

22 February 2023

---

## 2022 Full year results presentation

Attached is the Rio Tinto 2022 full year results presentation to be given at 8.30am (GMT) / 7.30pm (AEDT) today by our Chief Executive, Jakob Stausholm and Chief Financial Officer, Peter Cunningham. The presentation slides are also available at: [www.riotinto.com/en/invest/presentations/2023/annual-results](http://www.riotinto.com/en/invest/presentations/2023/annual-results).

The live webcast will be available at [www.riotinto.com/en/invest/presentations/2023/annual-results](http://www.riotinto.com/en/invest/presentations/2023/annual-results).

For personal use only

# Contacts

Please direct all enquiries to  
[media.enquiries@riotinto.com](mailto:media.enquiries@riotinto.com)

## Media Relations, UK

**Matthew Klar**  
M +44 7796 630 637

**David Outhwaite**  
M +44 7787 597 493

## Media Relations, Americas

**Simon Letendre**  
M +1 514 796 4973

**Malika Cherry**  
M +1 418 592 7293

## Investor Relations, UK

**Menno Sanderse**  
M +44 7825 195 178

**David Ovington**  
M +44 7920 010 978

**Clare Peever**  
M +44 7788 967 877

## Rio Tinto plc

6 St James's Square  
London SW1Y 4AD  
United Kingdom

T +44 20 7781 2000  
Registered in England  
No. 719885

This announcement is authorised for release to the market by Steve Allen, Rio Tinto's Group Company Secretary.

**riotinto.com**

## Media Relations, Australia

**Matt Chambers**  
M +61 433 525 739

**Jesse Riseborough**  
M +61 436 653 412

**Alysha Anderson**  
M +61 434 868 118

## Investor Relations, Australia

**Tom Gallop**  
M +61 439 353 948

**Amar Jambaa**  
M +61 472 865 948

## Rio Tinto Limited

Level 43, 120 Collins Street  
Melbourne 3000  
Australia

T +61 3 9283 3333  
Registered in Australia  
ABN 96 004 458 404

RioTinto

# 2022 Full Year Results

22 February 2023

Ulaanbaatar, Mongolia



# Cautionary and supporting statements

This presentation has been prepared by Rio Tinto plc and Rio Tinto Limited (together with their subsidiaries, “**Rio Tinto**”). By accessing/attending this presentation you acknowledge that you have read and understood the following statements.

## Production Targets

The estimated average production of ~500ktpa copper and ~330kozpa gold for the years 2028-2036 referenced on slides 20, 22 and 33 are underpinned as to 13% by Proved Ore Reserves and 87% by Probable Ore Reserves. The estimated average production of ~340ktpa copper and ~360kozpa gold for the years 2023-2027 referenced on slide 33 are underpinned as to 27% by Proved Ore Reserves and 73% by Probable Ore Reserves. The estimated average production of ~290ktpa copper, ~260kozpa gold and ~1,710kozpa silver for the estimated reserve life of approximately 30 years referenced on slide 33 are underpinned as to 26% by Proved Ore Reserves and 74% by Probable Ore Reserves. These production targets are stated as recovered metal and have been scheduled from current mine designs for the Oyu Tolgoi underground and open pit mines by Competent Persons in accordance with the requirements of the Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves, 2012 Edition.

## Forward-looking statements

This presentation includes “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts included in this report, including, without limitation, those regarding Rio Tinto’s financial position, business strategy, plans and objectives of management for future operations (including development plans and objectives relating to Rio Tinto’s products, production forecasts and reserve and resource positions), are forward-looking statements. The words “intend”, “aim”, “project”, “anticipate”, “estimate”, “plan”, “believes”, “expects”, “may”, “should”, “will”, “target”, “set to” or similar expressions, commonly identify such forward-looking statements.

Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Rio Tinto, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements, particularly in light of the current economic climate and the significant volatility, uncertainty and disruption arising in connection with the Ukraine conflict and the Covid-19 pandemic. Such forward-looking statements are based on numerous assumptions regarding Rio Tinto’s present and future business strategies and the environment in which Rio Tinto will operate in the future. Among the important factors that could cause Rio Tinto’s actual results, performance or achievements to differ materially from those in the forward-looking statements include, but are not limited to: an inability to live up to Rio Tinto’s values and any resultant damage to its reputation; the impacts of geopolitics on trade and investment; the impacts of climate change and the transition to a low-carbon future; an inability to successfully execute and/or realise value from acquisitions and divestments; the level of new ore resources, including the results of exploration programmes and/or acquisitions; disruption to strategic partnerships that play a material role in delivering growth, production, cash or market positioning; damage to Rio Tinto’s relationships with communities and governments; an inability to attract and retain requisite skilled people; declines in commodity prices and adverse exchange rate movements; an inability to raise sufficient funds for capital investment; inadequate estimates of ore resources and reserves; delays or overruns of large and complex projects; changes in tax regulation; safety incidents or major hazard events; cyber breaches; physical impacts from climate change; the impacts of water scarcity; natural

disasters; an inability to successfully manage the closure, reclamation and rehabilitation of sites; the impacts of civil unrest; the impacts of the Ukraine conflict and the Covid-19 pandemic; breaches of Rio Tinto’s policies, standard and procedures, laws or regulations; trade tensions between the world’s major economies; increasing societal and investor expectations, in particular with regard to environmental, social and governance considerations; the impacts of technological advancements; and such other risks identified in Rio Tinto’s most recent Annual Report and accounts in Australia and the United Kingdom and the most recent Annual Report on Form 20-F filed with the United States Securities and Exchange Commission (the “SEC”) or Form 6-Ks furnished to, or filed with, the SEC. Forward-looking statements should, therefore, be construed in light of such risk factors and undue reliance should not be placed on forward-looking statements. These forward-looking statements speak only as of the date of this report. Rio Tinto expressly disclaims any obligation or undertaking (except as required by applicable law, the UK Listing Rules, the Disclosure Guidance and Transparency Rules of the Financial Conduct Authority and the Listing Rules of the Australian Securities Exchange) to release publicly any updates or revisions to any forward-looking statement contained herein to reflect any change in Rio Tinto’s expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

Nothing in this presentation should be interpreted to mean that future earnings per share of Rio Tinto plc or Rio Tinto Limited will necessarily match or exceed its historical published earnings per share. Past performance cannot be relied on as a guide to future performance.

## Disclaimer

Neither this presentation, nor the question and answer session, nor any part thereof, may be recorded, transcribed, distributed, published or reproduced in any form, except as permitted by Rio Tinto. By accessing/ attending this presentation, you agree with the foregoing and, upon request, you will promptly return any records or transcripts at the presentation without retaining any copies.

This presentation contains a number of non-IFRS financial measures. Rio Tinto management considers these to be key financial performance indicators of the business and they are defined and/or reconciled in Rio Tinto’s annual results press release, Annual Report and accounts in Australia and the United Kingdom and/or the most recent Annual Report on Form 20-F filed with the SEC or Form 6-Ks furnished to, or filed with, the SEC.

Reference to consensus figures are not based on Rio Tinto’s own opinions, estimates or forecasts and are compiled and published without comment from, or endorsement or verification by, Rio Tinto. The consensus figures do not necessarily reflect guidance provided from time to time by Rio Tinto where given in relation to equivalent metrics, which to the extent available can be found on the Rio Tinto website.

By referencing consensus figures, Rio Tinto does not imply that it endorses, confirms or expresses a view on the consensus figures. The consensus figures are provided for informational purposes only and are not intended to, nor do they, constitute investment advice or any solicitation to buy, hold or sell securities or other financial instruments. No warranty or representation, either express or implied, is made by Rio Tinto or its affiliates, or their respective directors, officers and employees, in relation to the accuracy, completeness or achievability of the consensus figures and, to the fullest extent permitted by law, no responsibility or liability is accepted by any of those persons in respect of those matters. Rio Tinto assumes no obligation to update, revise or supplement the consensus figures to reflect circumstances existing after the date hereof.

# Jakob Stausholm

Chief Executive

Pilbara, Western Australia

RioTinto



# Strong financials

\$bn, except where stated	2020 – 2022	2022
Underlying earnings	47.1	13.3
Underlying ROCE	32% <sup>1</sup>	25%
Capital expenditure	20.3	6.8
Free cash flow	36.1	9.0
Dividends paid	33.2	11.7
Taxes & government royalties <sup>2</sup>	29.2	8.4

<sup>1</sup>Average over period | <sup>2</sup>Taxes and government royalties in respect of underlying earnings in the period

# Building an even stronger Rio Tinto

## Investing in the health of existing business

### All-injury frequency rate

**0.40**

Safety remains our top priority

### Asset health

Safe Production System, greater stability, stronger maintenance practices

### Building a thriving culture

Creating a safe, respectful and inclusive workplace

Empowering workforce, becoming less risk averse

### Strengthening our social licence

Western Range – first co-designed mine. New agreements in place to deliver better outcomes for Indigenous peoples

## Shaping our portfolio for the future

### Oyu Tolgoi

TRQ acquisition; 27 drawbells achieved, sustainable production in Q1

### Rincon

Progressing small-starter battery-grade lithium carbonate plant and early works

### Simandou

Non-binding term sheet signed to progress co-development of infrastructure; high-quality iron ore essential for green steel

### Portfolio alignment

Rhodes Ridge - underpinning the Pilbara's competitive position for decades to come

Cortez royalty and Roughrider divestments

**Second highest ordinary dividend ever  
and strengthening future dividend potential**

# Peter Cunningham

Chief Financial Officer

ersonal use only



Yarwun Alumina Refinery, Queensland

RioTinto

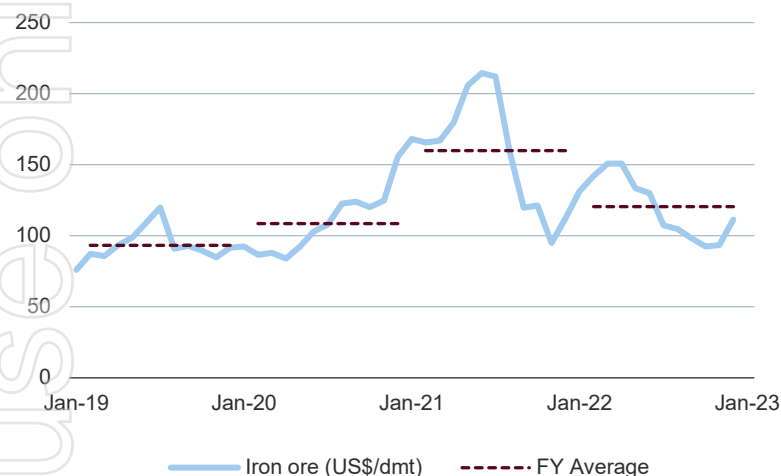
# Solid results against all-time highs in 2021

\$bn, except where stated	2022	2021	2020	vs 2021	vs 2020
Consolidated sales revenue	55.6	63.5	44.6	-13%	+25%
Underlying EBITDA	26.3	37.7	23.9	-30%	+10%
Underlying earnings	13.3	21.4	12.4	-38%	+7%
Net earnings	12.4	21.1	9.8	-41%	+27%
Underlying ROCE	25%	44%	27%		
Cash flow from operations	16.1	25.3	15.9	-36%	+2%
Capital expenditure	6.8	7.4	6.2	-9%	+9%
Free cash flow	9.0	17.7	9.4	-49%	-4%
Total dividend	8.0	16.8	9.0	-52%	-11%
Total dividend per share (\$)	4.92	10.40	5.57	-53%	-12%
Net (debt)/cash	(4.2)	1.6	(0.7)		

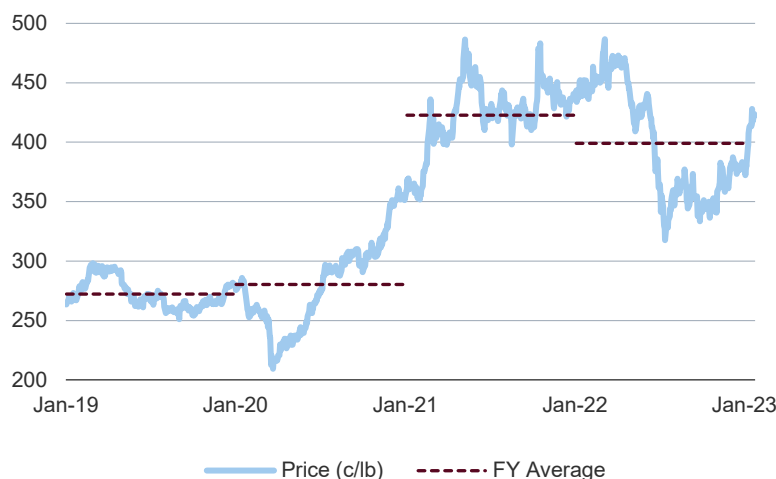


# Significant headwinds from costs and price in the second half

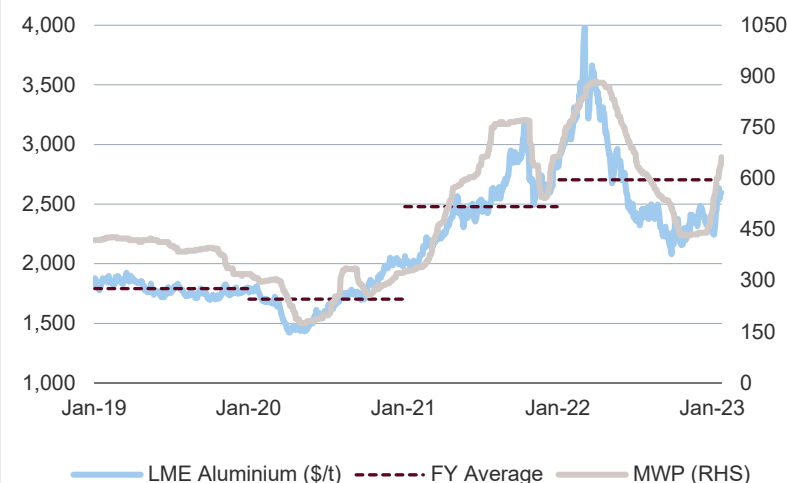
**Iron Ore<sup>1</sup> (-25% YoY)**



**Copper<sup>2</sup> (-6% YoY)**



**Aluminium<sup>3</sup> (+9% YoY)**



## Realised pricing

	H1	H2	Delta
Iron ore (\$/dmt)	121	94	-22%
Copper (c/lb)	447	362	-19%

## Realised pricing

	H1	H2	Delta
Aluminium (\$/t) <sup>4</sup>	3,808	2,870	-25%

## Aluminium raw materials \$/t index price

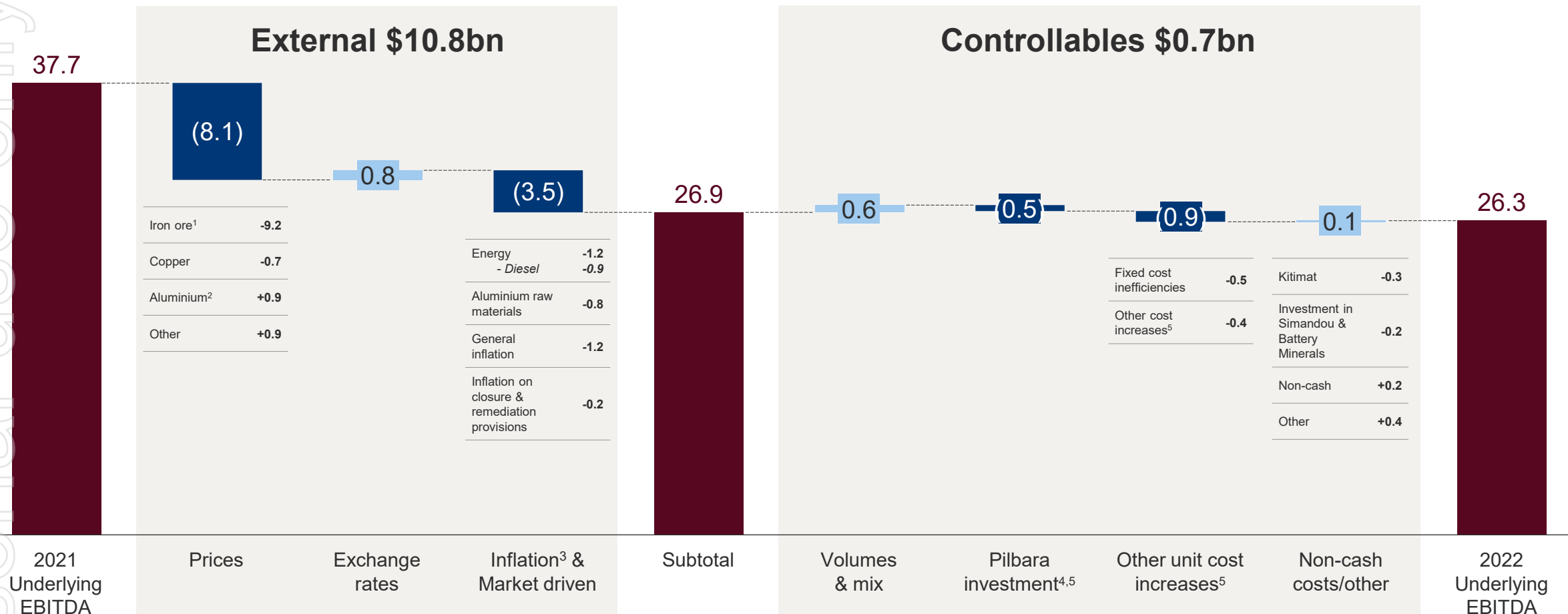
	H1	H2	Delta
Coal tar pitch	1,103	1,476	+34%
Petroleum coke	695	719	+3%

<sup>1</sup>Monthly average Platts (CFR) index for 62% iron fines | <sup>2</sup>Average LME price | <sup>3</sup>Average LME price. MWP = US Midwest premium | <sup>4</sup>LME plus all-in premiums (product and market) | YoY = change in annual average price. Source: Rio Tinto Market Analysis, LME, S&P Global, CRU NA

