



# Delivering value through optimisation

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Group Executive & Chief Executive Ferrous and Coal

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resourcing the future

## Forward looking statements

This presentation 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.

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## Non-IFRS financial information

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

## UK GAAP financial information

Certain historical financial information for periods prior to FY2005 has been presented on the basis of UK GAAP, which is not comparable to IFRS or US GAAP. Readers are cautioned not to place undue reliance on UK GAAP information.

## No offer of securities

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# Disclaimer

## Mineral Resources and Ore Reserves – Iron Ore

This presentation includes information on Mineral Resources (inclusive of Ore Reserves) and Ore Reserves.

These have been compiled by: P Whitehouse (MAusIMM) – Western Australia Iron Ore (WAIO) who is employed by BHP Billiton at the time of reporting. This is based on information in the BHP Billiton Annual Reports from 2007 to 2012 and other investor presentations which can be found at [www.bhpbilliton.com](http://www.bhpbilliton.com). All information is reported under the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2004' (the JORC Code).

The Compiler verifies that this report is based on and fairly reflects the Mineral Resources and Ore Reserve information in the supporting documentation and agrees with the form and context of information presented.

Ore Reserve and Mineral Resource classifications are contained in Table 1.

**Table 1**

|        | Proved Reserve (Bt) | Probable Reserve (Bt) | Measured Resource (Bt) | Indicated Resource (Bt) | Inferred Resource (Bt) |
|--------|---------------------|-----------------------|------------------------|-------------------------|------------------------|
| FY2012 | 1.4                 | 2.0                   | 2.3                    | 3.7                     | 14.6                   |
| FY2011 | 1.4                 | 2.1                   | 2.2                    | 3.9                     | 13.2                   |
| FY2010 | 1.3                 | 2.0                   | 1.9                    | 3.5                     | 10.7                   |
| FY2009 | 1.3                 | 1.8                   | 1.8                    | 3.2                     | 7.5                    |
| FY2008 | 1.5                 | 1.5                   | 2.0                    | 2.9                     | 6.8                    |
| FY2007 | 1.3                 | 1.1                   | 1.7                    | 2.1                     | 4.2                    |

## Mineral Resources and Ore Reserves – Metallurgical Coal

Based on information contained in the BHP Billiton 2012 Annual Report which can be viewed at [www.bhpbilliton.com](http://www.bhpbilliton.com).

All information is reported under the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2004' (the JORC Code) by the following Competent Persons who have the required qualifications and experience to qualify as Competent Persons under the JORC Code.

Broadmeadow: David Walker (MAusIMM) who is employed by Mineplan Pty Ltd at the time of reporting.

Illawarra Coal: Matthew Rose (MAusIMM) who is employed by BHP Billiton at the time of reporting.

The Competent Persons verify that this report is based on and fairly reflects the Mineral Resources and Ore Reserve information in the supporting documentation and agree with the form and context of information presented.

# Key themes

- Western Australia Iron Ore projects are on schedule and budget
- Multiple debottlenecking opportunities present a low cost path significantly beyond 220 mtpa<sup>1</sup>
- Unlocking latent capacity at Queensland Coal will drive a substantial increase in volumes and reduce costs
- Metallurgical coal projects in execution are on schedule and budget
- Improving the predictability of our operations through better planning, systems, processes and technology
- Our focused strategy will lower unit costs, deliver capital efficient volume growth and create value for our shareholders

1. 100% basis.



## Iron Ore

Maximising productivity, efficiency  
and returns

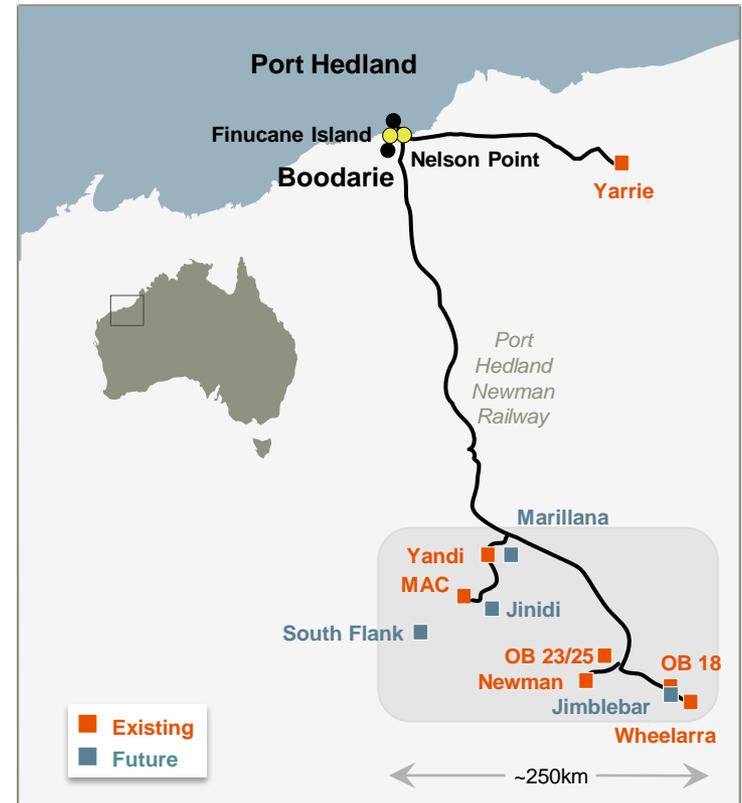
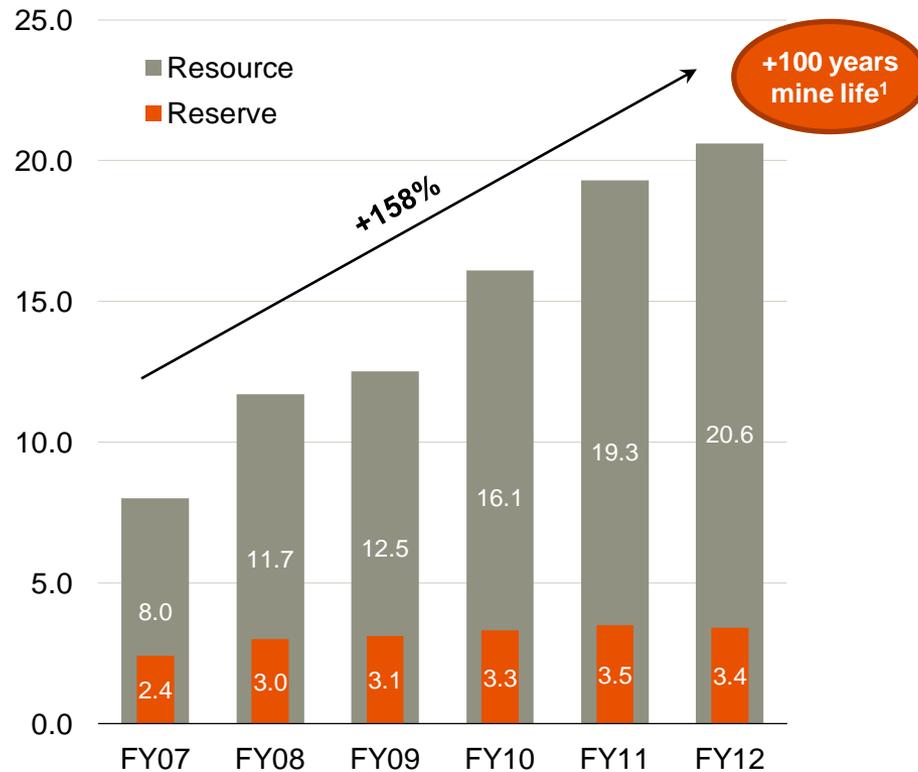


