHP Billiton Annual Report – 25 September 2014 (WAIO Ore Reserves, Samarco JV Mineral Resources and Samarco JV Ore Reserves). All reports (including those referenced below) are available to view on <http://www.bhpbilliton.com>.

WAIO FY2007 Mineral Resources and Ore Reserves are compiled by P. Whitehouse (MAusIMM) and T. Cockerill (MAusIMM) respectively, from the 2007 BHP Billiton Annual Report, dated 20 September 2007. WAIO FY2007 Exploration Targets are compiled by J. Knight (MAIG) from the BHP Billiton Western Australia Iron Ore Site Tour Presentation, dated 27 September 2011. This information was reported under the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2004' ('The JORC Code 2004 Edition').

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources and Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

WAIO FY2014 Exploration Targets, Mineral Resources and Ore Reserves are compiled by: J. Knight (MAIG), P. Whitehouse (MAusIMM) and T. Cockerill (MAusIMM) respectively. Samarco JV FY2014 Mineral Resources are reported by: L. Bonfioli (MAusIMM), J. P. da Silva (MAusIMM) and L. Goncalves de Rezende (MAusIMM). Samarco JV FY2014 Ore Reserves are reported by: D. Nunes (MAusIMM) and J. P. da Silva (MAusIMM) who are all employed by Samarco Mineração SA at the time of reporting. The above-mentioned persons are full-time employees of BHP Billiton, unless otherwise stated, and have the required qualifications and experience to qualify as Competent Persons for Exploration Targets, Mineral Resources and Ore Reserves under the relevant editions of the JORC Code. The compilers verify that this presentation is based on and fairly reflects the Exploration Targets, Mineral Resources and Ore Reserves information in the supporting documentation and agree with the form and context of the information presented.

The Exploration Targets, Mineral Resources and Ore Reserves breakdown by classification for WAIO FY2014 against FY2007 (100% basis) and Mineral Resources and Ore Reserves breakdown by classification for Samarco JV (100% basis) are contained in Table 1. All tonnes and grade information has been rounded, hence small differences may be present in the totals. Tonnages are reported on a wet basis in billions of tonnes (Bt). The range of Exploration Targets is estimated from geological information including drill holes, 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 Resources. It should not be expected that the quality of the Exploration Targets is equivalent to that of the Mineral Resources. Deterministic target ranges are generated by multidisciplinary teams using a formal company procedure. Exploration Targets will be tested with future exploration activities in alignment with Business strategy.

## Ore Reserves, Mineral Resources and Exploration Targets

Table 1

| Deposit    | Financial Year | Proved Reserves (Bt) | Probable Reserves (Bt) | Total Ore Reserves (Bt) | Measured Resources (Bt) | Indicated Resources (Bt) | Inferred Resources (Bt) | Total Mineral Resources (Bt) | Range of Exploration Targets (Bt) |                |                | BHP Billiton interest (%) |
|------------|----------------|----------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|------------------------------|-----------------------------------|----------------|----------------|---------------------------|
|            |                |                      |                        |                         |                         |                          |                         |                              | Low                               | Mid            | High           |                           |
| WAIO       | 2007           | 1.3 @ 60.5% Fe       | 1.1 @ 60.8% Fe         | 2.4 @ 60.6% Fe          | 1.7 @ 60.6% Fe          | 2.1 @ 60.3% Fe           | 4.2 @ 59.9% Fe          | 8.0 @ 60.1% Fe               | 12                                | 24             | 36             | 87 <sup>1</sup>           |
| WAIO       | 2014           | 1.7 @ 60.5% Fe       | 2.0 @ 61.0% Fe         | 3.7 @ 60.7% Fe          | 2.6 @ 60.0% Fe          | 5.6 @ 59.8% Fe           | 15 @ 59.0% Fe           | 23 @ 59.3% Fe                | 18 @ 56-60% Fe                    | 31 @ 56-60% Fe | 58 @ 56-60% Fe | 88 <sup>1</sup>           |
| Samarco JV | 2014           | 1.8 @ 40.1% Fe       | 1.1 @ 38.8% Fe         | 2.9 @ 39.6% Fe          | 3.0 @ 39.3% Fe          | 2.8 @ 37.2% Fe           | 1.7 @ 36.2% Fe          | 7.5 @ 37.8% Fe               |                                   |                |                | 50                        |

1. WAIO BHP Billiton interest is reported as Pilbara Ore Reserve tonnes weighted average across all Joint Ventures. BHP Billiton ownership varies between 85% and 100%.

# Key themes

- Iron Ore will remain a key pillar of a simplified BHP Billiton
- Growth in low-cost iron ore supply will continue to outpace demand
- We have the strongest resource position in the Pilbara
- We value safe and sustainable operations above all else
- We are targeting FOB unit costs of less than US\$20 per tonne at WAIO over the medium term and will require less sustaining capital investment than others in the industry
- We plan to grow WAIO production by 65 Mtpa at a capital intensity of approximately US\$30 per annual tonne

# A simpler and more productive organisation

## BHP Billiton core portfolio<sup>1</sup>

### Operated

Minerals



Western Australia Iron Ore



Olympic Dam



Escondida



Pampa Norte



Queensland Coal<sup>2</sup>



NSW Energy Coal



Jansen project

### Non-operated



Samarco



Antamina



Cerrejón

Petroleum



Onshore US



Shenzi



Angostura



Pyrenees



Macedon



Atlantis



Mad Dog



Bass Strait



North West Shelf

## Under review



Nickel West



New Mexico Coal



Smaller petroleum assets

1. Excludes exploration, appraisal and early stage development assets.

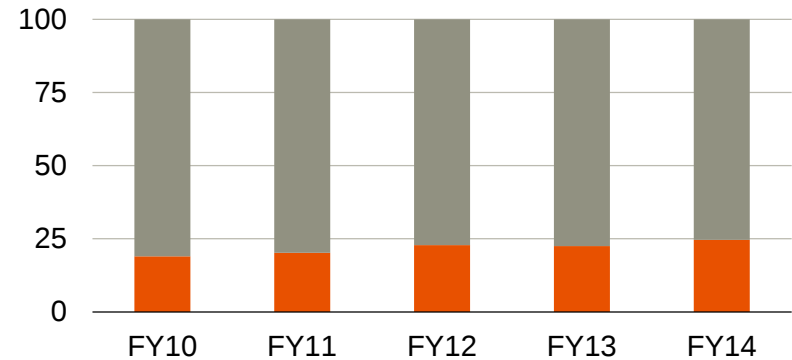
2. Queensland Coal comprises the BHP Billiton Mitsubishi Alliance (BMA) asset, jointly operated with Mitsubishi, and the BHP Billiton Mitsui Coal (BMC) asset operated by BHP Billiton.

# Iron Ore – a key pillar of BHP Billiton

- Our Iron Ore business, comprising Western Australia Iron Ore (WAIO) and Samarco, has delivered exceptional returns over the last five years
  - 22% of total BHP Billiton production<sup>1</sup>
  - average Underlying EBIT margin<sup>2</sup> of 59%
  - US\$57 billion of Underlying EBIT representing 46% of the Group total
  - invested US\$22 billion representing 28% of the Group total
  - generated an average return on net operating assets<sup>3</sup> of 66%

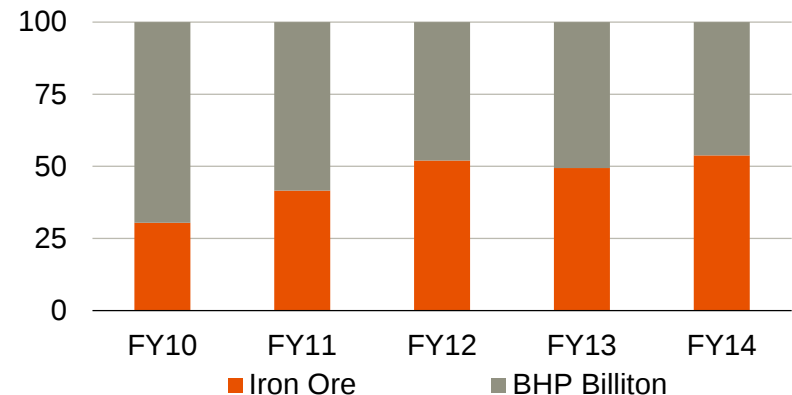
## A major contributor to production

(% of BHP Billiton production<sup>1</sup>)



## A major contributor to earnings

(% of BHP Billiton Underlying EBIT)



Note: Financial information for FY13 onwards has been included on the basis of IFRS 10, IFRS 11 and IFRIC 20.

1. Based on copper equivalent production calculated using FY09 average realised prices.

2. Excludes third party trading activities.

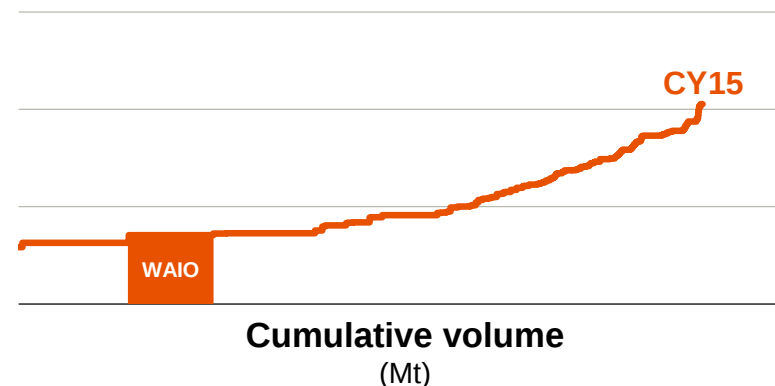
3. Represents Underlying EBIT divided by net operating assets.

# WAIO – our flagship Iron Ore asset

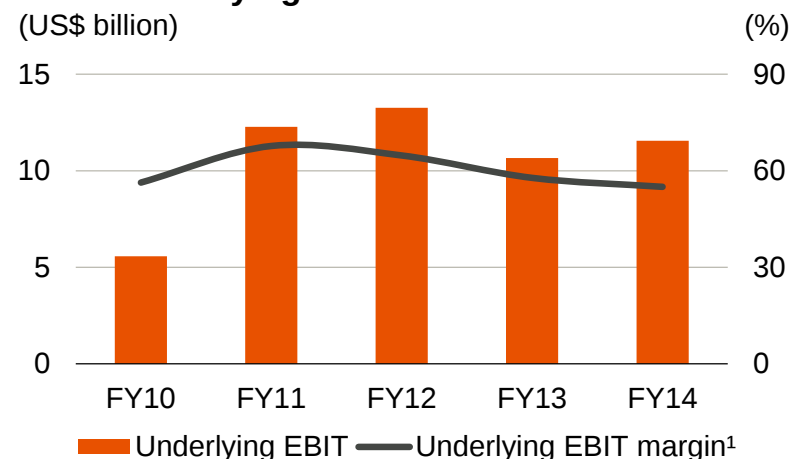
- WAIO generated US\$53 billion of Underlying EBIT over the last five years at an average Underlying EBIT margin<sup>1</sup> of 61%
- We operate four substantial mining hubs that produce a suite of high-quality products
- Installed rail infrastructure is capable of delivering more than 300 Mtpa of capacity with modest investment
  - 325 km of dual track rail in place
- The Port Hedland inner harbour is capable of supporting our growth objectives
  - each of our five car dumpers have optimised throughput potential of 55–60 Mtpa
  - each of our eight shiploaders have optimised throughput potential of 35–40 Mtpa
  - we have eight berths and an option for two additional berths at Burgess Point

## A leading low cost supplier of iron ore

(CIF China equivalent basis, US\$/t, nominal)



## WAIO Underlying EBIT

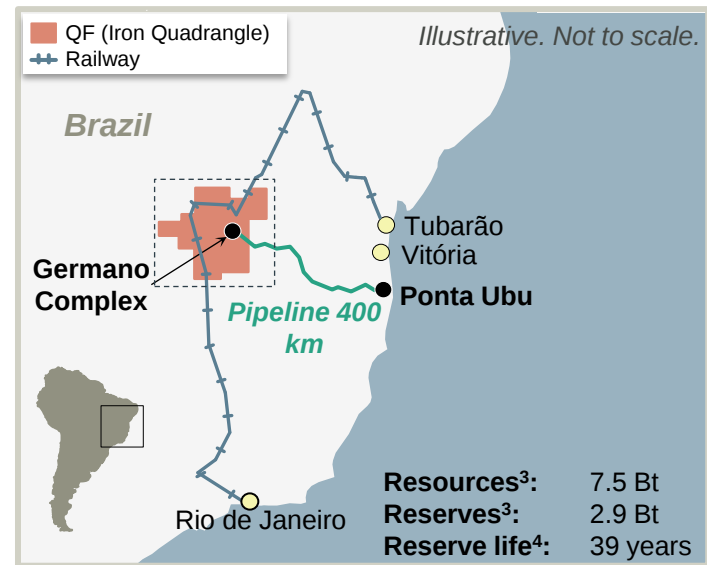


Source: Macquarie cost curve, August 2014.

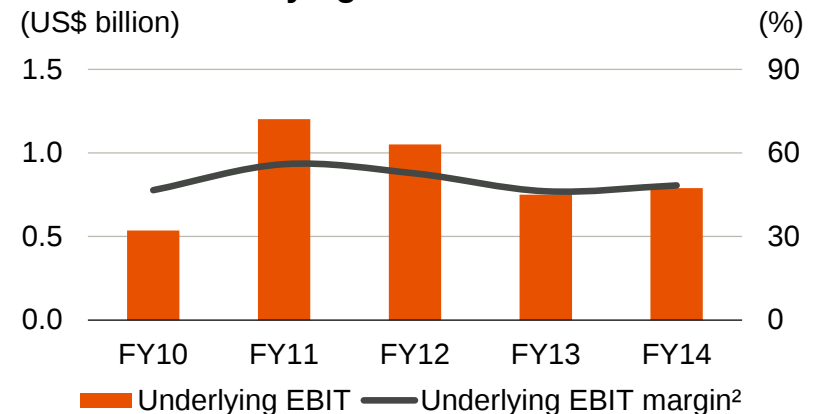
1. Excludes third party trading activities.

# Samarco – a world class pellet operation

- 50:50 joint venture with Vale
- A long-life, high-margin operation located in Brazil
- Its high-quality pellets add to the diversity of BHP Billiton's product portfolio
  - well positioned to service key demand centres in Europe and the Middle East
- Generated US\$4.3 billion<sup>1</sup> of Underlying EBIT over the last five years at an average Underlying EBIT margin<sup>2</sup> of 51%
  - fourth pellet plant recently commissioned with latent pipeline and port capacity



## Samarco Underlying EBIT<sup>1</sup>



1. BHP Billiton share.

2. Excludes third party trading activities.

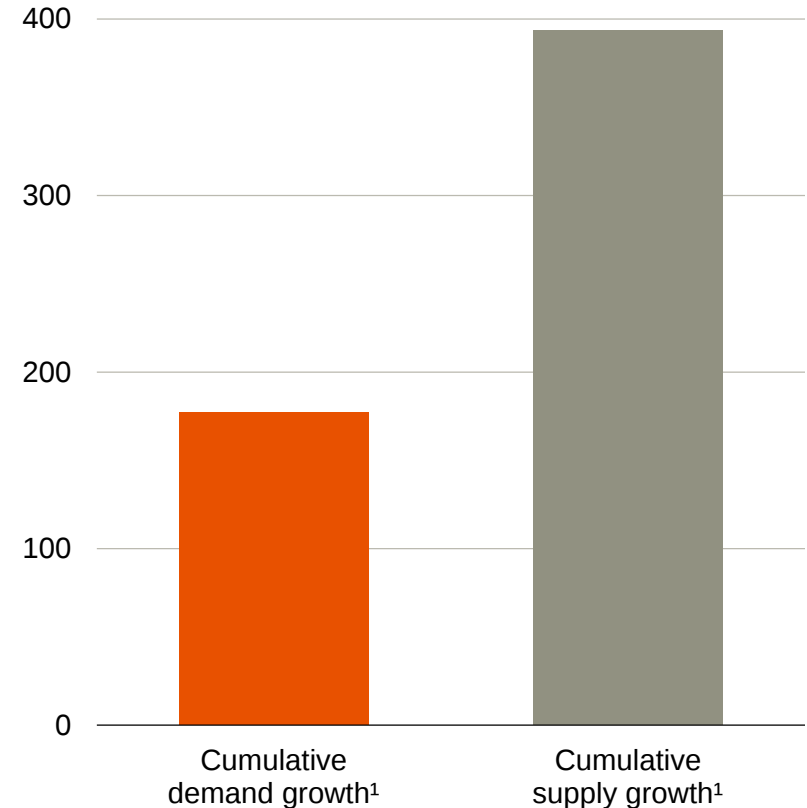
3. Resource and Reserve confidence classification and grades are tabulated in Disclaimer Table 1 on slide 3.

4. Represents the current scheduled life of mine which considers increasing tonnes as a result of decreasing grades to deliver a consistent concentrate product.

# Growth in low-cost iron ore supply will continue to outpace demand

- Iron ore is abundant in the Earth's crust
- The availability of capital is the primary barrier to entry
- High prices over the last decade have incentivised new entrants and substantial growth in traditional supply
- As a result, growth in seaborne supply is expected to exceed demand in the short to medium term
- This will result in a flattening of the iron ore cost curve
- We planned for this eventuality by turning our attention away from major supply chain investment to focus on productivity, cost reduction and capital-efficient growth

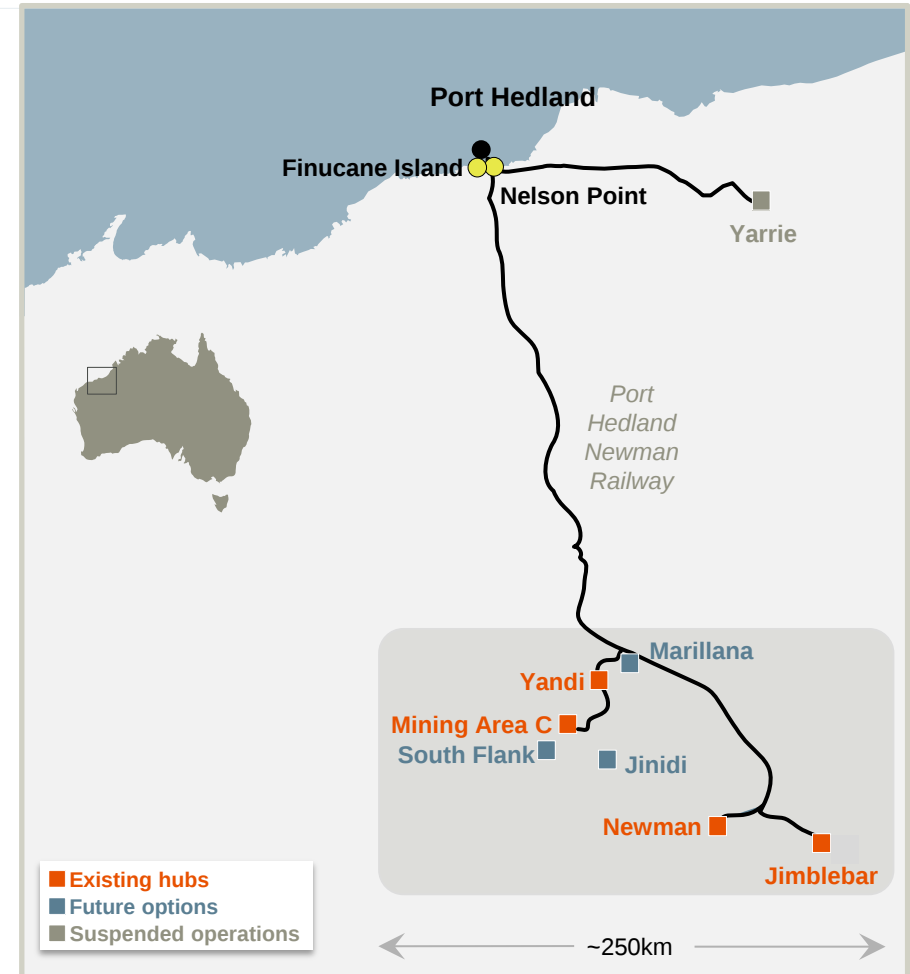
## Additional seaborne supply will outweigh demand (2013-2016, Mt, dry, 62% Fe)



1. Demand refers to contestable demand. Future supply growth refers to BHP Billiton estimates of incremental supply from the majors only.

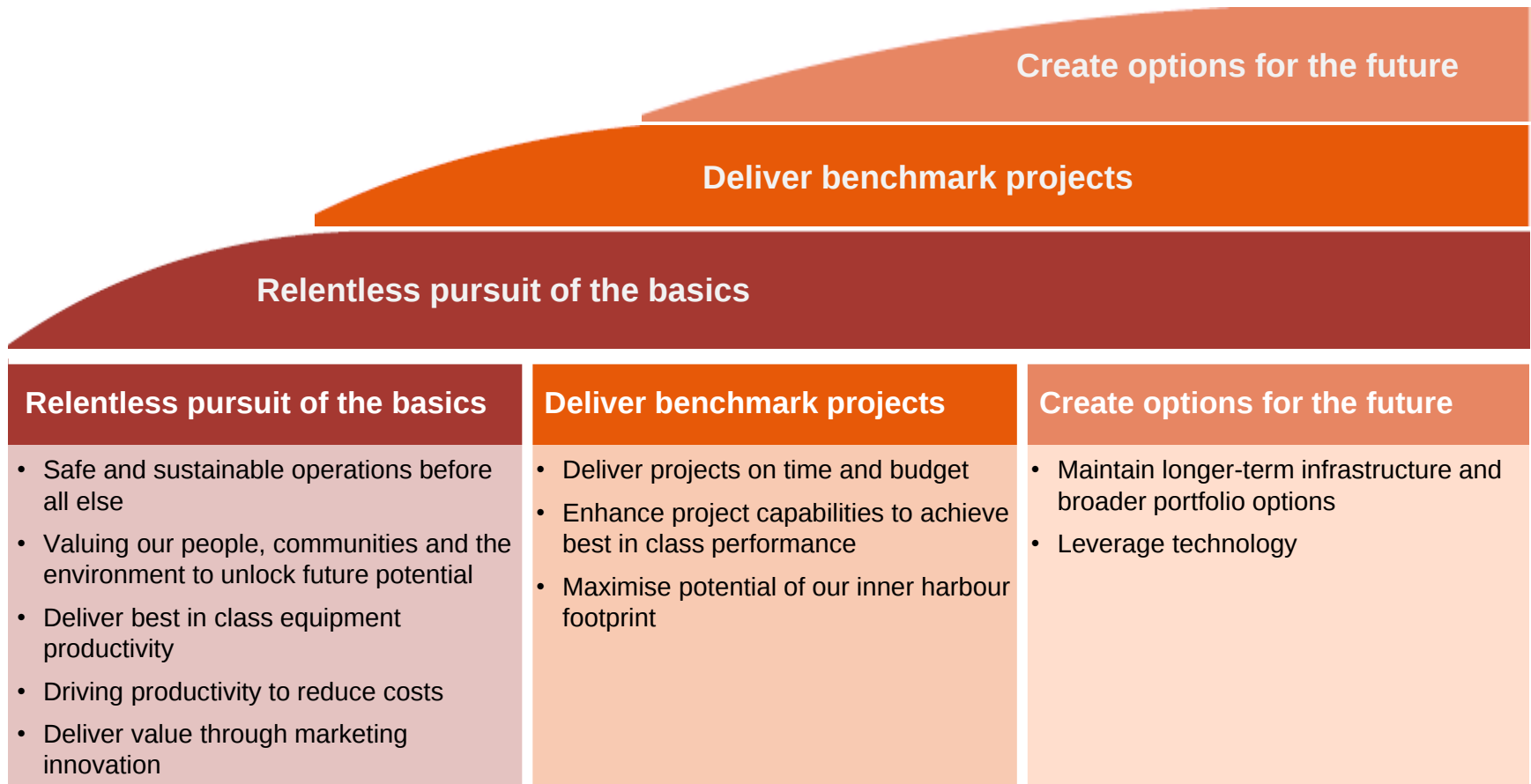
# We have the strongest resource position in the Pilbara

- Our Pilbara Mineral Resource has tripled<sup>1</sup> in size over the last seven years
- The scale and quality of our ore bodies and their concentrated geographic footprint underpins our competitive advantage
  - a low strip ratio of 1.3x
  - current operations are primarily above the water table and only 2% of production is beneficiated
  - can maintain our suite of high-quality products for decades to come
- Our four large-scale mining hubs are connected to a single integrated supply chain
- We have the resource endowment required to grow these hubs while benefiting from a lower rate of sustaining capital investment



1. Relates to our Total Resource FY07 versus FY14. Resource and Reserve confidence classification and grades are tabulated in Disclaimer Table 1 on slide 3.