# Continued tight focus on controllables

## Underlying EBITDA

\$bn



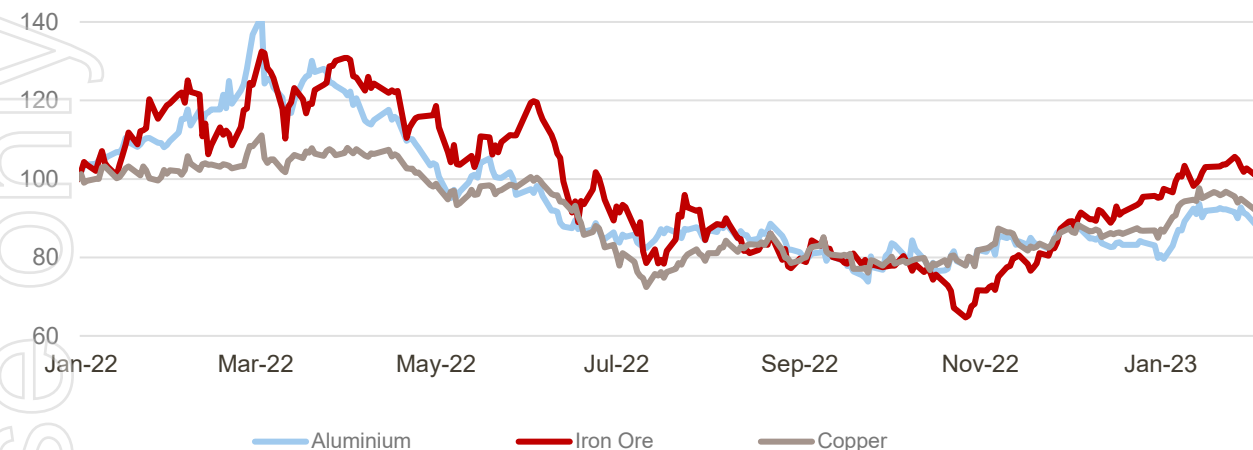
<sup>1</sup>Iron ore includes Pilbara, portside trading and IOC | <sup>2</sup>Aluminium includes alumina and bauxite | <sup>3</sup>Inflation variance of -\$1.5bn comprises general inflation (-\$1.2bn), inflation on closure and remediation provisions (-\$0.2bn) and included in Aluminium raw materials (-\$0.1bn) | <sup>4</sup>Gudai-Darri increased workforce to support ramp up and targeted investments in Pilbara pit health and system reliability | <sup>5</sup>Total impact of the change in operating unit cash costs of (\$2.2bn) comprises aluminium raw materials (\$0.8bn), Pilbara investment (\$0.5bn) and Other (\$0.9bn)

# Resilient product group financials: well positioned for 2023

	Iron Ore		Aluminium		Copper		Minerals	
\$bn, except where stated	Turning a corner operationally	vs 2021	Margin compression in the second half	vs 2021	Investing in growth	vs 2021	Resilient portfolio	vs 2021
Underlying EBITDA <sup>3</sup>	18.6	-33%	3.7	-16%	2.4	-40%	2.4	-7%
EBITDA margin <sup>1,2</sup>	68%	-8pp	29%	-9pp	49%	-10pp	40%	-3pp
Capex	2.9	-26%	1.4	+6%	1.6	+22%	0.7	+5%
Free cash flow	11.0	-27%	1.7	-27%	(0.3)	-120%	0.8	+7%
ROCE <sup>2,3</sup>	62%	-38pp	10%	-6pp	6%	-8pp	22%	+1pp
Performance	<ul style="list-style-type: none"> <li>Operational records achieved; healthy stock levels</li> <li>Lower pricing (Platts -25%) driving lower EBITDA</li> <li>Continued focus on controllable costs in inflationary environment</li> </ul>		<ul style="list-style-type: none"> <li>Kitimat and Boyne recovery progressing with full ramp-up in 2023</li> <li>Sharp price decrease in the second half (-25%), combined with rising input costs led to a significant margin squeeze and 72% reduction in EBITDA HoH</li> </ul>		<ul style="list-style-type: none"> <li>Anticipated decrease in gold sales at Oyu Tolgoi and raw materials inflation impacted EBITDA</li> <li>Average realised price decreased 5% in conjunction with negative provisional pricing (-\$175m)</li> </ul>		<ul style="list-style-type: none"> <li>Safe Production System delivering operational improvements at IOC</li> <li>Strong markets for TiO<sub>2</sub> and borates</li> <li>Lower EBITDA due to weaker pricing for iron ore, inflationary pressures and higher cash costs</li> </ul>	

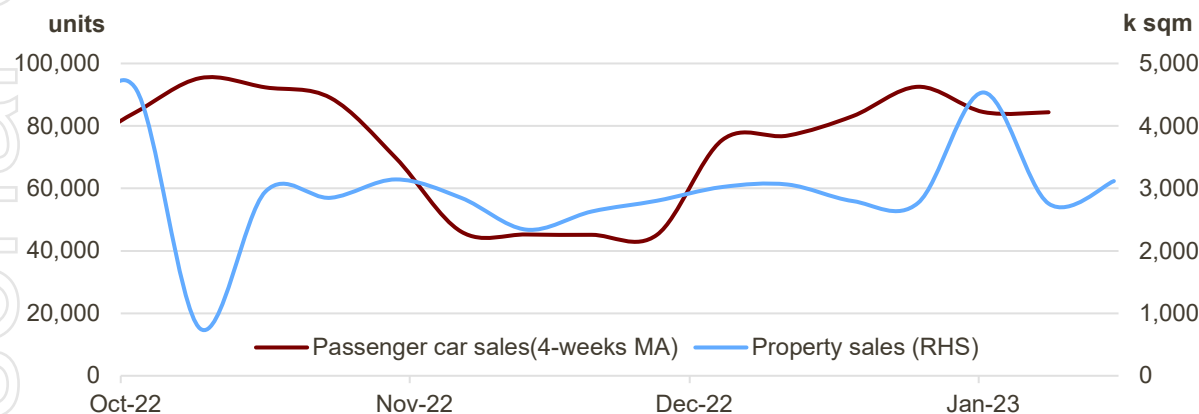
# Looking ahead - physical markets remain tight

Key commodity price performance<sup>1</sup>

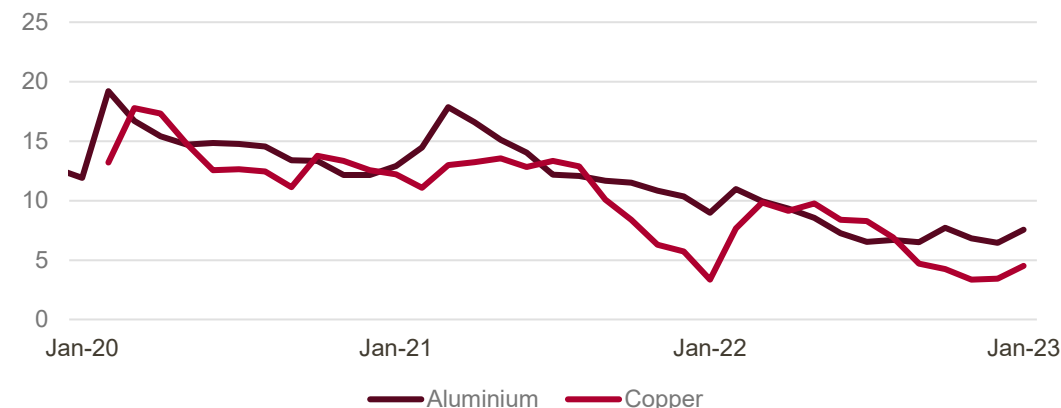


- **Commodity prices found some support** in recent months, albeit still lower than at the start of last year
- **China policy stance has pivoted to pro-growth**, with zero-COVID in rear view and the country's reopening providing economic recovery in Q2, although volatility still expected in Q1
- **Inflationary pressures alleviating** going into 2023 with easing pressure on supply chains and lower gas prices, although direct flow through to the cost base will take time
- **Global base inventories at low levels.** Metal markets tight and risk of supply disruptions persist. Contraction in seaborne iron ore supply led to stock drawdown at Chinese ports and mills

China consumption show signs of rebounding although economy remains volatile

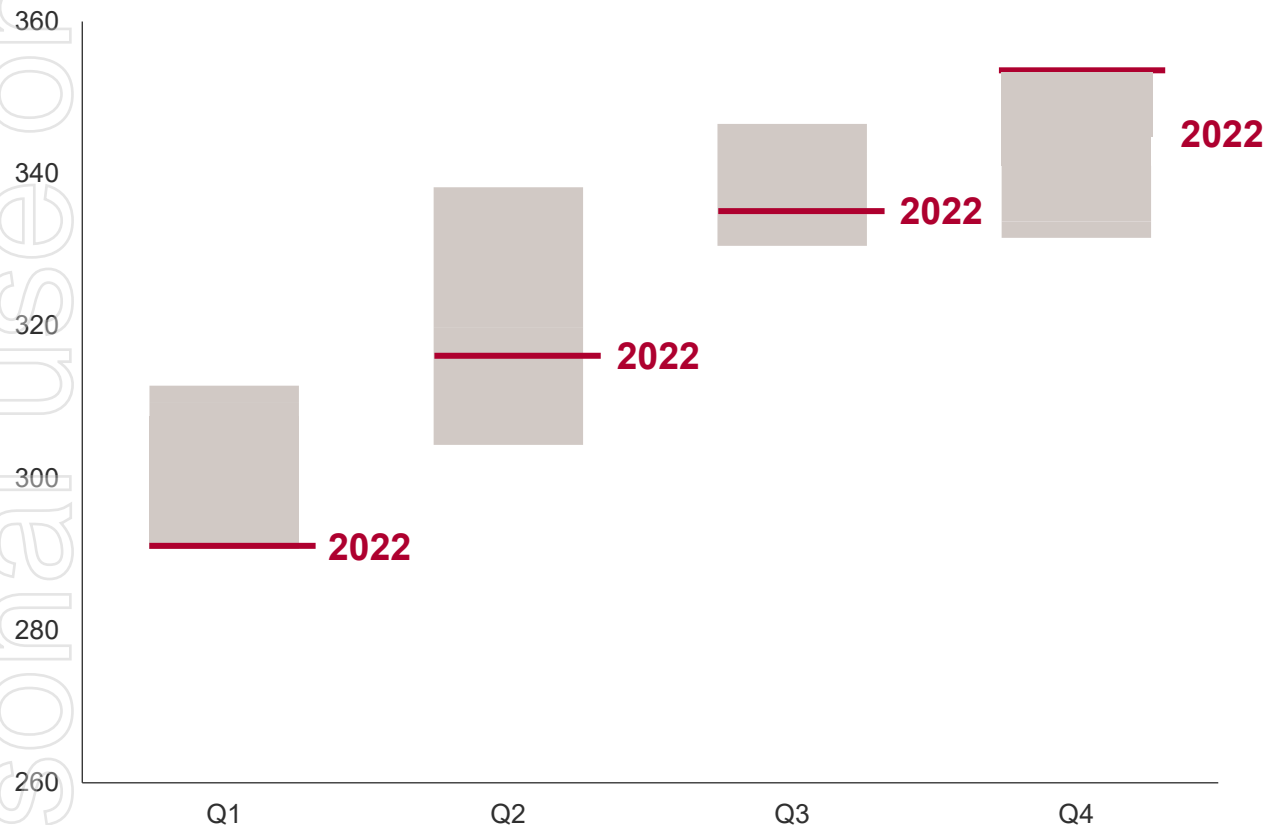


Metal global reported inventories as days of consumption<sup>2</sup>



# Pilbara iron ore: finished the year with strong momentum

Mine production ranges by quarter<sup>1</sup>  
(2019 to 2022, Mtpa)



- To offset ongoing depletion and add some growth during 2023:
  - Gudai-Darri to reach nameplate capacity on a sustained basis
  - Delivery of up to 5Mt production uplift from Safe Production System
- Entered 2023 with healthy system inventories including strong blasted stocks, mine and port stocks
- Management of cultural heritage sites and engagement with Traditional Owners continues
- 2023 shipments guidance of 320 to 335Mt remains subject to weather, market conditions, progressing the ramp-up from new mines and management of cultural heritage

# Safe Production System underpins improvements across safety, people and productivity

## Safety

Practices and training have improved safety\* performance

\*AIFR measured at the asset



### Kennecott concentrator

#### AIFR

**33%** improvement compared to 2021

### IOC concentrator

#### AIFR

**40%** improvement compared to 2021

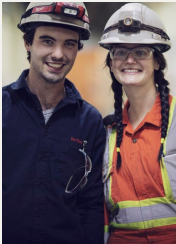
### Amrun fixed plant

#### AIFR

**29%** improvement compared to 2021

## People

Our measure of engagement over bi-annual surveys show significant improvements in empowerment across lighthouse sites



### Employee Satisfaction

**6%** improvement compared to the rest of the site. Strongest in empowerment and inclusion

### Employee Satisfaction

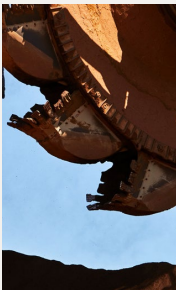
**5%** improvement compared to the rest of the site across collaboration, empowerment and resources

### Employee Engagement

**64%** improvement compared to the rest of the site in employee participation in the people survey

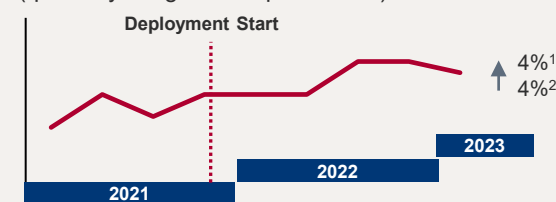
## Productivity

SPS supports operating time by addressing asset stability and availability



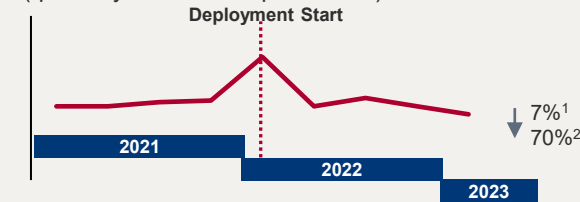
### Operating Rate

(quarterly – higher = improvement)



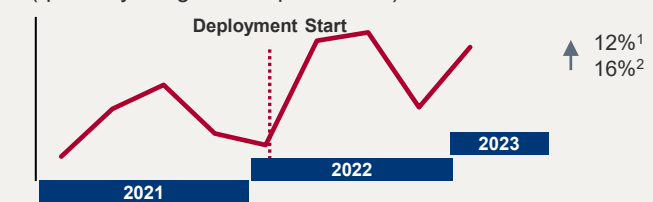
### Operating Variability

(quarterly – lower = improvement)



### Operating Time

(quarterly – higher = improvement)



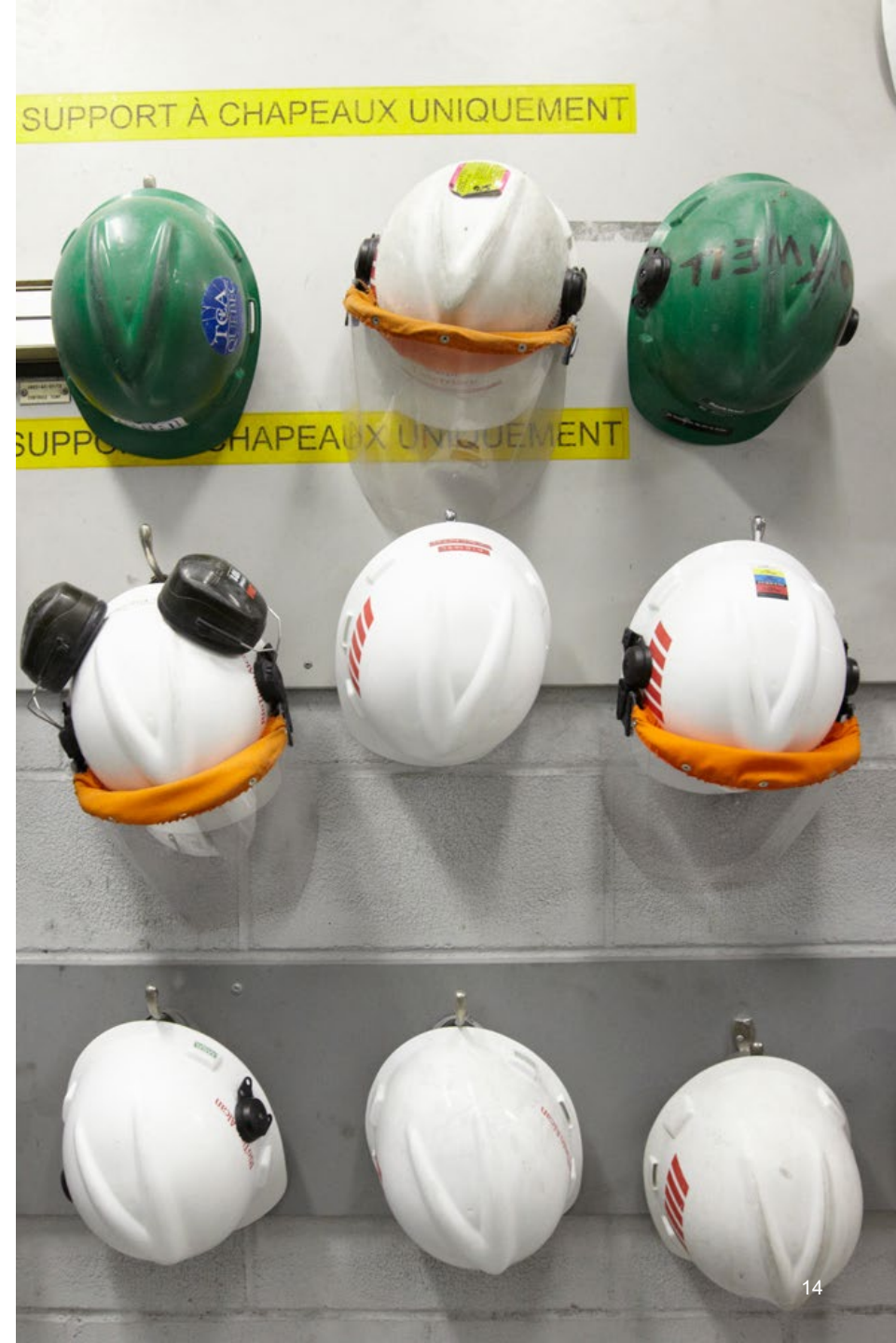
# Replicating the successes across our assets

## Product Group

	Actual sites	2023 target	Total sites <sup>1</sup>
Iron Ore	7	2 to 6	9 to 13
Aluminium	7	1	8
Copper	1	0	1
Minerals	1	1	2
<b>Total</b>	<b>16</b>	<b>4 to 8</b>	<b>20 to 24</b>

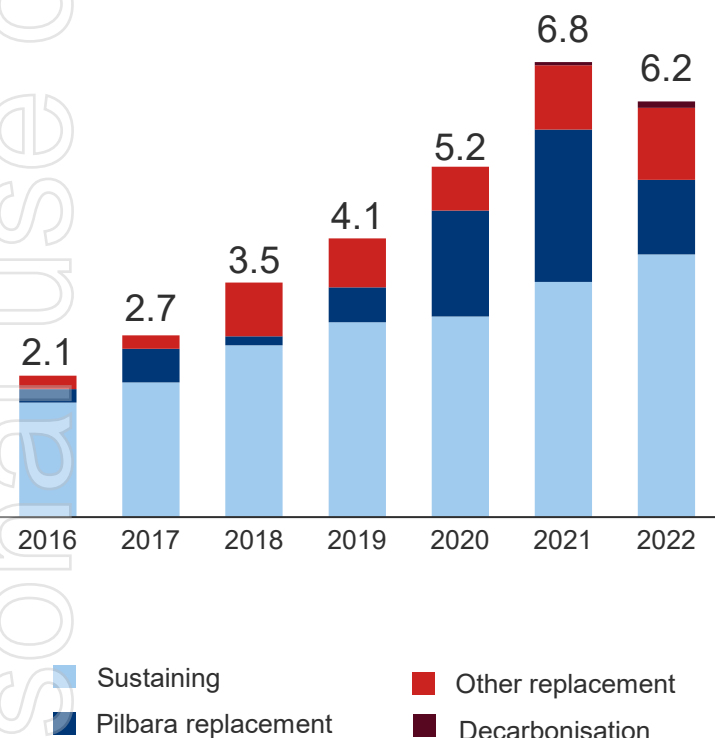
## Priorities in 2023:

- Going deeper at existing sites where we have already deployed to increase sustainable impact
- New impact driven deployments
- Focus on improving asset health and performance to stabilise production variability
- Identify key Kaizens (problem solving opportunities) to address high-priority improvements, with replication across Rio Tinto
- Upskill our people through training programmes

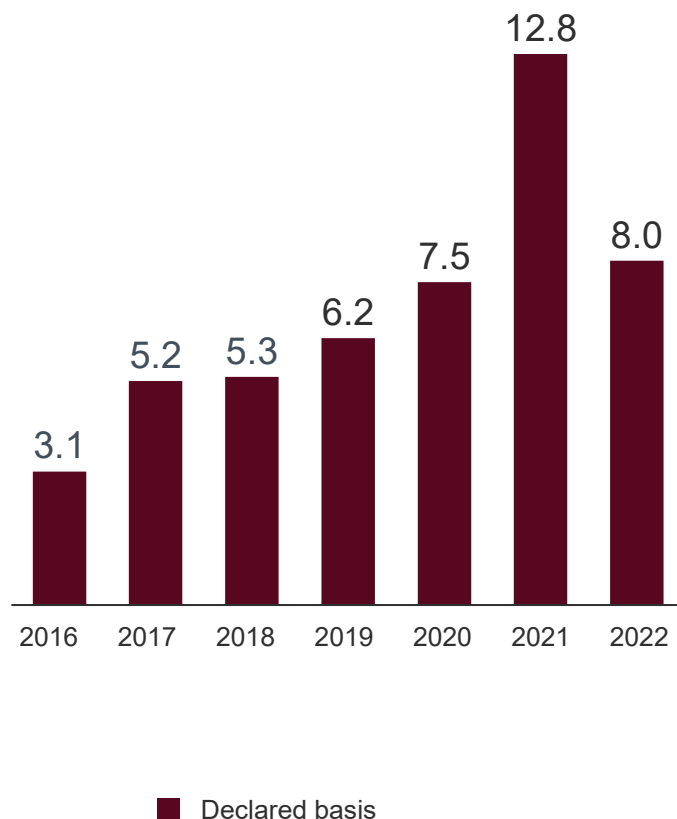


# We will continue to invest consistently through the cycle

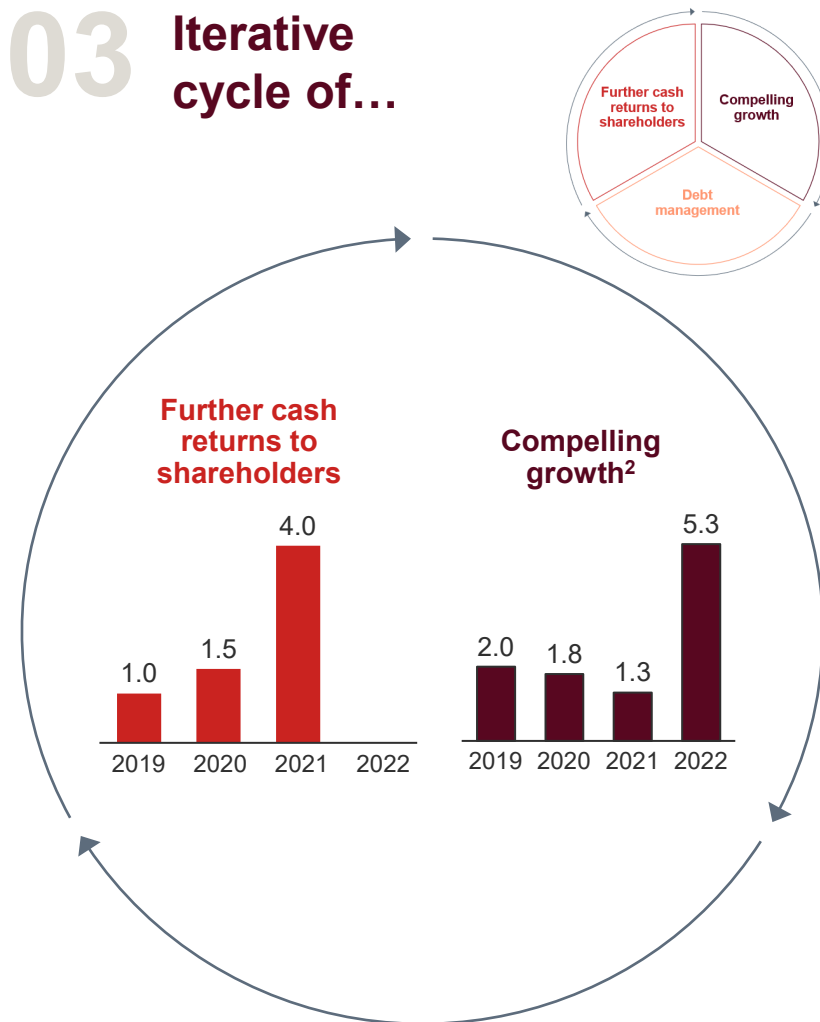
## 01 Essential capex Integrity, Replacement, Decarbonisation



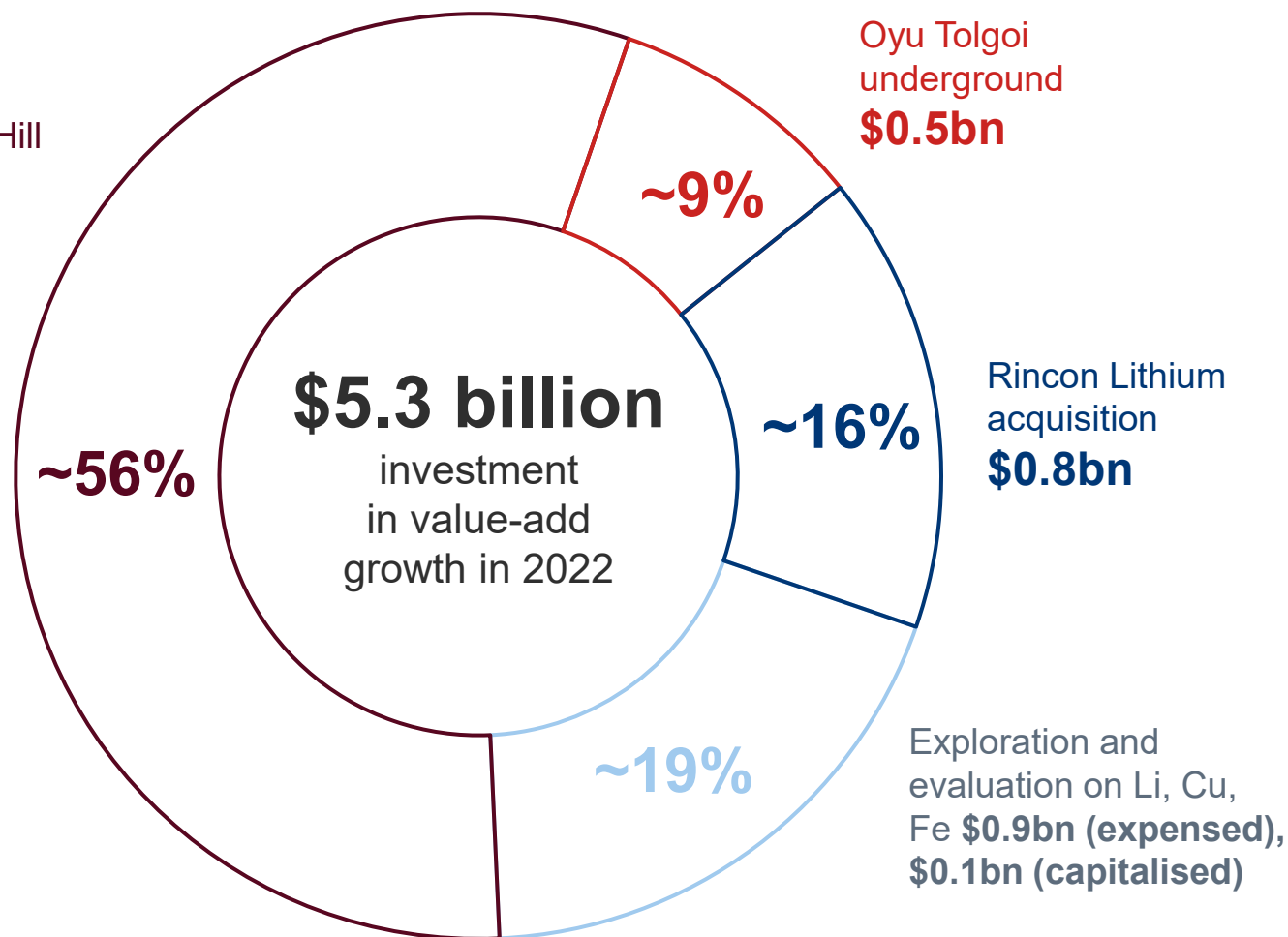
## 02 Ordinary dividends 40-60% of underlying earnings on average through the cycle<sup>1</sup>



## 03 Iterative cycle of...



# Investment in compelling growth in 2022



- **Significant investments in growth<sup>2</sup>** in 2022 with the acquisition of Rincon and the purchase of non-controlling interest in Turquoise Hill Resources
- **In 2023, we expect our share of capital investment to be around \$8bn (previously \$8 to \$9bn)**, including growth capital of around \$2bn, depending on the ramp-up of spend at Simandou
- **In 2024 and 2025, this rises to \$9 to \$10bn per year**, including the ambition to invest up to \$3bn in growth per year, depending on opportunities

# Balance sheet remains strong

## Disciplined approach is unchanged, we intend to maintain it throughout the cycle

Balance sheet strength is an asset. Offers resilience and creates optionality

## Principles-based approach to anchor balance sheet around a single A credit rating

Moody's: A2 (stable), S&P: A (stable)

No net debt target

## Our financial strength allows us to simultaneously:

Reinvest for growth (up to \$9-10bn per year in total capex depending on opportunities)

Accelerate our own decarbonisation (\$7.5bn to 2030, long term contracts + other indirect investment)

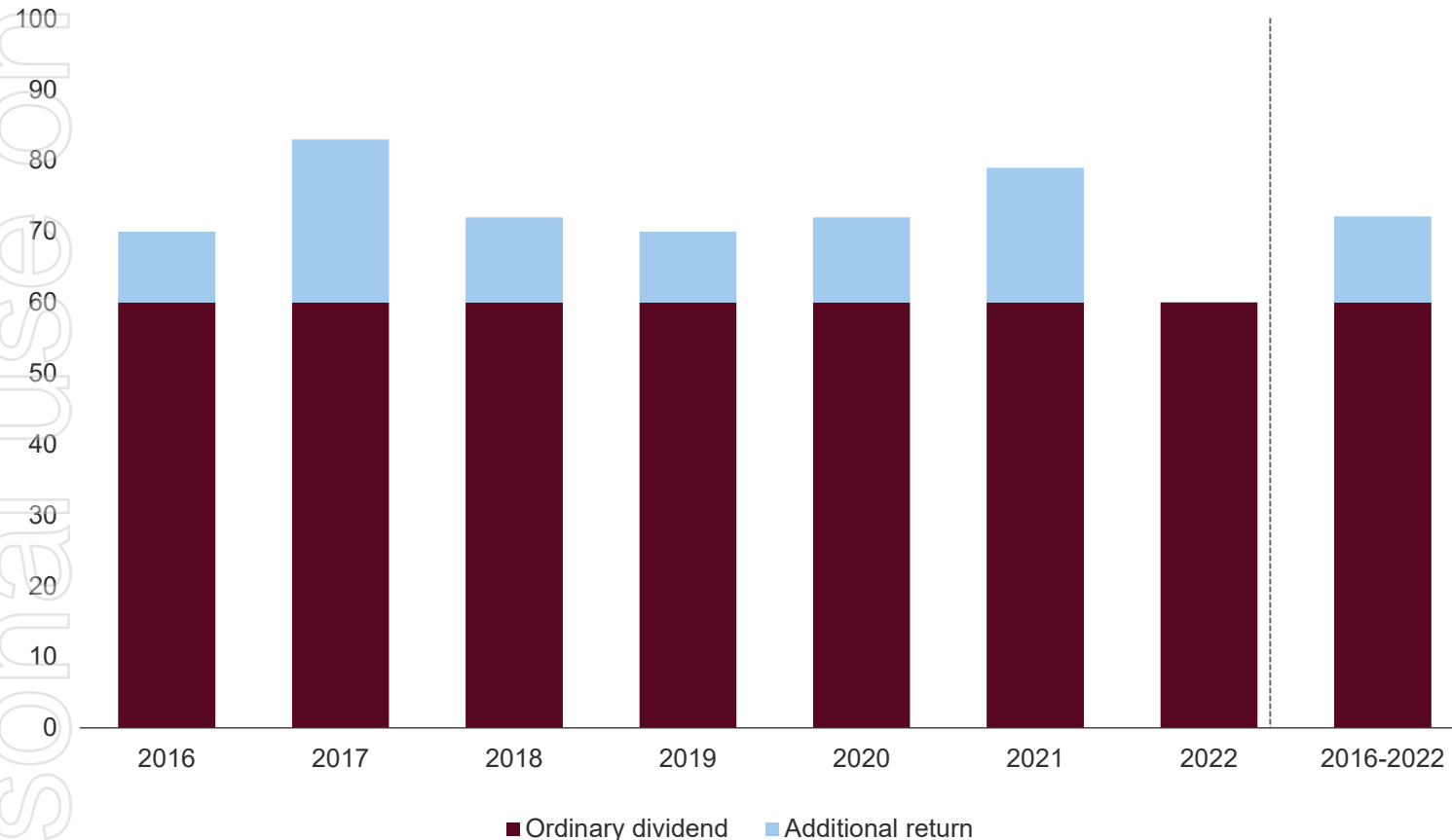
Continue to pay attractive dividends in line with our policy (consistent seven-year track record)

\$bn	2022	2021	2020
Net cash generated from operating activities	16.1	25.3	15.9
Capital expenditure	6.8	7.4	6.2
Dividends paid	11.7	15.4	6.1
Net (debt)/cash	(4.2)	1.6	(0.7)
Cash and liquid resources	8.8	15.2	12.9
Revolving credit facility (5 year maturity)	7.5	7.5	7.5
Net debt (cash)/Underlying EBITDA	0.16x	-0.04x	0.03x
Gearing	7%	-3%	1%
Weighted average debt maturity	11 yrs	11 yrs	9 yrs

# Attractive dividends remain paramount

Shareholder returns<sup>1</sup> of 40-60% of underlying earnings  
on average through the cycle

Payout ratio (%)



- \$3.7bn of dividends declared for H2, bringing the full year to \$8.0bn
- **Second highest full year ordinary dividend ever - a 60% payout**, in line with our policy
- **Consistent seven-year track record** of shareholder returns
  - 60% average payout on ordinary dividend over the past seven years
  - Total payout ratio has averaged 72% over the past seven years

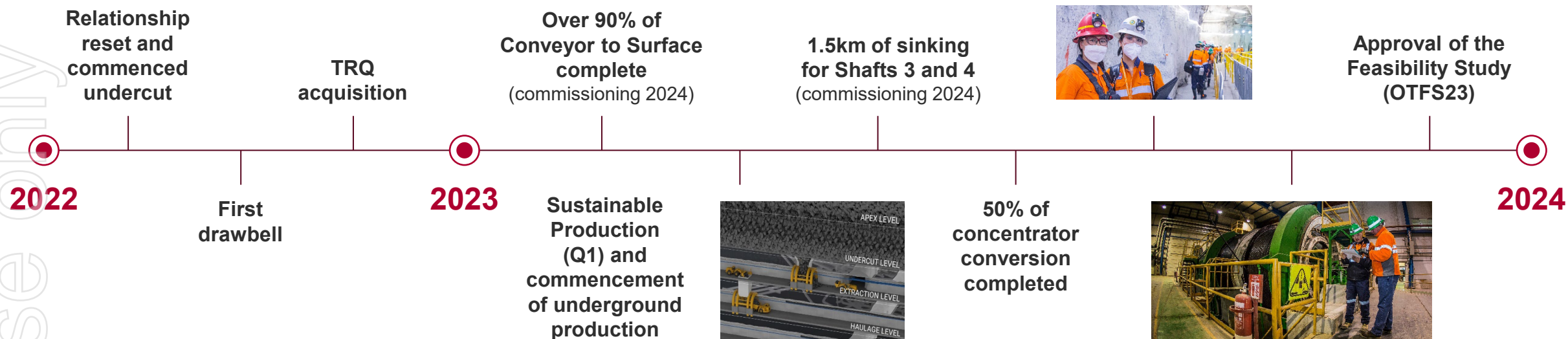
# Bold Baatar

Chief Executive, Copper

Oyu Tolgoi underground, Mongolia

RioTinto

# Oyu Tolgoi at an inflection point



**4<sup>th</sup> largest** copper-gold mine by 2030<sup>1</sup>; first quartile of Cueq<sup>2</sup> cost curve

Panel 0  
**27 drawbells fired**, Sustainable Production brought forward to Q1

Estimated average production  
**~500ktpa Cu & ~330kozpa Au** 2028-2036<sup>3</sup>

Industry leading **safety performance** and water intensity (0.4m<sup>3</sup>/t), studies for net zero by 2040

**World leading** cave monitoring, data collection and analysis systems

**Best-in-class** block caving technical expertise (Geotechnical Review Board)

# Committed to long-term partnership in Mongolia



**January 2022 agreement delivered opportunity to reset relationship and commitment to continued dialogue and partnership**

**Made in Mongolia campaign** of local suppliers and continued growth in Rio Tinto Mongolia Business and Support Centre delivering innovative group-wide shared services



Mongolia remains **highly prospective for resources**, with a young talented population

**Workforce of ~20,000 with 97% Mongolian and average age 28**

**Investment in long term Mongolian development** – \$50m in South Gobi Town Development - **Khanbogd Oyu Tolgoi Catalyst Fund** starts major projects in local community