# Our world class resource base is a competitive advantage

## Pilbara mineral resource more than doubled in six years... within a concentrated footprint

### WAIO resources and reserves

(billion wet tonnes, 100% basis)



Note: Refer to disclaimer on slide 3.

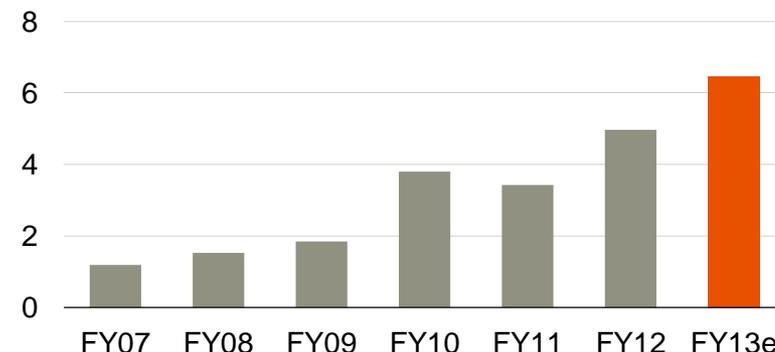
1. Represents the Mineral Resource (inclusive of Ore Reserves) divided by the FY12 production rate and does not imply that any mine planning has been completed. The life of individual mines may be more or less than the number stated above.

# Pursuing the capital efficient tonne

- Investment through the cycle and a series of successful projects have delivered significant production growth in Western Australia Iron Ore (WAIO)
- Our focus has shifted from the marginal tonne to the capital efficient tonne
- Debottlenecking opportunities have the potential to release significant capacity well beyond 220 mtpa (100% basis)
- We will exercise the options with the lowest capital intensity and highest returns to unlock substantial value

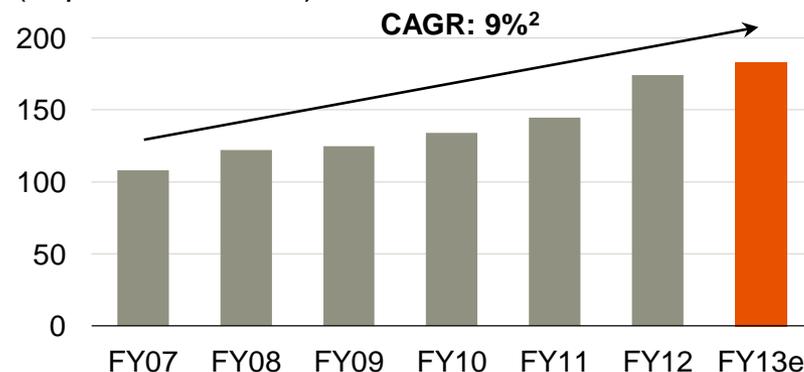
## WAIO investment<sup>1</sup>

(US\$ billion, BHP Billiton share)



## WAIO production

(mtpa, 100% basis)



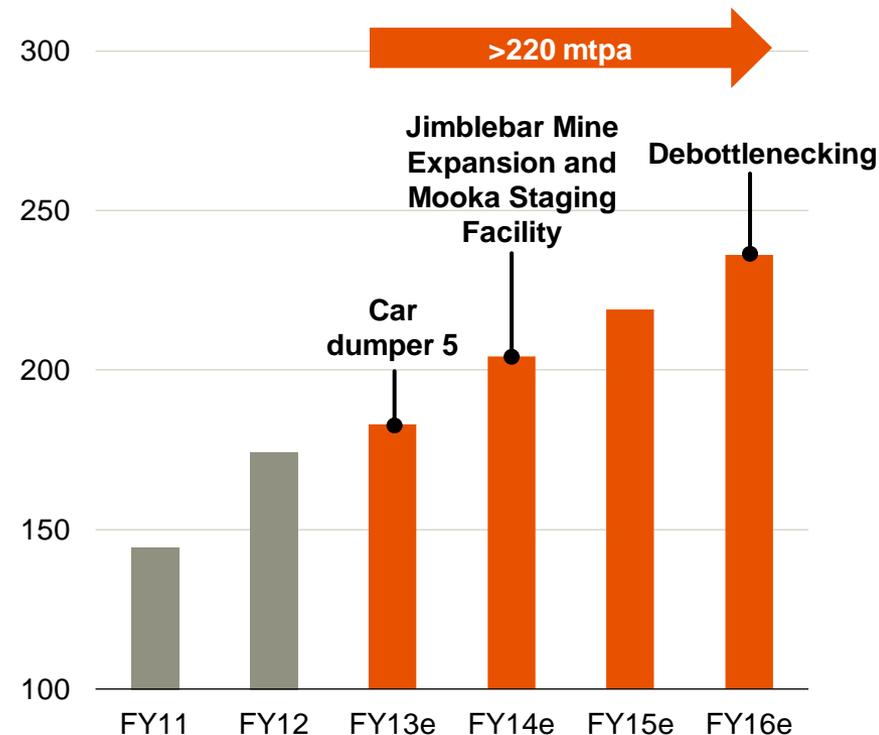
1. Includes growth and sustaining capital expenditure.