# Our plan will maximise shareholder value



# An experienced management team



**Michiel Hovers**  
Vice President  
Marketing



**Brett Swayn**  
Vice President HSE



**Andrew Carey**  
Vice President  
Human Resources



**Randal Barker**  
Vice President  
Group Legal



**Julius Matthys**  
Vice President  
Corporate Affairs



**Ricardo Escobar**  
Vice President  
Information  
Management



**Eddy Haegel**  
Vice President  
Production Mines



**Rag Udd**  
Vice President  
Production Logistics  
& Infrastructure



**Tony Ottaviano**  
Vice President  
Strategy, Development  
& Planning



**Jac Fourie**  
Vice President  
Projects



**Margaret Beck**  
Vice President  
Finance

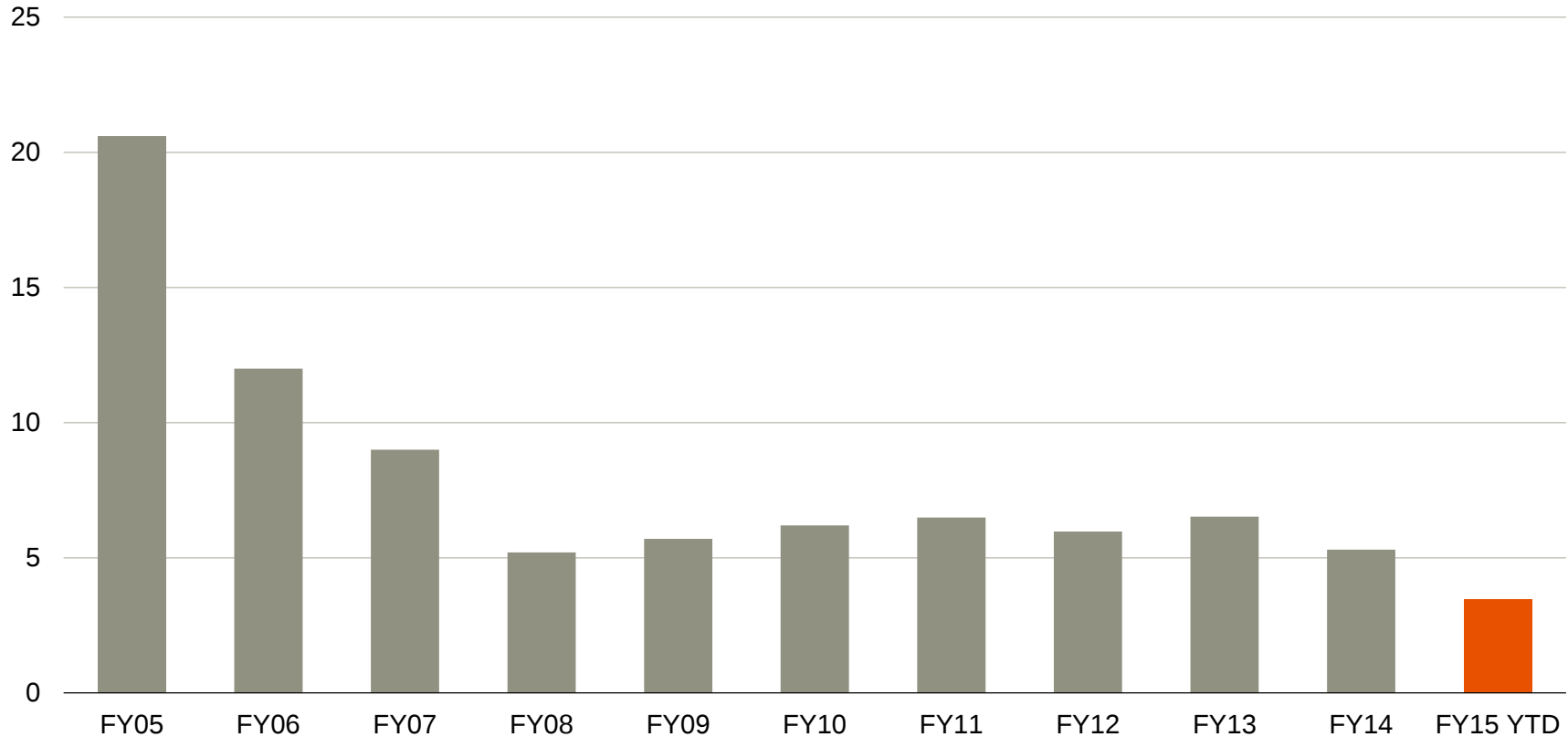


**Jimmy Wilson**  
President Iron Ore

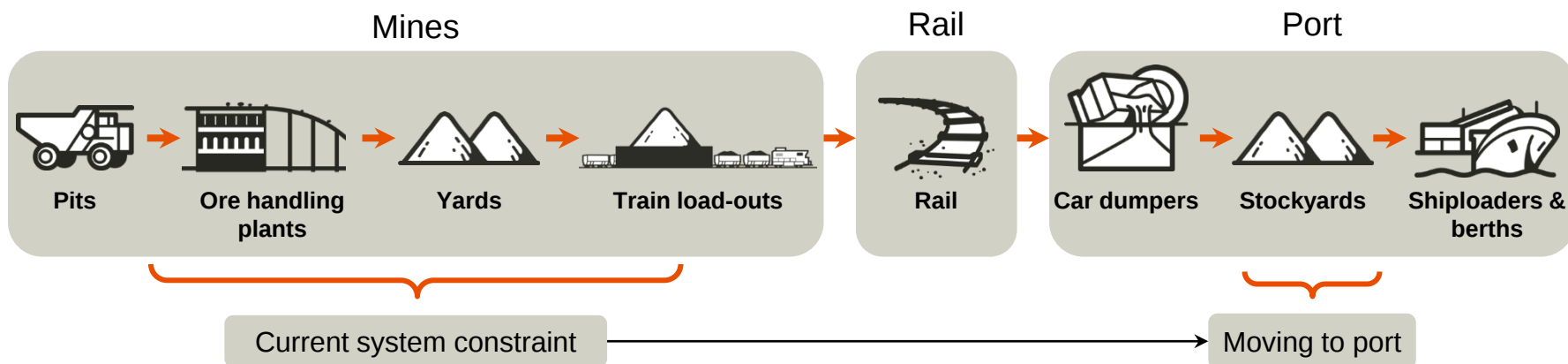
# Safe and sustainable operations above all else

## Total Recordable Injury Frequency (TRIF)

(WAIO, number of recordable injuries per million hours worked)



# Our integrated supply chain



## Key productivity levers at mines:

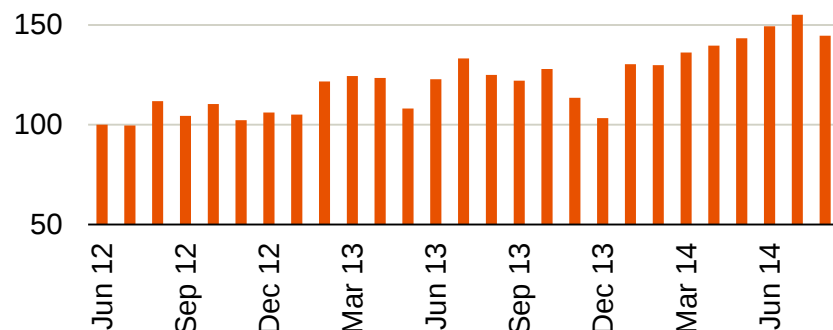
- Availability, utilisation and rate of excavators, trucks and fixed plant

## Key productivity levers at port:

- Flow through the stockyards
- Availability, utilisation and rate of key routes

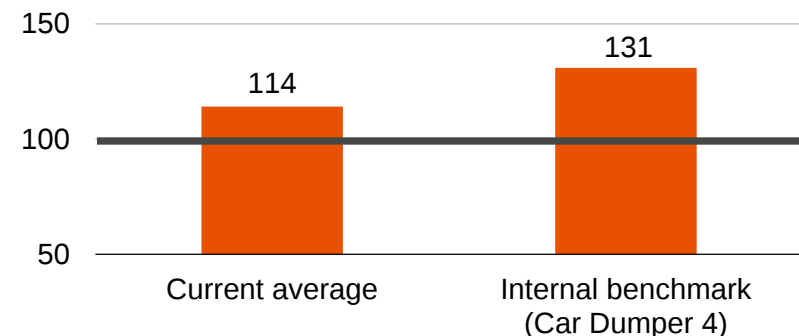
## WAIO excavator total movement rate

(material moved, 12 month moving average, index, June 2012=100)



## WAIO car dumping performance

(nameplate capacity = 100)

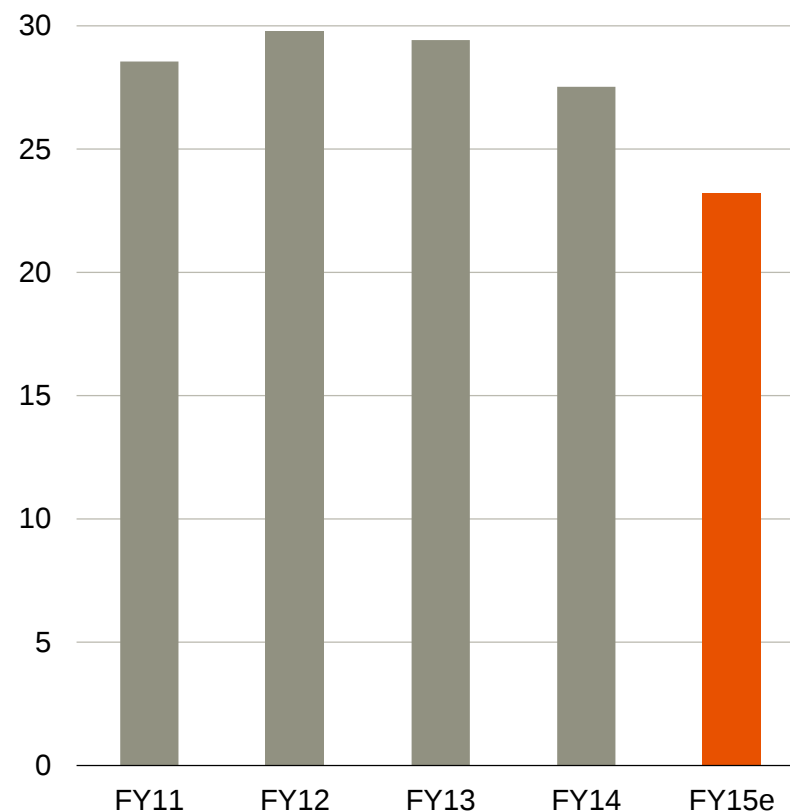


# Targeting FOB unit cash costs of less than US\$20 per tonne

- As production grows we will maintain a relentless focus on costs
  - strong early momentum as we reduced unit cash costs<sup>1</sup> by 12% in H2 FY14 to US\$25.89/t
- We are targeting unit cash costs<sup>1</sup> of less than US\$20/t<sup>2</sup> in the medium term
- Average sustaining capital expenditure of ~US\$5/t is anticipated in our five year plan
  - underpinned by our major hubs and concentrated resource footprint
- On an all-in cash basis we aim to be the lowest-cost supplier to China

## A significant reduction in WAIO unit costs<sup>1</sup>

(US\$/t)

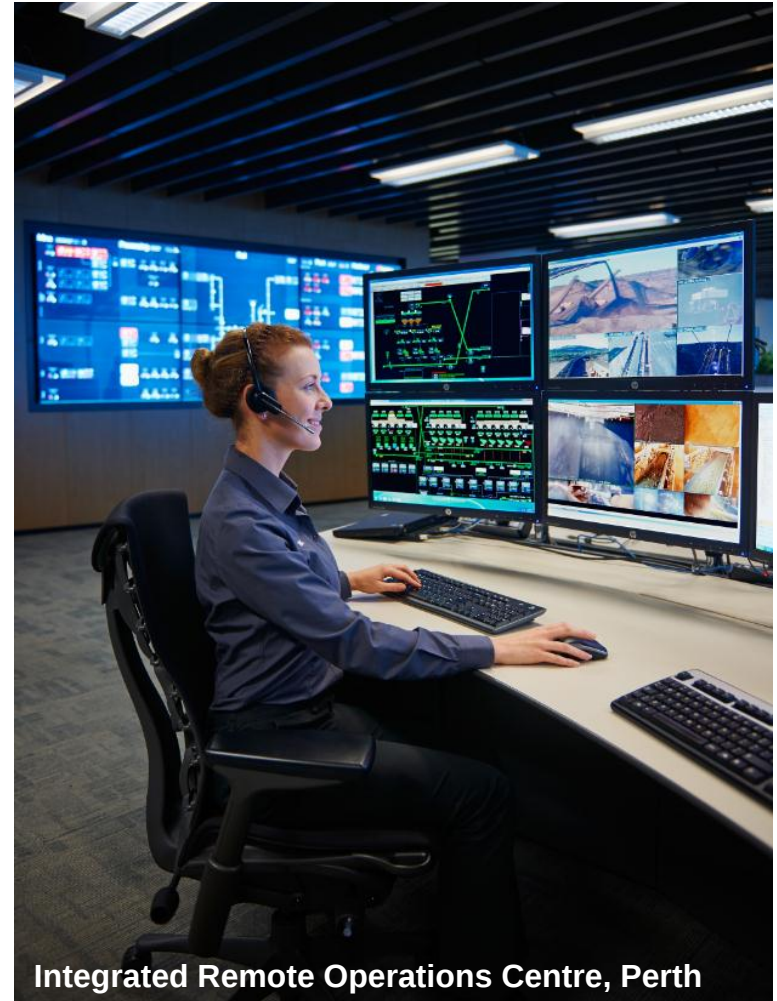


1. Excludes freight and royalties.

2. Based on real 2014 terms. AUD:USD of 0.91.

# Technology is a key productivity enabler

- Our technology agenda underpins the path to 290 Mtpa<sup>1</sup> and beyond
  - disciplined and value-based approach to technology driven by the business strategy
- Key technology enablers
  - our fully functioning Integrated Remote Operations Centre (IROC) continues to unlock capacity and synergies across the supply chain
  - autonomous haulage and drill rig trials are well advanced
  - we are actively studying best in class autonomous above rail capability
  - smarter exploration tools will substantially reduce resource definition costs



Integrated Remote Operations Centre, Perth

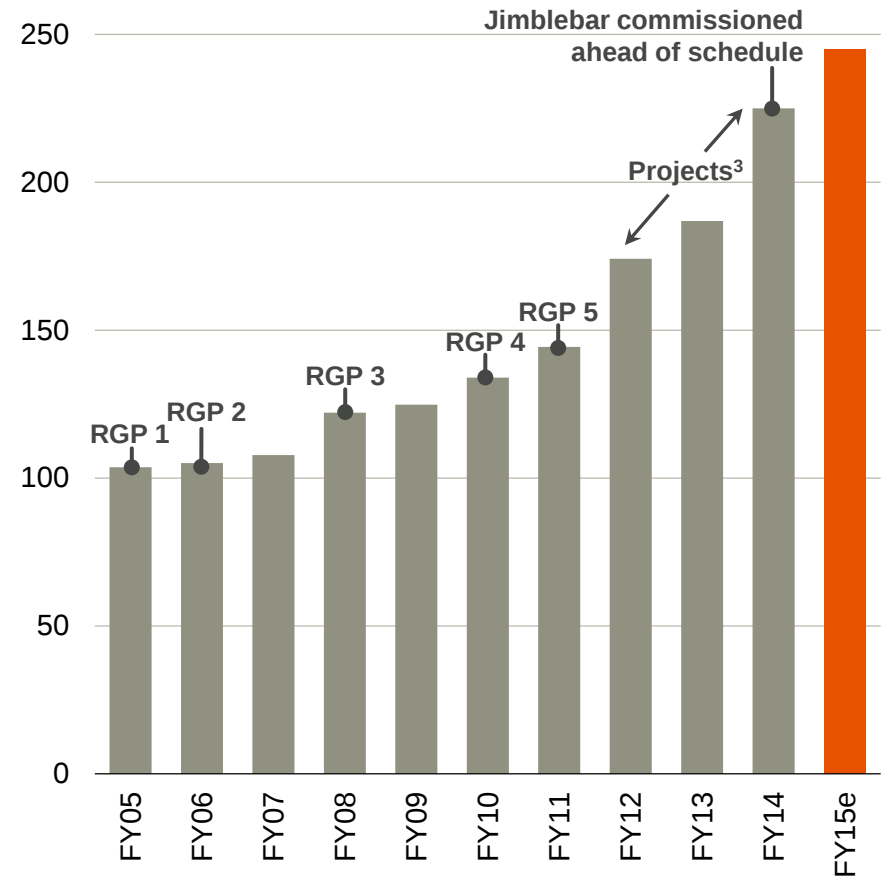
1. 100% basis.

# A proven track record of project delivery

- Over the last decade we invested US\$25 billion in the Pilbara
- As a result we have more than doubled iron ore production in a strong pricing environment
- WAIO achieved a fourteenth consecutive annual record in FY14 of 225 Mt<sup>1</sup>
  - Jimblebar delivered first production six months ahead of schedule
  - supplemented by a series of volume enhancing initiatives
- Full year guidance for FY15 is 245 Mt<sup>1</sup>
  - we have proven system capability significantly ahead of this rate

## Outstanding project delivery capability<sup>2</sup>

(production<sup>1</sup>, Mtpa)



1. 100% basis.

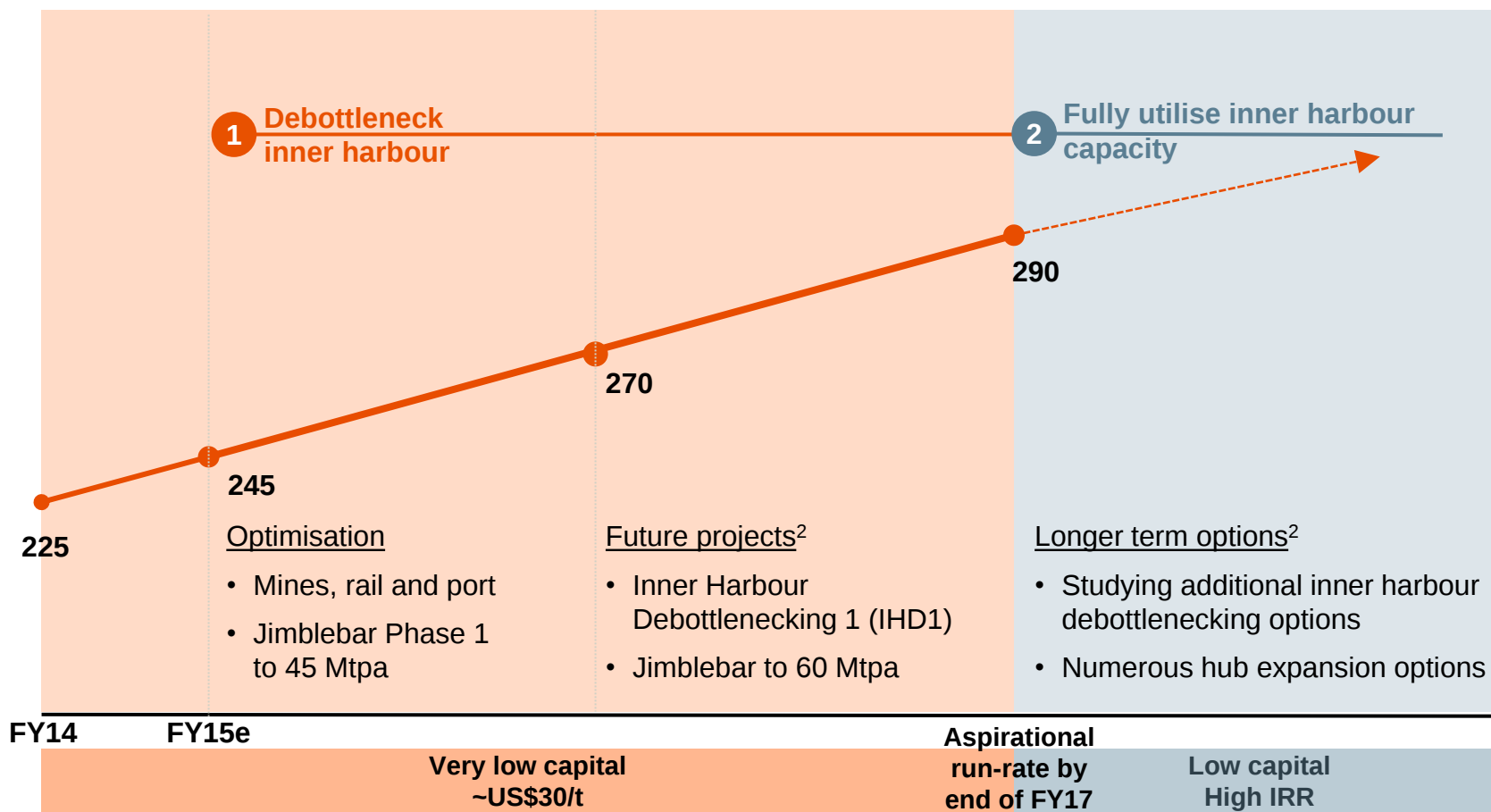
2. Rapid Growth Program (RGP) milestones indicate first ore dates.

3. WAIO Port Hedland Inner Harbour Expansion, WAIO Port Blending and Rail Yard Facilities, WAIO Jimblebar Mine Expansion.

# We plan to grow WAIO production by 65 Mtpa at a capital intensity of ~US\$30 per annual tonne

## Delivering value from our installed infrastructure<sup>1</sup>

(Mtpa, 100% basis)



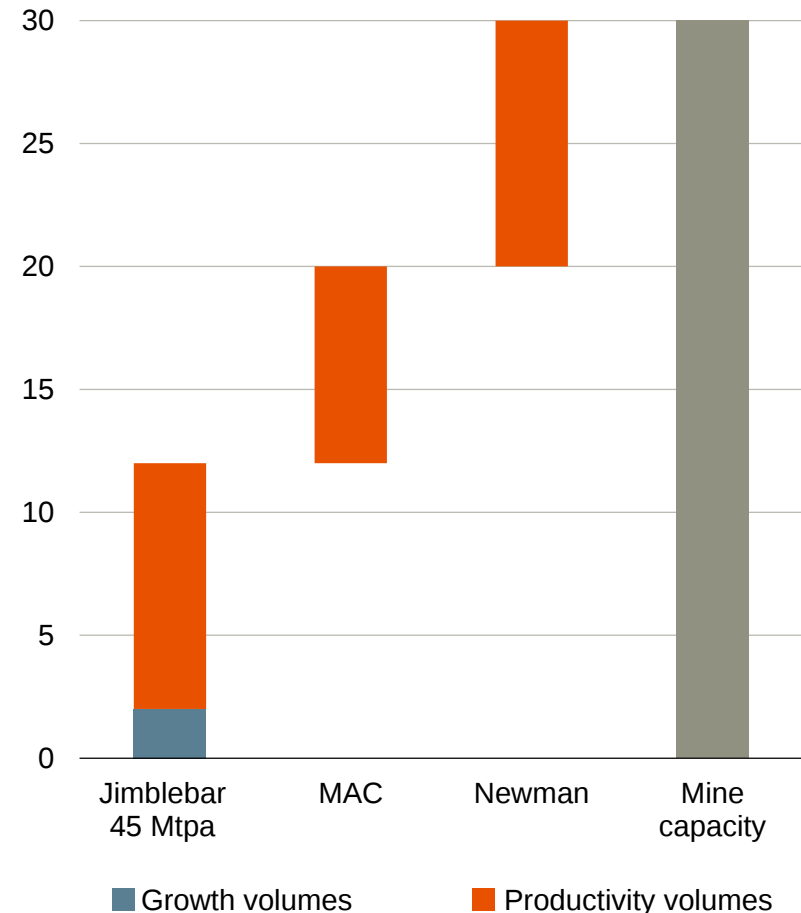
1. Represents actual production for FY14, FY15 guidance and aspirational future system run-rate.

2. Subject to Board approval.

# Step 1 to 290 Mtpa – raising the capacity of our mines without fixed plant investment

- WAIO production is expected to increase by 20 Mt to 245 Mt<sup>1</sup> in FY15
- Beyond FY15 our relentless focus on productivity will deliver volume growth from already installed infrastructure
  - Jimblebar Phase 1 will now achieve 45 Mtpa<sup>1</sup>
  - Mining Area C (MAC) volumes to increase by 8 Mtpa<sup>1</sup>
  - Newman volumes to increase by 10 Mtpa<sup>1</sup>
- Our dual track rail infrastructure is capable of supporting the uplift in mine capacity
- As mine capacity increases to ~275 Mtpa<sup>1</sup> the bottleneck shifts to the port

**Re-rating our hub capacity<sup>1</sup>**  
(FY15 baseline, Mtpa)



1. 100% basis.

# Step 2 to 290 Mtpa – investing in IHD1 and Jimblebar Phase 2

- The two key components to the second step of growth to 290 Mtpa<sup>1</sup> have a low capital cost and offer attractive investment returns
- Inner Harbour Debottlenecking 1 will deliver ~20 Mtpa<sup>1</sup> of incremental port capacity
  - low-capital intensity upgrades of critical inflow and outflow routes at Nelson Point and Finucane Island
  - replacement of Reclaimer 6 and expansion of Lump Rescreening Plant 2
- Jimblebar Phase 2 will increase hub capacity from 45 to 60 Mtpa<sup>1</sup>
  - ore handling plant has been re-rated from 55 to 60 Mtpa to match the installed stockpile and train load-out capacity
  - primary crusher and additional mining fleet required



Shiploader, Port Hedland

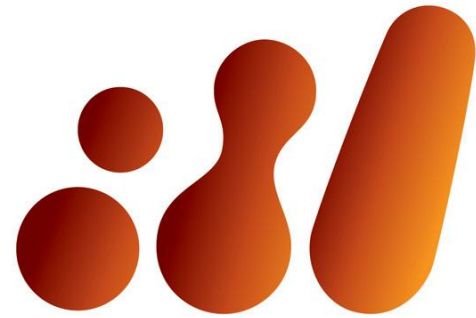


Jimblebar

1. 100% basis; Subject to Board approval.