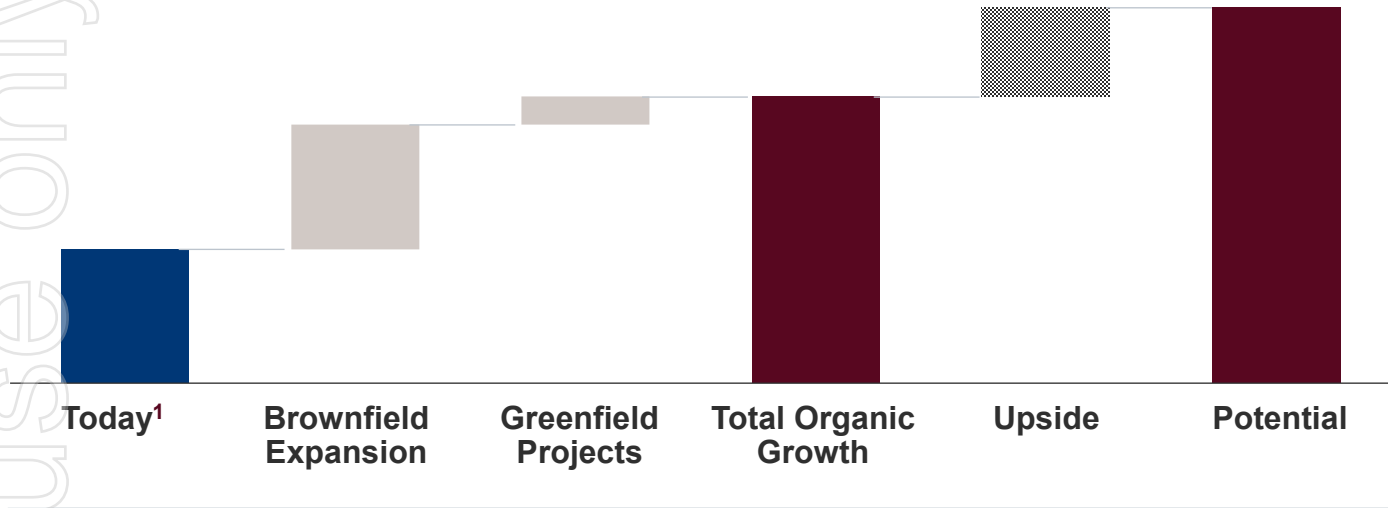


**500+ national suppliers and ~\$15bn spent in-country since 2010**

**Pro-FDI country** focused on long-term development principles, including New Economic Revival Policy

# Ambition to double volumes

Our ambition is to double annual Copper output by end of decade, enabled by significant long-life R&R



We have an interest in 2 of top 5 Copper assets globally by 2030<sup>2</sup>

	Mine	Country
1	Escondida	Chile
2	Grasberg	Indonesia
3	Collahuasi	Chile
4	Oyu Tolgoi	Mongolia
5	Cerro Verde	Peru

- Well endowed long-life asset portfolio
- Growth pathway includes **Kennecott expansion, Resolution** and **Winu** with upside
- **OT volumes to reach ~500ktpa** within the decade<sup>3</sup>
- Well positioned to support US energy transition and supply growing demand for copper
  - **Kennecott expansion pathways** (underground and open pit)
  - Revival of US legacy, **Resolution** in established Arizona copper triangle
  - **1 of only 2 operating smelters in the US**
- **Escondida** is the world’s largest copper mine with brownfield options
- **Nuton bioleaching** could unlock substantial volumes with ~80% recoveries

<sup>1</sup>Represents 2022 production as disclosed in the Rio Tinto Q4 Operations Review, 17 January 2023, with Oyu Tolgoi adjusted to 100% volumes. Escondida at RT share 30% | <sup>2</sup>Source: Wood Mackenzie Dec 2022, based on production from committed projects | <sup>3</sup>Based on the Oyu Tolgoi Feasibility Study 2020 (OTFS20). Remains subject to study work for Panels 1 and 2 (which are required to support the ramp-up to 95,000 tonnes of ore per day) which is expected to be completed in the first half of 2023. See supporting statements on slide 2

# Jakob Stausholm

Chief Executive

Rincon Lithium, Argentina

RioTinto

# Framework for a stronger Rio Tinto

Our purpose

**Finding better ways to provide the materials the world needs**



Our strategy

**Decarbonise our assets**

50% reduction in our emissions to 2030

**Help our customers decarbonise**

Developing products and technologies

**Growing in materials enabling the energy transition**

Ambition to double investment in growth

Our values

**Care**

**Courage**

**Curiosity**

# Continuing our journey in 2023

## People and Operations

- Accelerate our culture journey
- Deliver production safely
- Strengthen operational stability
- Invest in asset health
- Improve people engagement
- Deepen relationships with communities and Traditional Owners

## Portfolio

- Commence and ramp up Oyu Tolgoi underground
- Build Simandou
- Progress Resolution and Jadar
- Deliver Rincon Lithium starter plant
- Explore critical minerals in our resources
- Value chain partnerships
- Opportunity generation

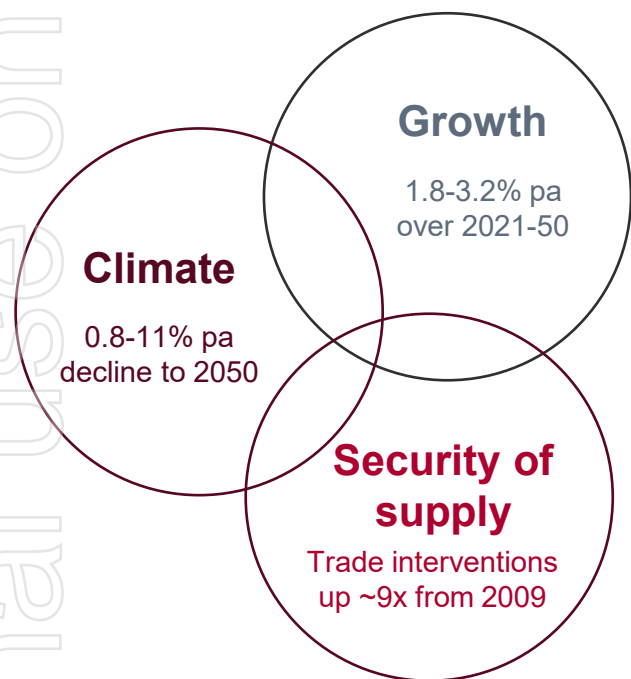
## Decarbonisation

- ELYSIS™ industrial scale pilot
- Queensland smelter repowering
- 230MW of solar in Pilbara
- BlueSmelting™ demonstration plant
- Renewable diesel trial at Boron
- Drive technology – electric steam generation and thermal storage
- Mature pipeline of projects



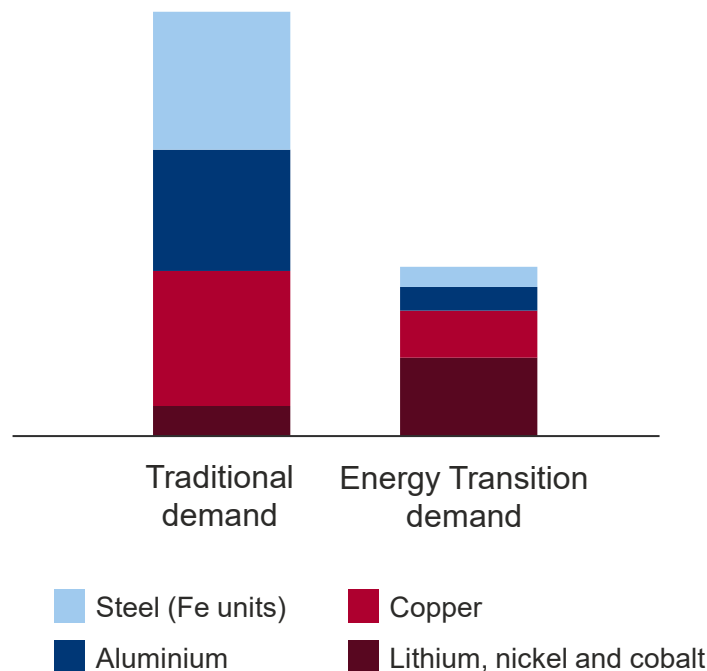
# Outlook underpins a stronger Rio Tinto for the long term

## Key drivers of global economy<sup>1</sup>



## Total commodity demand by 2035<sup>2</sup>

Total demand to grow by ~70% by 2035 from 2021 levels, or 3.7% CAGR with demand uplift from Traditional and Energy Transition broadly equal



## Our future options



<sup>1</sup>Growth and carbon projections from Rio Tinto Group scenarios (11% per annum decline in CO2 emissions based on 2021-49 period in net zero by 2050 pathway). Trade interventions from Global trade alert database | <sup>2</sup>Copper equivalent demand uses average annual prices from 2017-21 with finished steel demand in iron ore equivalent units. Energy Transition demand calculated on a gross basis. Based on Rio Tinto's Competitive Leadership scenario. The contribution to growth is based on a net basis, for example, electric vehicles generate incremental demand for copper but actually contain less steel than internal combustion engines | <sup>3</sup>Recycling share of total demand is currently higher due to the existing traditional use of nickel in industry and then declines as battery demand grows faster than recycling

ersonal use only

RioTinto

RioTinto

# Appendices

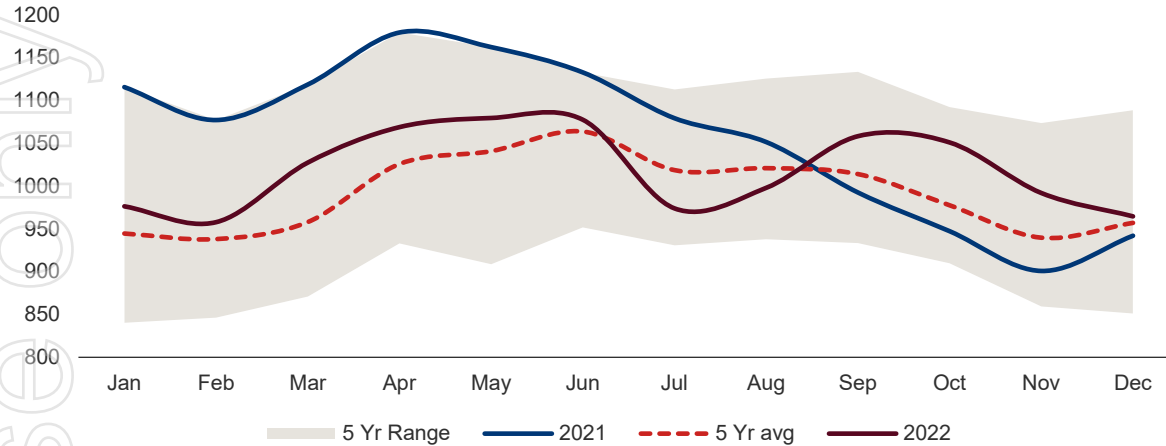
Full year results 2022



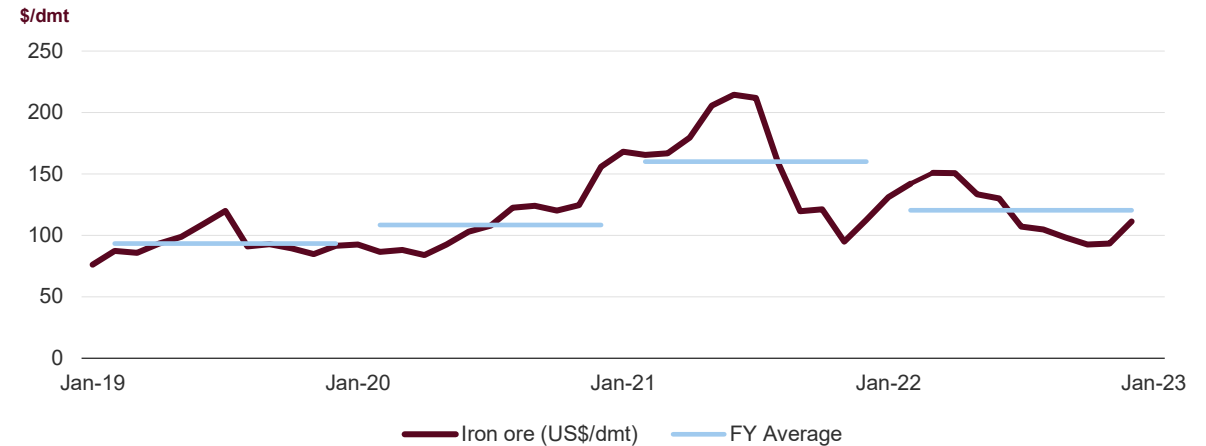
# Markets

# Iron ore market tighter than perceived in 2022

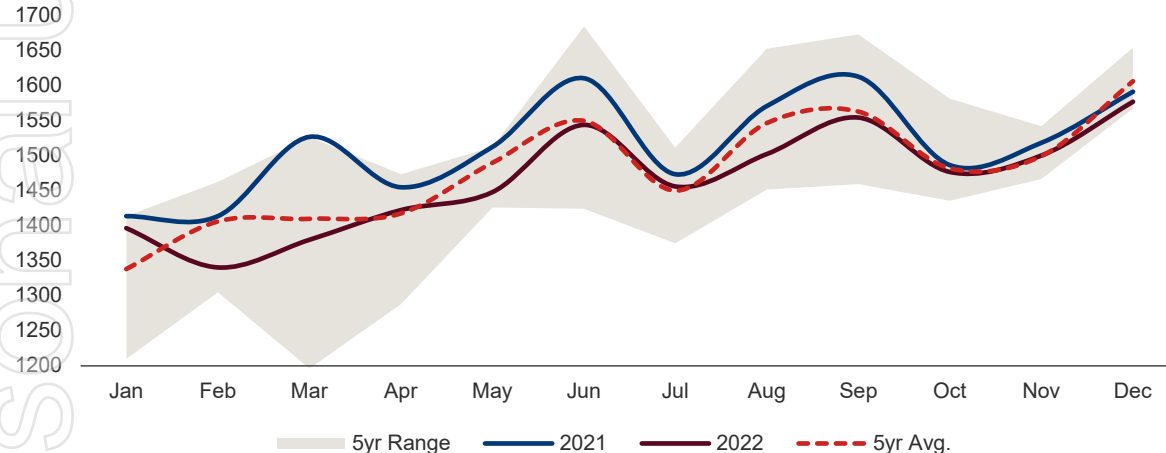
China's crude steel production (Mt annualised)



Iron Ore<sup>1</sup> (-25% YoY)



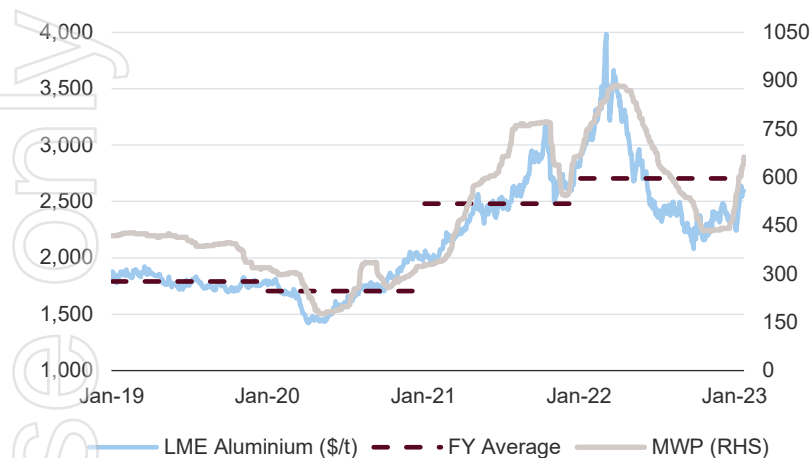
Seaborne Iron Ore supply run rate (Mt annualised<sup>2</sup>)



- 2022 was the first year since the beginning of the COVID-19 pandemic during which steel demand in China and the rest of the world contracted simultaneously. Nevertheless, iron ore price support emanated from disruptions to seaborne supply and scrap availability in China
- China's steel demand and production declined by -5% YoY and -4% YoY respectively, but with scrap availability and consumption -12% lower YoY, hot metal output remained largely unchanged close to 880Mt (-1% YoY)
- China's 2022 iron ore imports remained effectively unchanged YoY at almost 1.2Bt, while port inventories were drawn down from 155Mt to 131Mt during the year
- Meanwhile, iron ore supply trended below its 2021 and 5-year average levels during most of 2022, due to extreme rainfall in Brazil during Q1, the war in Ukraine, and India's decision to impose export duties. The major iron ore producers shipped 1.13Bt of iron ore (unchanged YoY), but the remainder of seaborne supply declined -13% YoY, bringing total iron ore exports down -3.2% YoY

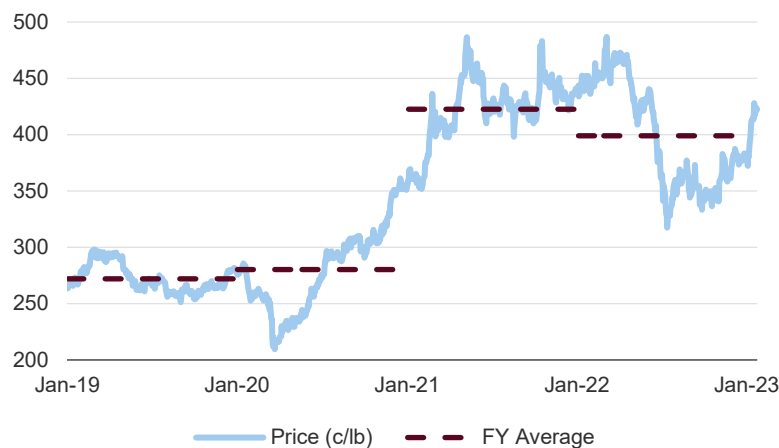
# Price support for aluminium, copper and TiO<sub>2</sub>

## Aluminium<sup>1</sup> (+9% YoY)



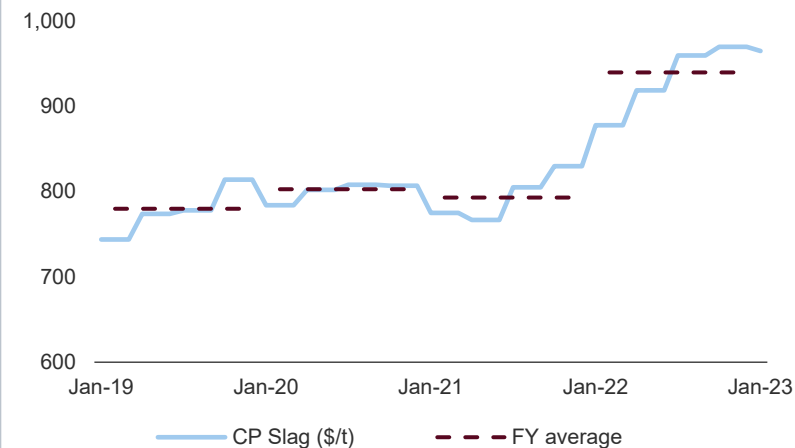
- Aluminium demand growth slowed in H222, first in Europe and Asia, then North America later in the year. However, Chinese aluminium export growth slowed from +34% YoY in H1, to +3% YoY in H2
- Aluminium production increased by 2% in 2022, driven by 4% growth in China. But low hydropower generation forced smelter cuts in southern China, resulting in a QoQ decline in Q4 output
- Global reported inventories declined substantially in 2022. The market tightness is very clear in the US, where the Midwest premium has now rallied by over 50% from the Q4 low

## Copper<sup>2</sup> (-6% YoY)



- Copper consumption held up as weakness in residential property was compensated for by strength in EVs, renewables and non-residential construction
- Supply disruptions persisted in 2022, mainly from Latin America, limiting supply growth
- Visible stocks fell to historically low levels and will require rebuilding in coming years after market deficits
- Investors increased their copper position through H2

## TiO<sub>2</sub> (chloride slag) (+19% YoY)



- TiO<sub>2</sub> feedstock price appreciation supported by low inventories and tight supply through 2022
- Demand for TiO<sub>2</sub> products was impacted by a weakening macro environment over the second half. This resulted in sales volume declines for pigment producers in North America and Europe
- TiO<sub>2</sub> feedstock supply growth has been moderate despite rising prices