2. CAGR from FY07 to FY13e.

# Major projects in execution are progressing well

- Major growth projects are on schedule and within budget
  - **Port Hedland Inner Harbour Expansion** commissioning scheduled for H2 CY12
  - **Jimblebar Mine Expansion** delivers 35 mtpa of mining capacity with larger processing capacity, first production scheduled for Q1 CY14
  - **Rail Yard Facilities Expansion** creates flexibility and increases our direct load capability with commissioning expected in H2 CY14
- Inner Harbour optimisation studies progressing well

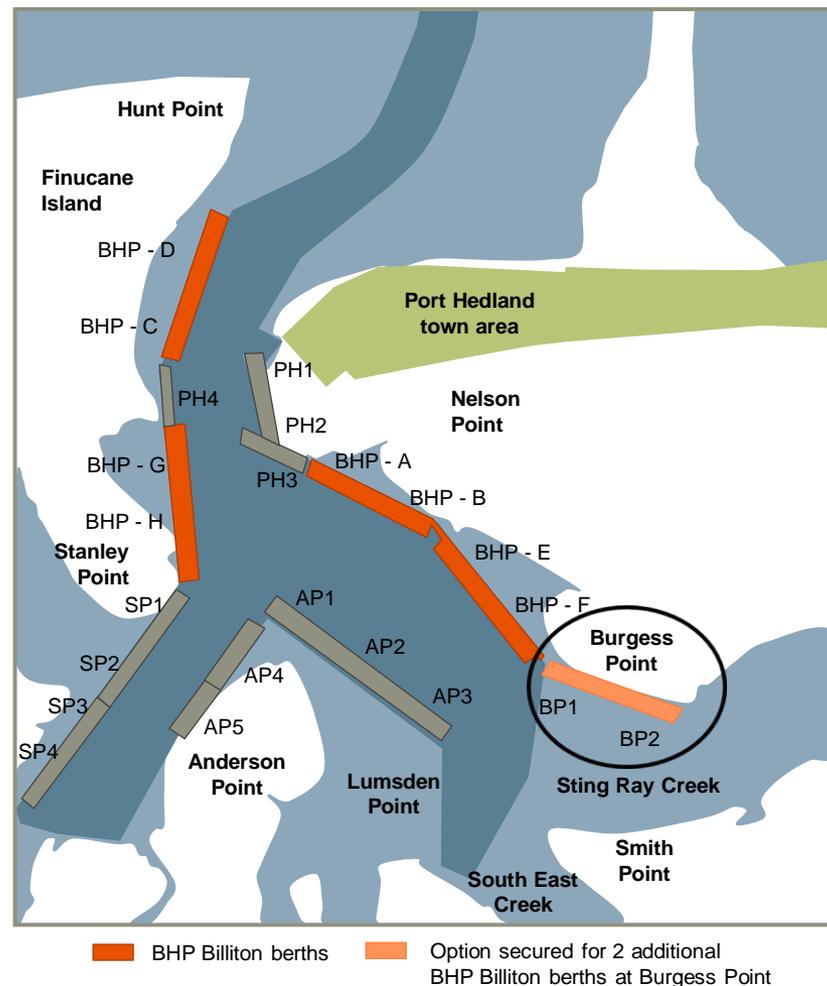
**WAIO production**  
(mtpa, 100% basis)



