Steel and iron ore market outlook

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3 October 2022
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This presentation contains forward-looking statements, including: statements regarding our strategy, our values and how we define success; our expectations of a competitive advantage for our business or certain products; our commitment to generating social value; our commitments under sustainability frameworks, standards and initiatives; our intention to achieve certain sustainability-related targets, goals, milestones and metrics; statements regarding trends in economic outlook; commodity prices and currency exchange rates; demand for commodities; medium-term guidance; production forecasts; operational performance; expectations, plans, strategies and objectives of management; climate scenarios; assumed long-term scenarios; potential global responses to climate change; the potential effect of possible future events on the value of the BHP portfolio; closure or divestment of certain assets, operations or facilities (including associated costs); anticipated production or construction commencement dates; capital expenditure or costs and scheduling; operating costs, including unit cost guidance, and shortages of materials and skilled employees; anticipated productive lives of projects, mines and facilities; provisions and contingent liabilities; and tax and regulatory developments.

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For example, our future revenues from our assets, projects or mines described in this release will be based, in part, upon the market price of the minerals, or metals 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 assets.

Other factors that may affect the actual construction or production or mine development commence dates, costs or production output and anticipated lives of assets, or facilities include: our ability to profitably produce and transport the minerals and/or metals extracted to applicable markets; the impact of foreign currency exchange rates on the market prices of the minerals or metals we produce; activities of government authorities in the countries where we sell our products and in the countries where we are exploring or developing projects, facilities or mines, including increases in taxes; changes in environmental and other regulations; the duration and severity of the Ukraine conflict and the COVID-19 pandemic and their impact on our business; political uncertainty; labour unrest; and other factors identified in the risk factors discussed in section 9.1 of the Operating and Financial Review in the Appendix BHP and the BHP'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.

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Unless specified otherwise: operations includes operated assets and non-operated assets; total operations refers to the combination of continuing and discontinued operations; continuing operations refers to data presented excluding the impacts of Onshore US from the 2017 financial year onwards and excluding the Thirds from the 2021 financial year onwards; references to Underlying EBITDA margin exclude third party trading activities; data from subsidiaries are shown on a 100 per cent basis and data from equity accounted investments and other operations is presented, with the exception of net operating assets, reflecting BHP's share; medium term refers to our five year plan. Numbers presented may not add up precisely to the totals provided due to rounding. All footnote content (except in the Annexures) is contained on slide 27.

Non-IFRS information

We use various Non-IFRS information to reflect our underlying performance. For further information please refer to Non-IFRS financial information set out in section 11 of the Operating and Financial Review in the Appendix 4E for the year ended 30 June 2022.

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In this release, the terms 'BHP', the 'Company', the 'Group', 'BHP Group', 'our business', 'organisation', 'we', 'us', 'our' and ourselves' refer to BHP Group Limited and, except where the context otherwise requires, our subsidiaries. Refer to note 28 'Subsidiaries' of the Financial Statements in the Appendix 4E for a list of our significant subsidiaries. Those terms do not include non-operated assets. This release covers BHP's functions and assets (including those under exploration, projects in development or execution phases, sites and closed operations) that have been wholly owned and/or operated by BHP or that have been owned as a joint venture by BHP (referred to in this release as 'operated assets' or 'operations') during the period from 1 July 2021 to 30 June 2022.

BHP also holds interests in assets that are owned as a joint venture but not operated by BHP (referred to in this release as ‘non-operated joint ventures’ or ‘non-operated assets’). Notwithstanding that this release may include production, financial and other information from non-operated assets, non-operated assets are not included in the BHP Group and, as a result, statements regarding our operations, assets and values apply only to our operated assets unless stated otherwise.

1. References in this release to a 'joint venture' are used for convenience to collectively describe assets that are not wholly owned by BHP. Such references are not intended to characterise the legal relationship between the owners of the asset.
Portfolio positively leveraged to megatrends

Low cost assets and world class resource base across a differentiated set of commodities

<table>
<thead>
<tr>
<th>BHP Portfolio</th>
<th>Population growth</th>
<th>Urbanisation</th>
<th>Rising living standards</th>
<th>Decarbonising power</th>
<th>Electrifying transport</th>
<th>Geopolitical risk</th>
<th>30/30 year growth</th>
<th>BHP 1.5°C scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>++</td>
<td>++</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
<td>~</td>
<td>~</td>
<td>&gt;2x</td>
</tr>
<tr>
<td>Largest endowment¹</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Nickel</td>
<td>+</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>++++</td>
<td>+</td>
<td>~</td>
<td>~4x</td>
</tr>
<tr>
<td>Second largest sulphide resource²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~2x</td>
</tr>
<tr>
<td>Lowest cost iron ore³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potash</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>~</td>
<td>~</td>
<td>+++</td>
<td>&gt;2x</td>
<td></td>
</tr>
<tr>
<td>Large-scale resource supports up to 100 years of operation⁴</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