# Other financials

# Oyu Tolgoi: Financial modelling

<b>Ownership</b>	66% Rio Tinto, 34% Government of Mongolia
<b>Accounting treatment</b>	100% consolidation of headline production (from 1 Jan 2023), sales revenue and underlying EBITDA Project finance included in Rio Tinto net debt
<b>Project capex</b>	\$7.06bn (100% consolidated) Includes Shafts 3 and 4, Primary Crusher 2 and Concentrator conversion
<b>Production<sup>1</sup></b>	~340ktpa copper average 2023 - 2027 ~500ktpa copper average 2028 - 2036 ~290ktpa copper average over ~30 year reserve life
<b>By-products<sup>1</sup></b>	~360kozpa gold average 2023 - 2027 ~330kozpa gold average 2028 - 2036 ~260kozpa gold and ~1,710kozpa silver average over ~30 year reserve life
<b>C1 unit costs (c/lb)</b>	\$0.82/lb - \$1.43/lb (Real, based on production ranges between ~350kt Cu and ~600kt Cu) over reserve life
<b>Grade (% cu)<sup>1</sup></b>	0.97% of ore to mill on average 2023 - 2027 1.28% of ore to mill on average 2028 - 2036 0.82% of ore to mill on average over ~30 year reserve life
<b>Sustaining capex<sup>2</sup></b>	\$304m average per annum 2023 - 2032 \$161m average per annum over ~30 year reserve life
<b>Tax rate</b>	Corporate Income 25%, Royalty 5%, VAT 10%

# Significant movements in iron ore prices impacting EBITDA

Underlying EBITDA 2022 vs 2021

\$m

50,000

40,000

30,000

20,000

10,000

0

-10,000

-20,000

2021  
underlying  
EBITDA

Price

( 8,101)

Iron ore<sup>1</sup>

Copper

Aluminium<sup>2</sup>

Industrial minerals

Diamonds

Other, net

37,720

( 9,155)

( 733)

886

387

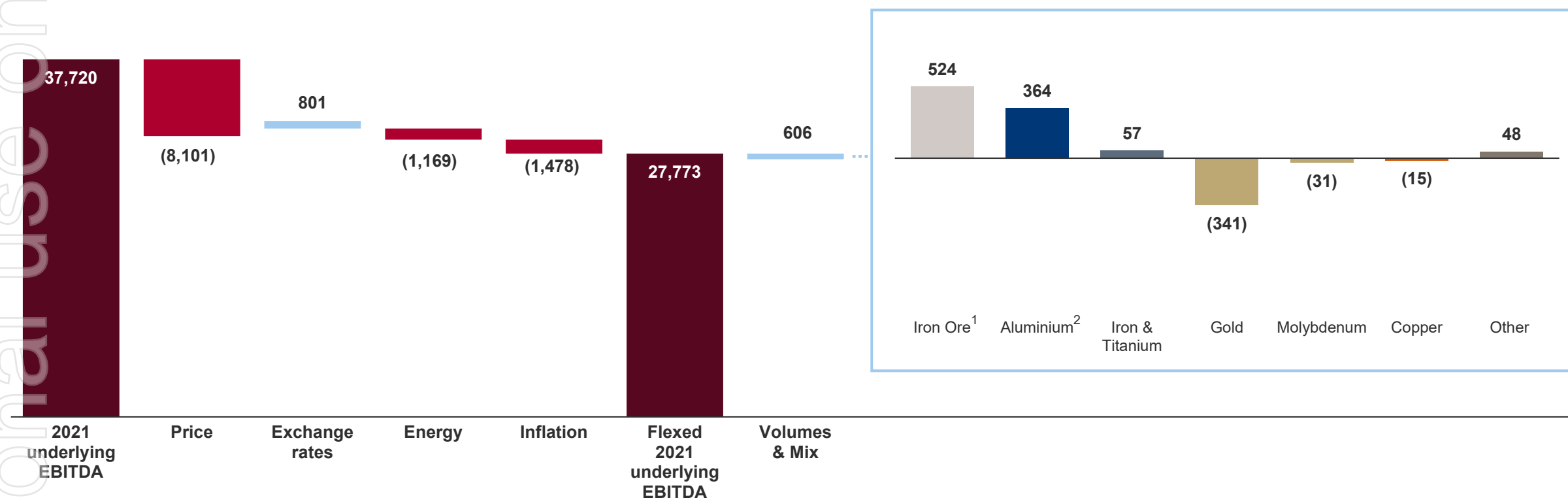
113

401

# Improvement in volumes and mix driven by higher China portside sales and favourable value-added products

Underlying EBITDA 2022 vs 2021

\$m



# Simplified earnings by Business Unit

	Primary Metal Atlantic	Pacific Aluminium	Copper	Pilbara
<b>Sales volume</b>	<b>2,204kt</b>	<b>1,010kt</b>	<b>594kt<sup>6</sup></b>	<b>277.6Mt<sup>9</sup></b>
Average benchmark price	\$2,703/t	\$2,703/t	398c/lb <sup>7</sup>	\$109.8/dmt <sup>10</sup>
Premiums, provisional pricing, by-product sales, product mix, other	\$767/t <sup>2</sup>	\$321/t <sup>2</sup>	58c/lb	\$(3.7)/dmt
<b>Revenue per unit</b>	<b>\$3,470/t<sup>3</sup></b>	<b>\$3,024/t<sup>3</sup></b>	<b>456c/lb</b>	<b>\$106.1/dmt</b>
Unit cost	\$1,729/t <sup>1,4</sup>	\$2,237/t <sup>1,4</sup>	237c/lb <sup>1,8</sup>	\$21.3/t <sup>11</sup>
Other costs per unit	\$640/t <sup>5</sup>	\$295/t <sup>5</sup>	(6)c/lb <sup>5</sup>	\$18.3/t <sup>12</sup>
<b>Margin per unit</b>	<b>\$1,101/t</b>	<b>\$492/t</b>	<b>225c/lb</b>	<b>\$66.5/t</b>
<b>Total EBITDA (\$m)</b>	<b>2,426</b>	<b>497</b>	<b>2,947</b>	<b>18,474</b>

<sup>1</sup>Calculated using production volumes | <sup>2</sup>Includes Midwest premium duty paid, which was 57% of our volumes in 2022 and value added premiums which were 50% of the primary metal we sold | <sup>3</sup>Segmental revenue per Financial Information by Business Unit includes other revenue not included in the realised price | <sup>4</sup>Includes costs before casting | <sup>5</sup>Includes net inventory movements to derive margin per unit on a sales basis | <sup>6</sup>Copper consolidated share, Kennecott and Oyu Tolgoi at 100%, Escondida at 30% | <sup>7</sup>Average LME | <sup>8</sup>C1 copper unit costs on a gross basis (excluding by-product credits) | <sup>9</sup>Consolidated basis | <sup>10</sup>Platts (FOB) index for 62% iron fines | <sup>11</sup>FOB basis, includes COVID-19 costs of \$0.4/t | <sup>12</sup>Includes freight and royalties

# Iron Ore

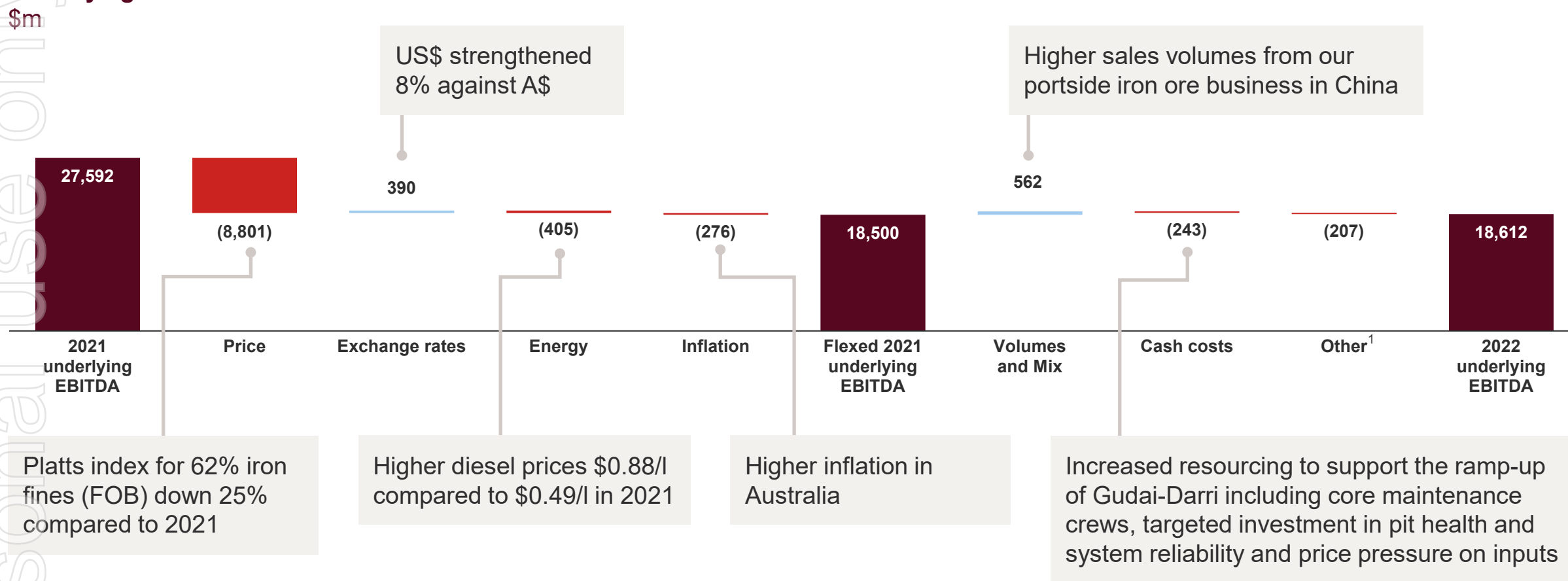
Financial metrics (\$bn)	2022	2021 comparison	2023 guidance
Segmental revenue	30.9	- 22%	
EBITDA	18.6	- 33%	
Margin (FOB) <sup>3</sup>	68%	- 8pp	
Operating cash flow	14.0	- 27%	
Capex	2.9	- 26%	Sustaining ~\$1.5 <sup>4</sup>
Free cash flow	11.0	- 27%	
Underlying ROCE	62%	- 38pp	
Average realised price <sup>1,3</sup> (\$/t)	106.1	- 26%	
Unit cost <sup>2,3</sup> (\$/t)	21.3	+ 15%	21.0-22.5

Shipments <sup>3</sup> (Mt, 100% basis)	2023 guidance	2022	2021	2020	2019	2018
Pilbara Blend		203.9	202.9	232.7	228.1	245.4
Robe Valley		25.5	25.2	30.3	27.4	32
Yandicoogina		56.9	56.9	57.7	57.1	57.4
SP10		35.4	36.6	9.9	14.8	3.4
<b>Total</b>	<b>320-335</b>	<b>321.6</b>	<b>321.6</b>	<b>330.6</b>	<b>327.4</b>	<b>338.2</b>

# Iron Ore

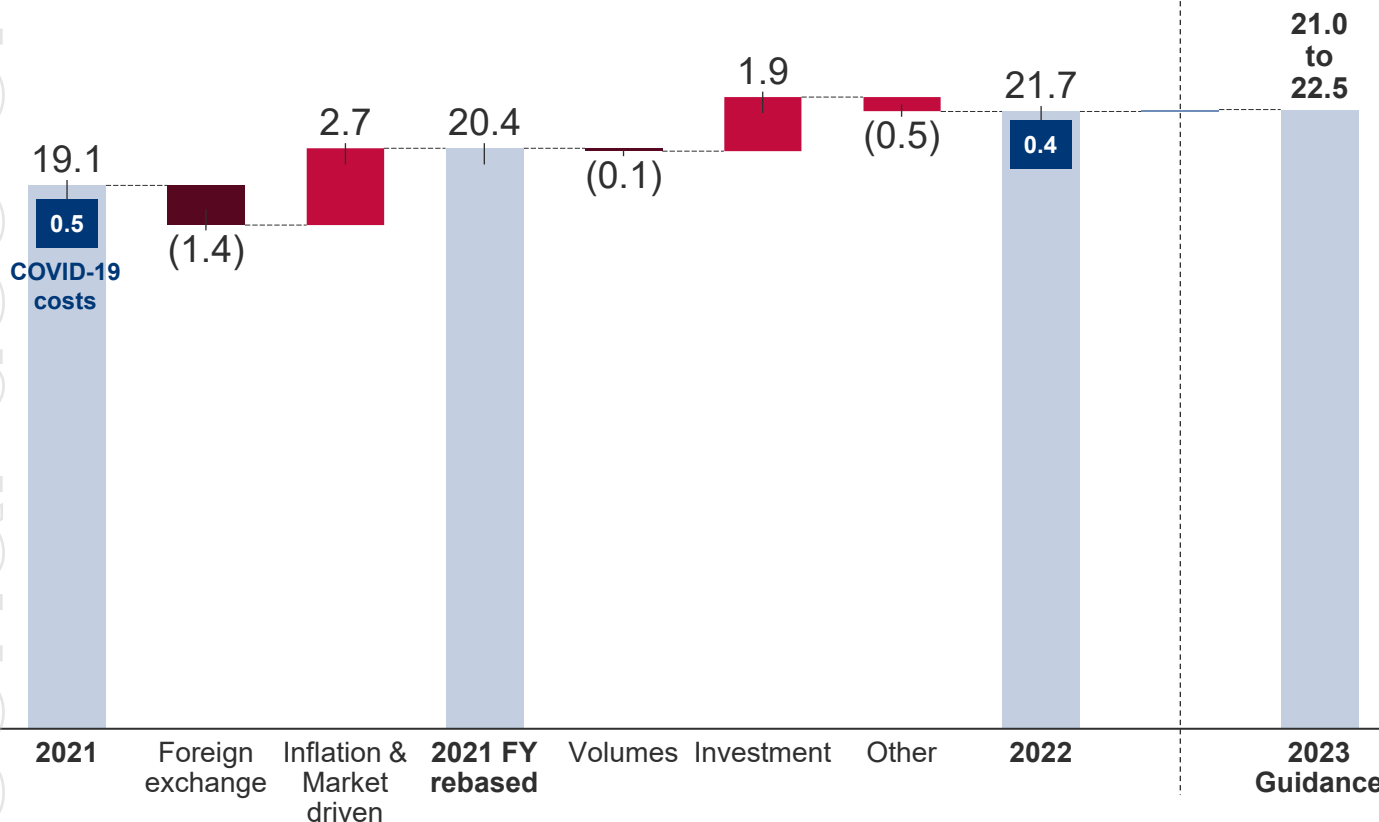
## Significant movement in price driving lower EBITDA

### Underlying EBITDA 2022 vs 2021



# Investment in the Pilbara, with the backdrop of inflationary and market pressures on prices

Pilbara iron ore unit cash costs, free on board (FOB) basis -  
US\$ per wet metric tonne



- Increase from 2021 primarily due to input price escalation and includes investment to support the ramp-up at Gudai-Darri and targeted investment in pit health and asset maintenance across the Pilbara
- 2023 unit cost guidance range of \$21.0 to \$22.5/t excluding COVID-19 includes:
  - Ramp-up of Gudai-Darri
  - Continued focus on asset integrity and management of controllable cost base
  - Some volume benefits
  - A\$:US\$ exchange rate of 0.70

# Aluminium

Financial metrics (\$bn)	2022	2021 comparison
Segmental revenue	14.1	+ 11%
EBITDA	3.7	- 16%
Margin (integrated operations)	29%	- 9pp
Operating cash flow	3.1	- 15%
Capex (excl. EAU's)	1.4	+ 6%
Free cash flow	1.7	- 27%
Underlying ROCE	10%	- 6pp
Aluminium realised price <sup>1</sup>	\$3,330/t	+ 15%
Average alumina price <sup>2</sup>	\$362/t	+ 10%
Canadian <sup>3</sup> smelters – hot metal cash cost <sup>4</sup>	\$1,678	+ 22%

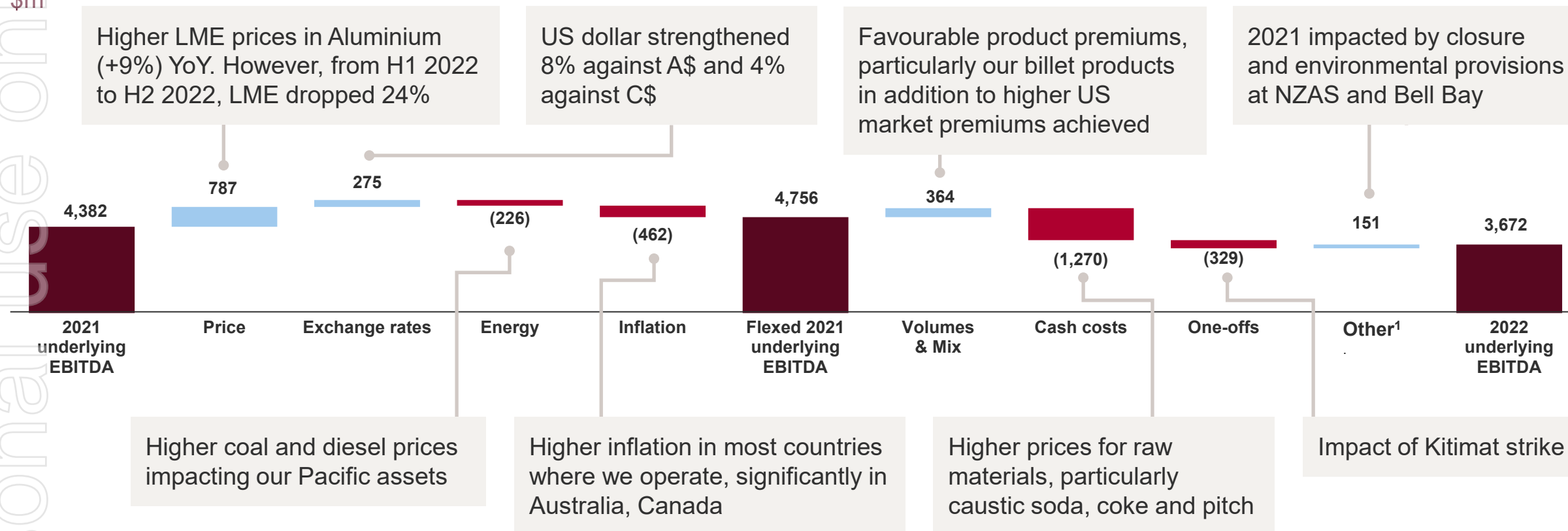
Production (Mt, Rio Tinto share)	2023 guidance	2022	2021	2020	2019	2018
Bauxite	54-57	54.6	54.3	56.1	55.1	50.4
Alumina	7.7-8.0	7.5	7.9	8.0	7.7	8.0
Aluminium	3.1-3.3	3.0	3.2	3.2	3.2	3.2