# Prioritising the highest return growth option

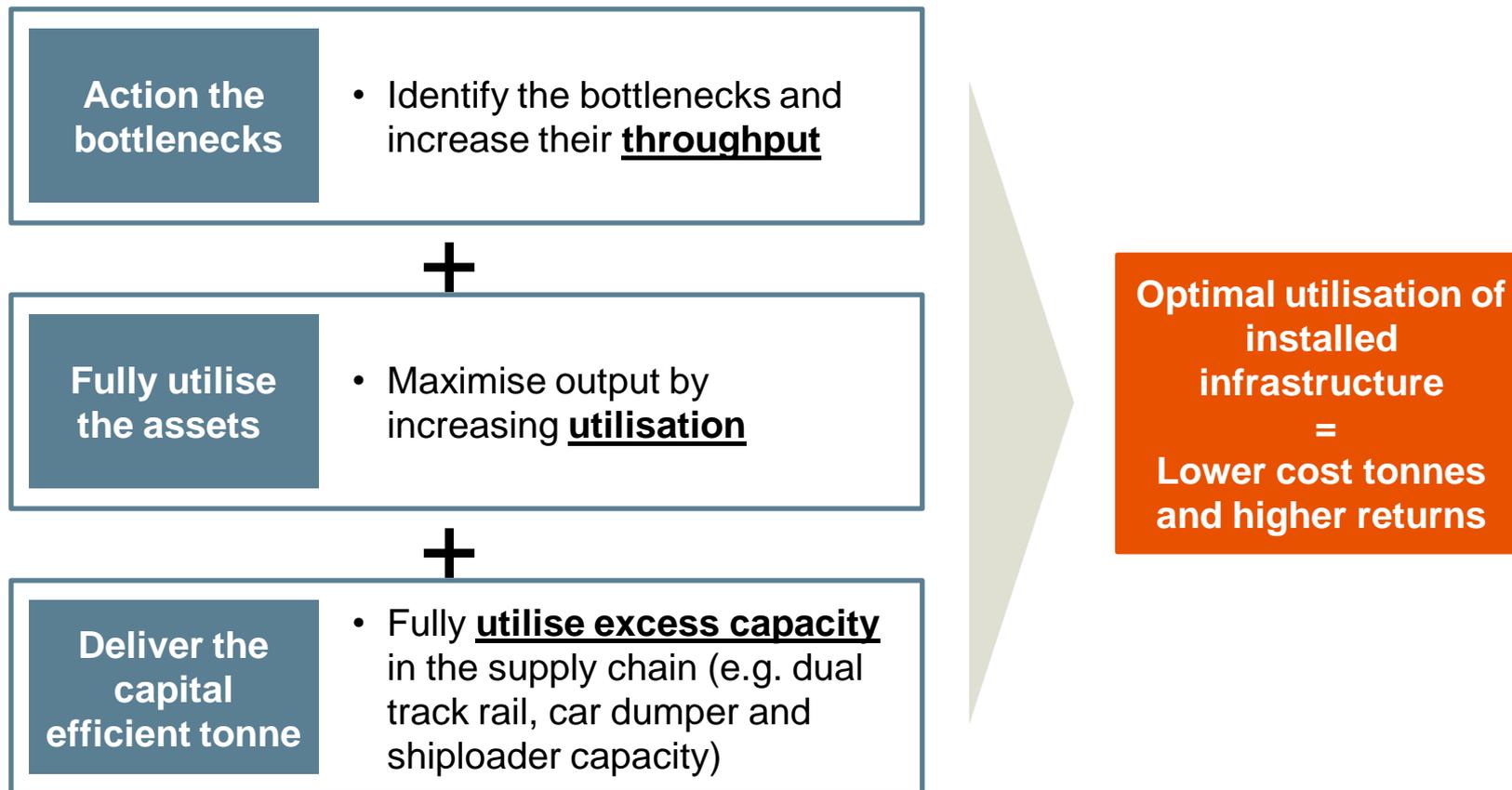
- Inner Harbour Expansion project on schedule
  - first ore loaded during Q1 FY13 from two recently installed shiploaders at Nelson Point
  - car dumper 5 scheduled to process first ore in late CY12
- The Inner Harbour will comprise eight berths and eight shiploaders, four each at Nelson Point and Finucane Island, when existing projects are completed
- Option secured for two additional berths at Burgess Point
- Potential to debottleneck existing land-side infrastructure
- The Outer Harbour remains a valuable option for long term growth

## Port Hedland Inner Harbour



# Debottleneck and optimise the supply chain

## Targeting the release of substantial capacity at low capital intensity



# Port: action the bottlenecks

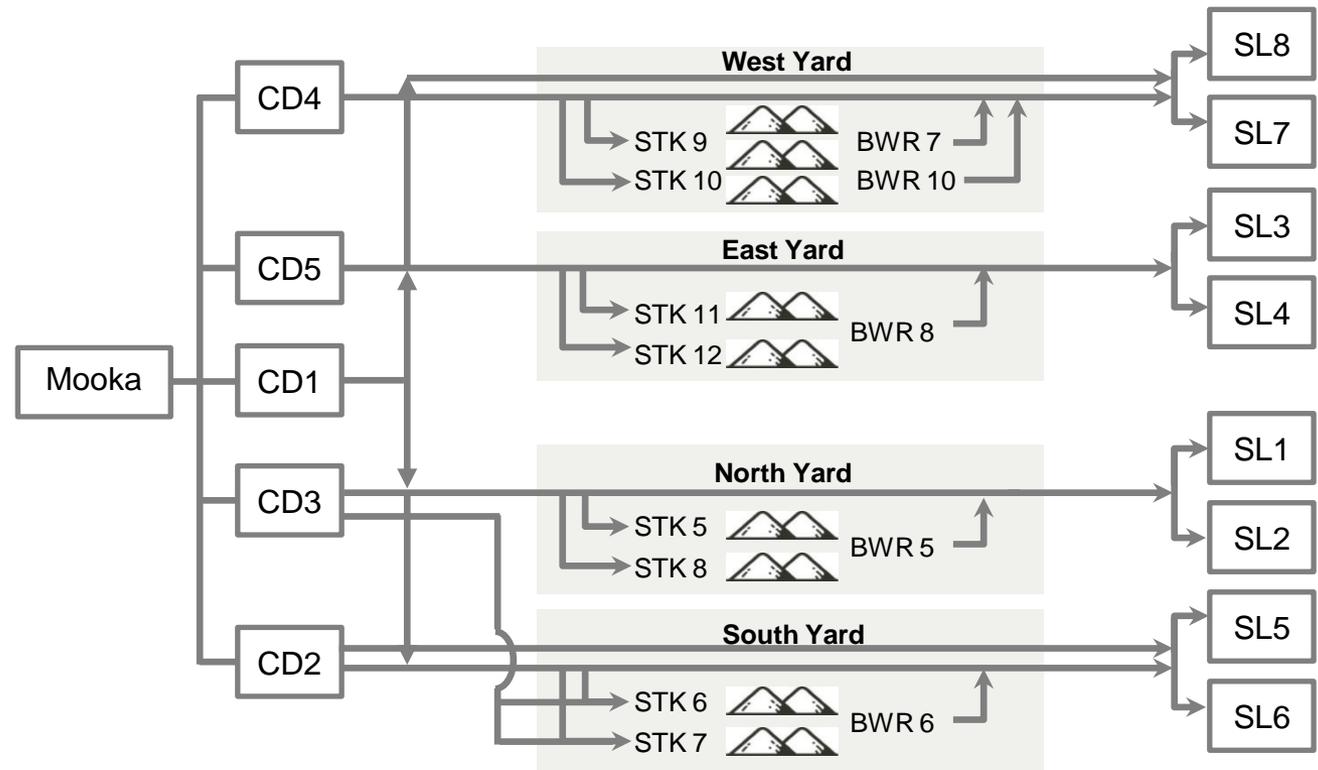
Optimise dumper performance and choke feed them