# Key messages

- Iron Ore will remain a key pillar of a simplified BHP Billiton
- Growth in low-cost iron ore supply will continue to outpace demand
- We have the strongest resource position in the Pilbara
- We value safe and sustainable operations above all else
- We are targeting FOB unit costs of less than US\$20 per tonne at WAIO over the medium term and will require less sustaining capital investment than others in the industry
- We plan to grow WAIO production by 65 Mtpa at a capital intensity of approximately US\$30 per annual tonne



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resourcing the future

Mainline rail



# Iron ore market outlook

**Michiel Hovers**  
Vice President Marketing Iron Ore  
6 October 2014



# Key themes

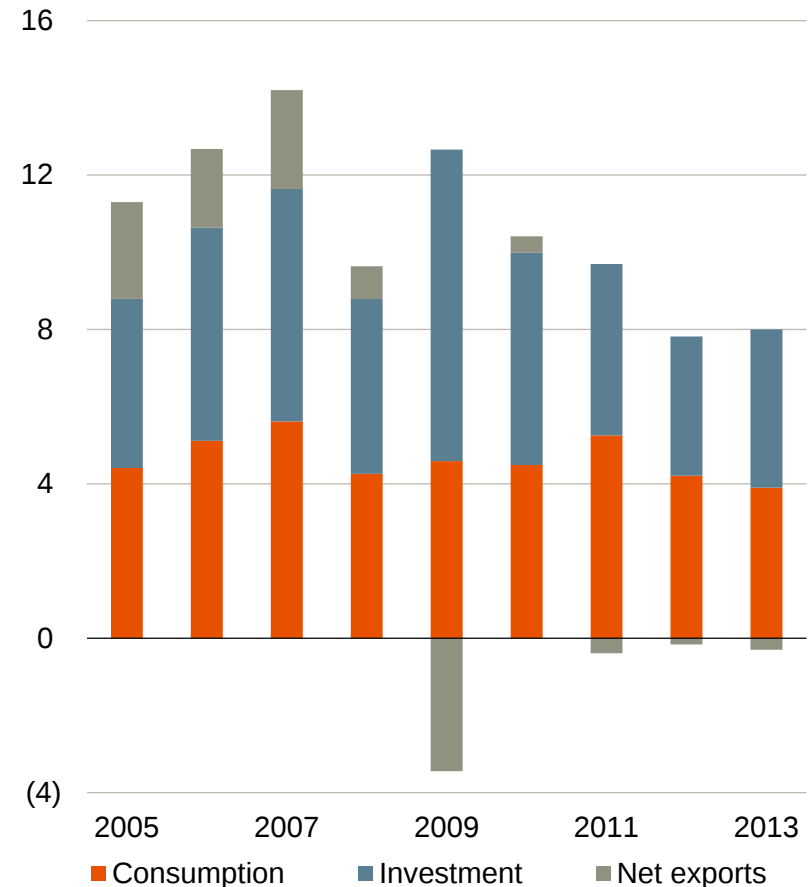
- China's steel production growth remains robust despite a rebalancing of the economy
- The construction and machinery sectors will underpin medium-term growth in Chinese steel demand
- Increasing scrap availability in China will impact long-term demand for pig iron
- Other emerging economies will support longer-term steel demand growth
- Growth in seaborne iron ore supply will outweigh growth in demand in 2014
- Low-cost seaborne iron ore supply will increasingly displace high-cost production and the cost curve will flatten
- Our marketing team is a major contributor to the Group's productivity agenda
- We continue to support the development of sustainable and efficient market clearing mechanisms

# The rebalancing of China's economy is underway

- China's GDP grew by 7.5% in Q2 CY14
  - the government is committed to a growth rate above 7.0% in the near term
- Solid export demand and an acceleration in government spending have supported growth in recent quarters
- Property investment is contributing less to activity as the economy begins its transition to consumption-led growth
  - real estate investment growth (13.4% YoY in August) and fixed asset investment growth (16.5% YoY in August) have moderated
  - retail sales grew by 10.7% YoY in June, outpacing GDP growth as household incomes continued to rise
- The government appears to have prioritised structural reform and is managing the rebalancing of its economy

## Transitioning to consumption-led growth

(contribution to Chinese GDP growth, %)

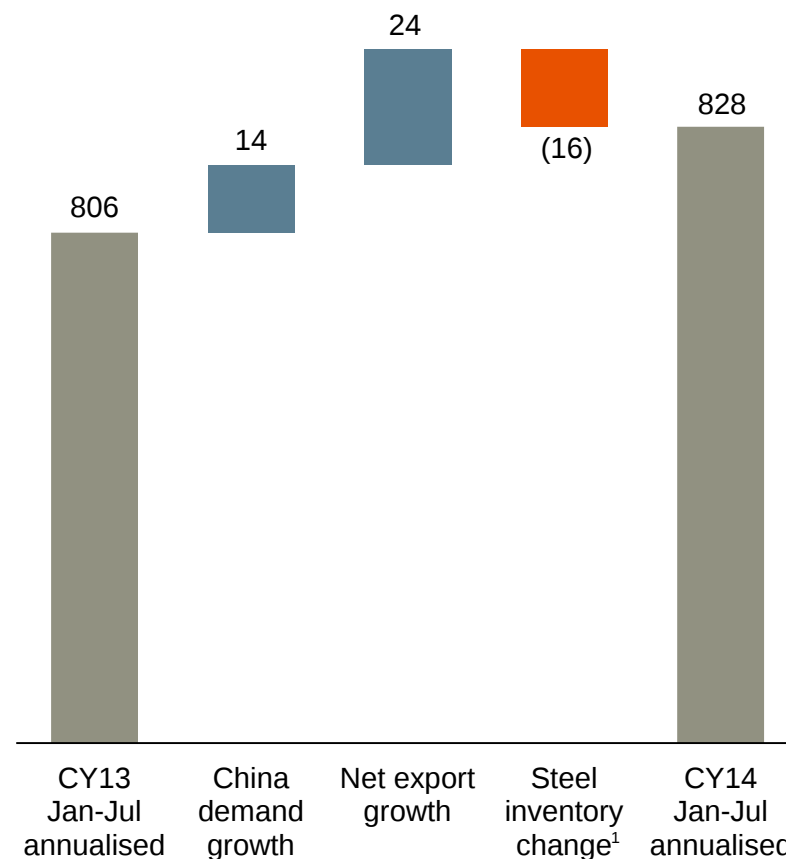


Source: NBS (via CEIC).

# China's steel production growth has moderated

- Growth in net exports has underpinned momentum in Chinese steel production in CY14
  - net steel exports in July 2014 increased by 48% YoY
- While Asia remains China's largest steel trading partner, other key markets are emerging
  - 60% of Chinese steel was exported to Asia in H1 CY14
  - H1 CY14 exports to the Americas and Middle East rose YoY by 57% and 40%, respectively
- Domestic steel demand faces headwinds from moderating growth in the property sector, however demand from the manufacturing sector is increasing

## Production growth increasingly reliant on exports (Chinese crude steel production, Mt)



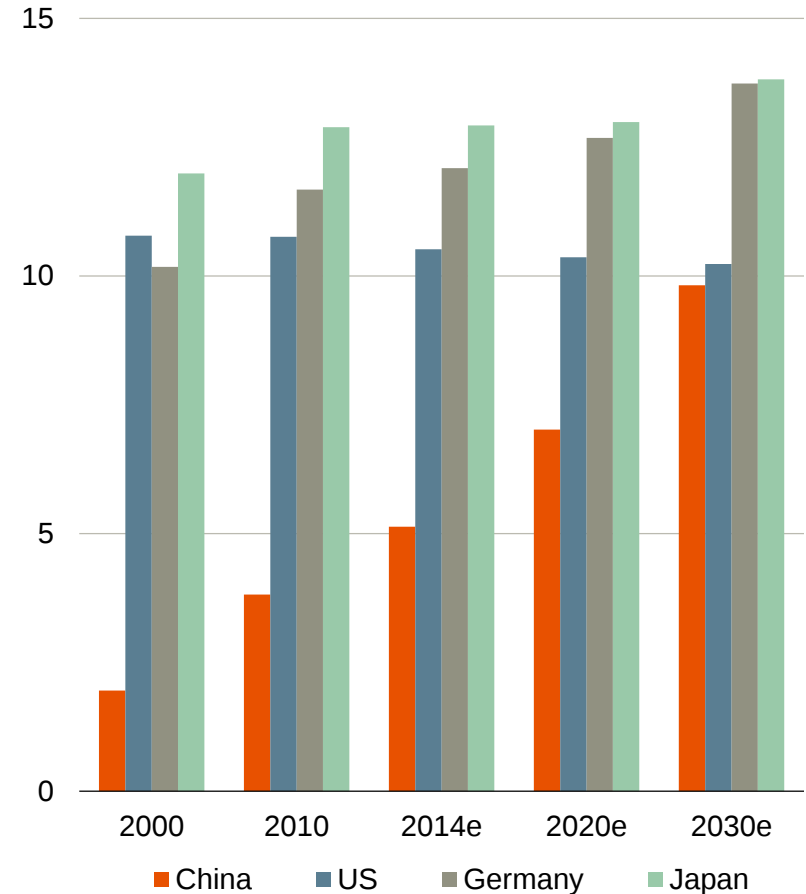
Source: BHP Billiton; NBS; Mysteel; CISA.

1. Estimated finished steel inventory changes by Chinese steel traders and steel mills.

# China's steel stock per capita is expected to double

- Despite an expected moderation in the rate of Chinese steel production growth, the absolute increase in production will be substantial
  - we expect Chinese steel demand to grow by ~2% CAGR to 2030
- China's stock of steel per capita is expected to double by 2030
  - developed economies typically hold over 10 tonnes of steel stock in use per capita
  - China's steel stock per capita currently represents ~50% of the US equivalent

**Substantial growth in Chinese steel stock**  
(finished steel per capita<sup>1</sup>, t)



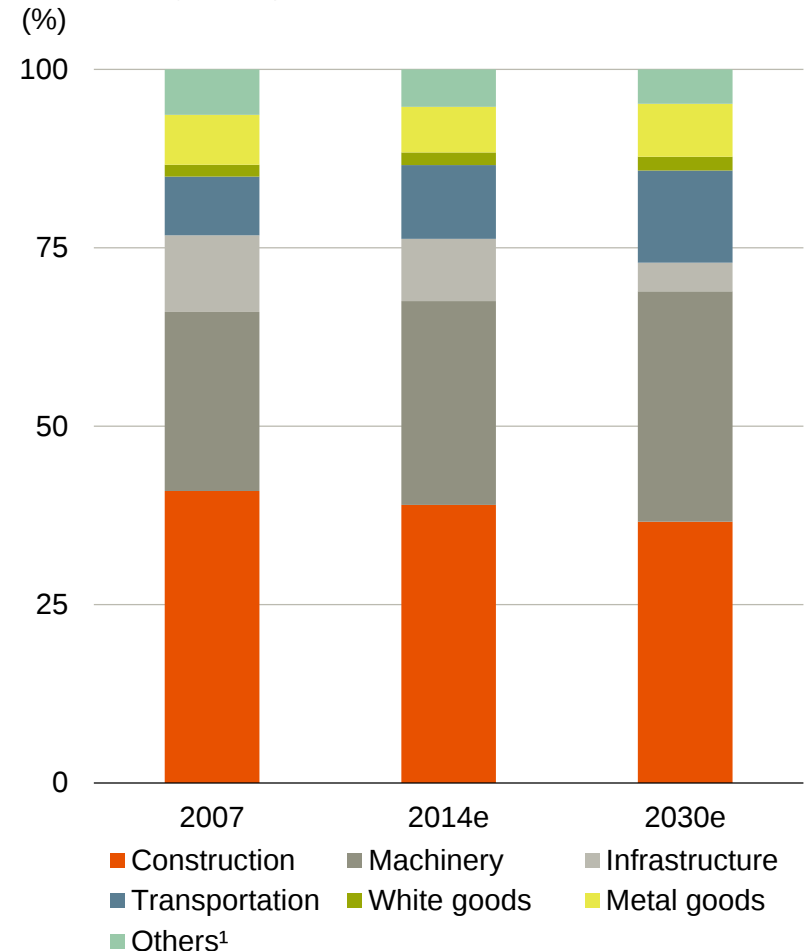
Source: BHP Billiton; Global Insight; Worldsteel.

1. Accumulation of steel stock is calculated from apparent steel consumption, net of trade in steel containing goods and net of steel out of use (scrapped).

# China's steel demand is led by the construction and machinery sectors

- The construction sector accounts for ~40% of current Chinese steel consumption
  - continued urbanisation will underpin the construction sector
- The machinery sector will increase its share of consumption as exports grow and industry modernises
  - machinery sector demand to increase by more than 40% by 2030
- Negative growth expected from the infrastructure sector as a result of the 2009 stimulus program and the associated front-loading of project activity
- Demand from the transportation, white goods and metal goods sectors will remain steady as the economy transitions to consumption-led growth

## Machinery-led growth in Chinese steel demand

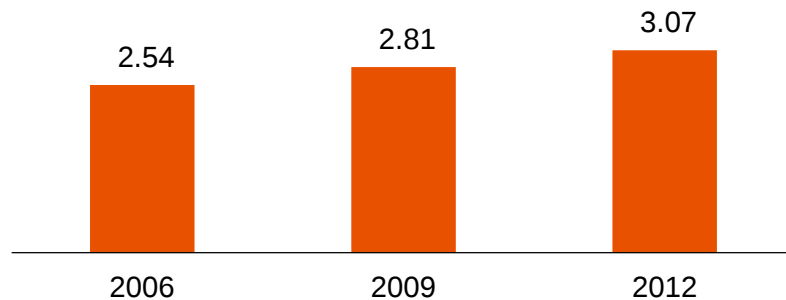


Source: BHP Billiton; CEIC.

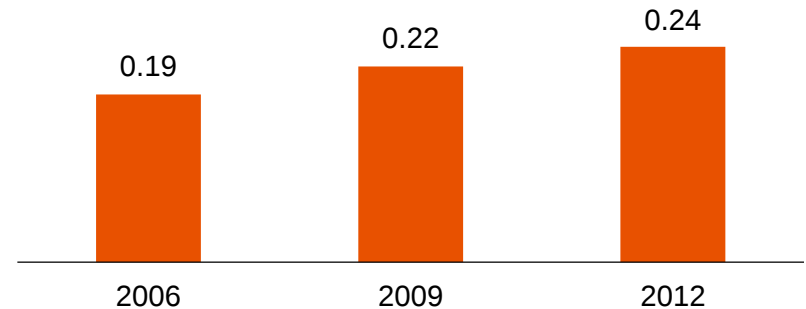
1. Others includes steel inventory changes by mills and traders, and steel demand from non-identified end user sectors.

# Higher steel intensity of construction and increased mechanisation will support demand

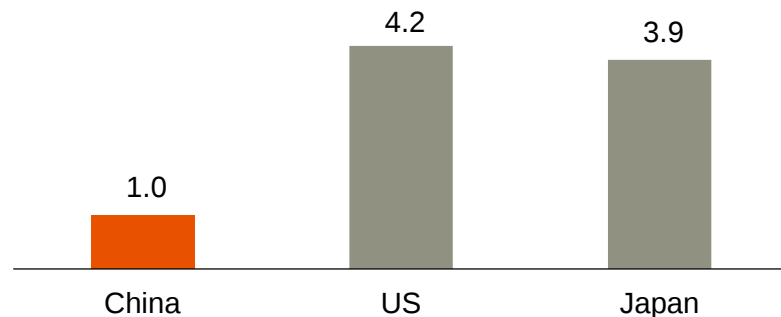
**250 million people in to modern, taller buildings...**  
(floor space to land area ratio<sup>1</sup> in Chinese cities)



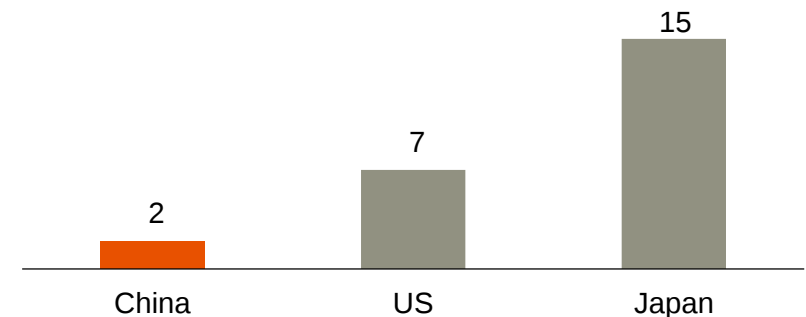
**...with larger basements**  
(basement to floor space ratio<sup>2</sup> in Chinese cities)



**Construction equipment penetration rate**  
(unit/000 population, 2011)



**Robots penetration rate in auto industry**  
(unit/000 vehicles production capacity, 2011)



Source: BHP Billiton; Tianhua MetricGeo; IHS Global Insight; China Robot Association; Fbetter Co.

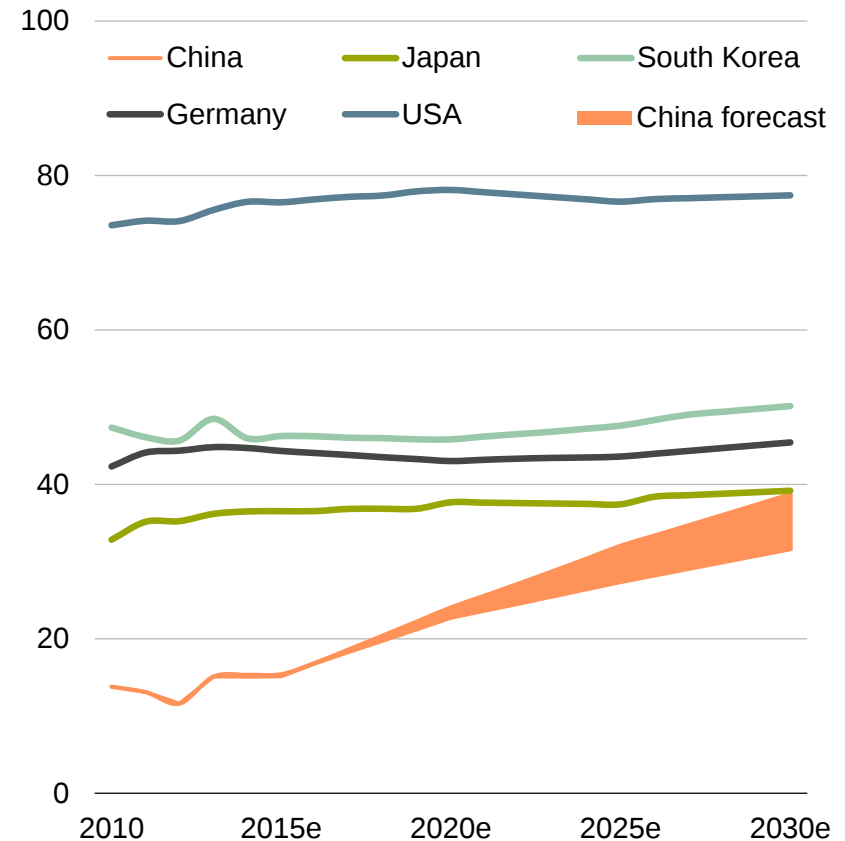
1. Represents total floor space / total land area.

2. Represents basement area / building floor space.

# An increase in scrap availability in China will impact long-term demand for pig iron

- China's scrap usage ratio of ~15% is the lowest among key steel-making countries and reflects low scrap availability
- Continued economic development and a maturing manufacturing sector will increase China's pool of available scrap
- Over the long term, we expect growth in scrap consumption to outpace steel production growth
- China's scrap usage will rise reducing pig iron demand

**China's scrap availability to increase significantly<sup>1</sup>**  
(%)



Source: BHP Billiton; Worldsteel.

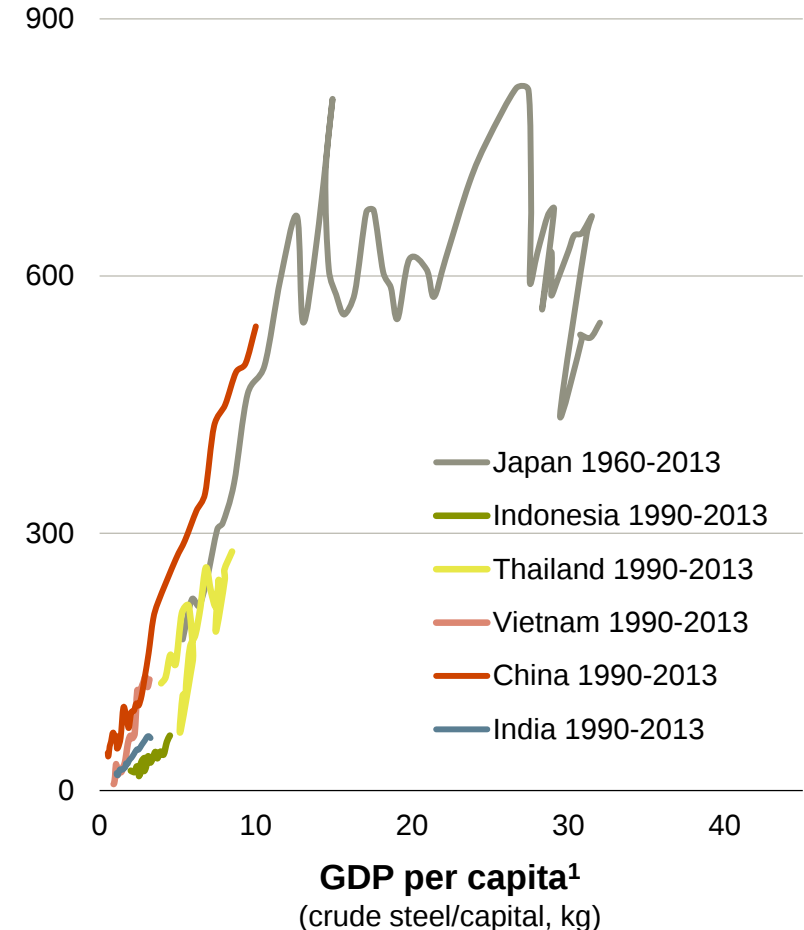
1. The scrap ratio is scrap consumption by steel mills divided by crude steel production. Scrap consumption is net of estimated consumption from foundry sector and is based on steel production and consumption.

# Emerging Asia has significant growth potential

- Emerging Asian countries are currently in the initial development phase, with significant potential for further growth in steel intensity per capita
  - more industrialised countries, such as Thailand and Vietnam, will continue to close the steel intensity gap with more developed nations
  - service oriented economies, such as India and Indonesia, are less steel-intensive, however the rise of their manufacturing sectors will translate into higher steel demand

## Steel intensity per capita

(crude steel/capital, kg)



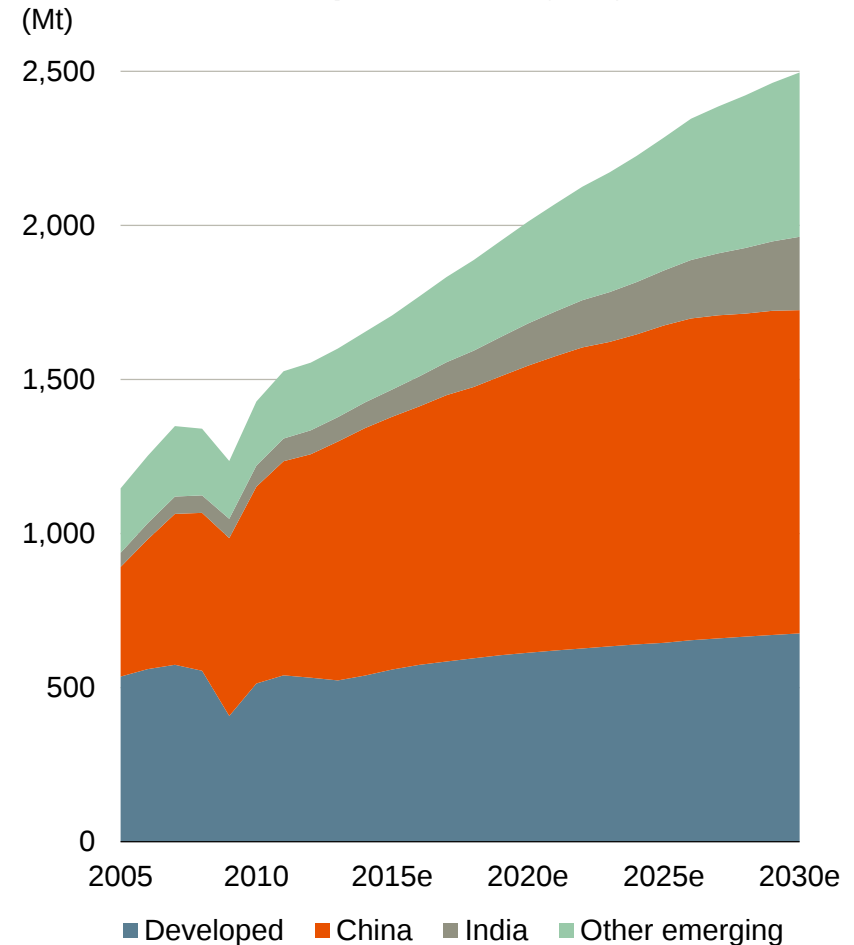
Source: BHP Billiton; Global Insight; Worldsteel.

1. 000s US\$ 2005 Purchasing Power Parity.

# The long-term outlook for global steel production remains robust

- Global crude steel production to grow at a CAGR between 2.5% and 3.0% to CY30
- Global crude steel production to reach ~2.5 billion tonnes by 2030
- We expect China's crude steel production to peak at 1 to 1.1 billion tonnes in the early to mid 2020s and plateau through to 2030
- Steel production growth in other emerging economies is outpacing China, supported by urbanisation and industrialisation

**Global crude steel production by region**

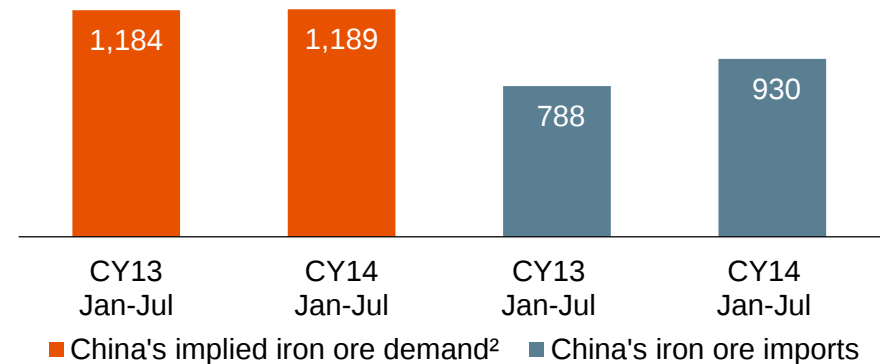


Source: BHP Billiton; Worldsteel.

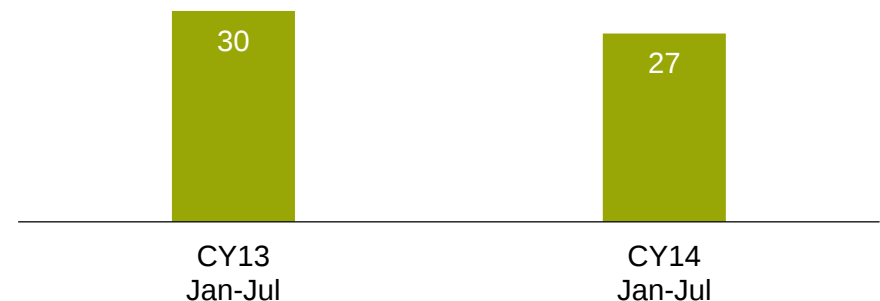
# Growth in seaborne iron ore supply will outweigh growth in demand in 2014

- China's iron ore demand from pig iron production remains at record highs but growth rates have moderated
- Growth in seaborne iron ore supply will exceed demand growth in CY14
  - total seaborne supply expected to increase by ~140 Mt in CY14
  - total demand expected to grow by ~55 Mt over the same period
- Chinese port stocks are at record highs, however inventories at small mills remain below historical averages
  - current port stocks of ~37 days (typical coverage 25–33 days)
  - current small mill imported ore inventories of 27 days<sup>1</sup> (typical coverage 30 days in CY13, 35 days in CY12)

## Growth in seaborne supply will exceed demand growth (annualised, Mt, wet, natural grade)



## China small mill inventories at historical lows (iron ore supply, days)



Note: All volumes in text are dry, 62% Fe.