2050 estimate, change from current

<table>
<thead>
<tr>
<th></th>
<th>~10 bn total population;</th>
<th>~7 bn urban population;</th>
<th>~$400 tn world GDP;</th>
<th>¾ of power capacity wind &amp; solar;</th>
<th>~2 bn EVs on the road;</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ 2¼ bn</td>
<td>+ 2¼ bn</td>
<td>4-fold gain</td>
<td>13-fold energy gain⁵</td>
<td>100-fold gain</td>
<td></td>
</tr>
</tbody>
</table>

+ Indicators are versus a baseline that does not include the theme being assessed. ~ Signifies trivial direct impact or offsetting forces that are basically in balance.

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3 October 2022
Steel is the building block of a better world

Different climate scenarios do not produce highly divergent outcomes

Cumulative steel demand ranges and scenarios

(30yr/30yr, %)

Source: BHP analysis, Vivid Economics.
Note: Our portfolio is tested across a range of future scenarios, including a scenario where warming is limited to 1.5°C. Scenarios were developed prior to the impacts of the COVID-19 pandemic, and therefore any possible effects of the pandemic were not considered in the modelling.
Essential value chains have differing demand drivers

Each is essential to our way of life and has a distinctive relationship to economic development

### Food value chain
- Population growth and dietary change
- Food, feed, fibre, fuel
- Low degree of recycling
- Steady increase in intensity through the entire development journey, high income plateau

### Steel value chain
- Urbanisation and industrialisation
- Buildings, infrastructure, machinery, other goods
- High degree of recycling
- Swift increase in intensity on the way to middle income, where a distinct peak forms

### Energy value chain
- Motorisation, electrification, industrialisation
- Transport, power, heat, chemicals
- Low degree of recycling
- Swift increase in intensity on the way to middle income, flatter beyond, high income plateau

Note: Illustrative only, reflecting stylised empirical path of major societies through time that have reached high income levels.

1. Recycling of nutrients via crop residue or manure occurs, but the food value chain is very inefficient and highly subject to waste.

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Industry has distinctive composition in each major region

Heterogeneity informs our approach to long run forecasting, with emphasis on a bottom-up methodology
Accumulated stock of steel in use per capita
(tonnes finished steel /capita)

Source: BHP analysis; Global Insight; United Nation; worldsteel.

Asian developing countries include ASEAN and other Asian developing countries.

Stock of steel per head plateaus at high income levels

Range of end-states in terms of capital stock depth are relatively narrow, but paths to the end-state are diverse.

GDP per capita (PPP)
Stock levels ultimately converge, but run rates are diverse

China’s post-plateau run-rate trajectory remains uncertain, with diverse examples from economies already at the high income level

Steel production by region per head (kg)


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China: a young, advanced, coastal fleet

New capacity positioned to service dynamic domestic demand centres and secure competitive access to imported raw materials

Cumulative steel demand ranges and scenarios

(30yr/30yr, %)

Map of China steel projects

Newly added capacity 2018-2023 by blast furnace volume

(Mt)

Steel capacity

Source: BHP analysis.

Note: Our portfolio is tested across a range of future scenarios, including a scenario where warming is limited to 1.5°C. Scenarios were developed prior to the impacts of the COVID-19 pandemic, and therefore any possible effects of the pandemic were not considered in the modelling.

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India: the major growth vector for global steel

Brownfield optionality puts official targets within reach; integrated steelmaking to gain share at expense of coal-based DRI

Cumulative steel demand ranges and scenarios
(30yr/30yr, %)

Growing steel capacity in India

Source: BHP analysis.

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3 October 2022
South East Asia: gearing up for domestic demand

Multiple countries within the region are building up capacity at home, seeking to reduce historical import dependency.

### Cumulative steel demand ranges and scenarios

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Steel Demand (Mt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep Green</td>
<td>300</td>
</tr>
<tr>
<td>~2 degrees</td>
<td>400</td>
</tr>
<tr>
<td>~3 degrees</td>
<td>500</td>
</tr>
</tbody>
</table>

**BHP planning range**

Source: BHP analysis.