# Aluminium

Significant margin squeeze, particularly in second half

## Underlying EBITDA 2022 vs 2021

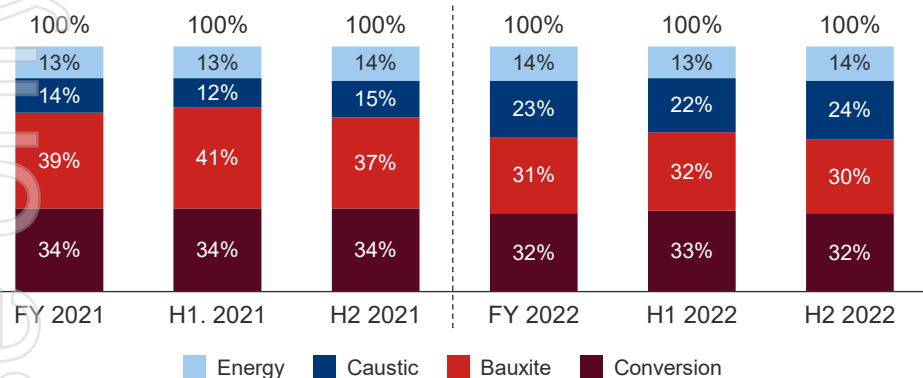
\$m



# Composition of alumina and aluminium production costs

## Production cash costs

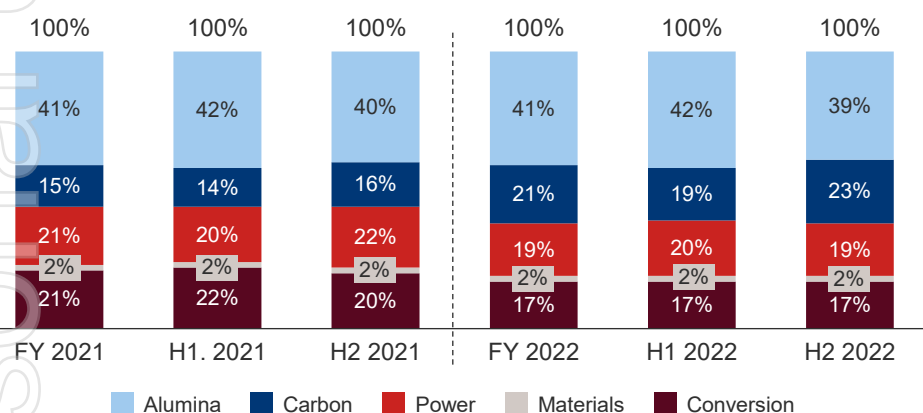
### Alumina refining



Input Costs (Index price)	H1 2021	H2 2021	H1 2022	H2 2022	Inventory Flow <sup>4</sup>	FY22 Annual Cost Sensitivity
Caustic Soda <sup>1</sup> (\$/t)	274	535	675	595	3 – 4 months	\$10m per \$10/t
Natural Gas <sup>2</sup> (\$/mmbtu)	2.85	4.59	6.02	7.01	0 - 1 month	\$4m per \$0.10/GJ
Brent Oil <sup>3</sup> (\$/bbl)	64.6	76.3	105.9	93.8	N/A	\$2m per \$10/barrel

1. North East Asia FOB
2. Henry Hub
3. Brent
4. Based on quarterly standard costing (moving average)

### Aluminium smelting (hot metal)

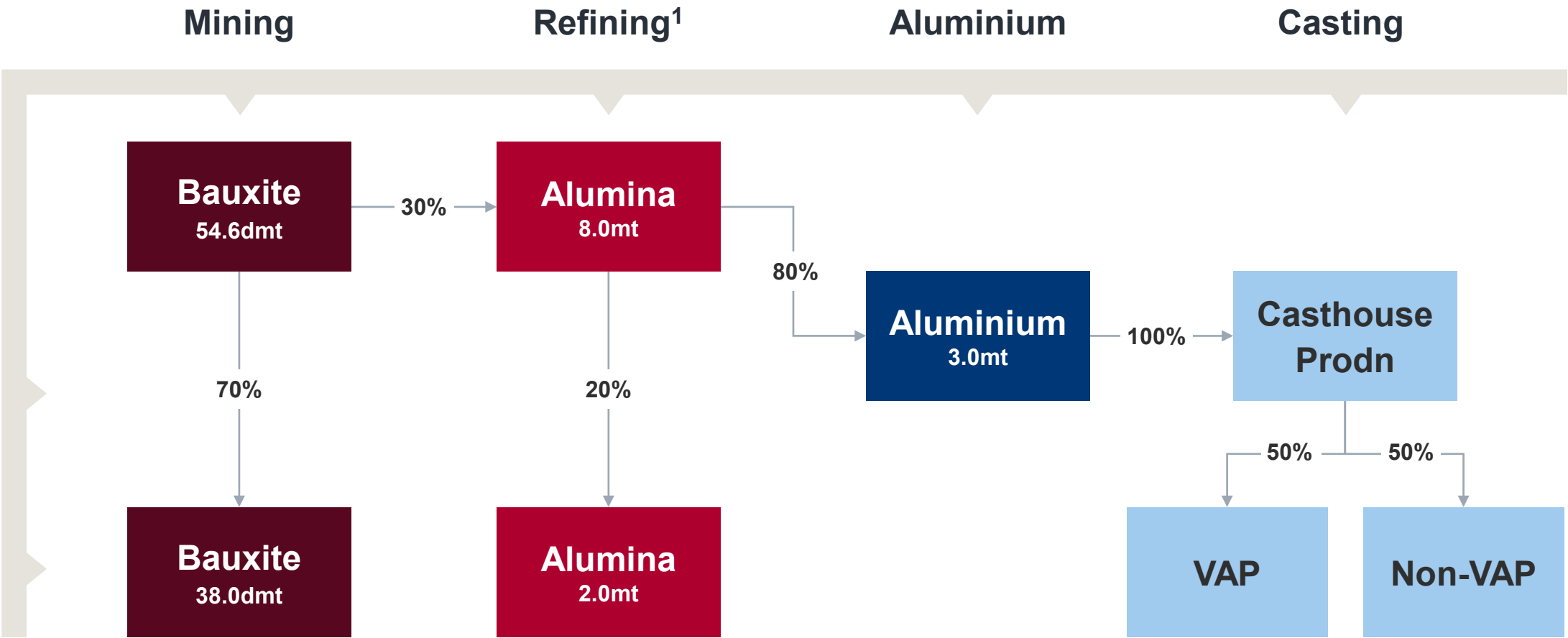


Input Costs (Index price)	H1 2021	H2 2021	H1 2022	H2 2022	Inventory Flow <sup>8</sup>	FY22 Annual Cost Sensitivity
Alumina <sup>5</sup> (\$/t)	288	369	395	328	1 - 2 months	\$64m per \$10/t
Petroleum Coke <sup>6</sup> (\$/t)	373	491	695	719	2 - 3 months	\$11m per \$10/t
Coal Tar Pitch <sup>7</sup> (\$/t)	748	818	1,103	1,476	1 - 2 months	\$2m per \$10/t

5. LME Australia
6. US Gulf (FOB)
7. North America (FOB)
8. Based on quarterly standard costing (moving average)

# Aluminium Value Chain

## 2022 Actuals



<sup>1</sup>As the result of Queensland Alumina Limited's (QAL) activation of a step-in process following sanction measures by the Australian Government, we have taken on 100% of capacity for as long as the step-in continues. We are using Rusal's 20% share of capacity under the tolling arrangement with QAL. This additional output is excluded from our production results as QAL remains 80% owned by Rio Tinto and 20% owned by Rusal. The above values represent 100% of capacity

# Copper

Financial metrics (\$bn)	2022	2021 comparison	2023 guidance
Segmental revenue	6.7	- 14%	
EBITDA	2.4	- 40%	
Margin (product group operations)	49%	- 10pp	
Operating cash flow	1.4	- 48%	
Capex	1.6	+ 22%	
Free cash flow	(0.3)	- 120%	
Underlying ROCE <sup>4</sup>	6%	- 8pp	
Copper realised price <sup>1</sup>	403c/lb	- 5%	
Unit cost <sup>3</sup>	163c/lb	+ 99%	160-180c/lb

Production (kt, Rio Tinto share)	2023 guidance	2022	2021	2020	2019	2018
Mined copper	650 to 710 <sup>2</sup>	521	494	528	577	608
Refined copper	180 to 210	209	202	155	260	275

# Copper

Anticipated decrease in gold sales at Oyu Tolgoi and raw materials inflation impacted EBITDA

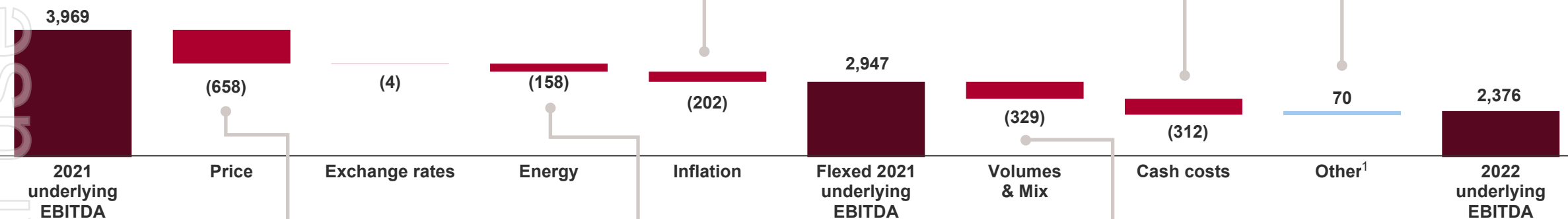
## Underlying EBITDA 2022 vs 2021

\$m

Higher general inflation in US, Chile and Mongolia increasing employee costs and other cash costs

Higher cash unit costs as a result of lower copper and gold volumes

Gain on land swap at Kennecott in 2022



Lower realised prices (-5%) to 403c/lb and negative impact of provisional pricing as result of decline in prices at end of December

Higher fuel and power prices across all operations

Lower volumes at Kennecott as a result of various operational challenges in 2022. Lower gold grades at OT as we move from phase 4b (higher grade) to phase 5 (lower grade) in the mine sequencing

# Minerals

Financial metrics (\$bn)	2022	2021 comparison
Segmental revenue	6.8	+ 4%
EBITDA	2.4	- 7%
Margin (product group operations)	40%	- 3 pp
Operating cash flow	1.5	+ 6%
Capex	0.7	+ 5%
Free cash flow	0.8	+ 7%
Underlying ROCE <sup>4</sup>	22%	+ 1 pp
IOC pellets price <sup>1</sup>	\$190/t	- 11%
TiO <sub>2</sub> slag price <sup>2</sup>	\$940/t	+ 19%

Production (Rio Tinto share)	2023 guidance	2022	2021	2020	2019	2018
IOC (Mt)	10.5-11.5	10.3	9.7	10.4	10.5	9.0
Borates – B <sub>2</sub> O <sub>3</sub> content (kt)	~0.5Mt	532	488	480	520	512
Titanium dioxide slag (kt)	1.1-1.4Mt	1,200	1,014	1,120	1,206	1,116
Diamonds <sup>3</sup> (kt)	3.0-3.8Mt	4,651	3,847	3,731	4,031	4,358

# Minerals

## Resilient portfolio despite inflationary pressures

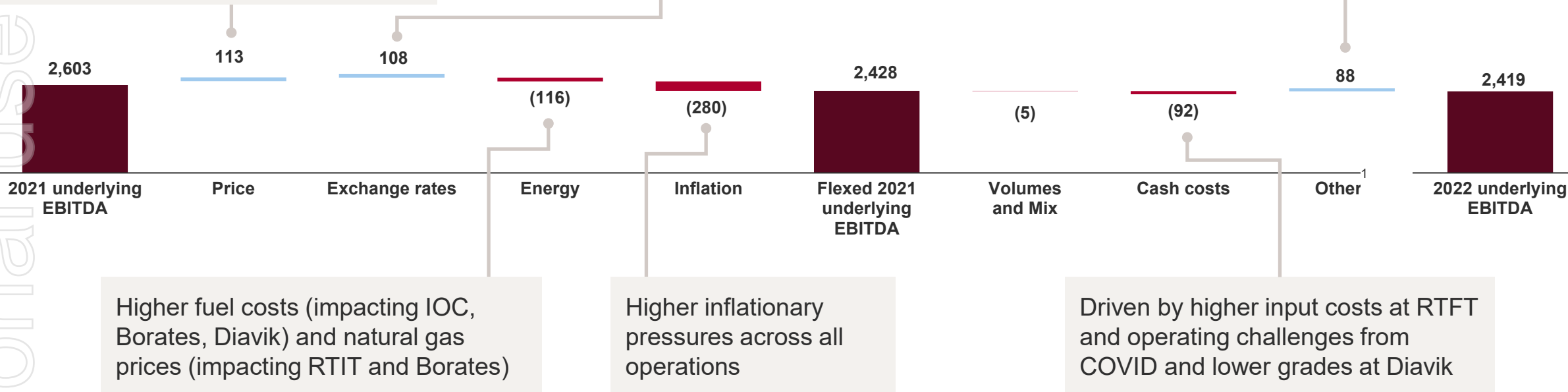
### Underlying EBITDA 2022 vs 2021

\$m

Higher slag, borates and diamonds prices (+\$615m) partly offset by lower iron ore prices in IOC (-\$502m)

US dollar strengthened 4% against Canadian dollar

Impact of Diavik acquisition offsetting E&E spend from Rincon



# Impacts of inflation on closure liabilities – accounting treatment

- At 30 June and 31 December, we reflect the latest view of closure cost obligations in current year real terms, by adjusting the existing estimate for current year inflation
- Inflation expectations have risen significantly in 2022. Assumptions and outcomes across the Group's most significant regions have averaged around 2% in recent years but increased throughout 2022. The table below shows our inflation assumptions at each balance sheet date. The long-term discount rate in USD real-terms of 1.5% remains unchanged

	Jan inflation assumption <sup>1</sup>	Jun inflation assumption <sup>1</sup>	Dec inflation assumption <sup>1</sup>
	%	%	%
Australia	5.5	12.4	16.4
USA	5.2	12.9	13.6
Canada	6.6	13.6	12.2

The effect of inflation is recorded within three separate line items in the table of provisions depending on nature of the adjustment and underlying cash flows as follows:

## 01

Adjustments to mining properties - increase in existing and new provisions (for sites currently operating)

## 02

Charged to profit - increase in existing and new provisions charged to operating costs for fully impaired / closed sites and clean-up provisions

## 03

Amortisation of discount comprises country specific inflation plus a long-term discount rate in USD real-terms of 1.5%

# Impacts of inflation on closure liabilities - disclosure

Closure liabilities roll forward (US\$m)	H1	H2	FY22	PY21
At 1 January	14,542		14,542	13,335
At 30 June		14,835		
Adjustment on currency translation	(514)	(185)	(699)	(483)
Increases to existing and new provisions	345	175	520	518
<b>Charged/(credited) to profit:</b>				
– increases to existing and new provisions	206	335	541	1,475
– unused amounts reversed	(18)	(54)	(72)	(192)
– exchange losses on provisions	24	(7)	17	23
– amortisation of discount	503	1,014	1,517	415
<b>Utilised in year</b>	(256)	(353)	(609)	(541)
<b>Transfers and other movements</b>	3	(1)	2	(8)
At 30 June	14,835			
At 31 December		15,759	15,759	14,542

Weaker Australia dollar, Canadian dollar and South African Rand against the US dollar in 2022.

## H1 2022

Includes adjustment to mining properties **for operating assets** as a result of changes in forecast cash flows due to change in outlook on inflation between **1 Jan and 30 June 2022**.

Capitalised to PP&E and depreciated over life of mine

## H2 2022

Includes adjustment to mining properties **for operating assets** as a result of changes in forecast cash flows including a change in outlook on inflation between **30 June and 31 December 2022**.

Capitalised to PP&E and depreciated over life of mine

## H1 2022

Includes adjustment to mining properties **for closed sites** as a result of changes in forecast cash flows due to change in outlook on inflation between **1 Jan and 30 June 2022**.

\$43m **excluded** from underlying earnings **for legacy sites** that were closed prior to their acquisition by Rio Tinto.

## H2 2022

Includes adjustment to mining properties **for closed sites** as a result of changes in forecast cash flows including a change in outlook on inflation between **30 June and 31 December 2022**.

\$137m **excluded** from underlying earnings **for legacy sites** that were closed prior to their acquisition by Rio Tinto.

## H1 2022

Amortisation of discount based on opening inflation assumptions at **January** for 2022.

## H2 2022

Amortisation of discount based on annual inflation assumptions at **June**.