Ensure all low cost, incremental investment in shiploader capacity has been fully explored



Test dynamic scheduling opportunities and product strategies to improve system performance



Mooka marshalling yard; CD: Car dumper; STK: Stockyard; BWR: Bucket wheel reclaimer; SL: Shiploader

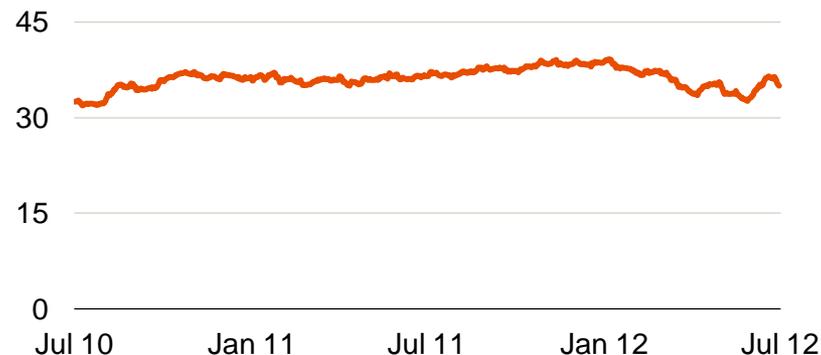
# Port: fully utilise the assets

**Car dumper 4 throughput**  
(mtpa, 90 day moving average)



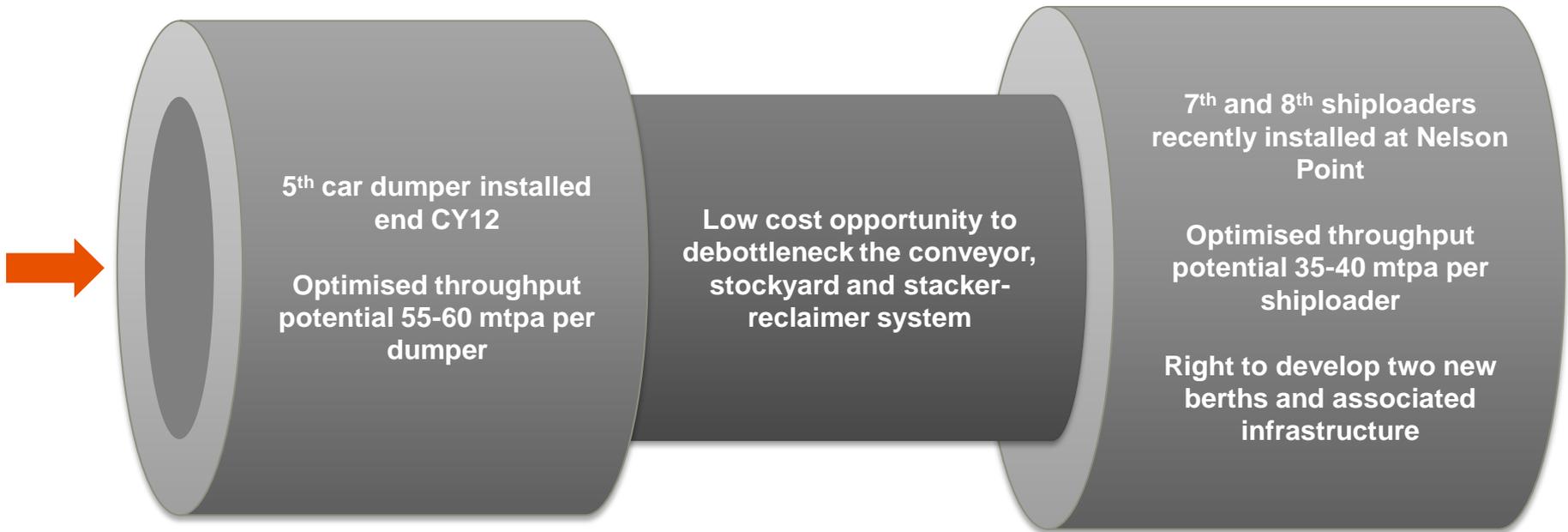
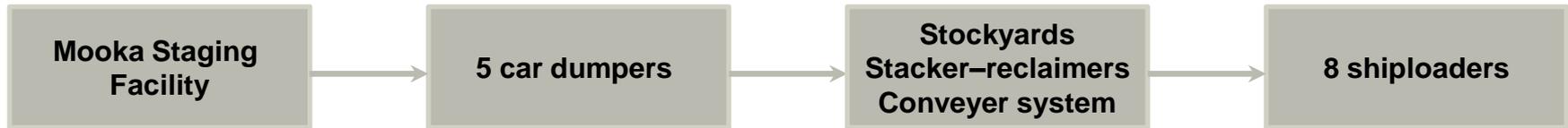
- Car dumper 4 performance improved by choke feeding
  - idle time reduced from 27% in FY11 to 10% in FY12
  - 57 mt dumped in FY12
- Targeting similar performance across all five dumpers
- Mooka Staging Facility enables trains to be queued away from the congestion of the Inner Harbour, increasing car dumper utilisation
  - completion scheduled for H2 CY14