Source: BHP Billiton estimates based on NBS; China Customs; Mysteel.

1. Based on average of January to July data.

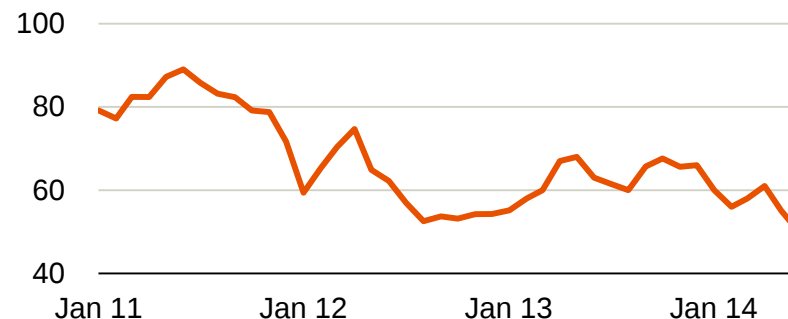
2. Iron ore demand is calculated from pig iron production.

# High-cost iron ore supply is price elastic

- Private Chinese mines have responded to a sharp reduction in prices despite a ~10% reduction in local taxes and fees in some regions
  - an additional ~50 Mtpa of China's domestic private iron ore capacity was idled between December 2013 and August 2014
  - China's state-owned and captive mines continue to operate at full capacity of ~140 Mtpa
- Low-cost Australian iron ore is also displacing supply from other regions, such as Indonesia, Russia, Mexico and Kazakhstan
- Indian exports expected to remain below 10 Mtpa in CY14 despite the recent removal of the mining ban in Goa

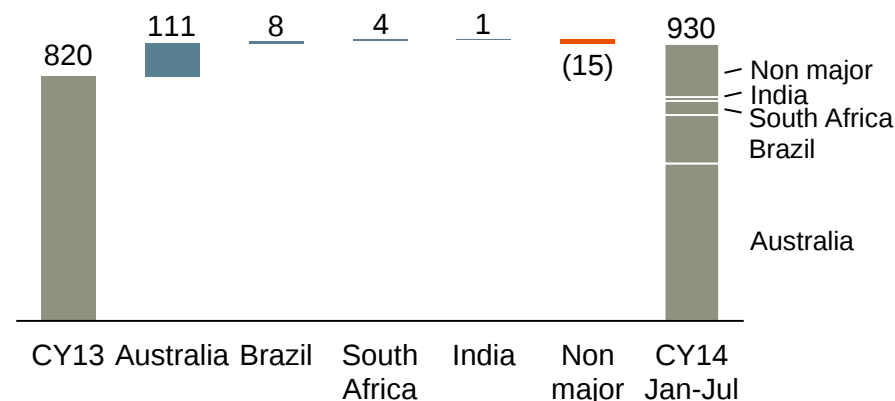
## Chinese private mines are price sensitive<sup>1</sup>

(operating rate, %)



## Australia is the major source of new supply<sup>2</sup>

(annualised, Mt, wet, natural grade)



Note: All volumes in text are dry, 62% Fe.

Source: BHP Billiton estimates based on SMM Survey; China Customs; GTIS.

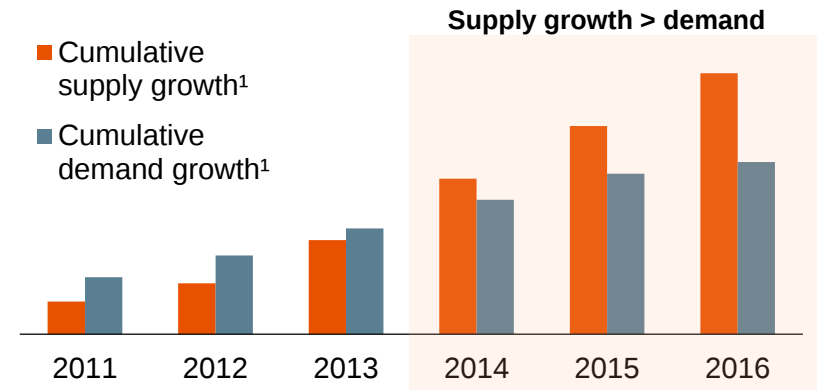
1. Private mine only, excludes SOE production.

2. Chinese imports only.

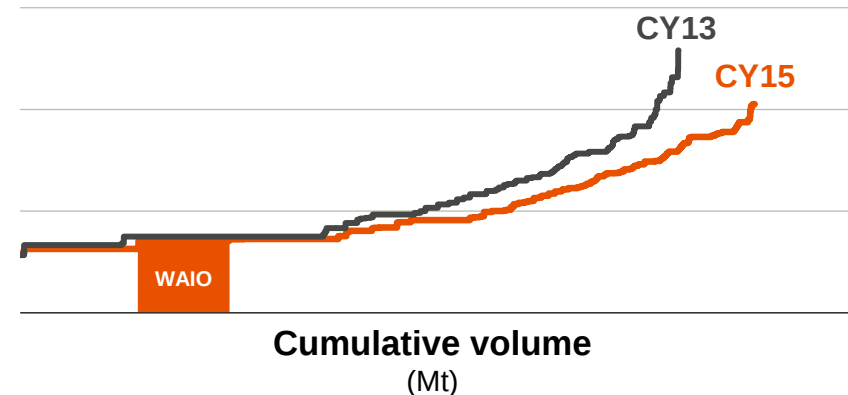
# The iron ore cost curve will flatten over time

- Global contestable iron ore demand growth is expected to moderate
  - ~9% CAGR between 2000 and 2010
  - ~3% CAGR forecast between 2010 and 2020
- Seaborne supply growth will continue to exceed demand over the medium term
  - as existing projects ramp-up and productivity gains are delivered, Australian and Brazilian production is expected to increase
- We will retain a favourable position on the cost curve, underpinned by the quality of our resource base and our productivity agenda

## Growth in low-cost supply will outpace demand... (62% Fe, Mtpa, dry)



## ...leading to a flatter cost curve (CIF China equivalent basis, US\$/t, nominal)



Source: BHP Billiton internal estimates; Cost curve from Macquarie Research, August 2014.

1. Demand refers to contestable demand. Future supply growth refers to BHP Billiton estimates of incremental supply from the majors only.

# A value-adding, marketing model

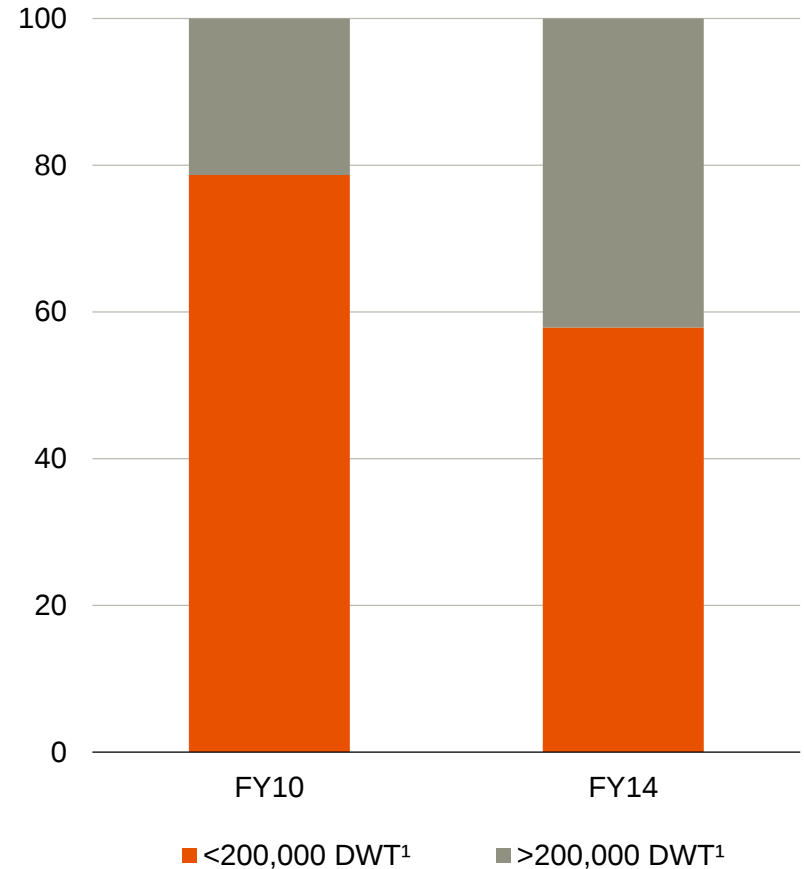
|                            |                                  |                                                                                                                                                       |
|----------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Front office</b>        | <b>Commercial execution</b>      | <ul style="list-style-type: none"><li>• Maximise price realisation</li><li>• Customer-specific product placement</li></ul>                            |
| <b>Technical Marketing</b> | <b>Value-in-use maximisation</b> | <ul style="list-style-type: none"><li>• Optimising product placement based on customer needs</li><li>• Maximise upstream resource value</li></ul>     |
| <b>Distribution</b>        | <b>Supply chain optimisation</b> | <ul style="list-style-type: none"><li>• Ensure reliable, cost-efficient delivery</li><li>• Optimise throughput</li></ul>                              |
| <b>Analysis</b>            | <b>Industry fundamentals</b>     | <ul style="list-style-type: none"><li>• Forecast long-term supply and demand</li><li>• Enable strategic marketing and group level decisions</li></ul> |

# Fleet optimisation has increased port throughput

- Our freight scheduling has been enhanced to increase throughput at Port Hedland
  - we have optimised the CFR:FOB split to enhance supply chain flexibility
- Over 40% of voyages per month now use >200,000 DWT<sup>1</sup> vessels

## Greater productivity at Port Hedland

(% of total vessels)



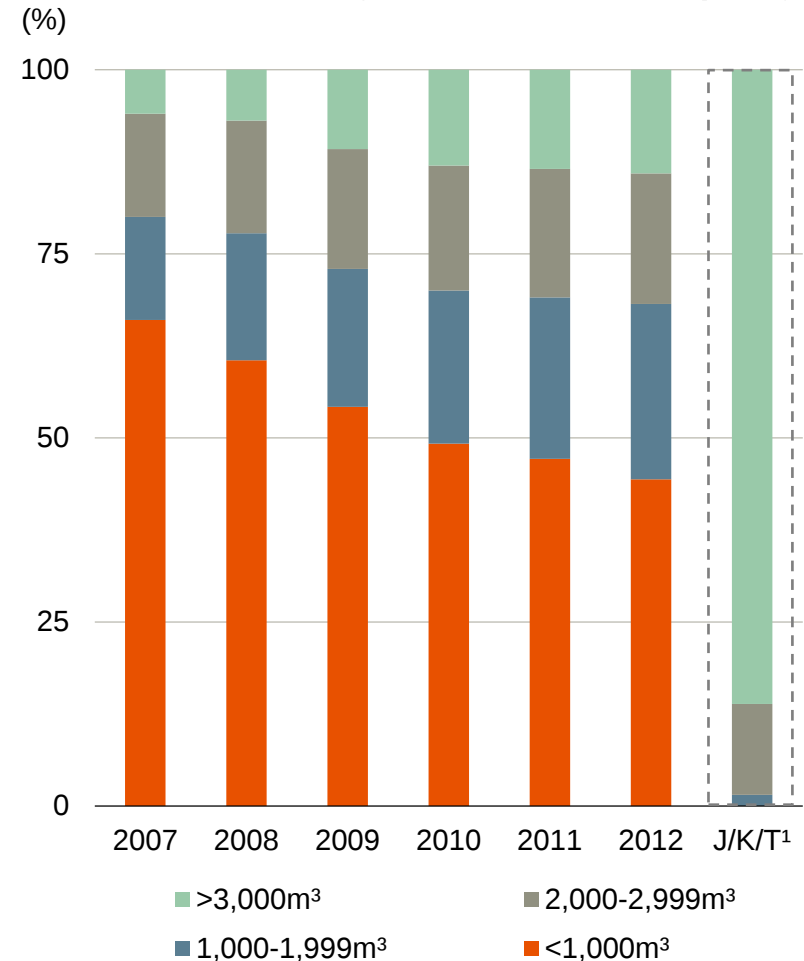
Source: BHP Billiton.

1. DWT refers to Deadweight Tonnage.

# The quality of our ore is a competitive advantage

- China is following the global trend towards larger and more efficient blast furnaces
  - economies of scale and increasing seaborne supply support larger integrated steel mills in coastal areas
  - large furnaces are fed with stable and high-quality raw materials to optimise performance and extend asset life
- Environmental standards are becoming more stringent
  - low-gangue raw materials reduce fuel rates, waste streams and hazardous emissions
- Our products offer the quality and reliability required for large, modern furnaces

## China is modernising its blast furnace capacity



Source: BHP Billiton.

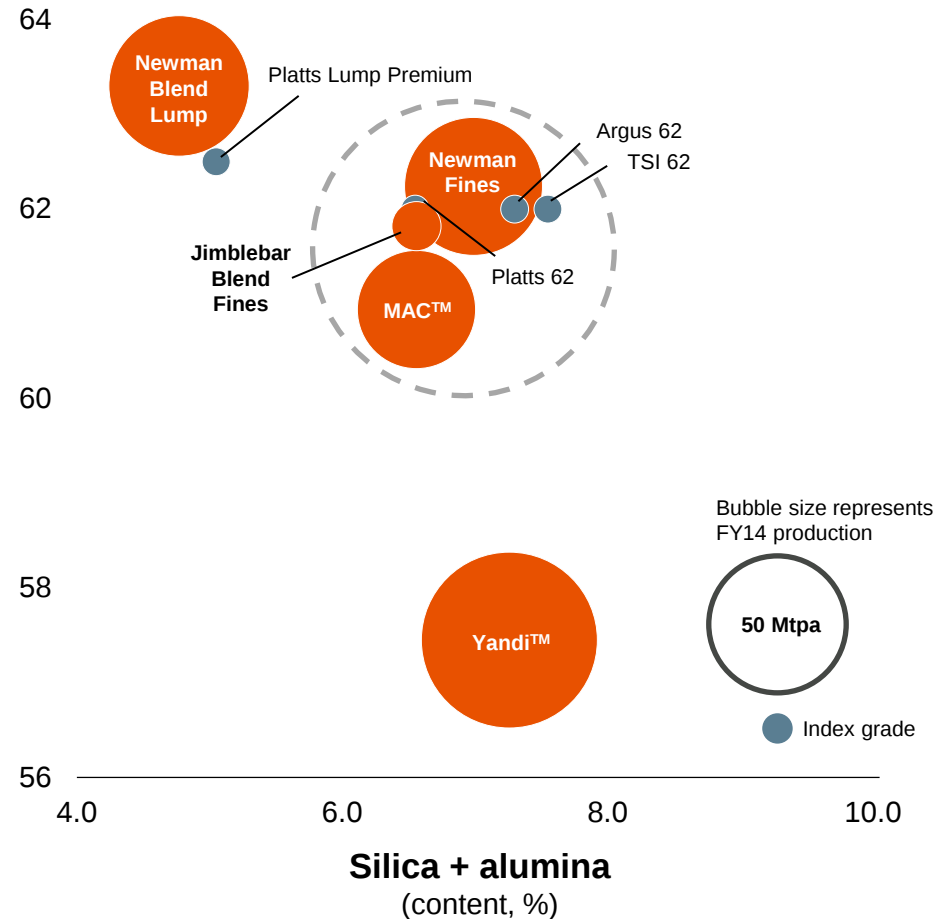
1. J/K/T refers to Japan, Korea and Taiwan.

# Adding another long-life source to our 62% fines product suite

- We deliver low variability products into the 62% Fe and 58% Fe high-grade quality segments that form the base load for many Asian sintering blends
- BHP Billiton Marketing has successfully introduced the Jimblebar Blend Fines product
  - a high Fe, low loss on ignition Brockman ore from the Newman region
  - sales to >20 customers in FY14

## High-quality suite of fines and lump products

(iron content, %)

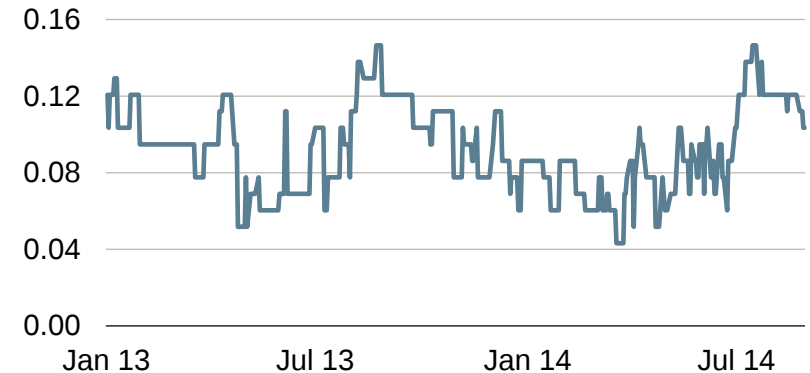


Note: Chart based on FY14 sales volumes and typical specifications.  
Source: BHP Billiton; Platts; TSI; Metal Bulletin; Argus.

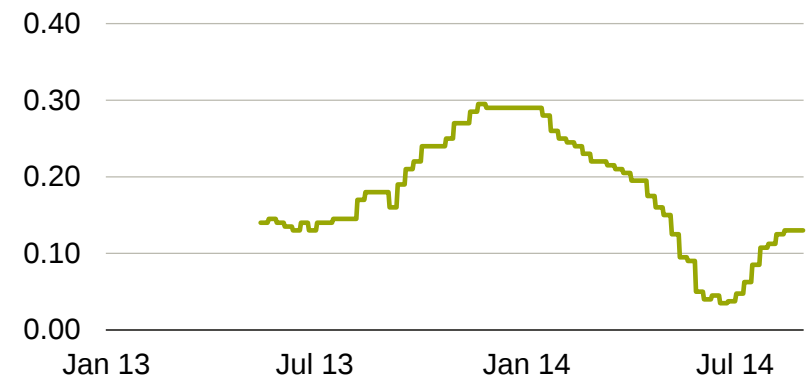
# Not all Fe units are created equal

- We produce high-quality value-in-use ores
- The value of our resources is elevated by low impurity levels and the production of lump
- The value of Fe in our Yandi fines achieves a premium relative to 58% indices, in part due to its lower alumina and phosphorus levels
- Our lump trades at a premium to the 62% Fe fines indices due to lower impurities and the avoidance of agglomeration costs

**Metal Bulletin 58% Fe high-grade quality premium**  
(US\$/dmton)



**Platts 62.5% Fe spot lump premium**  
(US\$/dmton)

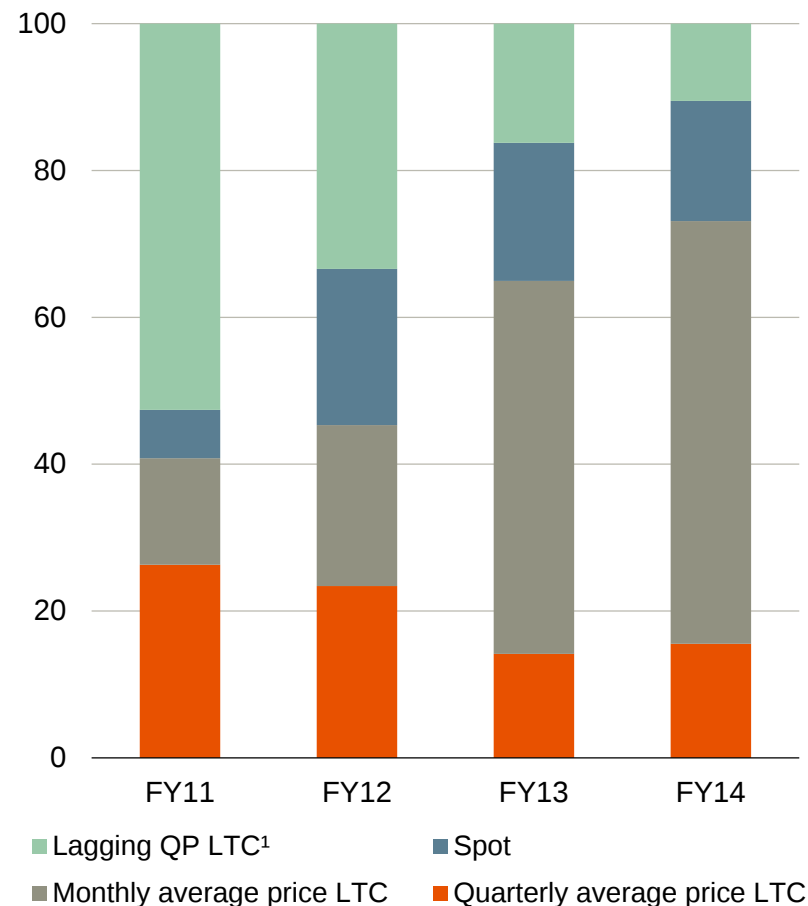


Source: MB; Platts.

# BHP Billiton continues to lead market innovation

- All of BHP Billiton's contracted iron ore production is sold on a floating price basis
  - our price-of-the-day philosophy underpins world-class contract performance
- In FY14 our iron ore sales, on average, were linked to the index price for the month of shipment with price differentials reflecting product quality
- Over 15% of BHP Billiton's iron ore volumes are sold on a spot basis
- We are actively encouraging further market innovation
  - development of lump premium index
  - encouraging e-documentation

## Our contracts are achieving the price of the day (contract quotation periods, %)



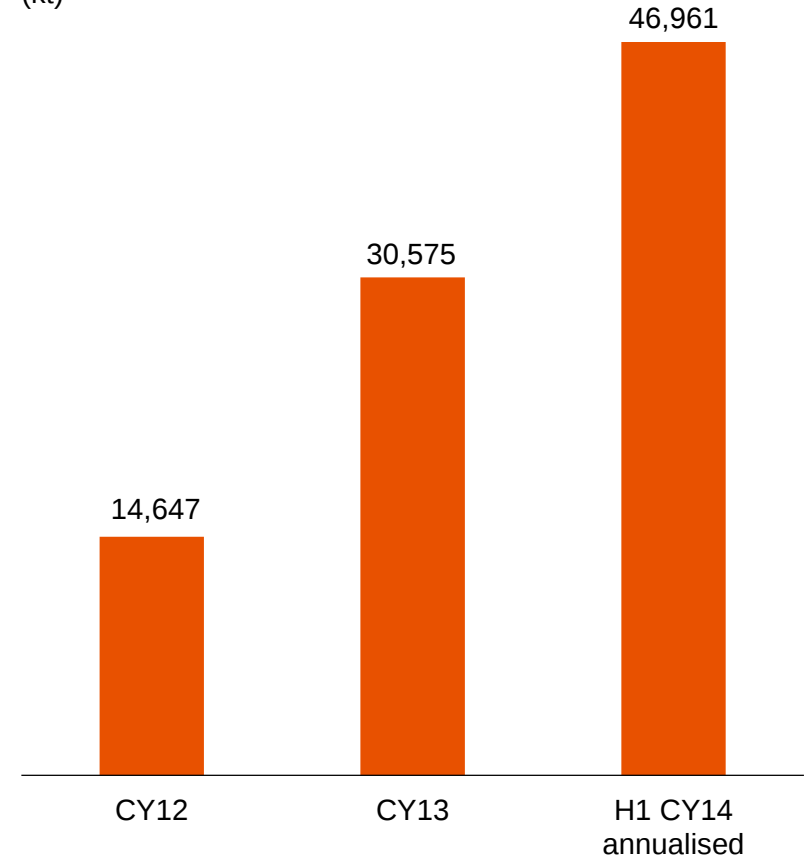
Source: BHP Billiton; Platts; globalORE; COREX; TSI; MB; CISA.

1. LTC refers to Long Term Contracts. Lagging QP includes, Q-1Q-1M, etc.

# Physical transaction platforms are well accepted

- Physical transaction platforms are well accepted by the market and provide an efficient spot trading mechanism
- globalORE and COREX are two examples of industry-owned (steel mills, miners and traders) platforms
  - BHP Billiton is a founding member of globalORE and a partner in COREX
- Platform sales represented ~50% of total reported spot transactions for the last six consecutive quarters
- Registered members for globalORE have increased by 66% from 73 in CY12 to 121 in CY14 YTD
- Total reported spot transactions of >100 Mt annualised in July 2014

**Spot transactions via globalORE and China Iron Ore Spot Trading Platform<sup>1</sup>**  
(kt)

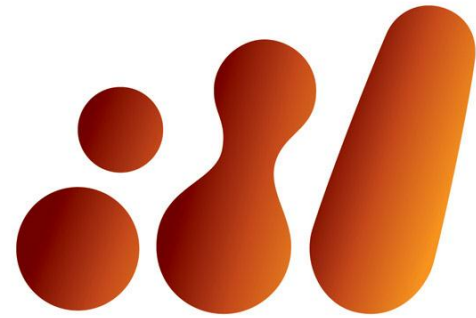


Source: BHP Billiton; globalORE; COREX.