### Map of SE Asia steel projects

- **Existing**
- **Under construction**
- **Planning / Announced**

**ILLUSTRATIVE ONLY**

Source: SEAISI.
Steel a net beneficiary of decarbonisation & climate

Net impact of decarbonising power and physical impacts of climate change is a modest uplift in medium and long term demand

We estimate a modest uplift in our base case for steel demand in both 2030 and 2050 from the net impact of four forces:

- Infrastructure of decarbonisation [more steel]
- Decline of fossil energy demand [less steel]
- Higher capital stock turnover [more steel]
- Slower economic growth due to the physical climate impacts & carbon policies [less steel]
Essential for the decarbonisation of power

Steel consumption in power will triple from today with demand from wind and solar 5 times bigger

Renewable energy

![Renewable energy image]

Global steel demand from power generation (Mt finished steel, new capacity + rebuild)

- Nuclear
- Solar
- Wind onshore
- Wind offshore
- Hydro & other renewables
- Fossil fuel & others

Non-fossil fuel share of steel demand in power gen (%)

- 2015: 63%
- 2030: 94%
- 2050: ~100%

2050 steel demand in Power Generation vs 2020

- Power Gen% total steel demand 2050
- Share in 2020 <2%

- 3x

Renewable power tends to require more steel compared to fossil fuels (Steel t/MW of capacity)

- Wind offshore: 190
- Hydro: 161
- Wind onshore: 124
- Nuclear: 59
- Coal: 58
- Solar: 45
- Gas: 35
- Oil: 15

Source: Hatch, ArcelorMittal.
Capital ages faster under climate extremes

Shorter capital lifetimes and higher capital stock turnover are the intuitive outcomes of a harsher physical climate

The results we present on capital depreciation are general and abstract in nature, being estimated at the whole of capital stock level, either nationally or regionally, in addition to being based on average climate parameters at the same level of aggregation. Therefore, they are not appropriate for accounting use for specific assets, where local climatic and other idiosyncratic factors will be in play. Underlying data sourced from the Penn World Table, analysis by BHP.

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Global scrap ratio to rise steadily towards “50 in 50”

Global ratio will reach and surpass pre-China boom levels, as end-of-life scrap availability in China more than doubles by 2050

Global steel production and scrap consumption

1. Scrap consumption is net of estimated consumption in foundry sector and is based on steel production and consumption.
2. Scrap consumption / crude steel production.

Regional scrap to steel ratio

Source: BHP analysis.

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Iron ore range is resilient, but notably lower than steel

Alternative metallics compete with primary ore in coming decades

Cumulative steel and iron ore demand ranges and scenarios
(30yr/30yr, %)

Source: BHP for all scenarios, Vivid Economics for 1.5 degrees.
Note: Our portfolio is tested across a range of future scenarios, including a scenario where warming is limited to 1.5°C. Some scenarios were developed prior to the impacts of the COVID-19 pandemic, and therefore any possible effects of the pandemic were not considered in the modelling. They are presented here "as is".

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3 October 2022
Low expectations of the late 2010s were not fulfilled

Consensus views of iron ore industry development pre-Brumadinho were a poor predictor of actual performance

Contestable demand

(Mt)

<table>
<thead>
<tr>
<th></th>
<th>CY21 forecast in 2018</th>
<th>CY21 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>1,701</td>
<td>1,826</td>
</tr>
<tr>
<td>Developed Asia</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>1,800</td>
<td></td>
</tr>
</tbody>
</table>

Majors’ seaborne exports

(Mt)

<table>
<thead>
<tr>
<th></th>
<th>CY21 forecast in 2018</th>
<th>CY21 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHP</td>
<td>1,355</td>
<td>1,275</td>
</tr>
<tr>
<td>Australia others</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>79</td>
<td></td>
</tr>
</tbody>
</table>

Juniors’ seaborne exports + China’s domestic iron ore production

(Mt)

<table>
<thead>
<tr>
<th></th>
<th>CY21 forecast in 2018</th>
<th>CY21 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>405</td>
<td>588</td>
</tr>
<tr>
<td>Juniors</td>
<td>1,701</td>
<td>1,826</td>
</tr>
</tbody>
</table>

Source: 1) Wood Mackenzie. “Before” was sourced from the CY2018 Q3 long term forecast before the Brumadinho tragedy. “Now” use the version of CY2022 Q2 long term forecast.

2) BHP operational review for the half year ended 31 Dec 2021. 3) IHS GTA.

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Reliability of supply is highly valuable in an uncertain world

Accurate volume guidance, delivery to specifications, competitive price realisation, durably low cost operations and attractive margins

Performance versus guidance mixed across the industry
(%, average variation from initial guidance mid point, FY14-FY21)

2030 – BHP projected to remain the lowest cost major producer
(CFR China, 62% Fe Fines equivalent, US$/dry tonne)

Source: Company reports, SBG Securities, analysis by BHP.