**Shiploader 1 throughput**  
(mtpa, 90 day moving average)



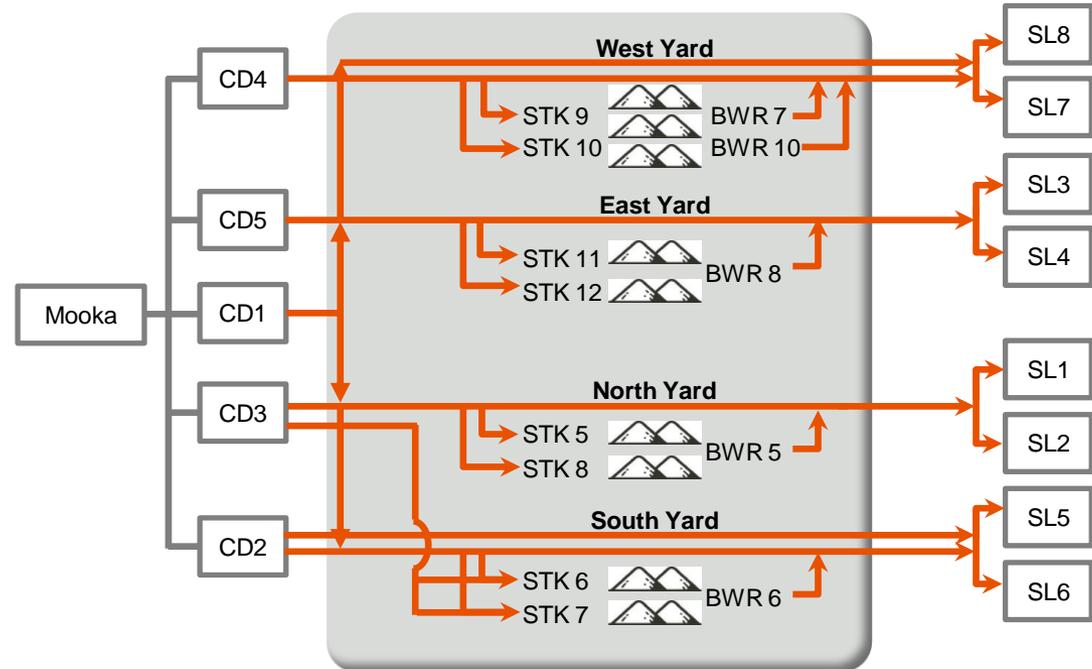
- Shiploader 1 (SL1) is one of our oldest loaders rated at 10,000 tph loading capability (newer loaders are 12,500 tph)
- Despite limitations, SL1 comfortably operating at >35 mtpa annualised rate
- Additional opportunities to remove constraints through the tidal cycle
- Targeting optimal performance across all eight shiploaders

# Port: deliver the capital efficient tonne



# Port: low cost debottlenecking of our conveyors and stockyards

- Latent capacity in our car dumpers and shiploaders has been tested and proven
- Complex interconnections are constraining the system
- System capacity will rise significantly as we debottleneck our stockyards and conveyors



Mooka marshalling yard; CD: Car dumper; STK: Stockyard; BWR: Bucket wheel reclaimer; SL: Shiploader

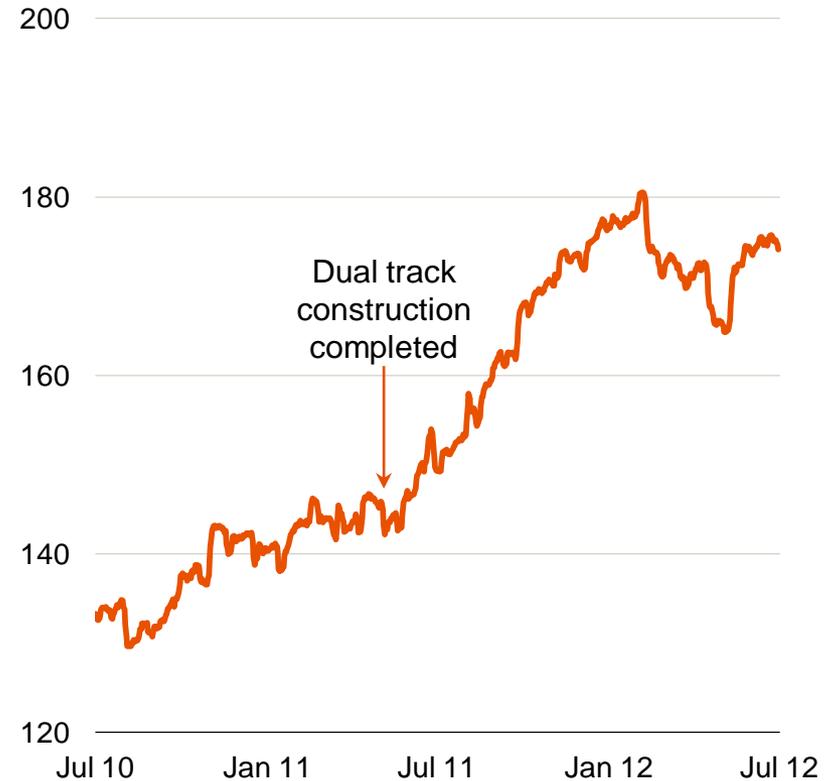
# Port: optimising stockyard performance will unlock significant value



# Rail: substantial upside in our existing dual track

- Achieved 145 mtpa with single track infrastructure
- Single track operation required a large number of passing loops which created inefficiency
- Dual track can deliver more than 300 mtpa of capacity with modest investment

**Railed tonnage performance**  
(mtpa, 90 day moving average)



# Mines: readily expandable

## Mobile crushers can unlock 20 mtpa of capacity

- Fully utilise rail load out capacity
- We are deploying mobile crushers at Whaleback and MAC
- Evaluating deployment at Jimblebar and Yarrie