1. COREX (formerly CBMX) since 8 May 2012, and globalORE since 30 May 2012.

# Key themes

- China's steel production growth remains robust despite a rebalancing of the economy
- The construction and machinery sectors will underpin medium-term growth in Chinese steel demand
- Increasing scrap availability in China will impact long-term demand for pig iron
- Other emerging economies will support longer-term steel demand growth
- Growth in seaborne iron ore supply will outweigh growth in demand in 2014
- Low-cost seaborne iron ore supply will increasingly displace high-cost production and the cost curve will flatten
- Our marketing team is a major contributor to the Group's productivity agenda
- We continue to support the development of sustainable and efficient market clearing mechanisms



**bhpbilliton**

resourcing the future



Integrated Remote Operations Centre, Perth

# Western Australia Iron Ore financial performance

**Margaret Beck**  
Vice President Finance  
6 October 2014

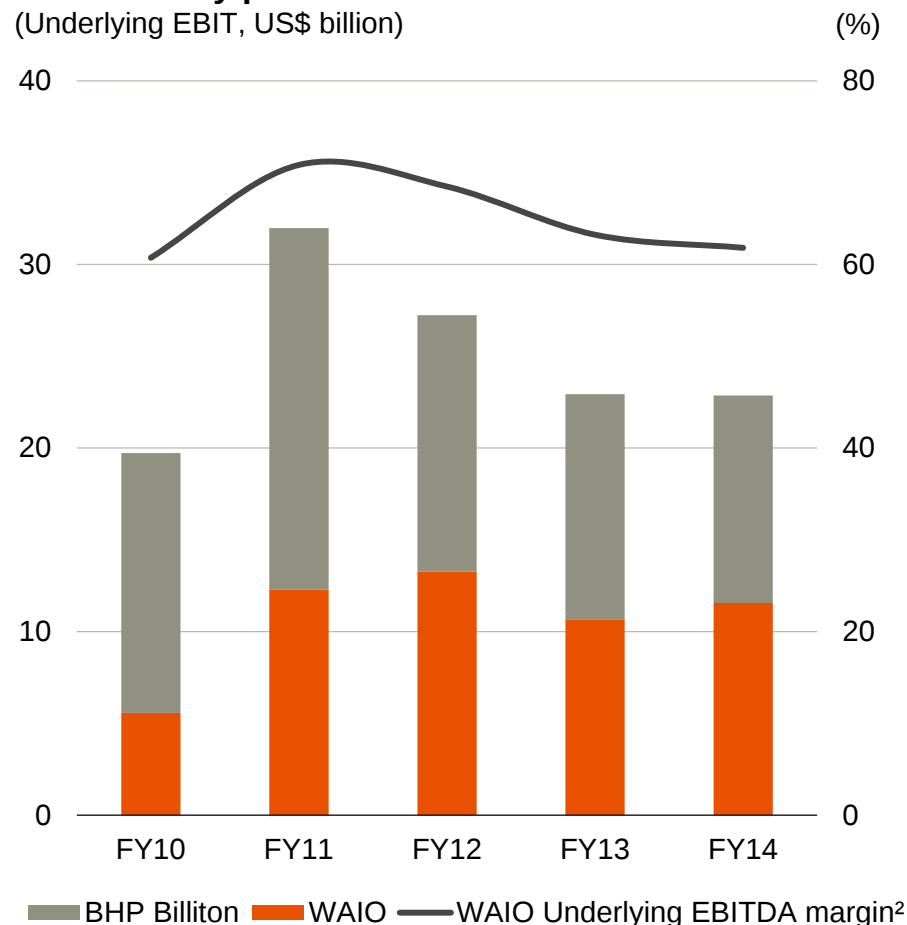


# WAIO has delivered exceptional returns

- Western Australia Iron Ore has delivered exceptional returns over the last five years
  - 20% of total BHP Billiton production<sup>1</sup>
  - average Underlying EBITDA margin<sup>2</sup> of 65%
  - US\$53 billion of Underlying EBIT, representing 43% of the Group total
  - average return on net operating assets<sup>3</sup> of 66%

## WAIO – a key pillar

(Underlying EBIT, US\$ billion)



1. Based on copper equivalent production calculated using FY09 average realised prices.

2. Excludes third party trading activities.

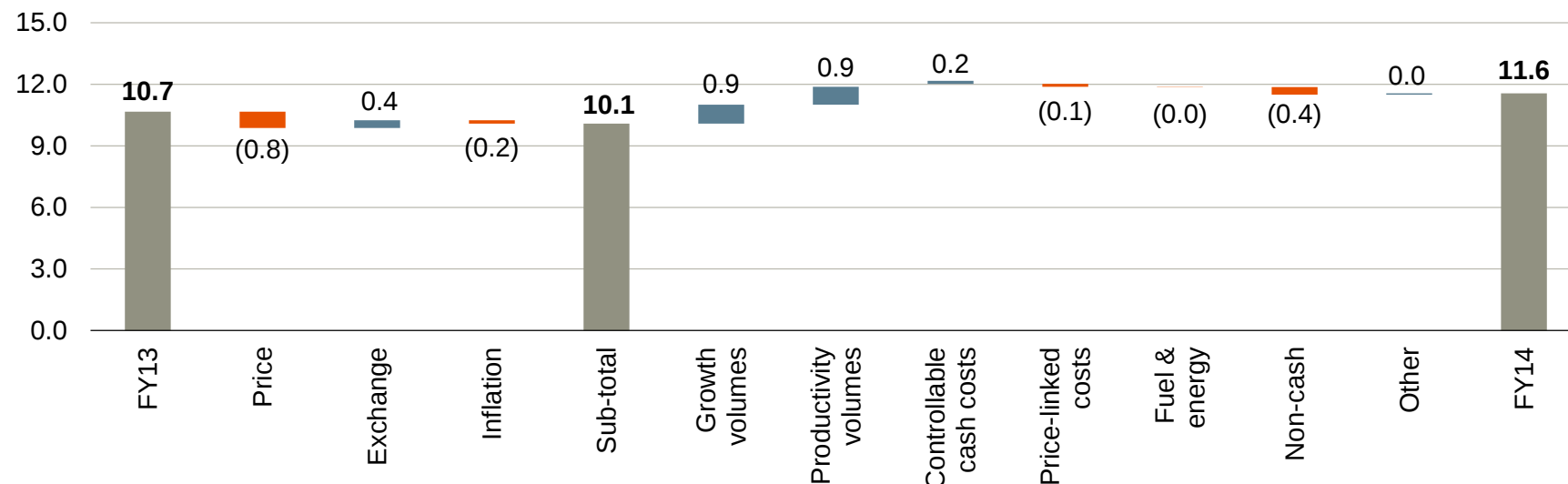
3. Represents Underlying EBIT divided by net operating assets.

# Successfully managing the factors we control

- WAIO achieved a fourteenth consecutive annual production record of 225 Mt<sup>1</sup> and exported 223 Mt<sup>1</sup> of high-quality product
- Volume efficiencies reflect an increase in the utilisation of existing infrastructure across the supply chain and a higher percentage of direct load ore to the port, while growth volumes reflect the ramp-up of our new Jimblebar mine
- Plans are in place to deliver a significant reduction in operating costs

## WAIO Underlying EBIT variance

(US\$ billion)

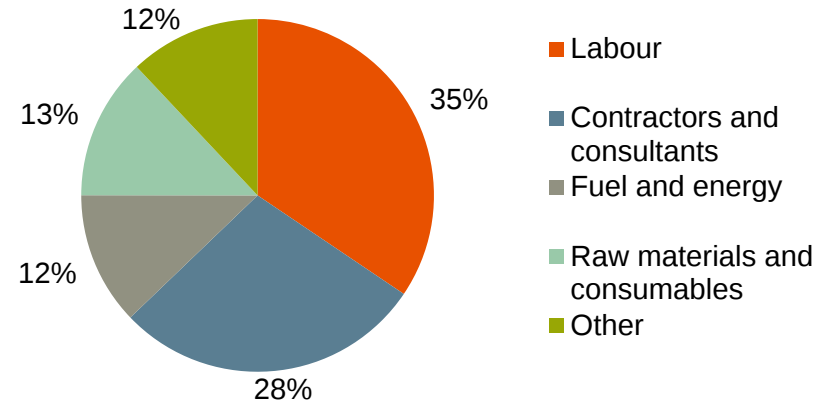


1. 100% basis.

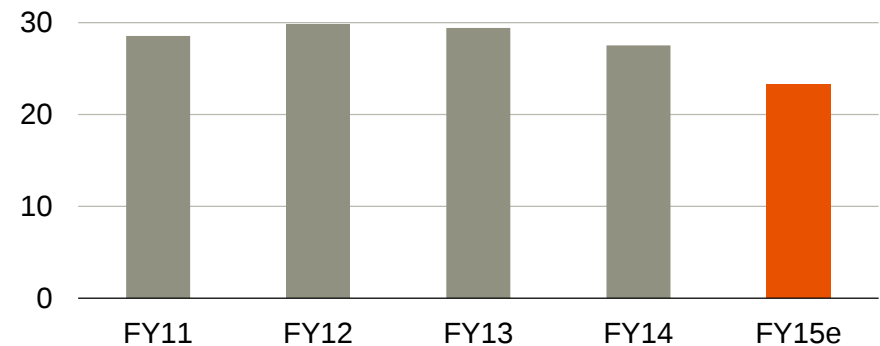
# Taking a hard line on costs

- Our relentless focus on productivity delivered a 12% reduction in unit cash costs<sup>1</sup> in H2 FY14 to US\$25.89/t
- We have plans in place that will enable us to drive unit cash costs<sup>1</sup> below US\$20/t<sup>2</sup> in the medium term
  - reduction in services through insourcing and efficiencies
  - more efficient use of raw materials and consumables
  - reduction in general overhead and business development costs
  - our growth plan to 290 Mtpa<sup>3</sup> will release economies of scale

**Breakdown of WAIO costs in FY14<sup>1</sup>**



**Targeting a significant reduction in costs in FY15<sup>1</sup>**  
(US\$/t)



1. Excludes royalties and freight.

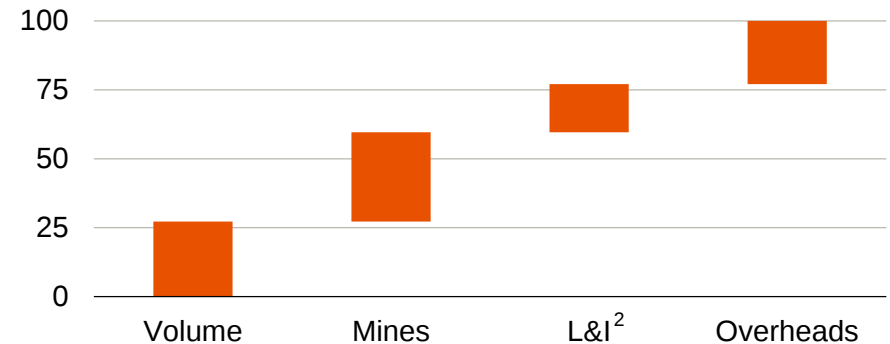
2. Based on real 2014 terms, AUD:USD exchange rate of 0.91.

3. 100% basis.

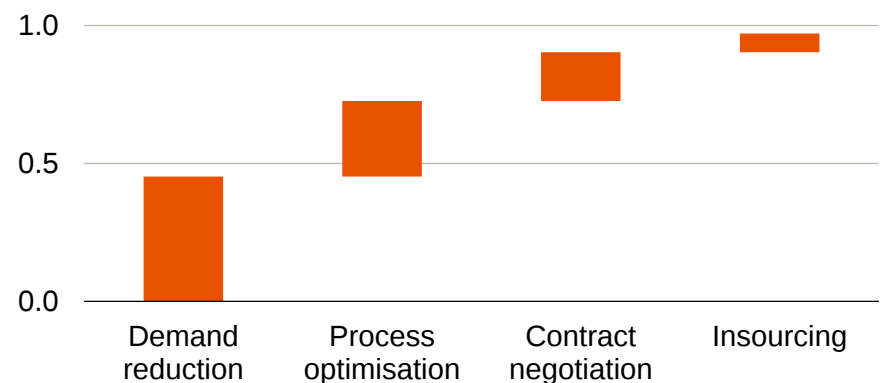
# Our plans are built from the bottom up

- We are systematically targeting cost savings across the supply chain
  - equipment productivity is reducing demand for new equipment and enabling a reduction in hire gear
  - supply productivity is reducing external expenditure through lower demand, better rates and insourcing of services
  - people productivity is driving efficiencies and allowing optimisation of functional support

**The pathway to unit cash costs below US\$20/t<sup>1</sup>**  
(split of cost reduction, %)



**~US\$1 billion reduction in external expenditure by FY17<sup>3</sup>**  
(US\$ billion)



1. Excludes royalties and freight. Based on real 2014 terms, AUD:USD exchange rate of 0.91.

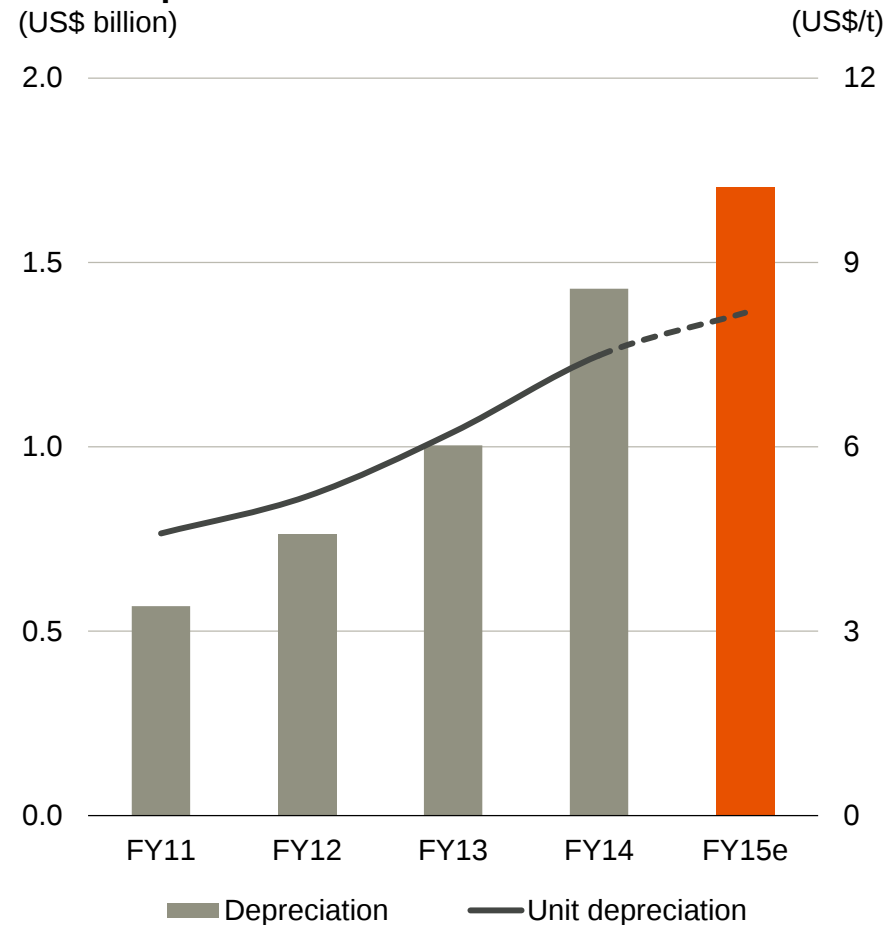
2. L&I refers to logistics and infrastructure and includes rail, port and non-process infrastructure.

3. Annualised basis relative to FY14.

# Lower sustaining capital expenditure is a function of our superior resource base

- Our depreciation rate has increased with the completion of major projects and the growth of our business
  - unit depreciation is not expected to increase post FY15
- Over the next five years we expect sustaining capital expenditure to average ~US\$5/t
  - a new mining hub is not required for at least 30 years
  - no replacement mines are expected to be required for at least eight years

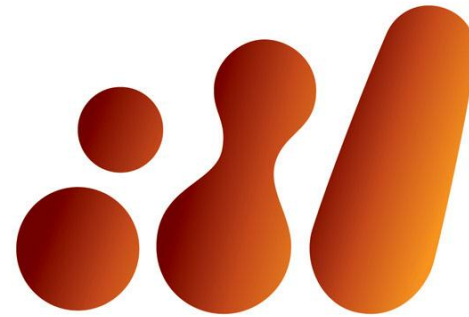
**WAIO depreciation**  
(US\$ billion)



# A meaningful contribution to the economy and our communities

- We contribute to the communities in which we operate by providing skilled employment opportunities, wages, taxes, royalties and community development programs
- For FY14 we will pay approximately A\$5 billion in government taxes and royalties
  - A\$3.4 billion in federal government taxes
  - A\$1.7 billion in state royalties and taxes
- In addition we contributed A\$56 million to local community programs, and procured A\$3.3 billion in goods and services in Western Australia





**bhpbilliton**

resourcing the future



# Relentless pursuit of the basics

**Eduard Haegel** Vice President Production Mines  
**Rag Udd** Vice President Production Logistics & Infrastructure  
6 October 2014

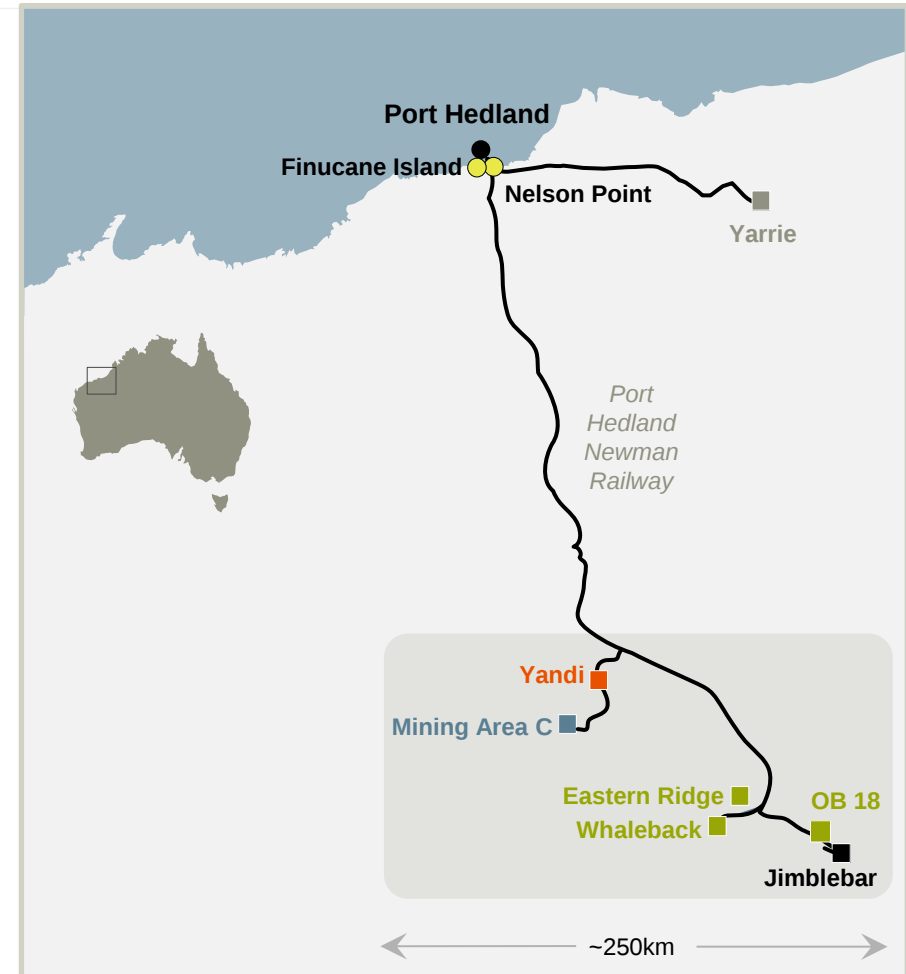


# Key themes

- We operate a world-class fully integrated supply chain
- We safely deliver high-quality product while pursuing the lowest possible unit costs
- Our move to owner-operator at all mines is complete
- We have standardised the key components of our mine and rail fleets
- Further operational improvement will allow us to grow without major investment
- By optimising the flow of product into Port Hedland we will unlock significant capacity

# Mine operations overview

- Our world-class resource supports four large hubs averaging over 60 Mtpa with capacity to grow
- Introduction of a single lump product has unlocked greater system capacity
- We have a centralised fleet management across all mining operations
  - ~209 trucks and 35 excavators<sup>1</sup>
  - managed remotely through Perth IROC<sup>2</sup>
  - focused on availability, utilisation and rate
- Contractor insourcing and equipment standardisation are key productivity enablers



Note: Coloured boxes denote discrete central Pilbara WAIO mining hubs. Yarrie is currently suspended.

1. Includes four 996 shovels.

2. IROC refers to Integrated Remote Operations Centre.

# Jimblebar hub

- First ore in September 2013
- ~700 employees
- Four mining pits feed two primary crushers linked to the ore handling plant (OHP) by overland conveyor
- Jimblebar is running an autonomous haulage project
- High-grade Brockman ore

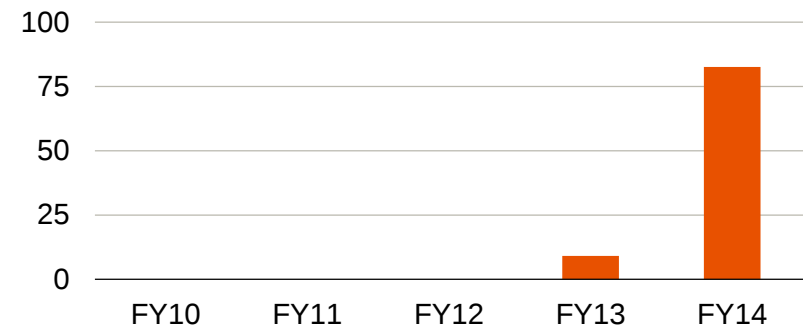
## Infrastructure summary

- two primary crushers
- one OHP
- one train load-out (TLO)
- fleet of eight excavators and 35 haul trucks



## Historical productive movement

(Mtpa, 100% basis)



# Mining Area C hub

- First ore in 2003
- ~1,050 employees
- Eight mining pits feed into two fixed OHPs and a relocatable crusher
- High-grade Marra Mamba and Brockman ore

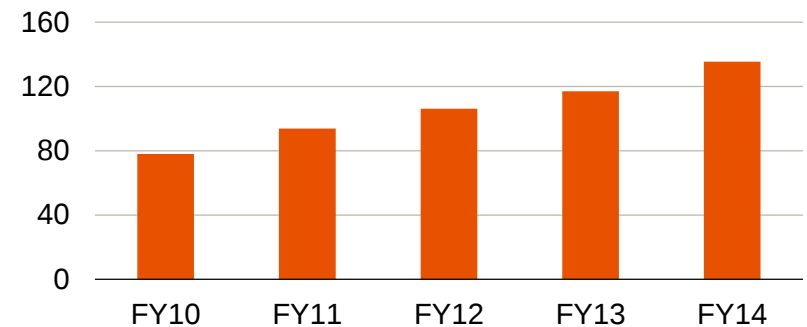
## Infrastructure summary

- two OHPs
- one TLO
- fleet of 10 excavators and 65 haul trucks



## Historical productive movement

(Mtpa, 100% basis)



# Yandi hub

- First ore in 1991
- ~850 employees
- Eight mining pits feed five primary crushers
- Yandi is trialing an autonomous drilling program
- Largest mining hub in the Pilbara<sup>1</sup>
- Channel iron deposit

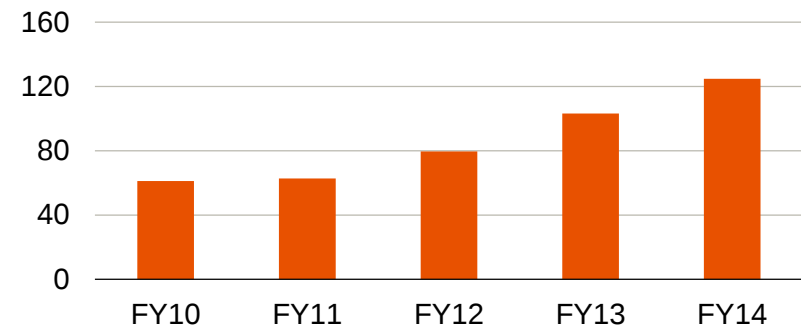
## Infrastructure summary

- three OHPs
- two TLOs
- fleet of six excavators, four primary front end loaders and 45 haul trucks



## Historical productive movement

(Mtpa, 100% basis)



1. Based on saleable production.

# Newman hub

- First ore in 1969
- ~1,200 employees
- Six mining pits feed into the Newman hub
- Primary crushed ore from Orebodies 18 and 24 delivered to Newman hub utilising shuttle trains and a car dumper facility
- High-grade Brockman and Marra Mamba ore

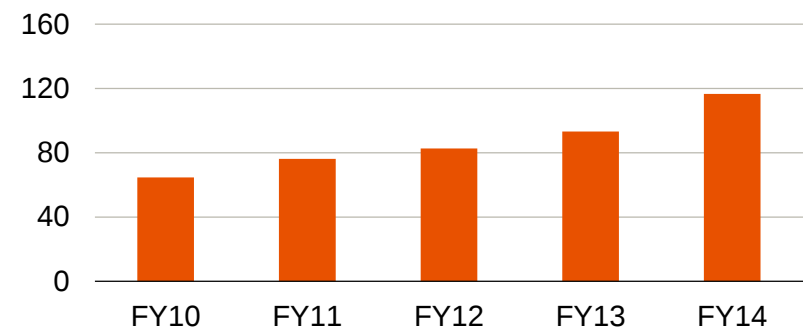
## Infrastructure summary

- five primary crushers
- car dumper
- beneficiation plant
- two OHPs
- two TLOs
- fleet of 11 excavators and 64 haul trucks



