Iron Ore Industry in Pilbara

• Over last decade, growth in demand for iron ore has been underpinned by significant demand from China and other emerging economies.

• Primary driver has been the industrialisation and urbanisation of these regions.

• Major iron ore producing countries are Australia, Brazil and China.

• Export iron ore production has very high barriers to entry.

• Iron ore producers have been challenged to expand rapidly enough to keep pace with global demand.
Iron Ore Growth Story

Iron Ore exported through Port Hedland

- 2007 = 107 million tonnes
- 2010 = 174 million tonnes

Chinese Steel production

- 2007 = 495 million tonnes
- 2011 = 627 million tonnes
- China produced a record 60.25 million tonnes of steel in May 2011

More growth forecast
China Seaborne Iron Ore Outlook

China’s growth supported by continued steel capacity expansions

- Crude steel production capacity
  - 790Mt capacity in 2010 vs projected 1,290Mt in 2015
China Seaborne Iron Ore Outlook

Domestic ore production measured by contained iron difficult to sustain

Physical tonnes increasing / grade is decreasing

Production increases possible at higher cost using existing technology
Expected production increases by 2015

- Others (e.g., SNIM, Kumba, etc.) ~ 75mtpa
  - South Africa ~ 15mtpa (Kumba)
  - West Africa ~ ?
    - Risk precludes conventional finance
    - New infrastructure not built
    - Upgrades to existing possible
    - Delays - Rent seeking by politicians

- 900mtpa increased demand – 688mtpa identified supply

Conclusion:
- Chinese domestic response requires higher prices
- If China builds 500mtpa of additional steel capacity by 2015 there will be a shortfall in supply
Pilbara Growth in Iron Ore

Source: Credit Suisse estimates
Pilbara Growth Plans

Fortescue Metals Group
- Expansion under way to exporting 155 million tonnes per annum by June 2013

BHP Billiton
- Expansion to 220 million tonnes per annum planned

Rio Tinto
- Expansion planned to 333 million tonnes per annum by 2015
Rio Tinto

• Supply from 14 mines
• 1,400km of rail infrastructure
• Dual Ports
Rio Tinto

Locomotives

Ore Cars
• Supply from seven mines
• 1,000km of rail infrastructure
• Expandable port facilities using outer harbour
• Supply from two mines
• 250km of rail infrastructure – expanding to 350km
• Significant growth strategy
## Benchmark Data – Pilbara Railways

<table>
<thead>
<tr>
<th></th>
<th>FMG (YEJ11)</th>
<th>RIO (YEJ10)</th>
<th>BHPBIO (YEJ10)</th>
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</thead>
<tbody>
<tr>
<td>Rail (km)</td>
<td>256</td>
<td>1,400</td>
<td>+1,000</td>
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<tr>
<td>Locomotives</td>
<td>15</td>
<td>128</td>
<td>114</td>
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<tr>
<td>Ore Cars</td>
<td>976</td>
<td>8,400</td>
<td>4,000</td>
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<tr>
<td>Consist length (ore cars)</td>
<td>240</td>
<td>236</td>
<td>204*</td>
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<tr>
<td>Rake ore tonnage (kt)</td>
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<tr>
<td>Axle load (t)</td>
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<td>Cycle time (hr)</td>
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<td>30.0</td>
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<tr>
<td>Annual tonnage (Mt)</td>
<td>41</td>
<td>180</td>
<td>125</td>
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Thank you