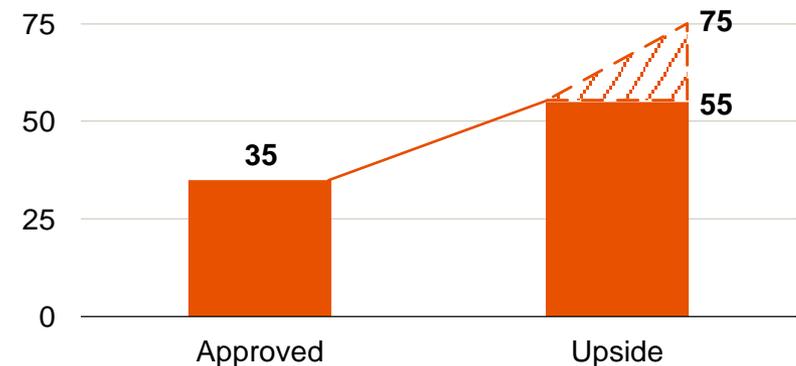
## Jimblebar built for expansion beyond 35 mtpa

- Initial investment delivers capacity of
  - 60 mtpa stockpile and train load out
  - 55 mtpa Ore Handling Plant (OHP)
  - 35 mtpa mining fleet
- Substantial low cost expansion option

## One new mine required to achieve >300 mtpa



## Jimblebar production (mtpa, 100% basis)





# Metallurgical Coal

Releasing latent capacity

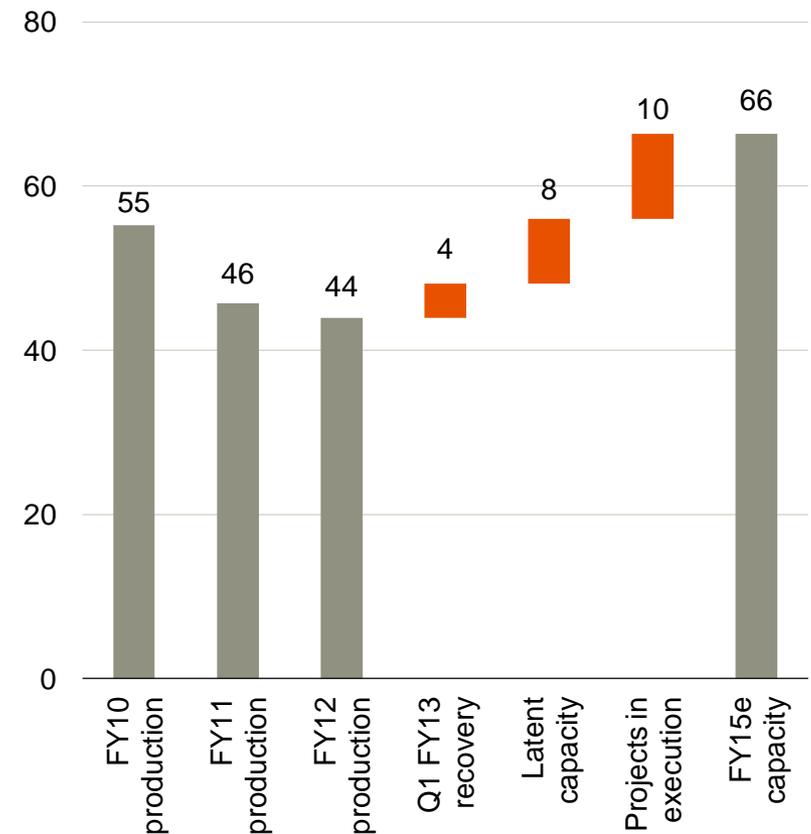


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# Significant latent capacity at Queensland Coal

- Industrial action and wet weather severely constrained production at Queensland Coal in FY11 and FY12
- Strong recovery during the September 2012 quarter as BMA production increased to over 80% of supply chain capacity
- Short term focus
  - fully realise existing system capability
  - commission projects in execution
  - debottleneck and optimise installed capacity
- By end CY14 the capacity of Queensland Coal will be 50% higher than the production rate in FY12

**Queensland Coal production capacity<sup>1</sup>**  
(mtpa, 100% basis)

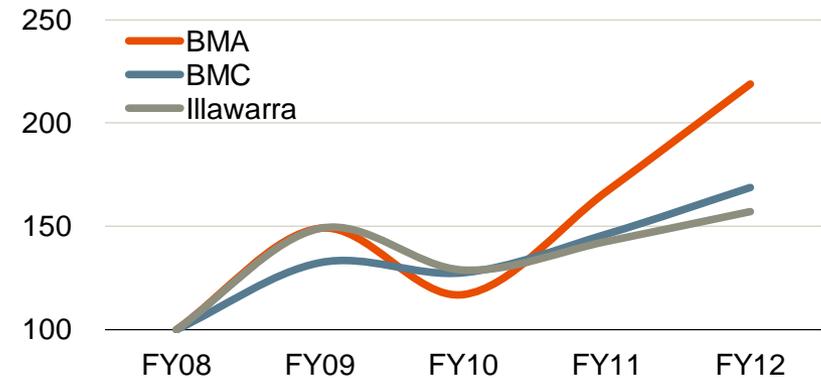


1. Includes major projects in execution; FY15 estimated capacity excludes Norwich Park and Gregory nominal capacity.

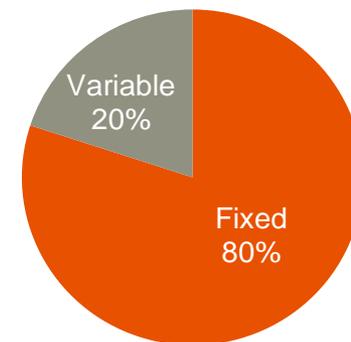
# Cost reduction activities at BMA are well underway

- Returning volumes to pre-flood and industrial action levels will drive significant unit cost improvement
- Closure of high cost operations
  - Norwich Park
  - Gregory open cut
- Targeting material cost savings
  - optimise contractor usage and rates
  - reduce supplier costs
  - review general overheads
- Reduce business development costs
- All non-essential expenditure is being targeted

**Unit costs<sup>1</sup>**  
(indexed to 100 in FY08)



**Queensland Coal cost base**  
(cash costs, %)



1. A\$ per tonne FOB costs - cash production costs plus shiploading, demurrage, royalties and marketing and selling costs.