## Historical productive movement<sup>1</sup>

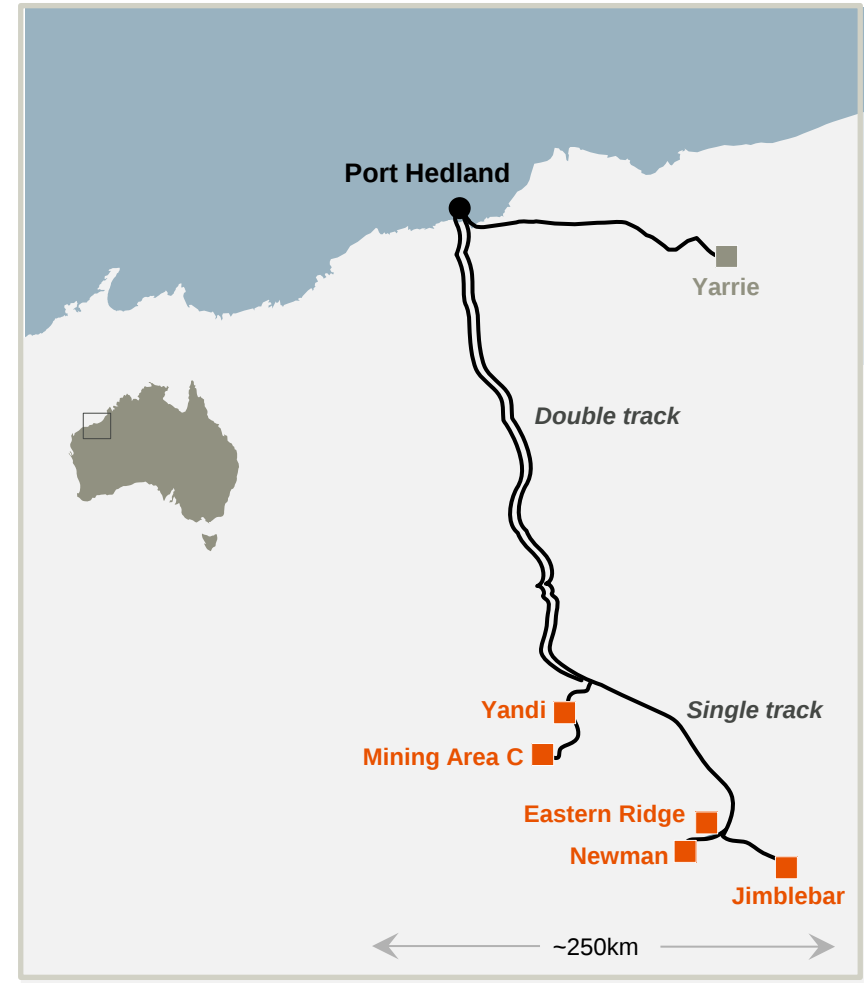
(Mtpa, 100% basis)



1. Historical productive movement for Mount Whaleback operation.

# Rail infrastructure

- Mainline
  - over 1,300 km of track which connects all mining hub train load-outs to the Port Hedland inner harbour
  - dual tracked between Yandi junction and the port
  - Mooka staging facility was constructed with five lines of track to enable optimal scheduling of rakes to the car dumpers
- Rolling stock
  - over 8,800 ore cars
  - 166 locomotives (140 SD70s, 26 Dash 8s)
- Infrastructure under construction
  - ore car repair shop



# Port infrastructure

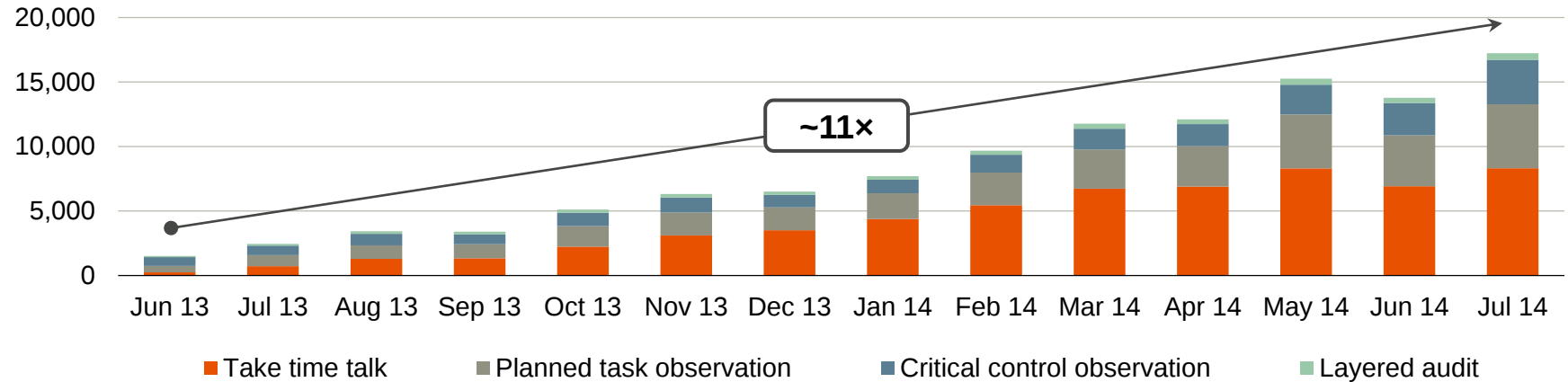
- Five car dumpers, two with the ability to feed through an underground tunnel from Nelson Point to Finucane Island
  - optimised throughput potential of 55–60 Mtpa per dumper
- Eight shiploaders (~12,500 tph each), one per berth
  - optimised throughput potential of 35–40 Mtpa per shiploader
- Four stackers
- Five bucket wheel reclaimers



# We value safe and sustainable operations above all else

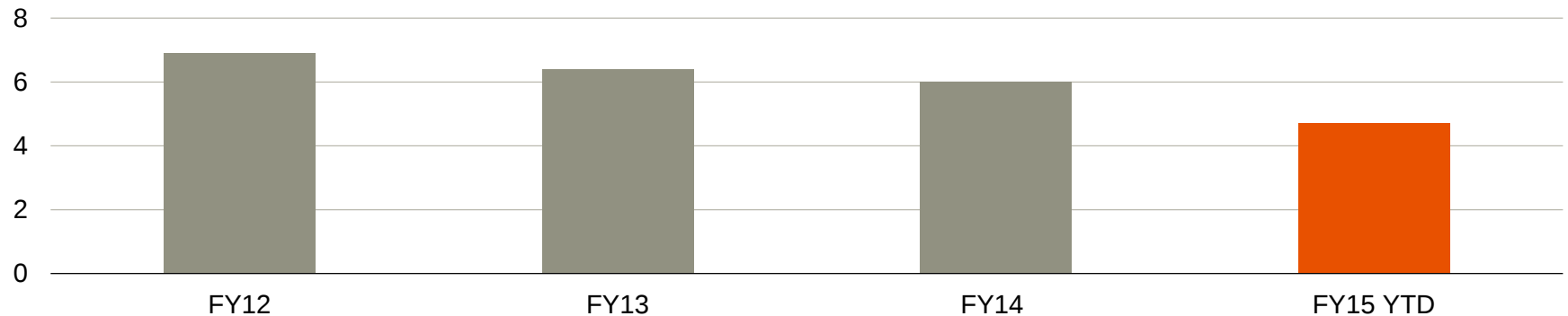
## Field leadership activities

(Mine and Logistics & Infrastructure, observations)



## Total Recordable Injury Frequency (TRIF)

(Mines and Logistics & Infrastructure, recordable injuries per million hours worked)



# We operate a fully integrated supply chain from mine to rail to port

## Integrated Remote Operations Centre



Flow



Synchronisation

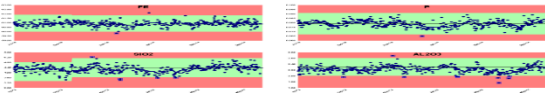


Balance

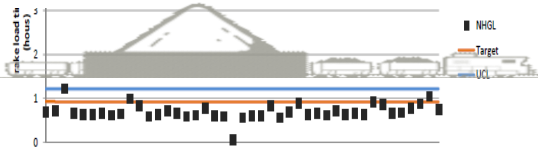
### Focus at Mines

**Enable SL<sup>1</sup> utilisation** – Target the factors that mines control

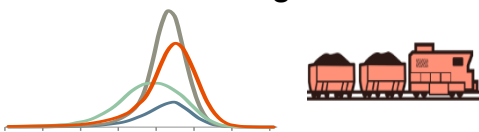
#### Product on specification



#### Load times



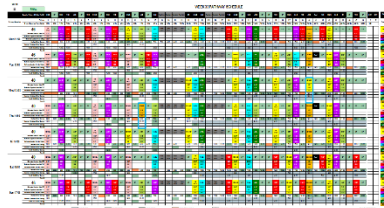
#### Ore car weights



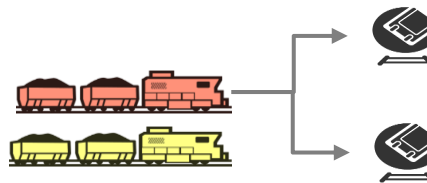
### Focus at Rail

**Enable SL<sup>1</sup> utilisation** – Target the reliable feeding of port

#### Reliable travel times and train departures per day



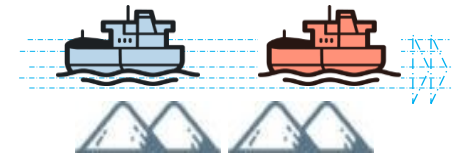
#### Reliable feed of car dumpers



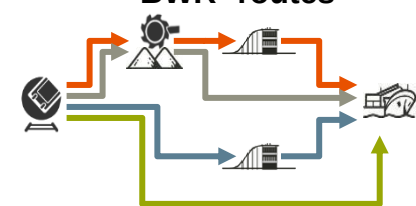
### Focus at Port

**Lifting SL<sup>1</sup> utilisation** – Maximise berth loading hours, underpinned by reliability

#### Vessel sequencing and yard focus



#### Direct to ship complementing BWR<sup>1</sup> routes

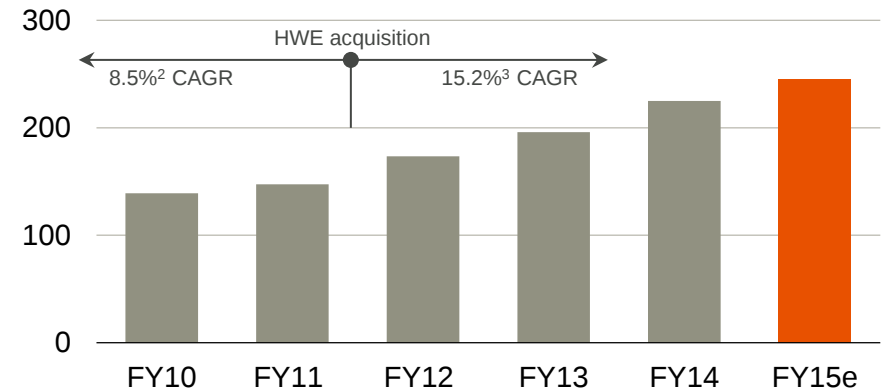


1. Refers to shiploader (SL) and bucket wheel reclaimer (BWR).

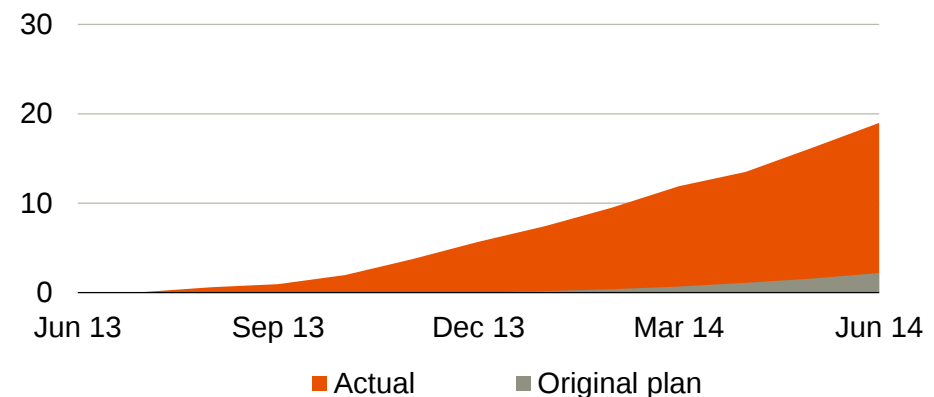
# Transition to owner-operator has unlocked under-utilised mine capacity

- WAIO started the move to owner-operator in September 2011 with the acquisition of HWE Mining subsidiaries
  - the last of our contractor sites, Orebody 18, transitioned on 1 July 2014
- Owner-operator enables better alignment with BHP Billiton's key value drivers
  - debottlenecking of existing plants has safely delivered significant rate increases
  - new plants have achieved production milestones well ahead of plan
- Jimblebar delivered first production six months ahead of schedule and with an accelerated ramp up
  - Jimblebar Phase 1 will now achieve 45 Mtpa<sup>1</sup>

**Ore For Rail (OFR) from WAIO operations<sup>1</sup>**  
(Mtpa)



**Accelerated ramp up of Jimblebar hub<sup>1</sup>**  
(OFR, annualised rate, Mt)



1. 100% basis.

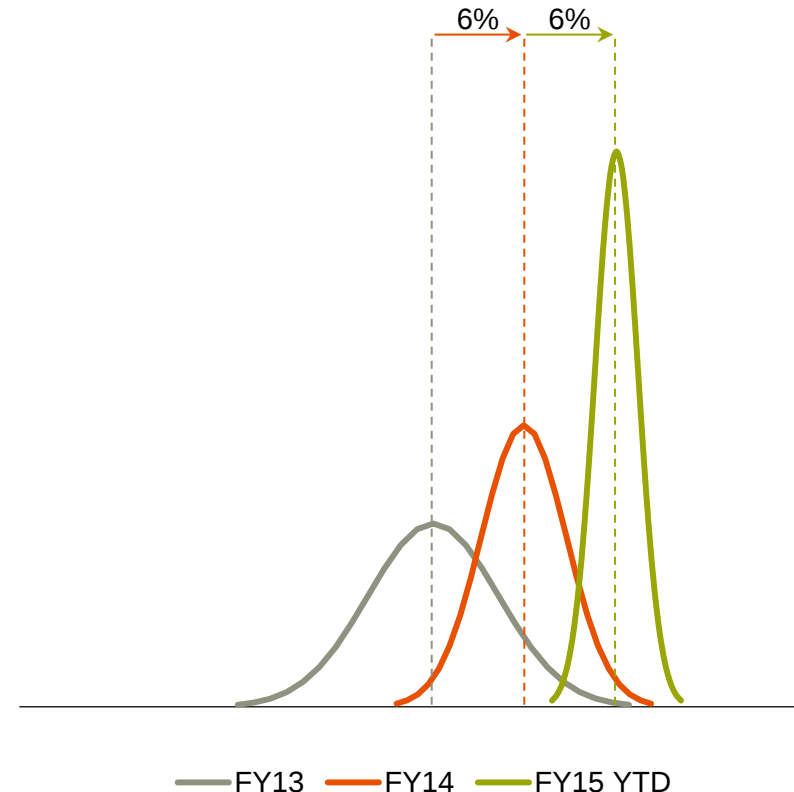
2. Period FY03 through FY11.

3. Period FY11 through FY14.

# Relentless focus on availability, utilisation and rate has raised OHP and TLO performance

- **Availability** of mine reclaimers and train load-outs has increased, improving supply chain performance
  - centralised shutdown management has resulted in a significant reduction in shutdown frequency
- **Utilisation** of OHPs<sup>1</sup> has increased by 9% from FY13 to FY15 YTD
  - focus on reducing feed delays by choke feeding primary crushers
  - installation of a grizzly at Mining Area C reduced crusher feed delays
- **Rate** of processing at OHPs<sup>1</sup> has increased by 12%<sup>2</sup> from FY13 to FY15 YTD
  - increased conveyor speeds through selected routes
  - improved control systems logic

**WAIO OHP processing rate<sup>1</sup>**  
(hourly production rate<sup>3</sup>, tonnes)



1. Excludes Jimblebar OHP.

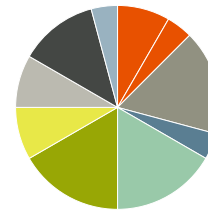
2. Compound annualised improvement FY13 to FY15 YTD.

3. Data approximated to fit normal distribution.

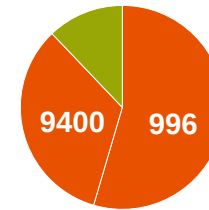
# We have standardised the key components of our mining operations

- We have standardised systems, processes and equipment across our mining operations
  - simplified organisational design
  - uniform mine design
  - consistent planning processes
  - simplified operational procedures
  - transparent management reporting
  - fit for purpose technical training
  - standardised heavy vehicles, light vehicles and other ancillary equipment

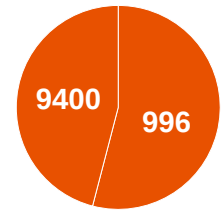
**Standardisation of excavators**  
(%)



2011

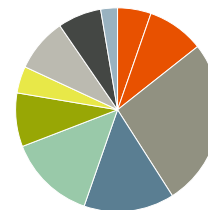


Current

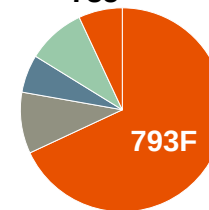


Future

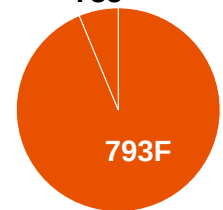
**Standardisation of trucks**  
(%)



2011

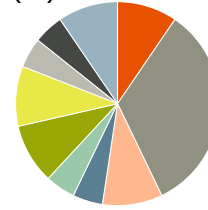


Current

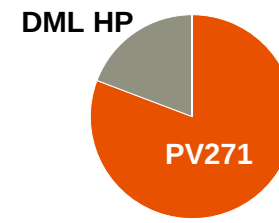


Future

**Standardisation of drills**  
(%)



2011



Current

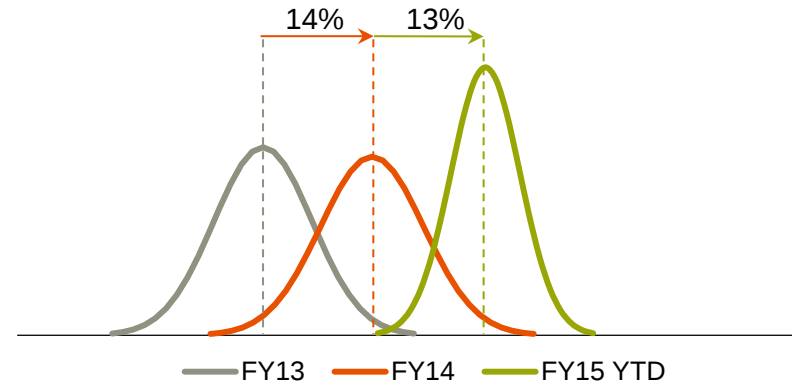


Future

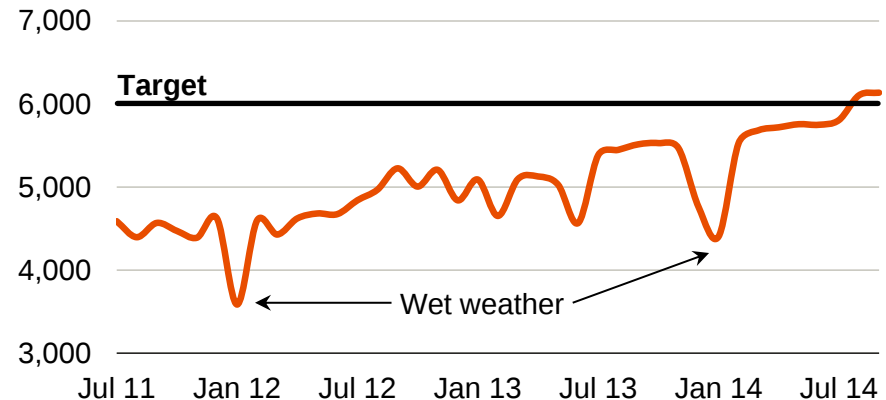
# Standardisation has facilitated a step change in performance of mining operations

- The standardisation of our mining equipment and management systems provides consistent and transparent data for benchmarking
- The relentless pursuit of benchmark performance involves replication of best practices across all operations
- This approach has delivered a sustainable increase in performance
  - 996 excavator annualised production has increased by 29%<sup>1</sup> since FY13
  - 793 haul truck operating hours have increased to above 6,000 hours per year
- These productivity increases coupled with standardised equipment and training have enabled fleet and personnel to be relocated as required across WAIO operations
  - reducing the capital required for growth

**WAIO 996 production performance**  
(annualised tonnes<sup>2</sup>)



**WAIO 793 haul truck operating hours**  
(annualised)



1. Compound annualised improvement FY13 to FY15 YTD.

2. Data approximated to fit normal distribution.

# Relentless pursuit of the basics has delivered a significant reduction in mining unit costs

- Improving safety performance, increasing volumes and a focus on costs are delivering a substantial reduction in mining unit costs
  - removal of hired mining equipment has reduced costs by A\$6 million per month
  - high-cost contractor labour is being removed or replaced

## A substantial reduction in mining unit costs

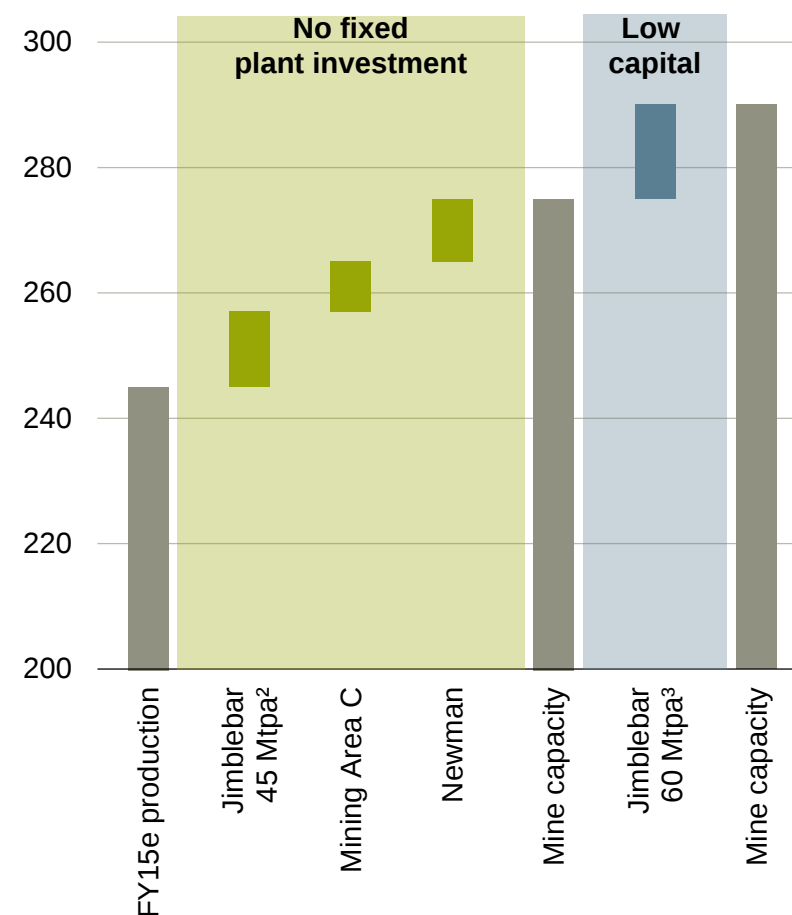
(3 month moving average mining costs, index, June 2012 = 100)



# Productivity is unlocking significant capacity

- We can increase mine output to ~275 Mtpa<sup>1</sup> with no additional fixed plant investment
- Jumblebar Phase 1 will now achieve 45 Mtpa<sup>1</sup>
  - addition of 10 haul trucks and two excavators
- Unlocking 8 Mtpa<sup>1</sup> of processing capacity at Mining Area C
  - increasing screen capacity
  - automation of primary crusher rock breaker
- Unlocking 10 Mtpa<sup>1</sup> of processing capacity at Newman
  - increasing conveyor speed on constrained route
  - improving product screening capacity

**Tier 1 portfolio provides optionality<sup>1</sup>**  
(Mtpa)



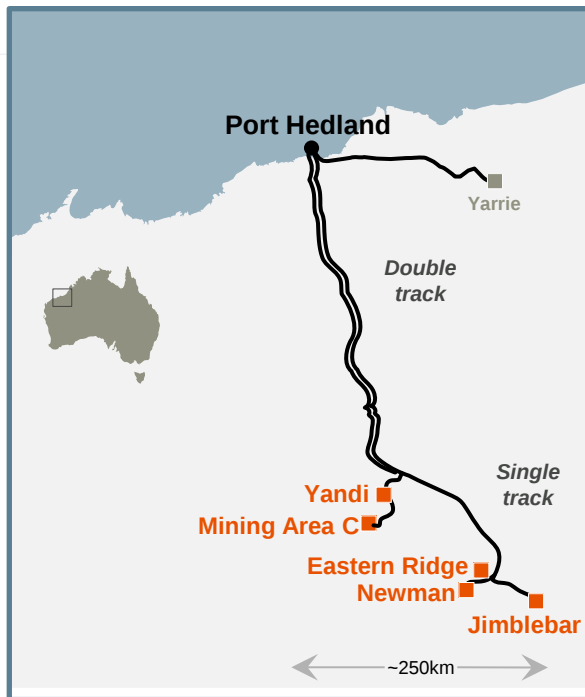
1. 100% basis.