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Steel decarbonisation in three stages

Regions will transit through these stages at different rates, based on local conditions faced by steel producers

- **Optimisation stage**
  - Up to 20% CO₂ reduction vs. BAU

- **Transition stage**
  - 30-60% CO₂ reduction vs. BAU

- **Green end state**
  - >80% CO₂ reduction vs. BAU

Incremental improvements in raw materials and process conditions for the integrated steelmaking route:
- Raw Material Quality
- Energy Optimisation / Efficiency
- Technology Improvements

Modifications to BF-BOF route and increased use of renewable energy sources and install low carbon technologies:
- Low Carbon Fuels
- Blast Furnace Modifications
- Carbon Capture

Low carbon technologies have matured and cost competitive for development at scale:
- Modified BF with CCUS
- Direct Reduction with Green Hydrogen
- Electric Steelmaking
- Other New Technologies

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Multiple ‘near’ net zero pathways for steel industry

Pathways for industry to be largely decarbonised through primary steel production from iron ore

1. Modified BF CCUS
   - Conventional BF-BOF now

2. H2 DRI Electric Furnace
   - Electric Arc Furnace (EAF) > 66Fe
   - Electric Smelter Furnace (ESF)

3. Electrolysis
   - Green hydrogen
   - Gas recycle
   - Non-fossil carbon
   - Fossil carbon
   - Renewable power
   - Green hydrogen

Pathways:
- Path 1 uses carbon as primary reductant
- Path 2 and 3 use hydrogen or electricity as primary reductant

Emissions Intensity (t-CO2/t-steel)

Transition:
- BF Blast Furnace
- BOF Basic Oxygen Furnace
- EAF Electric Arc Furnace

Green End State:
- ESF Electric Smelting Furnace
- SR Smelting Reactor
- EC Electrolysis Cell

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3% of current iron ore supply is ‘EAF quality’ today

This will drive innovation along the value chain as steel decarbonisation scenarios develop

Iron ore supply curve by quality band (2022)

<table>
<thead>
<tr>
<th>Fe grade (%)</th>
<th>Mt</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 58%</td>
<td>50</td>
</tr>
<tr>
<td>58-60%</td>
<td>52</td>
</tr>
<tr>
<td>60-63%</td>
<td>54</td>
</tr>
<tr>
<td>63-65%</td>
<td>56</td>
</tr>
<tr>
<td>65-67%</td>
<td>58</td>
</tr>
<tr>
<td>&gt; 67%</td>
<td>60</td>
</tr>
</tbody>
</table>


Western Australia Iron Ore site tour
3 October 2022
Differentiated regional steel decarbonisation pathways

Key enablers are policy, supply of renewable power and carbon storage capacity, age and scale of blast furnace fleet

<table>
<thead>
<tr>
<th>Optimisation &amp; Transition</th>
<th>BF optimisation</th>
<th>Gas DRI</th>
<th>DRI-EF</th>
<th>Green End State</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>Energy efficiency, material quality</td>
<td>Scrap, Modified BF</td>
<td>Modified BF-CCUS</td>
<td>Policy-supported transition drive major producers into hydrogen DRI-EF</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aging blast furnaces to be retired in the coming 1-2 decades</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td></td>
<td>Modified BF + CCUS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Other pathways /technologies in the mix</td>
</tr>
<tr>
<td>Developed APAC</td>
<td>Limited potential for raw material or process efficiency optimisation</td>
<td>2020</td>
<td>2035</td>
<td>Modified BF + CCUS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lack of renewable power and carbon storage resource driving exploration of carbon transport and DRI in overseas markets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Loss in competition for export markets likely</td>
</tr>
<tr>
<td>India / ASEAN</td>
<td>Build / expand modern BF fleet to replace sub-standard coal-based DRI (in India) and induction furnaces (in ASEAN)</td>
<td>2020</td>
<td>2035</td>
<td>The region with perhaps the youngest modern BF fleet by 2050</td>
</tr>
<tr>
<td></td>
<td>Exploration of alternative iron-making techs to replace fragmented coal RI-EAF segment</td>
<td></td>
<td></td>
<td>CCU options developed with lack of conventional storage</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

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3 October 2022
BHP’s Climate Transition Action Plan

A framework to discuss our strategy and engagement

Control
- Areas where the decisions we take can have a direct impact on emissions
  e.g. changing how we operate, our supplier selection criteria, improving our product quality