# Projects are on schedule and budget

## Daunia – first of the new mines

- 4.5 mtpa greenfield mine development
- US\$800 million (BHP Billiton share)<sup>1</sup>
- Initial production CY13
- Project is 68% complete<sup>2</sup>

## Broadmeadow Sustaining Operations

- Increases capacity by 0.4 mtpa and extends mine life by 21 years
- US\$450 million (BHP Billiton share)<sup>1</sup>
- Initial production CY13
- Project is 83% complete<sup>2</sup>

## Illawarra Coal – Appin Area 9

- Sustains West Cliff and Appin mines for 20 years with capacity of 3.5 mtpa
- US\$845 million (BHP Billiton share)<sup>1</sup>
- Initial production CY16
- Project is 25% complete<sup>2</sup>

Note: Refer to disclaimer on slide 3.

1. BHP Billiton interest : Daunia 50%; Broadmeadow 50%; and Illawarra Coal 100%.

2. As at 30 September 2012.



# Caval Ridge – significant low cost expansion potential

- Revised cost US\$1.87 billion (BHP Billiton share)<sup>1</sup>
- Initial production CY14
- Project is 48% complete<sup>2</sup>
- Phase 1 mining fleet supports 5.5 mtpa operation
- Preparation plant capacity of 10 mtpa
- Rapid, low cost expansion of the mining fleet to 10 mtpa will be timed to meet market demand
- Expansion options beyond 10 mtpa



1. BHP Billiton interest: Caval Ridge 50%.  
2. As at 30 September 2012.

# Securing our infrastructure capacity

## Hay Point Expansion Phase 3

- Reduces storm vulnerability
- Increases port capacity from 44 mtpa to 55 mtpa
- US\$1.25 billion (BHP Billiton share)<sup>1</sup>
- Completion CY14
- Project is 50% complete<sup>2</sup>

## Rail strategy – a cost effective option

- Establish above rail operations – initial capacity of 15 mtpa
- We will be the only integrated metallurgical coal producer from mine to port in Australia
- Creating future options and capability

1. BHP Billiton interest: Hay Point 50%.  
2. As at 30 September 2012.

## Reducing storm vulnerability at Hay Point

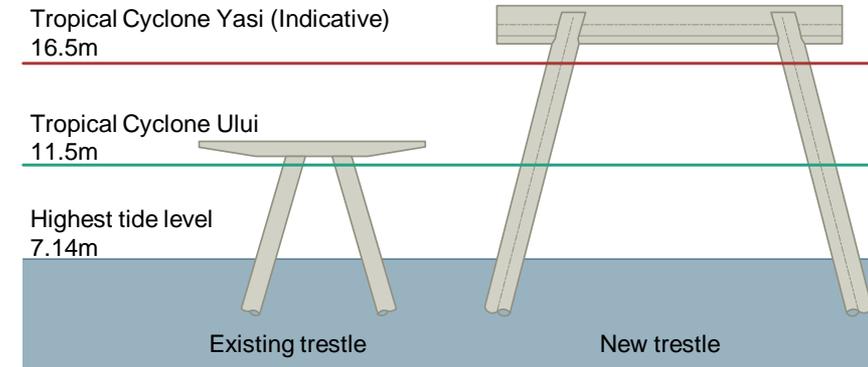


Illustration only.



# Improving the predictability of our operations



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# Reducing the variability of our operations

- Reduced operating variability improves safety, increases productivity and lowers costs
- Common metrics and simplified processes ensure we do the basics well
  - by end CY13 all operations will be using the same SAP system
  - the application of SAP across all functions including Maintenance, HSEC and Production Management will be a major differentiator for BHP Billiton
- Key difference is measurement of planning and execution, not just cost
  - was the work planned?
  - was the work executed according to the plan?



# Advantages of a low variability operation

## Measurement of the right metrics to drive value

- Percentage of work planned one week in advance (mining and maintenance)
- Adherence to schedule on the day (mining and maintenance)
- Production forecast accuracy
- Mined tonnes and grade, by block and by day
- Inventory tonnes and specifications

## Predictable operations with reliable equipment

- Increase productivity and reduce costs
- Allow standardised equipment and programmed procurement
- Maximise the benefit of autonomous equipment
- Enable more efficient technologies (truckless mining/mass material movement)
- Allow tighter product specifications in sales agreements

**Autonomous Caterpillar truck at New Mexico Coal**

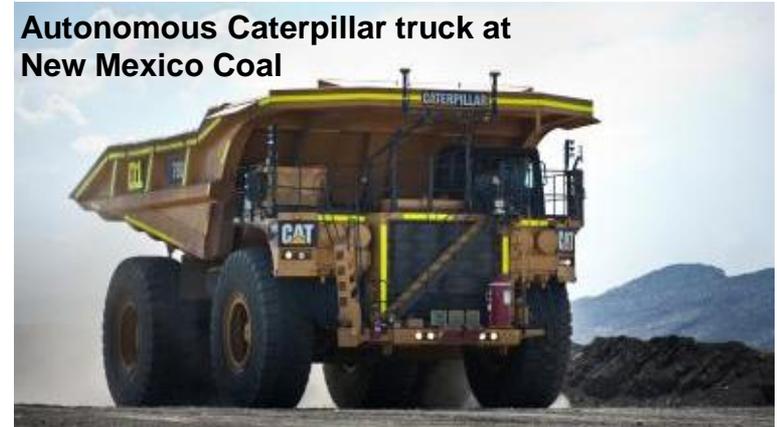


Photo courtesy of Caterpillar Inc.



**Autonomous drill rig in operation at BMA**

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