2. Includes 2 Mt of growth related tonnes with respect to the ramp-up to 35 Mtpa.

3. Subject to Board approval.

# Rail will never be the bottleneck

## Existing double track



Significant below rail investment  
already installed

>260 Mtpa

## Never be the bottleneck

- Productivity improvements
- Fleet and maintenance standardisation
- Synchronisation of the network
- Currently investing in longer, heavier trains
  - Electronically Controlled Pneumatic Brakes (ECPB)
  - 40 tonne axle load bogies
- Crossovers and signals
- Rolling stock

Deliver by end of 2015

290 Mtpa

## Optimise & automate

- Above rail investment
- Communications based signalling and train control
- Automation of processes at car dumpers and load-outs
- Studying further automation options

Studies in progress

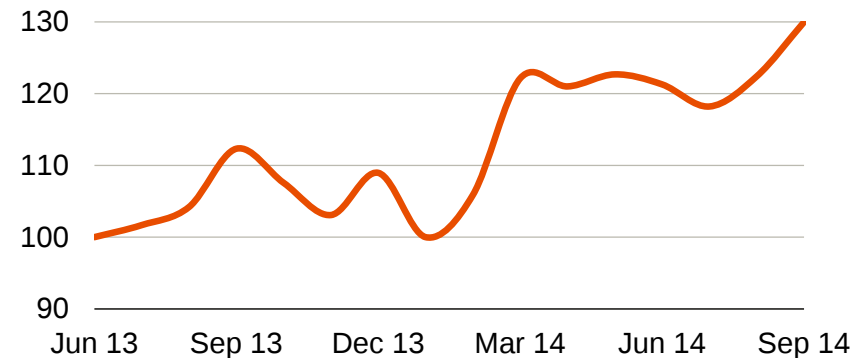
290 Mtpa and beyond

# Focus on availability, utilisation and rate has raised rail performance

- **Availability** of rail has increased
  - completion of track ballast remediation project has improved track availability and extended track life longevity
  - centralised coordination of track maintenance has doubled productivity and increased the operating window
- **Utilisation** has improved by revising our scheduling methodology
  - 28% improvement in the number of train departures per day coupled with a 23% reduction in travel time
- **Rate** of railing has increased
  - revision of braking procedures to increase average train speed
  - reduction of track speed restrictions without compromising safety

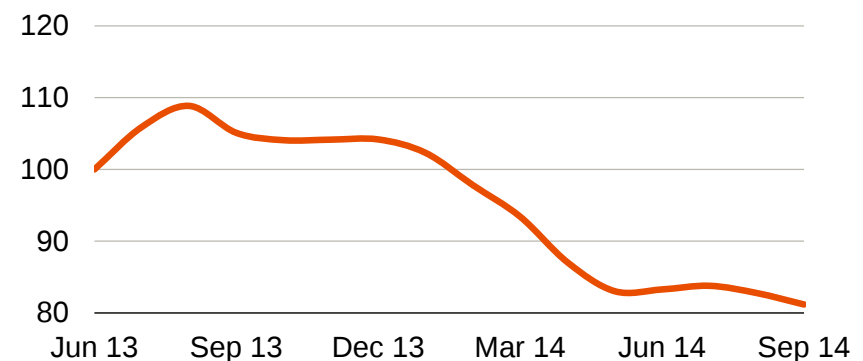
## Train departures per day are increasing

(index, June 2013 = 100)



## Train travel time is decreasing

(index, June 2013 = 100)

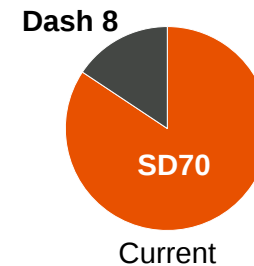
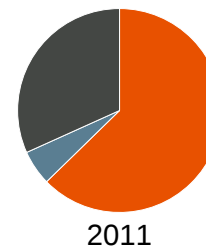


# Longer, heavier trains will underpin an increase in railing capacity to 290 Mtpa and beyond

- Modest above rail investment is required to lift overall rail capacity to 290 Mtpa<sup>1</sup>
- A combination of standardisation, longer trains and heavier wagons will increase rail capacity by ~28 Mtpa<sup>1</sup>
- Longer trains will add ~10 Mtpa<sup>1</sup> capacity for ~US\$12/t of capital
  - rake length will increase from 124 to 132 cars per rake
- Heavier trains will add a further ~18 Mtpa<sup>1</sup> of capacity for ~US\$8/t of capital
  - wagon capacity will increase from 129 to 139 tonnes per car
- Some additional crossover and loop extensions are required

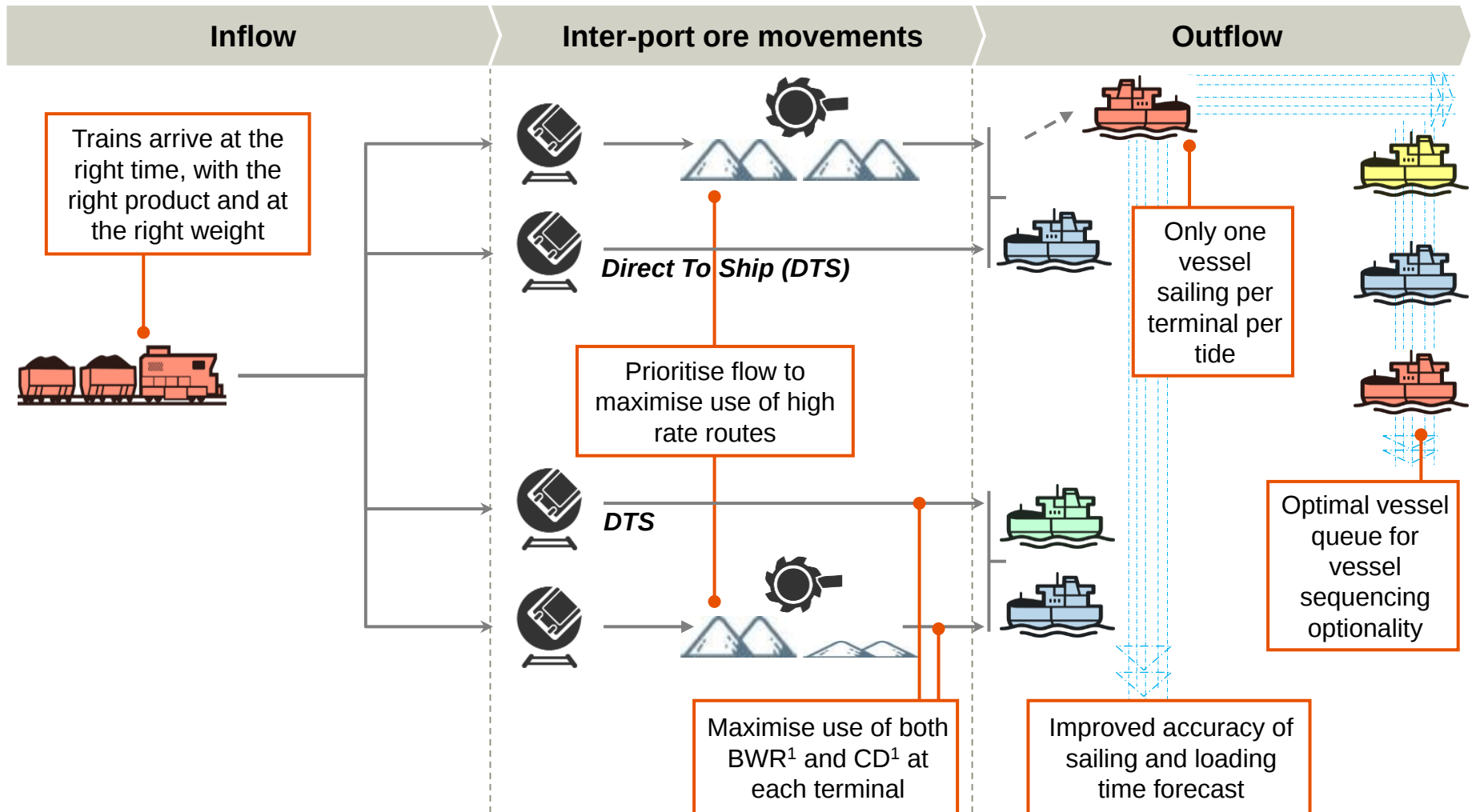


## Standardisation of locomotives (%)



1. 100% basis.

# Optimising the flow of ore through the port



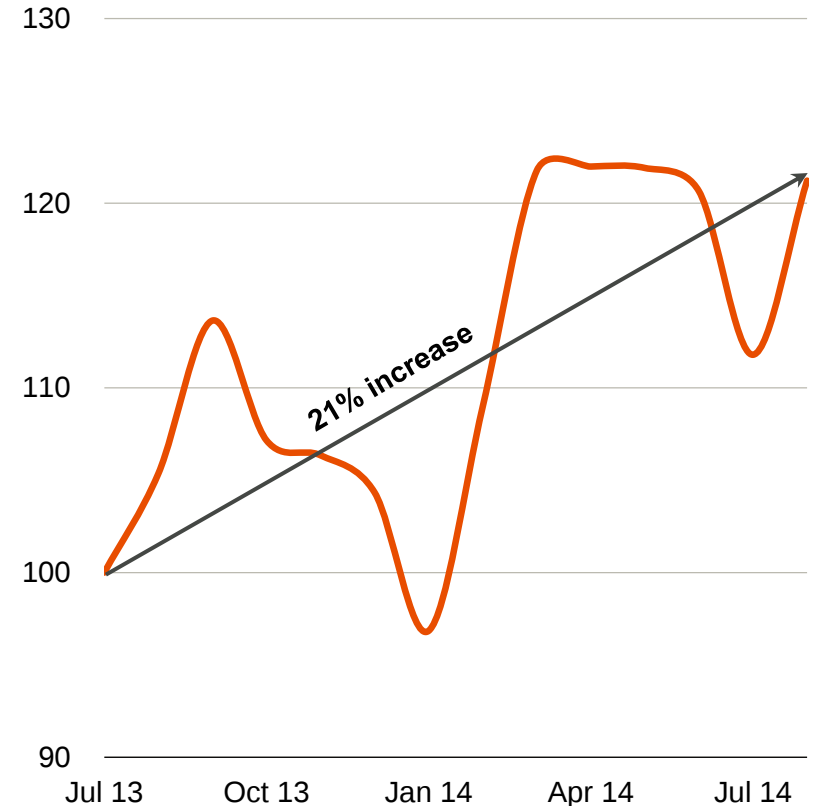
1. Refers to bucket wheel reclaimer (BWR) and car dumper (CD).

# Focus on availability, utilisation and rate has raised port capability

- **Availability** of car dumpers and shiploaders has increased following changes to our maintenance strategy
  - 50% reduction in electrical delays over the last 18 months
- **Utilisation** substantially enhanced through better planning and scheduling
  - regular train presentation has improved car dumper utilisation by 21%
  - improved ship sequencing and presentation at the berths
- **Rate** of port equipment lifted through a combination of initiatives
  - optimised direct to ship volumes
  - lump processing rates increased via direct loading from car dumper to rescreening plants
  - routes upgraded at low cost

## Total car dumper utilisation

(index, June 2013 = 100)



# Replacement of Shiploaders 1 and 2 at Nelson Point further increases port capacity

- We are replacing two shiploaders at Nelson Point at a cost of US\$300 million<sup>1</sup>
  - loading rates increase by 25% to 12,500 tph
  - improves reliability
- Project is on budget and schedule
  - Shiploader 1 achieved first ore in August 2014
  - Shiploader 2 first ore expected in Q2 FY15

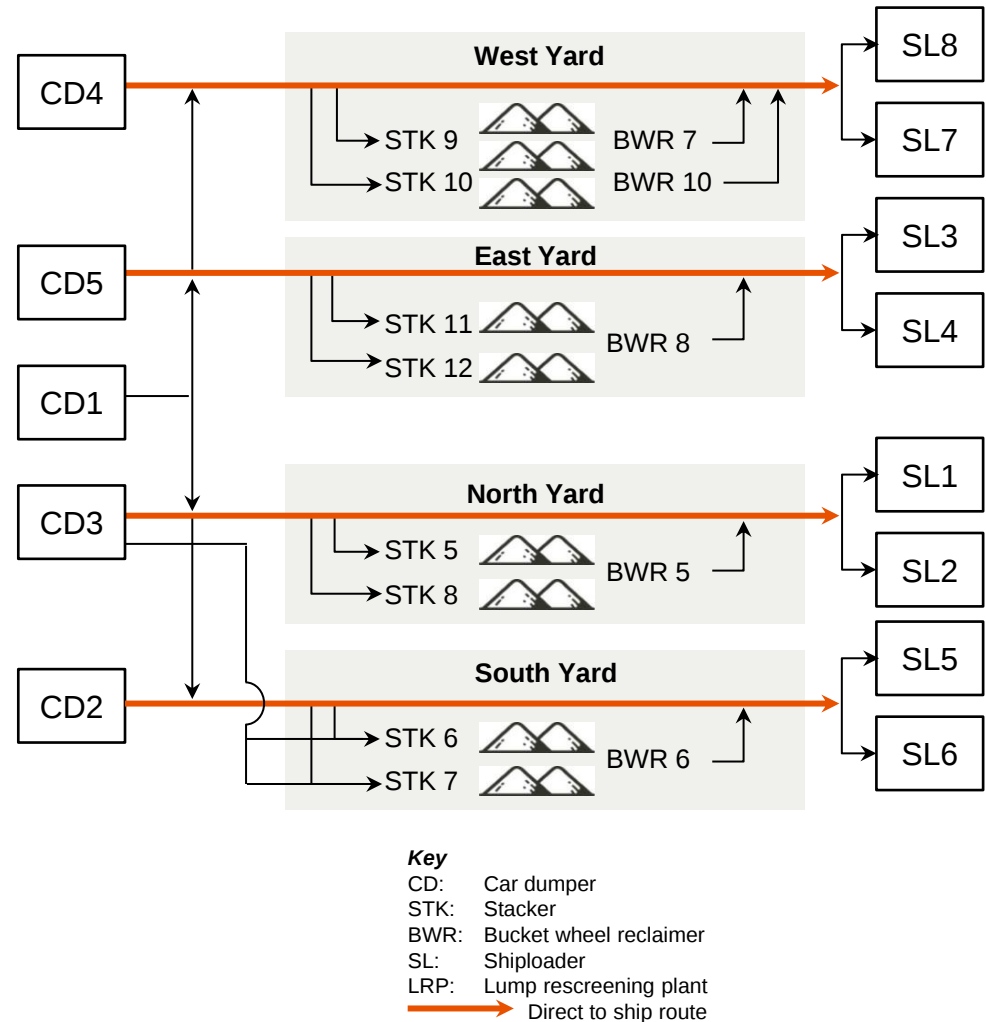


1. BHP Billiton share.

# IHD1 will lift inner harbour capacity from 270 Mtpa to 290 Mtpa

- Upgrades to 12 conveyor route system components including drives and belts
- Replacement of Bucket Wheel Reclaimer 6
- Expansion of Lump Rescreening Plant 2
- Minor equipment changes to stackers and shiploaders
- Maximise direct to ship loading and the flow of ore to the shiploaders
  - distinct competitive advantage
  - will provide further benefit through future application of smart logistics and scheduling technology

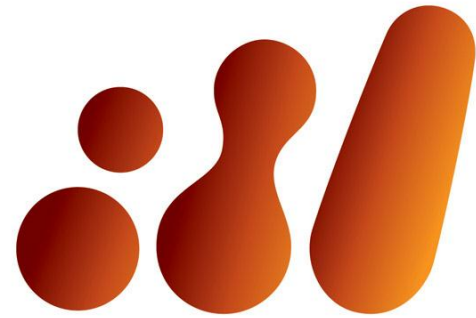
**Other inner harbour  
debottlenecking opportunities  
have been identified and are  
being actively studied**



Note: IHD1 is subject to Board approval.

# Key themes

- We operate a world-class fully integrated supply chain
- We safely deliver high-quality product while pursuing the lowest possible unit costs
- Our move to owner-operator at all mines is complete
- We have standardised the key components of our mine and rail fleets
- Further operational improvement will allow us to grow without major investment
- By optimising the flow of product into Port Hedland we will unlock significant capacity



**bhpbilliton**

resourcing the future

Newman



# Leveraging our superior resources through productivity

**Tony Ottaviano**

Vice President Strategy, Development & Planning

6 October 2014



# Key themes

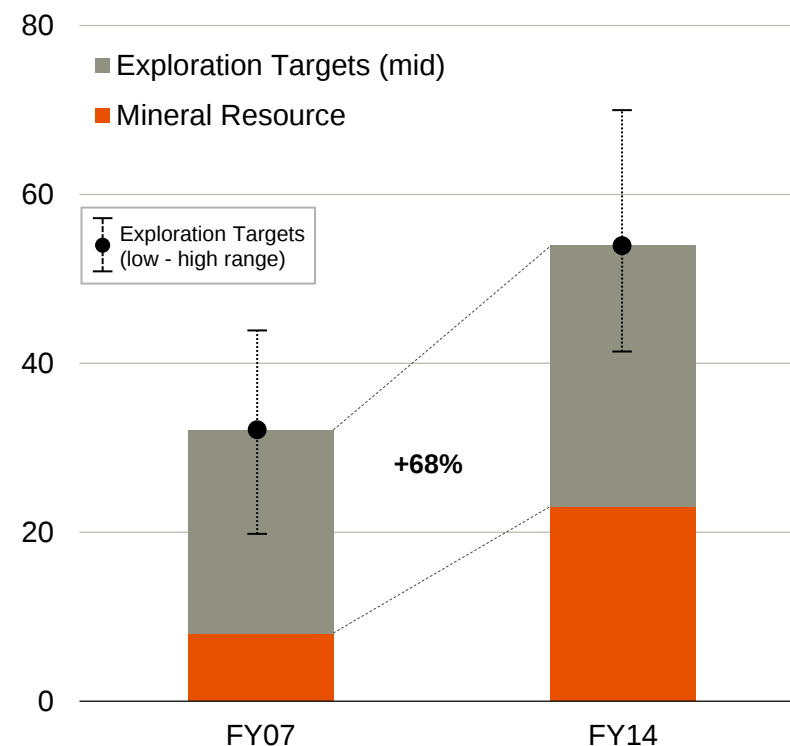
- The scale and close proximity of our high-quality resources to our major mining hubs underpins our competitive advantage
- We have capital-efficient options to sustain and grow these hubs for decades to come
- Our ore bodies will enable us to maintain our high-quality product specifications
- We plan to grow WAIO production by 65 Mtpa at a capital intensity of approximately US\$30 per annual tonne
- The adoption of technology will enhance our safety, volume and cost initiatives

# We have the strongest resource position in the Pilbara

- Our Pilbara Mineral Resource has tripled<sup>1</sup> in size during the last seven years
  - Resources of 23 Bt inclusive of Reserves of 3.7 Bt<sup>2</sup>
- Our current focus is to increase resource definition around existing hubs
- In the longer term our Exploration Targets could add another 18 Bt to 58 Bt<sup>3</sup> of high quality resource
- Our resource endowment will support our business for more than 100 years<sup>4</sup>

## WAIO mineral inventory<sup>2,3,4</sup>

(billion wet tonnes, 100% basis)



1. Relates to our Total Resource FY07 versus FY14.

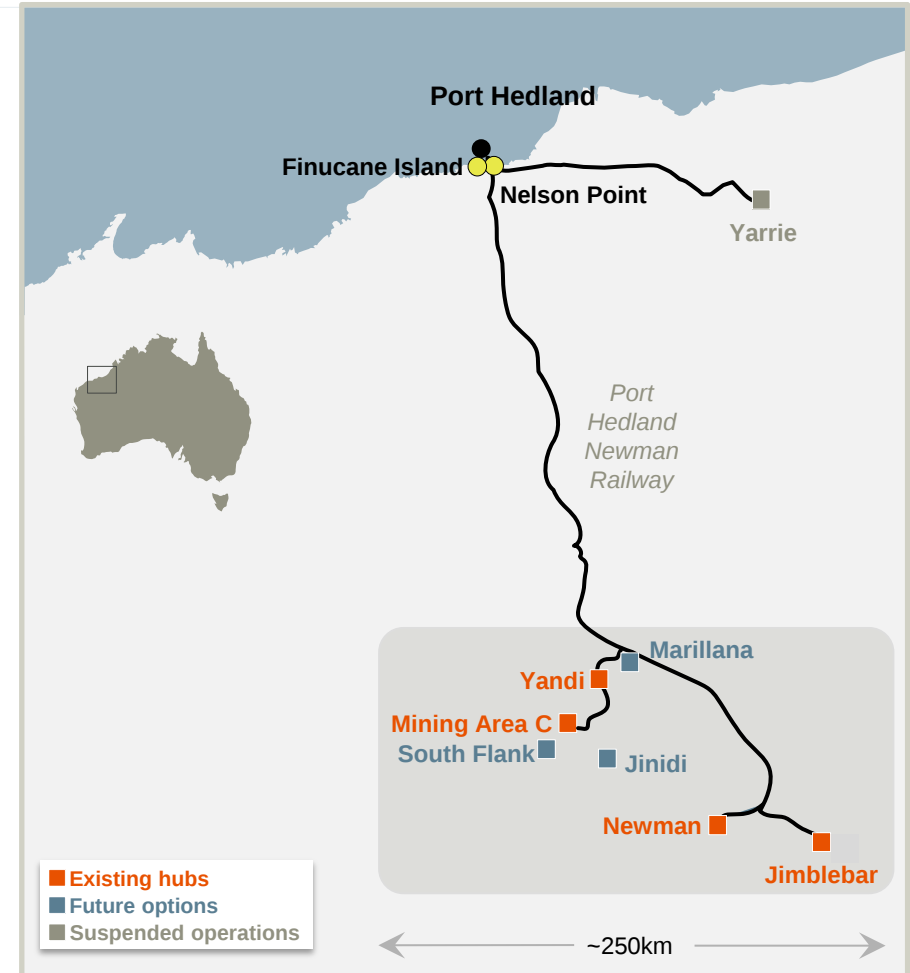
2. Resource and Reserve confidence classification and grades are tabulated in Disclaimer Table 1 on slide 3.

3. The range of Exploration Targets is estimated from geological information including drill holes, outcrops and geophysical information, and is shown as a range (black bars). 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. Refer to Disclaimer on slide 2.

4. Mineral inventory is equal to the sum of FY14 Mineral Resources and ranged Exploration Targets. Inventory life is estimated from the mineral inventory (classified Mineral Resources converted to a run-of-mine basis using historical Mineral Resources to Ore Reserves conversion and Exploration Targets (Mid) converted using conceptual conversion) divided by the FY14 production rate on a 100% basis.

# High resource intensity and proximity to our infrastructure is a competitive advantage

- We operate four large mining hubs within a highly concentrated footprint of 7,752 kilometres squared
  - almost 3 Mt of Total Resource per square kilometre of live tenure<sup>1</sup>
  - 95% of our 23 Bt of Resource<sup>2</sup> is within a 200 x 100 km area concentrated around existing hubs
- We have low-cost development options adjacent to our existing hubs
- As a result we can sustain and grow production for decades to come



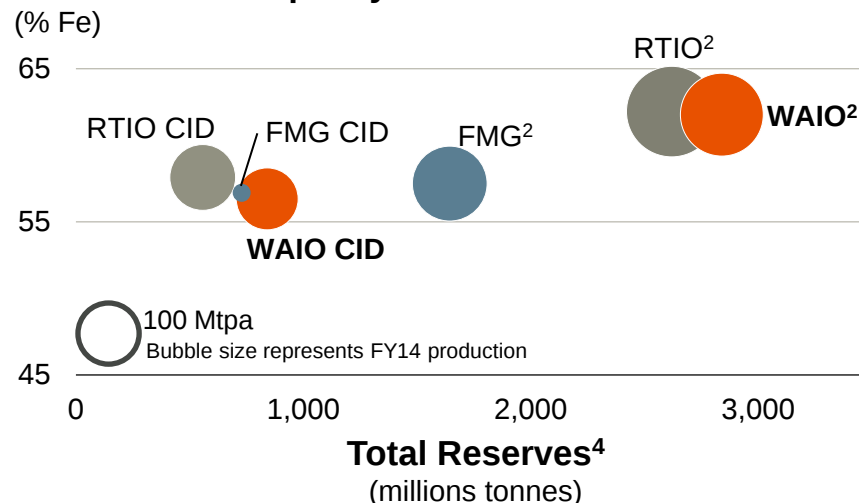
1. Tenure includes all granted mineral related leases available from public information as at September 2014.

2. Resource and Reserve confidence classification and grades are tabulated in Disclaimer Table 1 on slide 3.

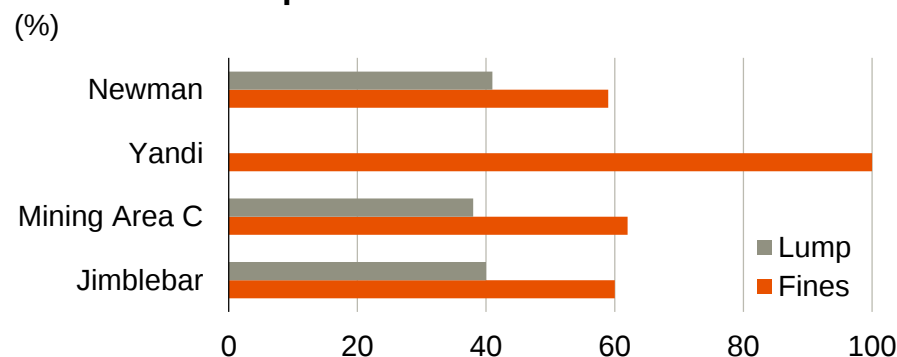
# The characteristics of our ore bodies support low-cost operations

- Our world-class ore bodies should enable us to become the lowest-cost supplier of iron ore to China
  - we optimise our mine plans to maximise our profit margin
- The majority of our resources are high Fe, high lump, Brockman and Marra Mamba ores
  - product specification will be maintained at the 62% Fe benchmark
  - lump is expected to remain ~25%<sup>1</sup> of the product mix
  - excluding Yandi Fines lump represents ~40% of total production
  - we will continue to focus on maximising our lump yield which delivered a US\$12/DMT premium<sup>3</sup> in FY14

## WAIO's reserve quality is world class



## WAIO FY14 Lump and Fines breakdown



Source: BHP Billiton; company announcements.