Partner
- Areas where we can partner with customers, suppliers and others to drive outcomes
  e.g. accessing low carbon technology for our operations, collaborating to support commercialisation of low or zero carbon solutions

Influence
- Areas where we can provide thought leadership to influence industry emissions
  e.g. through sharing knowledge and our climate story with industry, policy advocacy, standards & certifications

FY2022
- Scope 3
  - Downstream
  - 385Mt CO₂-e
  - Control
    - Product quality
    - Product technical support
    - Product placement
    - Our shipping selection criteria
    - Our portfolio
  - Partner
    - Partnering on low emission technologies
    - BHP Ventures
    - Supply chain traceability

- Scope 2
  - Upstream
  - 16Mt CO₂-e
  - Control
    - Our supplier selection criteria
    - Collaborate on carbon neutral solutions

- Scope 1
  - 9Mt CO₂-e
  - Control
    - How we operate
  - Partner
    - Ensuring availability of solutions
  - Influence
    - Knowledge sharing & standards
    - Policy and advocacy

https://www.bhp.com/sustainability/climate-change

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3 October 2022
# Partnerships with customers and other industry leaders

**Looking to scale modified Blast Furnace (BF) projects, engaging research and technology providers to de-risk alternate pathways**

## Customer Partnerships

- Partnerships with 5 key customers
  - 13% of global steel production

## Research

- Fundamental and industrial programs in Australia, China, North America and Europe
  - Leading research institutes, industrial consultants and technology providers

## Ventures

- Investing in green end state technologies

### Test, design and scale Modified BF, CCUS and DRI-EF plant trials

- Sign MOUs, scope core projects
  - FY22 Progress
  - FY23+ Focus

- Complete feasibility studies & test work

- Plan and execute plant trials

- Optimise raw material performance in Modified blast furnace
  - Develop DRI - EF processes for Pilbara ores

- Start exploratory test work & concept studies

- Support plant trials & product performance

- Explore demo plant options

- Test electrolysis in concept then assess for scale up

- Initial investments & lab testing

- Pilot campaigns with BHP ores

- Assess scale up options

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**Western Australia Iron Ore site tour**

3 October 2022


3. Slide 3: Based on published unit costs by major iron ore producers, as reported at 30 June 2022.

4. Slide 3: Based on a Reserve life of 94 years as reported in BHP’s 17 August 2021 news release, available to view on www.bhp.com, with further optionality from Jansen’s 5,230 Mt Measured Resource base.

5. Slide 3: Three-quarters refers to the share of power capacity. 13-fold refers to the increase in the volume of primary energy, not the increase in the share.
Appendix
Our decarbonisation targets and goals are clear
To support the net zero transition, we will continue to pursue sustainable provision of our products

Operations (Scopes 1 and 2)

**FY2030**

**Target** Reduce operational greenhouse gas (GHG) emissions by at least 30% from FY2020 levels.

**2050**

**Goal** Achieve net zero operational GHG emissions.

Value chain (Scope 3)

**2030**

**Goals**

**Steelmaking.** Support industry to develop technologies and pathways capable of 30% emissions intensity reduction in integrated steelmaking, with widespread adoption expected post 2030.

**Shipping.** Support 40% emissions intensity reduction of BHP-chartered shipping of BHP products.

**2050**

**Goal** Pursue the long-term goal of net zero Scope 3 GHG emissions. Achievement is uncertain and we cannot ensure the outcome alone.

**Targets**

**Shipping.** Net zero GHG emissions from all shipping of BHP products*.

**Suppliers.** Net zero for the operational GHG emissions of our direct suppliers*.

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Important note

Refer to the full description of BHP’s climate change targets and goals, including essential definitions, assumptions and caveats, at bhp.com/climate

1. The baseline year(s) of our targets will be adjusted for any material acquisitions and divestments based on emissions at the time of the transaction, and to reflect progressive refinement of emissions reporting methodologies. The targets’ boundaries may in some cases differ from required reporting boundaries. The use of carbon offsets will be governed by BHP’s approach to carbon offsetting described at bhp.com/climate.

* These targets are referable to a FY2020 baseline year. Our ability to achieve the targets is subject to the widespread availability of carbon neutral solutions to meet our requirements, including low/zero-emissions technologies, fuels, goods and services.

Goal! An ambition to seek an outcome for which there is no current pathway(s), but for which efforts will be pursued towards addressing that challenge, subject to certain assumptions or conditions.

Target! An intended outcome in relation to which we have identified one or more pathways for delivery of that outcome, subject to certain assumptions or conditions.

Information is valid at July 2022