# Cash flow reconciliation

2022 Cash Flow (US\$m)	Statutory cash flow	Reconciling items	Underlying cash flow
Profit after tax for the year/Underlying EBITDA	13,076		26,272
Adjustments for:			
– Taxation	5,586		
– Finance items	1,846		
– Share of profit after tax of equity accounted units	(777)	(1,111) <sup>1</sup>	(1,888)
– Impairment of investments in equity accounted units after tax	202	(202) <sup>2</sup>	-
– Loss on disposal of interest in subsidiary	105	(105) <sup>2</sup>	-
– Impairment reversals	(150)	150 <sup>2</sup>	-
– Depreciation and amortisation	5,010		
– Provisions (including exchange differences on provisions)	1,006	(180) <sup>2</sup>	826
Utilisation of provisions	(1,039)		(1,039)
Change in working capital	(465)		(465)
Other items	(1,242)	693	(548)
<b>Cash flows from consolidated operations</b>	<b>23,158</b>		
Dividends from EAU's	879		879
Net interest paid	(573)		(573)
Dividends paid to non-controlling interests	(421)		(421)
Tax paid	(6,909)		(6,909)
<b>Net cash generated from operating activities</b>	<b>16,134</b>		
Purchases of PPE			(6,750)
Lease principal payments			(374)
<b>Free cash flow</b>			<b>9,010</b>

## Utilisation of provisions

Close down and restoration	(609)
Post-retirement benefits and other employee benefits	(254)
Other provisions	(176)
	<b>(1,039)</b>

## Change in working capital

Inventories	(1,185)
Trade and other receivables	20
Trade and other payables	700
	<b>(465)</b>

## Other items

	Statutory	Reconciling items	Underlying
Gain on sale of Cortez	(432)	432 <sup>2</sup>	-
Change in non-debt derivatives <sup>3</sup>	(551)	6 <sup>2</sup>	(545)
Depreciation transferred	(157)	157 <sup>4</sup>	-
Other items <sup>2,4</sup>	(102)	99	(3)
	<b>(1,242)</b>	<b>693</b>	<b>(548)</b>

# Income Statement: exclusions

	2022			2021		
	Per Annual Report	Exclusions	Underlying	Per Annual Report	Exclusions	Underlying
<b>Consolidated sales revenue</b>	55,554		55,554	63,495		63,495
Net operating costs (excluding items disclosed separately)	(34,770)	(374)	(35,144)	(32,690)	811	(31,879)
Impairment reversals/(charges net of reversals)	150	(150)	—	(269)	269	—3
Loss on disposal of interest in subsidiary	(105)	105	—	—		—
Exploration and evaluation expenditure (net of profit relating to interests in undeveloped projects)	(896)		(896)	(719)		(719)
<b>Operating profit</b>	<b>19,933</b>	<b>(419)</b>	<b>19,514</b>	<b>29,817</b>	<b>1,080</b>	<b>30,897</b>
Share of profit after tax of equity accounted units	777		777	1,042		1,042
Impairment of investments in equity accounted units	(202)	202	—	—		—
<b>Profit before finance items and taxation</b>	<b>20,508</b>	<b>(217)</b>	<b>20,290</b>	<b>30,859</b>	<b>1,080</b>	<b>31,939</b>
Net exchange gains/(losses) on external and intragroup net (debt)/cash balances	253	(253)	—	802	(802)	—
Net losses on derivatives not qualifying for hedge accounting	(424)		(424)	(231)		(231)
Finance income	179		179	64		64
Finance costs	(335)	421	86	(243)	230	(13)
Amortisation of discount on provisions	(1,519)		(1,519)	(418)		(418)
<b>Finance items</b>	<b>(1,846)</b>	<b>168</b>	<b>(1,678)</b>	<b>(26)</b>	<b>(572)</b>	<b>(598)</b>
<b>Profit before taxation</b>	<b>18,662</b>	<b>(49)</b>	<b>18,613</b>	<b>30,833</b>	<b>508</b>	<b>31,341</b>
Taxation	(5,586)	902	(4,684)	(8,258)	(224)	(8,482)
<b>Profit after tax for the year</b>	<b>13,076</b>	<b>853</b>	<b>13,929</b>	<b>22,575</b>	<b>284</b>	<b>22,859</b>
— attributable to owners of Rio Tinto (net earnings)	12,420	855	13,275	21,094	286	21,380
— attributable to non-controlling interests	656	(2)	654	1,481	(2)	1,479

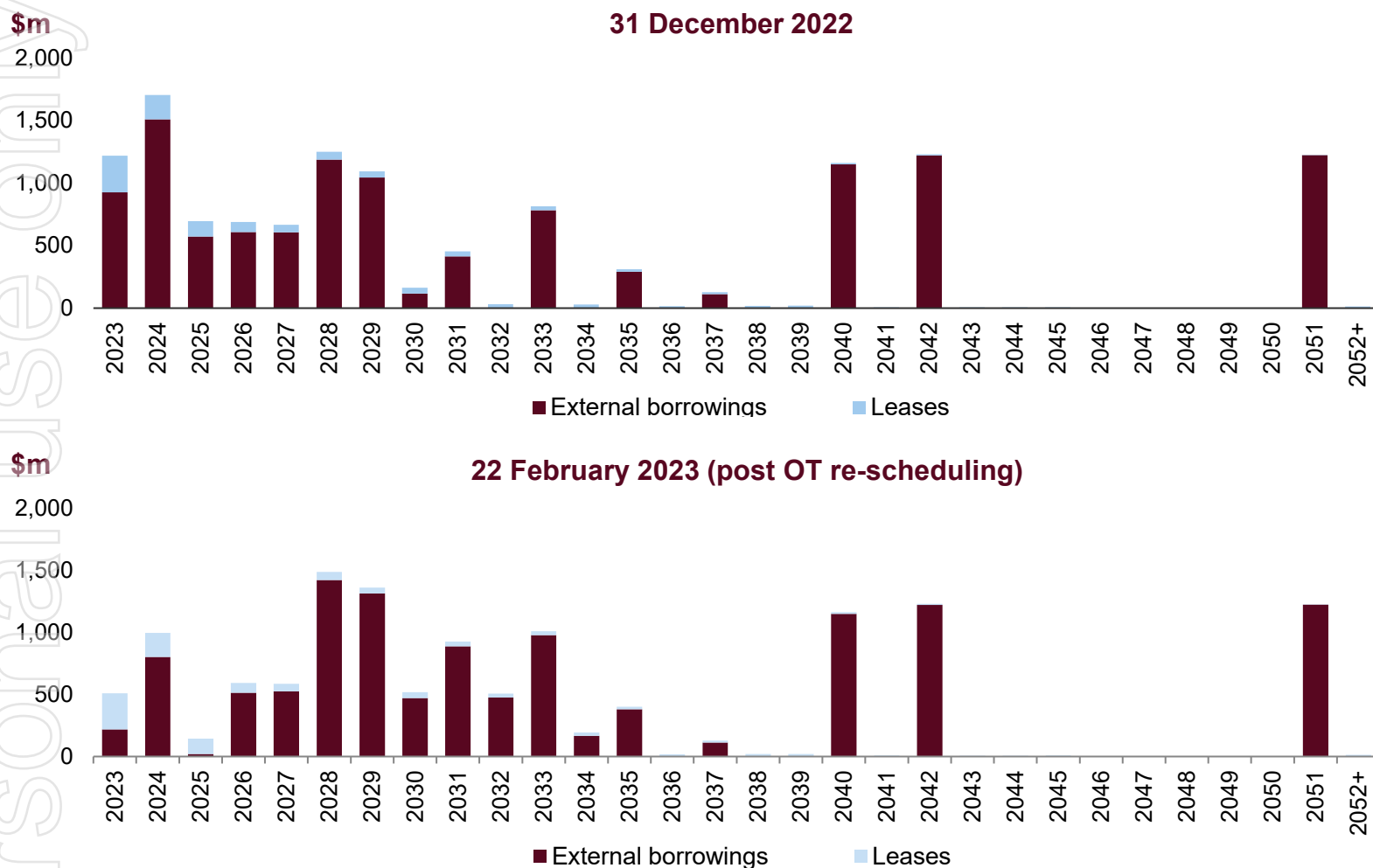
# Modelling EBITDA

## Underlying EBITDA sensitivity

	Average published price/ exchange rate for FY 2022	US\$m impact on full year 2022 underlying EBITDA of a 10% change in prices/exchange rates
Aluminium - US\$ per tonne	2,703	1,076
Copper - US cents per pound	398	505
Gold - US\$ per troy ounce	1,800	68
Iron ore realised price (FOB basis) - US\$ per dry metric tonne	106.1	2,608
Australian dollar against the US dollar	0.69	629
Canadian dollar against the US dollar	0.77	339
Oil (Brent) - US per barrel	100	220

# Debt maturity profile<sup>1</sup>

On 16 February 2023, the \$3.9bn Oyu Tolgoi Project Finance facility was re-scheduled and principal repayments deferred



- At 31 December, average outstanding debt maturity of corporate bonds ~15 years (~11 years for Group debt)
- OT Project Finance re-scheduling has extended the average outstanding debt maturity for Group debt to ~12 years
  - Under the OT Project finance, the lenders have agreed to a deferral of the principal repayments by three years to June 2026 and to an extension of the final maturity date by five years from 2030 to 2035
- No corporate bond maturities until 2024
- Liquidity remains strong under stress tests
- \$7.5bn back-stop Revolving Credit Facility matures in November 2027. It has an additional one-year extension option

# Guidance

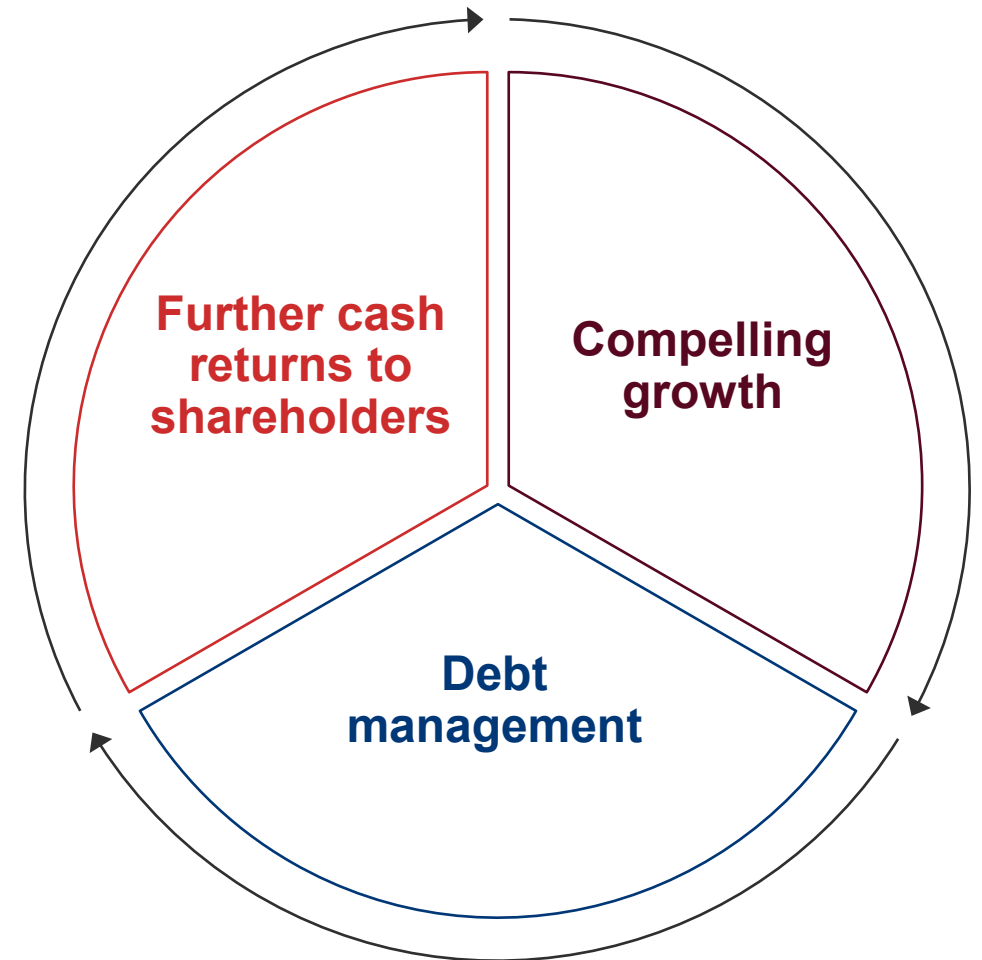
# Balancing near-term returns to shareholders

**Essential capex**

*Integrity, Replacement, Decarbonisation*

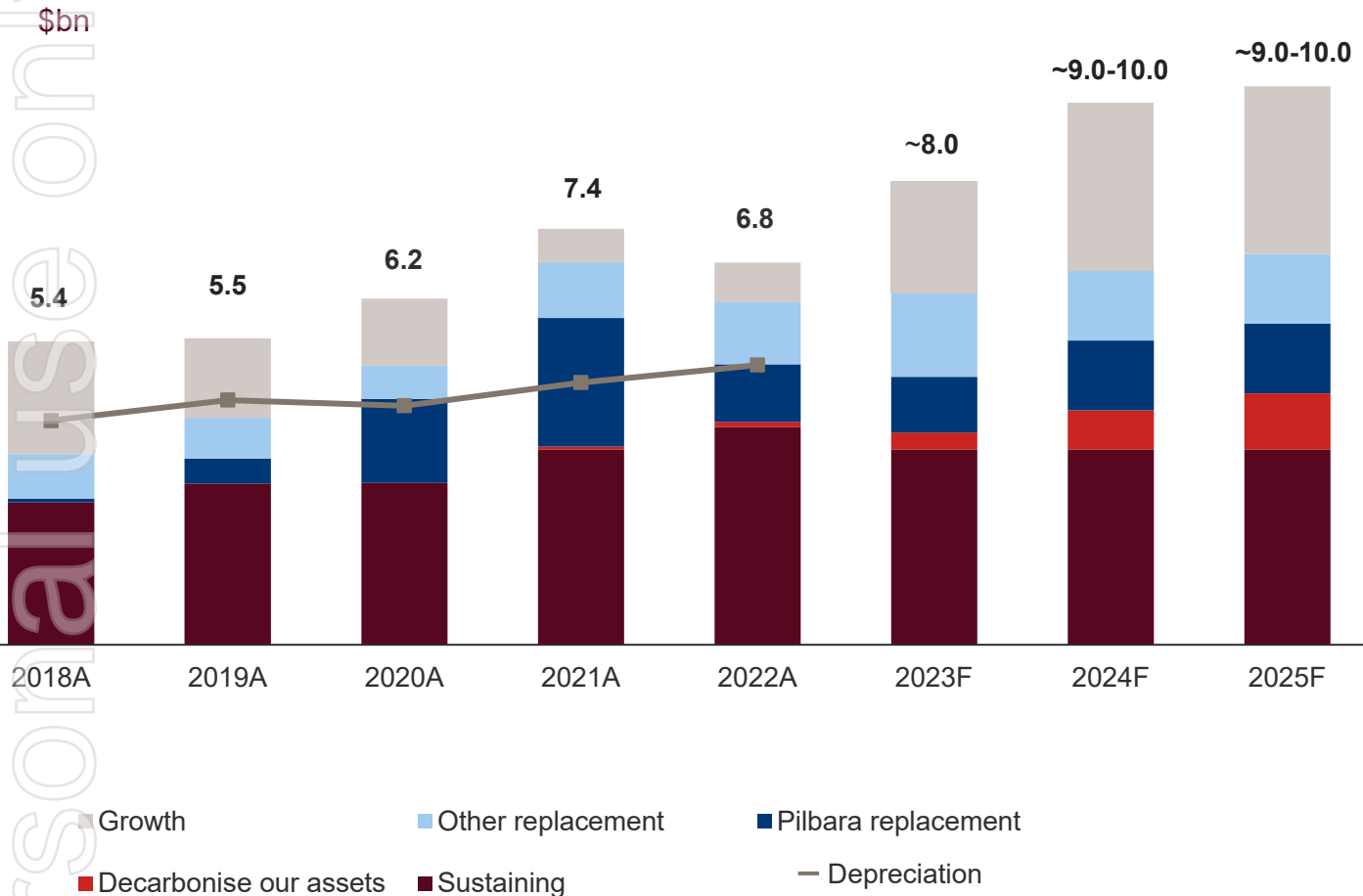
**Ordinary dividends**

**Iterative cycle of**



# Disciplined investing for growth and decarbonisation

## Capital expenditure profile (Rio Tinto share)



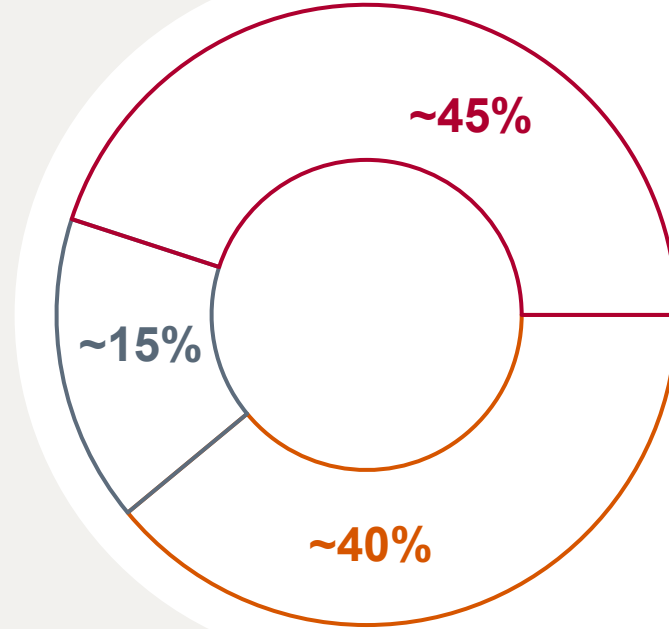
- In 2023, we expect our share of capital investment to be around \$8.0bn (previously \$8.0 to \$9.0bn), including growth capital<sup>1</sup> of around \$2.0bn, depending on the ramp-up of spend at Simandou
- Ambition to grow and decarbonise reflected in 2024-25 capex of ~\$9-10bn including up to \$3bn in growth investment, depending on opportunities
- Direct decarbonisation investment of ~\$7.5bn<sup>2</sup> to 2030, predominantly in second half of decade. Long term contracts and opex in addition
- Average annual sustaining capital of ~\$3.5bn
- Replacement capital remains \$2-3bn per year

# Ambition to invest up to \$3 billion in growth per year

## Rio Tinto share of growth capital

Represents the Group's economic investment in key growth projects through 2023-2025

Introduced to better represent our share of investment for capital projects which are jointly funded with other shareholders (e.g. Simandou) – better reflecting our approach to capital allocation



### Committed capex



Oyu Tolgoi

### Advanced projects



Simandou

### Studies progressing towards approval in period



Rincon and other lithium



Resolution Copper



Kennecott underground



AP60 expansion

# Group level financial guidance

	2023	2024	2025
<b>CAPEX</b>			
Total Group	~\$8.0bn	~\$9.0 – 10.0bn	~\$9.0 – 10.0bn
Group Sustaining Capex	~\$3.5bn	~\$3.5bn	~\$3.5bn
Pilbara Sustaining Capex	~\$1.5bn <sup>1,2</sup>	~\$1.5bn <sup>2</sup>	~\$1.5bn <sup>2</sup>
<ul style="list-style-type: none"> <li>– \$1.5bn to decarbonise our assets over next three years</li> <li>– Total decarbonisation investment of ~\$7.5bn<sup>1</sup> in this decade, predominantly in second half</li> <li>– Ambition to grow and decarbonise reflected in 2023-24 capex of \$9-10bn including up to \$3bn in growth spending, depending on opportunities</li> <li>– Replacement spending \$2-3bn per year</li> </ul>			
<b>Effective tax rate</b>	~30%		
<b>Returns</b>	Total returns of 40 – 60% of underlying earnings through the cycle		

# Product group level guidance

	2023 Production Guidance
<b>Pilbara iron ore shipments</b>	320 – 335Mt <sup>1</sup> (100% basis)
<b>Copper</b>	
Mined Copper	650 – 710kt <sup>2</sup>
Refined Copper	180 – 210kt
<b>Aluminium</b>	
Bauxite	54 – 57Mt
Alumina	7.7 – 8.0Mt
Aluminium	3.1 – 3.3Mt
<b>Minerals</b>	
TiO <sub>2</sub>	1.1 – 1.4Mt
IOC pellets and concentrate <sup>3</sup>	10.5 – 11.5Mt
B <sub>2</sub> O <sub>3</sub>	~0.5Mt
Diamonds	3.0 – 3.8m carats

	2023 Unit cost guidance <sup>4</sup>
<b>Pilbara Iron ore (\$/tonne)</b>	\$21.0 – \$22.5
<b>Copper C1 (US cents/lb)</b>	160 – 180

<sup>1</sup>Pilbara shipments guidance remains subject to weather, market conditions, progressing the rump-up from new mines and management of cultural heritage

<sup>2</sup>Oyu Tolgoi production for 2022 remains on a 33.52% Rio Tinto share basis. Subsequent to Rio Tinto's acquisition of Turquoise Hill Resources which completed on 16 December, 2023 mined copper guidance now includes Oyu Tolgoi on a 100% consolidated basis and continues to reflect our 30% share of Escondida |

<sup>3</sup>Iron Ore Company of Canada | <sup>4</sup>FY23 guidance is based on A\$:US\$ exchange rate of 0.70 and excludes COVID-19 response costs

# Application of the returns policy

## Capital return considerations

## Comments

### Results for FY 2022

- Operating cash flow of **\$16.1bn**
- FCF of **\$9.0bn<sup>1</sup>**
- Underlying earnings down 38% to **\$13.3bn**

### Long-term growth prospects

- Focused on Oyu Tolgoi
- Investing in replacing high quality assets in Pilbara and Kennecott
- Ongoing exploration and evaluation programme

### Balance sheet strength

- Strong balance sheet with net debt of **\$4.2bn**

### 40-60 per cent of underlying earnings through the cycle

- **Full year pay-out of 60%** based on (i) Strong financial performance in 2022 (ii) strong balance sheet (iii) outlook

### Balanced between growth and shareholder returns

- Defined growth pipeline and a strong balance sheet providing capacity for shareholder return
- Our priority is to generate long-term value by consistently implementing our strategic objectives through the cycle. We continue to maintain our capital discipline in times of macro-economic challenge and uncertainty. We have made additional returns in times of surplus cash flow and lower capital needs and we will continue to pay attractive dividends to our shareholders in line with our pay-out policy

### Outlook

- The economic outlook is moderating with China reopening and pivot to pro-growth although volatility still expected in Q1, inflationary pressures are alleviating going into 2023 with easing pressure on supply chains and lower gas prices, although direct flow through to the cost base will take time

# Safe Production System and Decarbonisation

# Safe Production System (SPS)

## Best operator

Building a lasting competitive advantage with our people. We want to empower them to safely run assets that are in control, capable and performing better than any of our competitors.