1. Total WAIO lump as a percentage of production includes Yandi fines.

2. Excludes Channel Iron Deposit (CID) Reserve.

3. Platts 62.5% spot lump premium averaged 19.8 c/dmtu (~US\$12/DMT) for FY14.

4. BHP Billiton Reserves as at FY14; Rio Tinto Reserves as at CY13; FMG Reserves as at FY14.

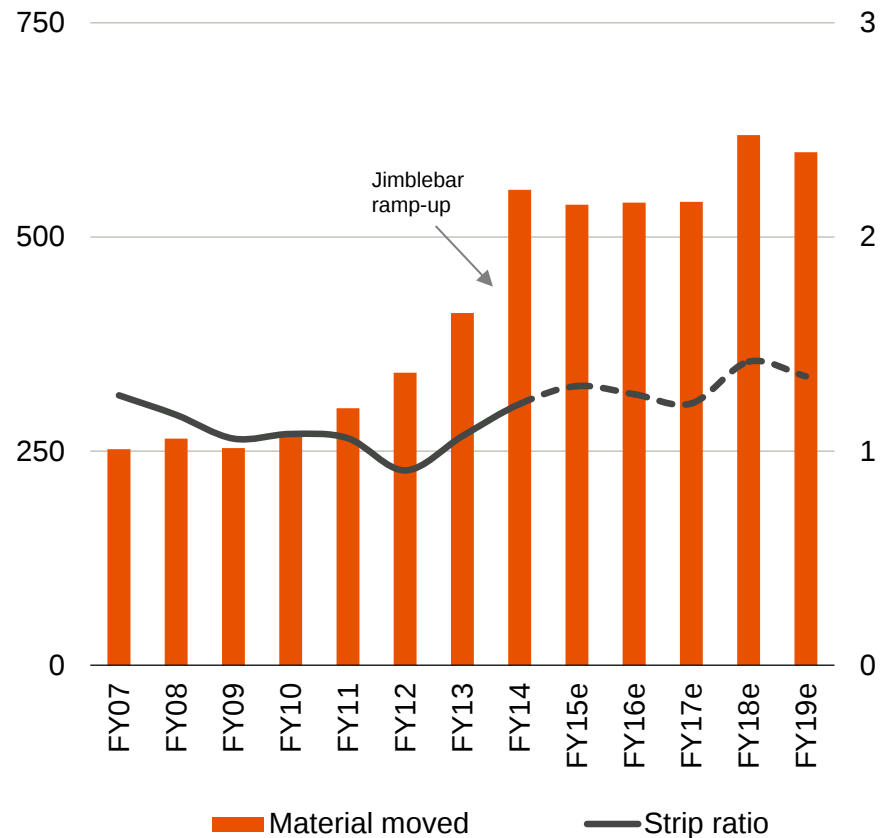
# The characteristics of our ore bodies support low-cost operations

- Our strip ratio is expected to remain stable at an average of 1.3x over the next five years
- A lower proportion of our resource is below the water table
  - results in lower capital intensity and operating costs for processing
  - reduces yield loss due to beneficiation
- Only 2% of our current production is beneficiated
  - beneficiation has been studied and remains a valuable option

## WAO material moved and strip ratio

(Mt, 100% basis)

(strip ratio)



# Excellence in project delivery

- Over the last decade we completed a series of major investments at WAIO and developed a strong track record of project delivery
  - Jimblebar delivered first production six months ahead of schedule in FY14
- On average, recent projects have been completed 9% ahead of local currency budget and 4% ahead of schedule
- We are now focused on substantially improving the capital efficiency of future investment
  - full utilisation of installed infrastructure
  - standardisation, modularisation and replication for best in class design
  - strategic contractor management
  - contracting to capitalise on loosening market conditions

## A strong track record of project delivery

(% of target, A\$ 100% basis)



1. WAIO Port Hedland Inner Harbour Expansion and WAIO Port Blending and Rail Yard Facilities.

2. Based on estimated project completion.

# Capital savings through Standardisation, Modularisation and Replication

## Conveyor components

Optimised designs for transfer chutes, take-up, shuttle, high and low level sections selected for all sustaining and debottlenecking projects

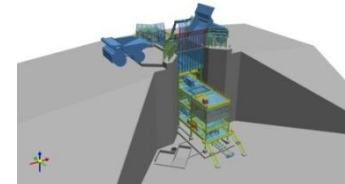
30%  
saving



## Primary crusher

New design selected for future satellite ore bodies at Mining Area C

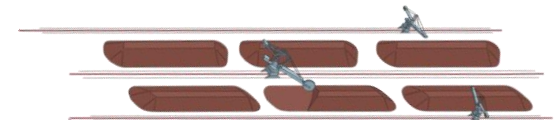
18%  
saving



## Stockyard machines

Revised reclaimer and stacker specifications selected for port and mine debottlenecking projects

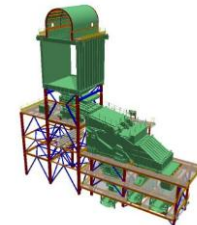
10%  
saving



## Screening and crushing modules

Leaner design selected for mine debottlenecking projects

15%  
saving



Note: Savings are in comparison to previously approved projects. Additional indirect cost and engineering cycle time savings will be realised through selecting pre-defined Standardisation, Modularisation and Replication designs.

# Modularisation underpinned the successful delivery of the Jimblebar project

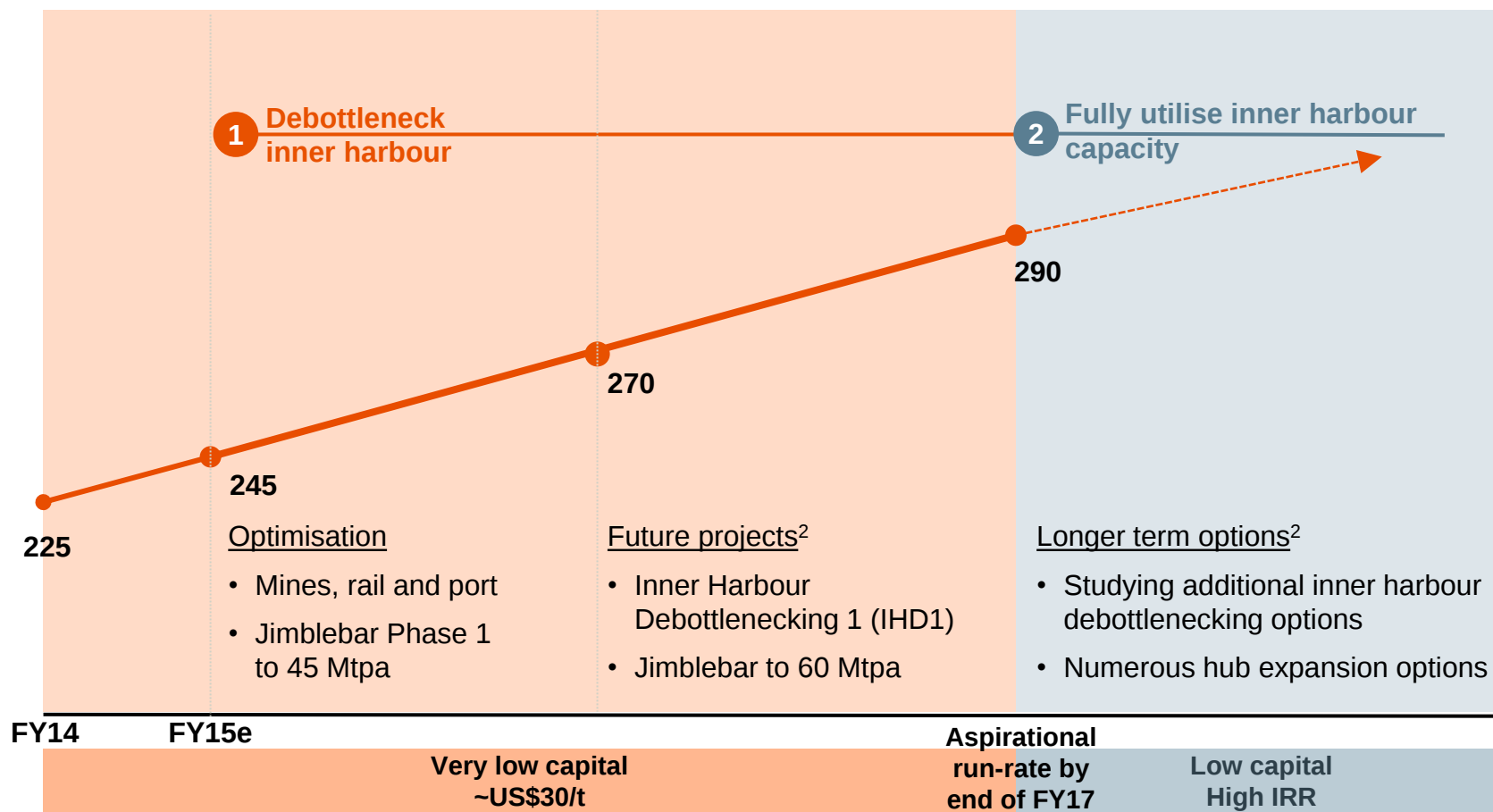
- Jimblebar delivered first production six months ahead of schedule
- Employed modular approach with major items fabricated in China and delivered to site for assembly
- China procurement team instrumental in sourcing and monitoring contractor delivery
  - project team undertook regular progress audits and quality inspections in China
  - world-class end product



# We plan to grow WAIO production by 65 Mtpa at a capital intensity of ~US\$30 per annual tonne

## Delivering value from our installed infrastructure<sup>1</sup>

(Mtpa, 100% basis)



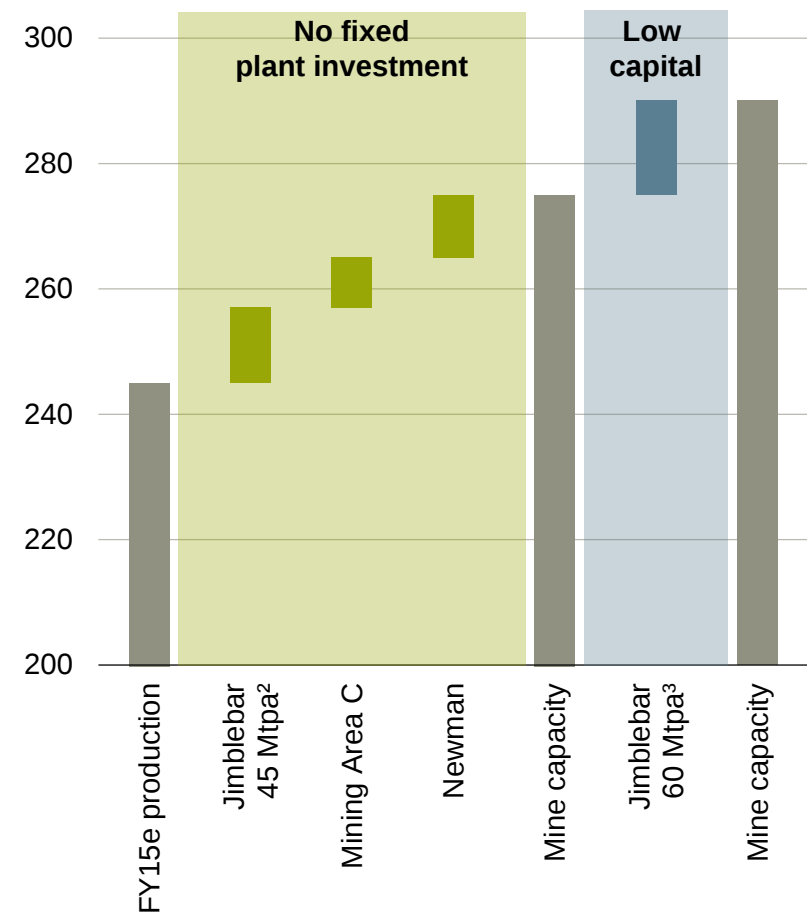
1. Represents actual production for FY14, FY15 guidance and aspirational future system run-rate.

2. Subject to Board approval.

# Releasing more volume from our installed mine infrastructure

- Low-cost volume growth will be underpinned by
  - unlocking latent capacity
  - debottlenecking mine-rail interfaces
- We can increase mine output to ~275 Mtpa<sup>1</sup> with no additional fixed plant investment
  - Jimblebar Phase 1 will now achieve 45 Mtpa<sup>1</sup>
  - Mining Area C and Newman will deliver the balance
- The currently preferred option to lift mine capacity to 290 Mtpa<sup>1</sup> is the low-cost expansion of Jimblebar to 60 Mtpa<sup>1,3</sup>
  - requires additional mining fleet and primary crusher

## Tier 1 portfolio provides optionality<sup>1</sup> (Mtpa)

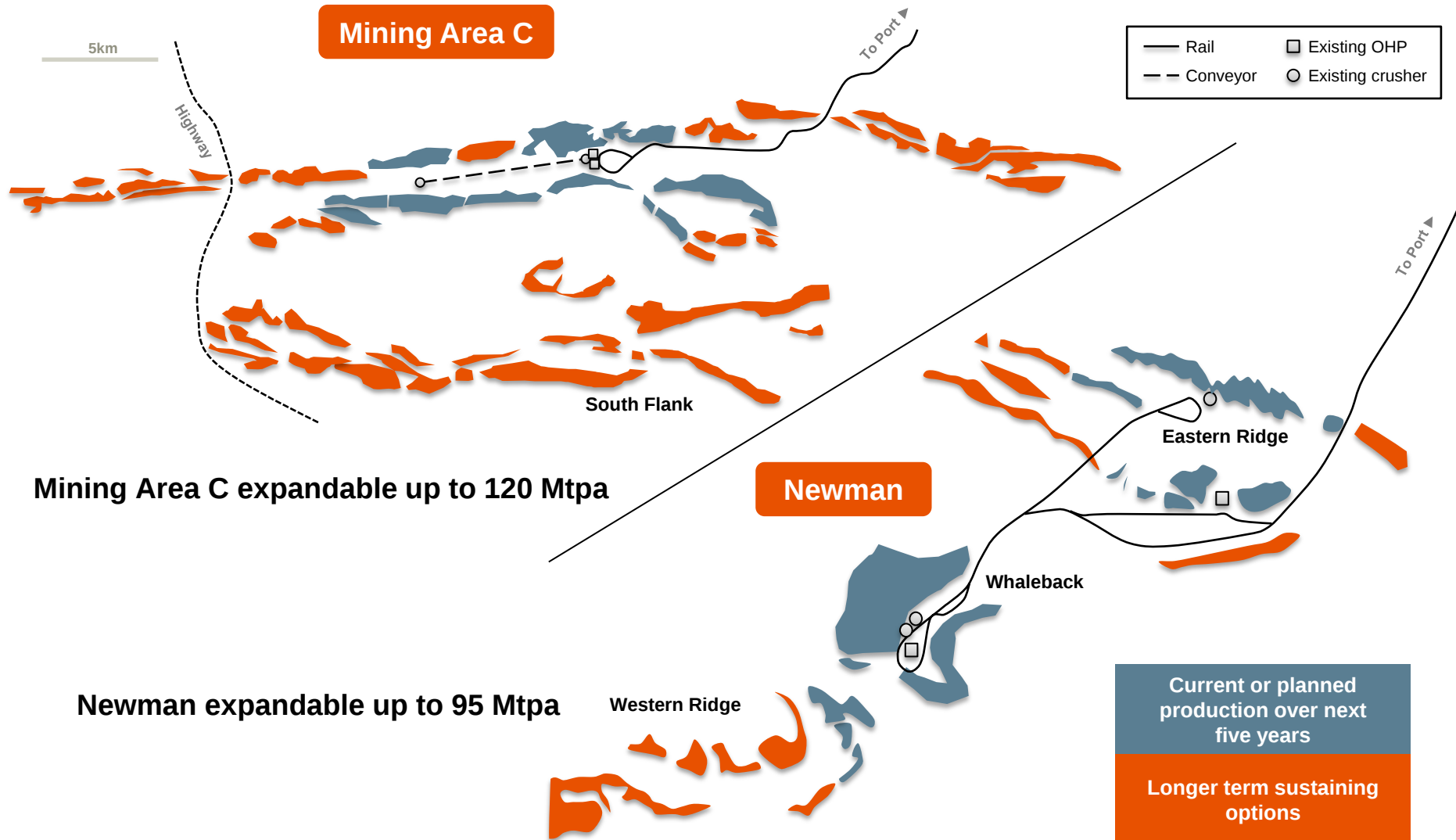


1. 100% basis.

2. Includes 2 Mt of growth related tonnes with respect to the ramp-up to 35 Mtpa.

3. Subject to Board approval.

# We can sustain our existing hubs for at least 30 years



Note: Potential additional drilling not limited to Mining Area C and Newman Hubs.

# Rail will never be the bottleneck

## Existing double track



Significant below rail investment  
already installed

**>260 Mtpa**

## Never be the bottleneck

- Productivity improvements
- Fleet and maintenance standardisation
- Synchronisation of the network
- Currently investing in longer, heavier trains
  - Electronically Controlled Pneumatic Brakes (ECPB)
  - 40 tonne axle load bogies
- Crossovers and signals
- Rolling stock

Deliver by end of 2015

**290 Mtpa**

## Optimise & automate

- Above rail investment
- Communications based signalling and train control
- Automation of processes at car dumpers and load-outs
- Studying further automation options

Studies in progress

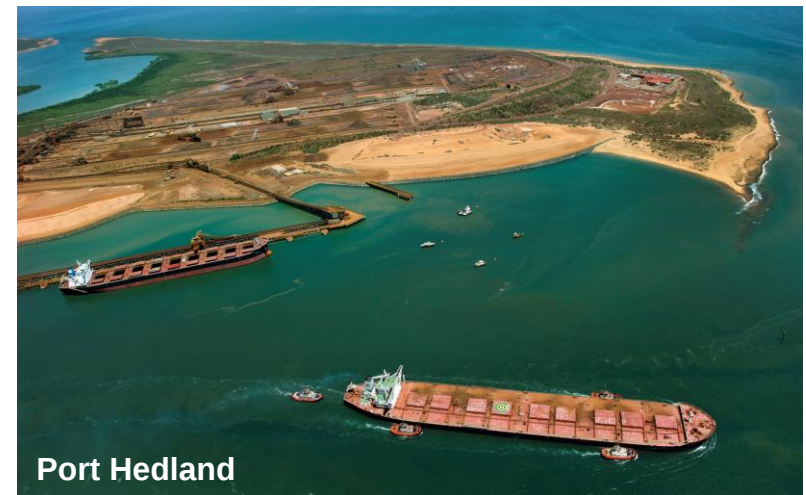
**290 Mtpa and beyond**

# The port will support our capital-efficient growth plans

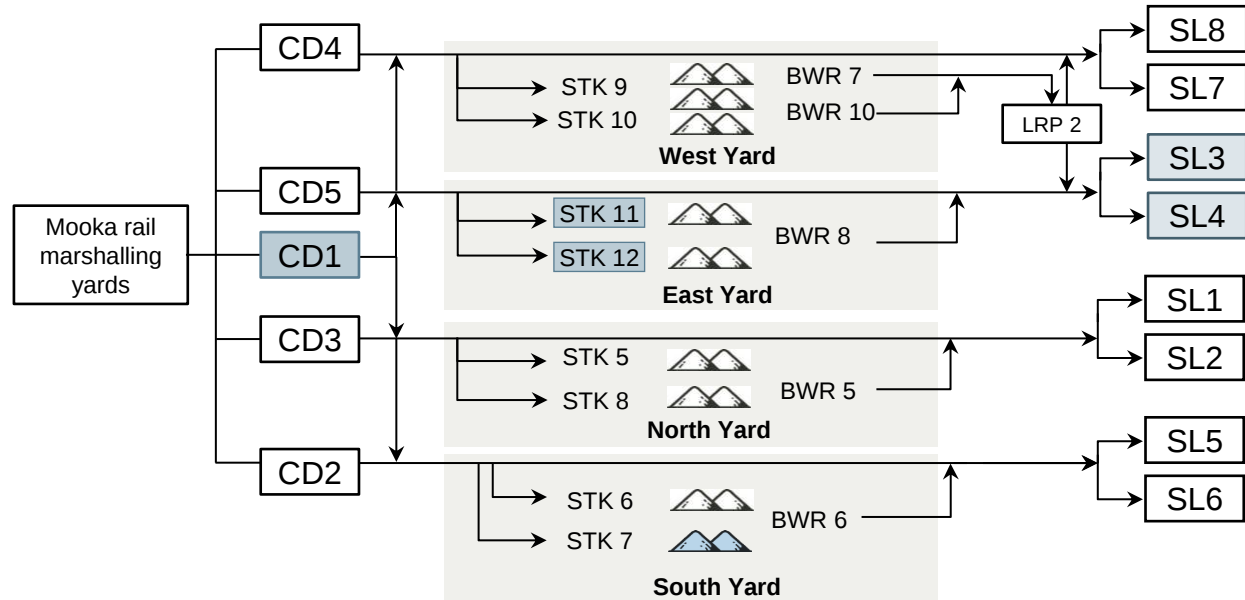
- We have 240 Mtpa<sup>1</sup> of A and B class capacity allocated at Port Hedland
- Able to utilise latent D class capacity
  - capacity has been accessed on a number of occasions
- The port has sufficient capacity on each tide to support our growth plans
  - Pilbara Ports Authority has increased the sailing window by one hour taking the vessels per tide from six to eight<sup>2</sup>
- Channel capacity may be further unlocked
  - reduced vessel separation
  - dual turning basins
- Operating initiatives will deliver 270 Mtpa<sup>1</sup> in the inner harbour
- Inner Harbour Debottlenecking 1 project will deliver a further 20 Mt to 290 Mtpa<sup>1</sup> (subject to Board approval)

1. 100% basis.

2. Roger Johnston (CEO, PPA), April 2014, IAPH Sydney Conference.



# Debottlenecking initiatives that could unlock additional capacity are under study



Identified further debottlenecking opportunities

**Key**

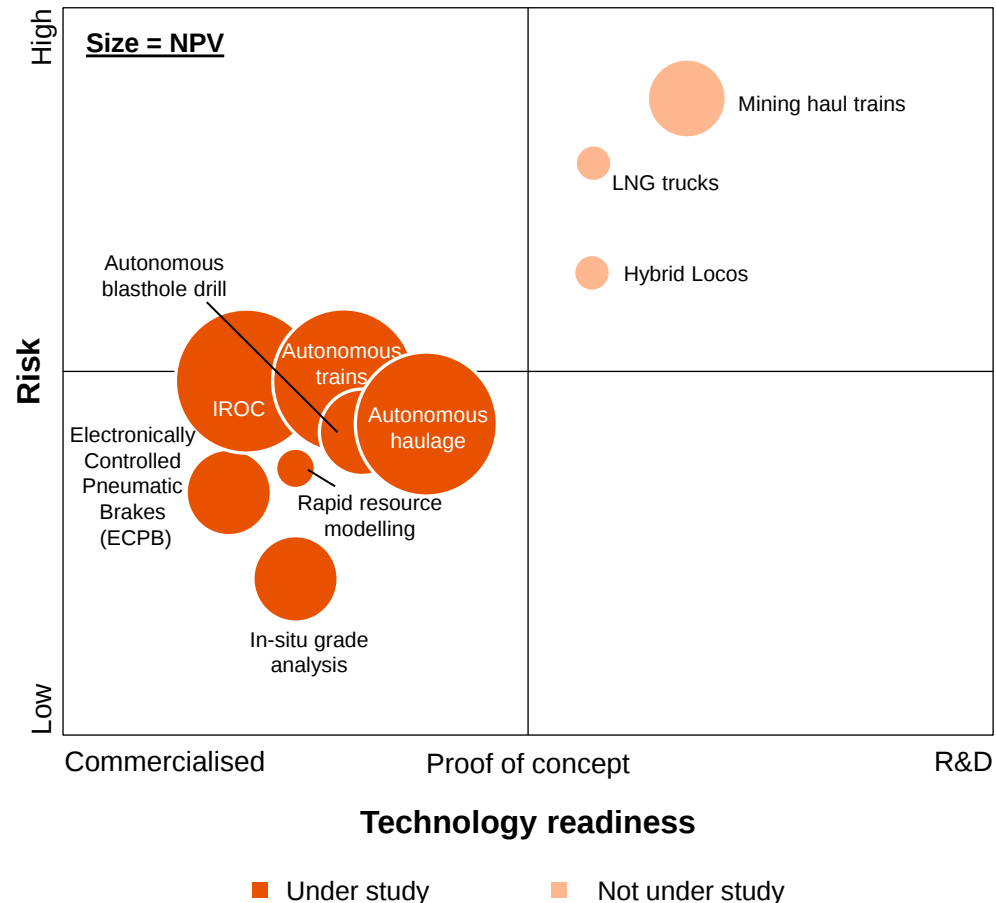
CD: Car dumper  
STK: Stacker  
BWR: Bucket wheel reclaimer  
SL: Shiploader  
LRP: Lump rescreening plant

## Debottlenecking opportunities under study

- East Yard stacker upgrades
- South Yard extension and linkage
- CD1 and Tunnel upgrade to 13,500 tph
- LRP3 upgrade to 17,000 tph

# Integrated approach to technology focused on maximising value

- First wave of productivity improvement driven by process refinements and control
  - underpinned by 1SAP and the BHP Billiton Operating Model
- Next wave of productivity improvement will be enabled by the targeted application of technology
- Five key areas have the potential to deliver significant productivity gains through technology
  - automation
  - smart, networked operations
  - innovative extraction and processing
  - advanced geosciences
  - reducing our footprint
- Technology is scalable and can be shared across the broader BHP Billiton portfolio



# Core technology projects demonstrating early success

## Autonomy



### Autonomous trucks

- Nine autonomous haul trucks in operation at Jumblebar
- >20 Mt to be hauled autonomously in FY15
- Autonomous haul truck fleet to increase to 12



### Train automation

- Load-out automation
- Automated dumper spotting study advanced
  - unlocks 2–5 Mtpa
- Train automation in early study phase
- Virtual/Moving Block Signalling

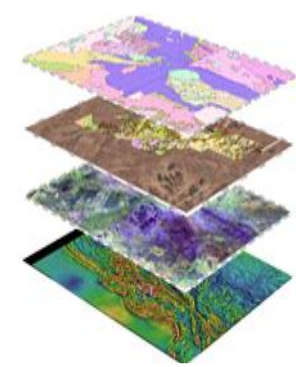


### Autonomous drills

- Trialling Atlas Copco 'Pit Viper' at Yandi
- Positive early results
  - 9.8% increase in metres drilled per shift<sup>1</sup>
  - 22% improvement in drill bit life
- Fully autonomous blasthole drilling at Yandi by FY16
- Expect 300% increase in metres drilled per FTE

1. Compared to average manned drill performance at Yandi.

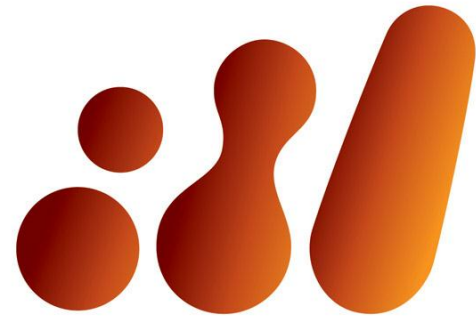
## Smart exploration



- Exploration down-hole assay tool for in-situ grade analysis
- Reduced time from exploration to mining
- Improved resource knowledge
- Improved utilisation of rig geologists
- 10 km of diamond drilling eliminated

# Key themes

- The scale and close proximity of our high-quality resources to our major mining hubs underpins our competitive advantage
- We have capital-efficient options to sustain and grow these hubs for decades to come
- Our ore bodies will enable us to maintain our high-quality product specifications
- We plan to grow WAIO production by 65 Mtpa at a capital intensity of approximately US\$30 per annual tonne
- The adoption of technology will enhance our safety, volume and cost initiatives



**bhpbilliton**

resourcing the future