Care

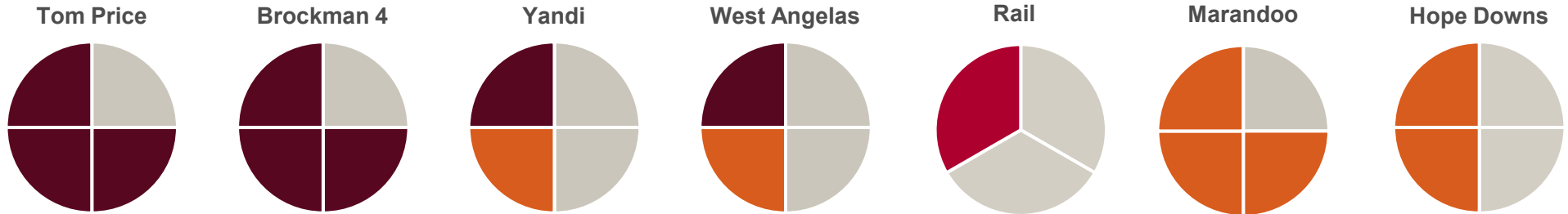
Courage

Curiosity

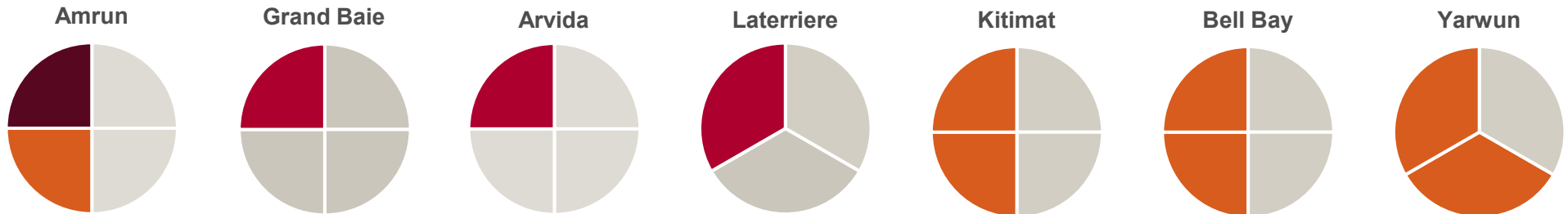


# Site-by-site progression: 30 deployments in 16 sites (end of December 2022)

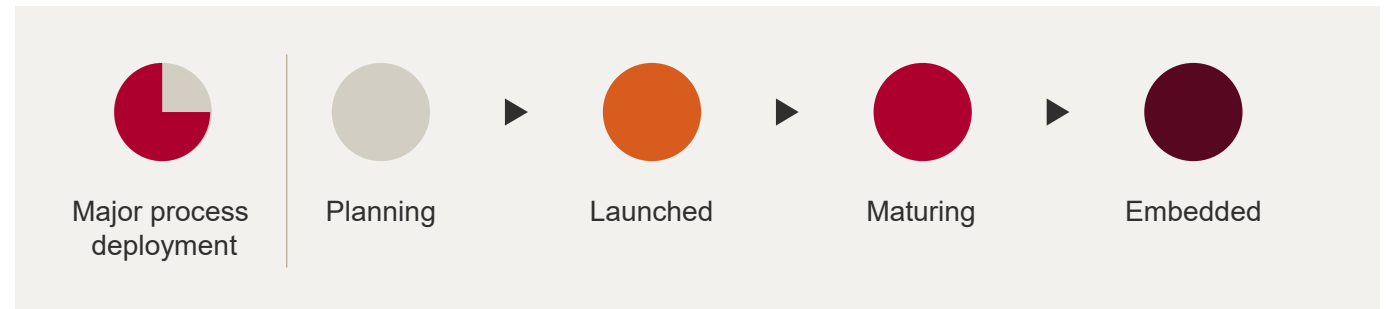
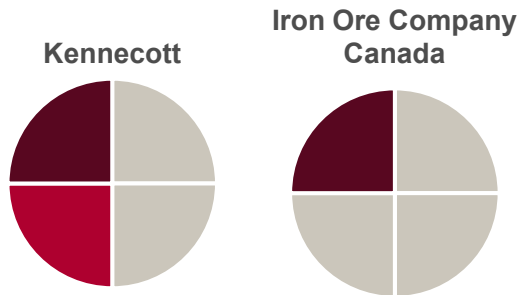
Iron Ore sites deployed



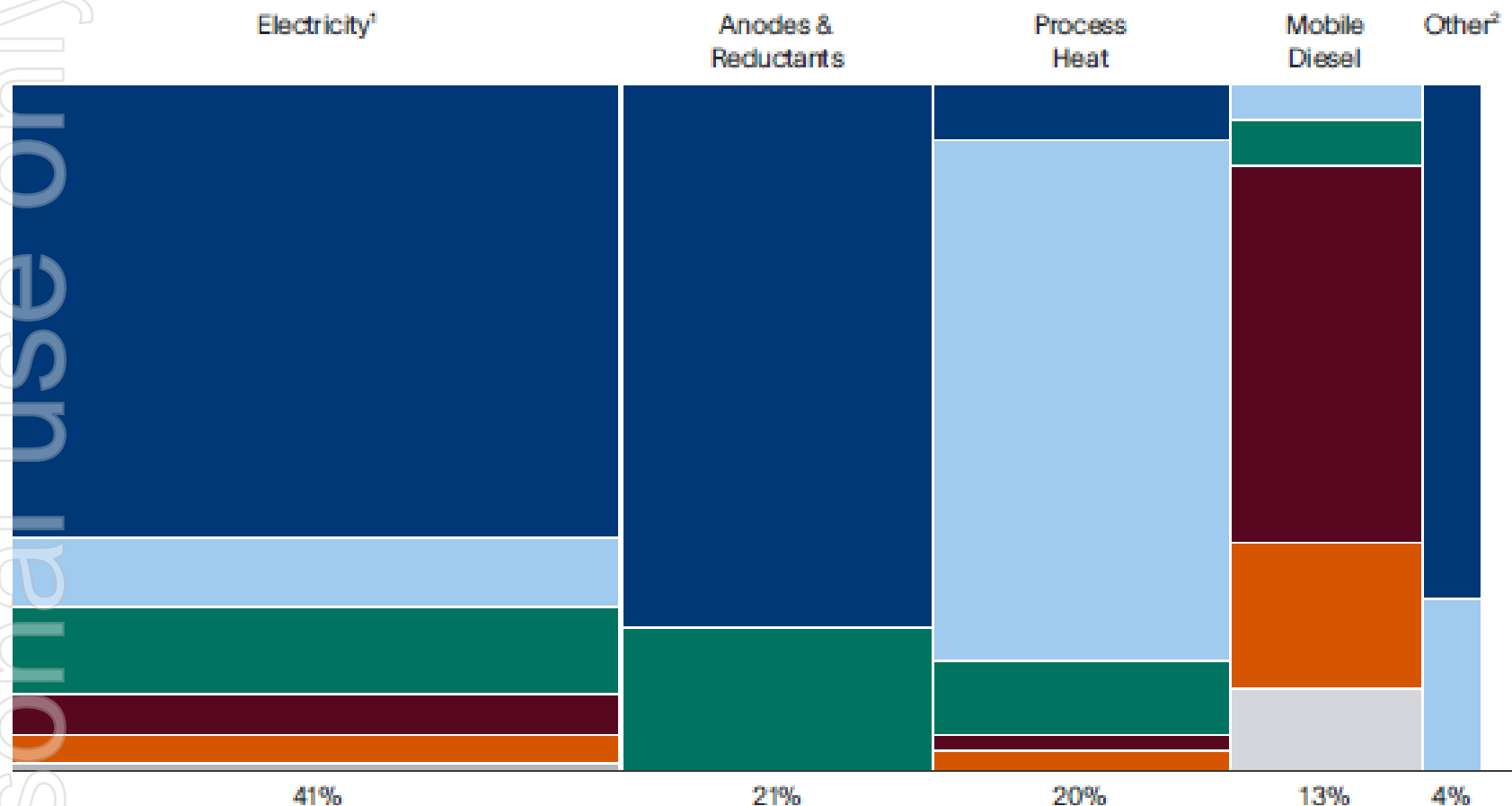
Aluminium sites deployed



Copper/Minerals sites deployed



# Processing accounts for the majority of our carbon footprint - Our scope 1 and 2 emissions



**2022**

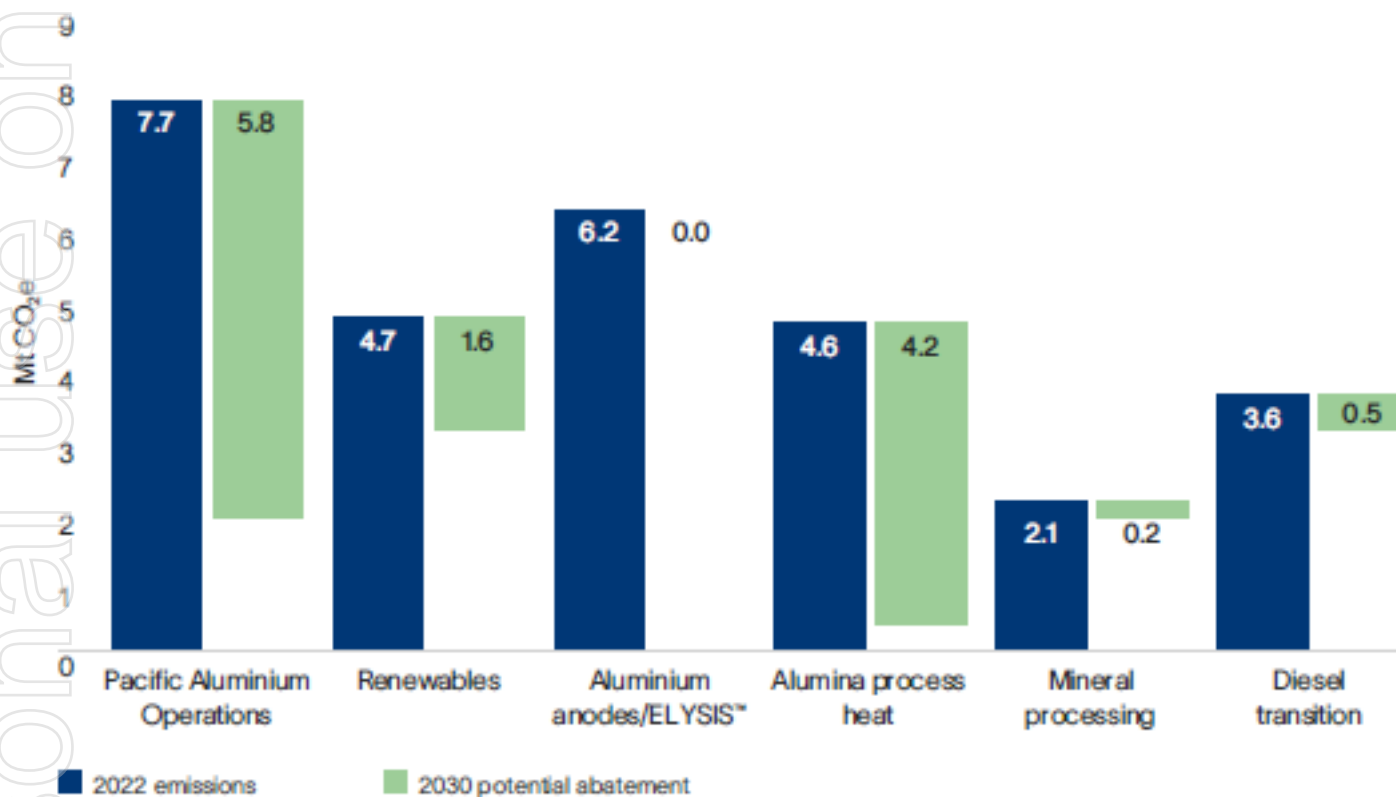
equity basis

**30.3**  
**Mt CO<sub>2</sub>e**



# Pursuing an abatement pathway to reach our 2030 target

Mt CO<sub>2</sub>e emissions by major abatement programmes – equity share



2018 emissions baseline	32.5
Emissions reduction to 2022	-2.2
2022 emissions	30.3
Growth to 2030	1.1
Abatement Programmes	-12.3
Other required abatement (includes NbS)	2.8

2030 emissions (50% reduction) 16.2

New projects will need to be carbon neutral or have emissions mitigated elsewhere in the portfolio.

# Value-accretive decarbonization at a modest carbon price

## Renewables

Pilbara: Phase 1 – solar plus on-grid battery storage

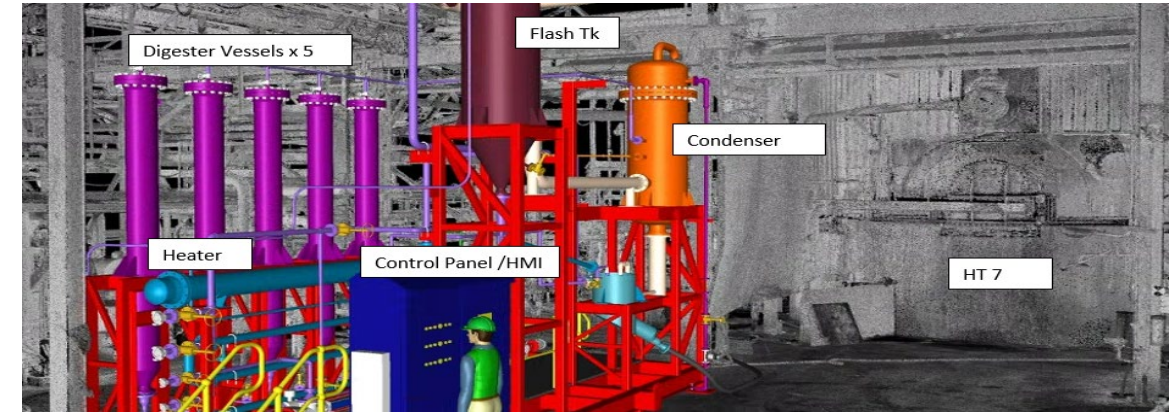


**Value  
accretive  
at ~\$40/t  
carbon price**

- 230MW solar plus 200MWh of on-grid battery storage solutions delivered 2023-26
- Capex \$0.6bn
- Builds on 34MW already installed at Gudai-Darri. Long lead investment approved for 100MW - Pilbara Coastal Solar
- 6PJ of annual gas displacement by end 2026, delivering gas savings of ~\$55m pa at current prices
- Abatement reduction of ~300kt pa CO<sub>2</sub>e emissions, upside based on tracking rather than fixed assembly for some assets

## Alumina process heat

QAL double digestion<sup>1</sup>

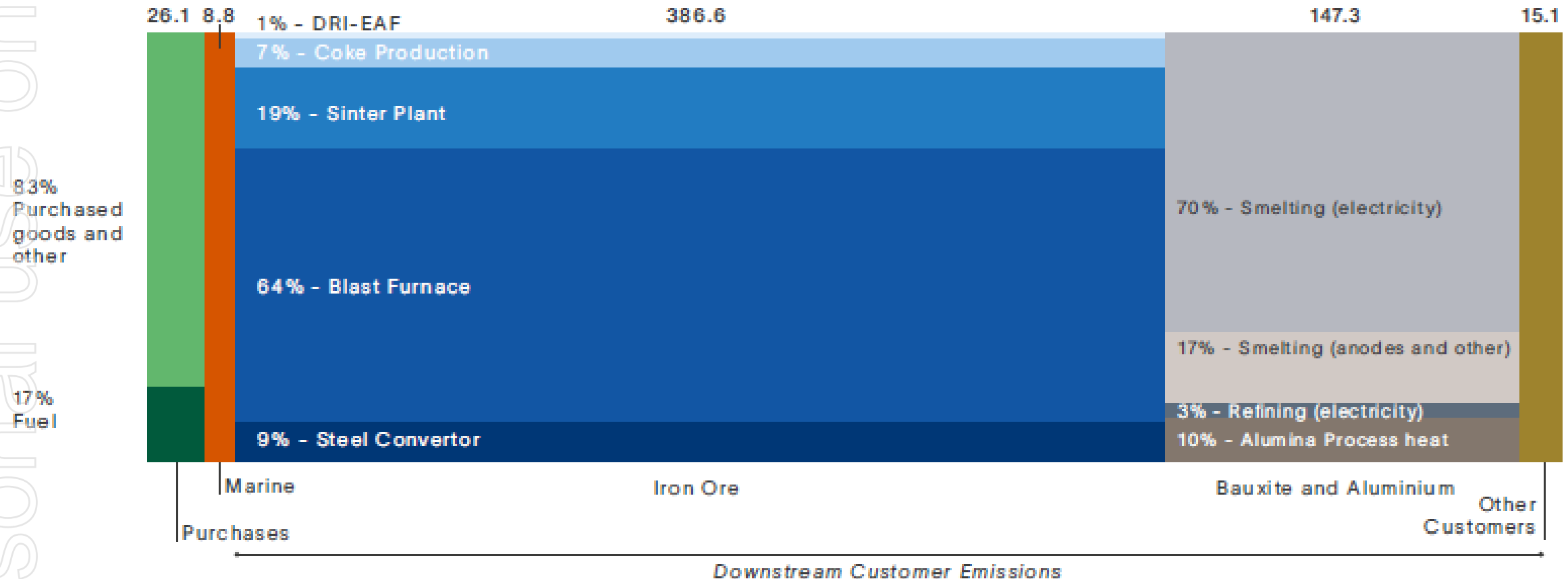


**Value  
accretive  
at zero  
carbon price**

- Energy efficient digestion process
- Capex \$0.3bn
- ~\$80m pa opex cost saving by reducing bauxite, raw material and energy costs
- Abatement reduction of ~350kt CO<sub>2</sub>e emissions
- 2023 pilot plant; replication opportunity at Yarwun

# Supply chain emissions: scope 3 (equity basis)

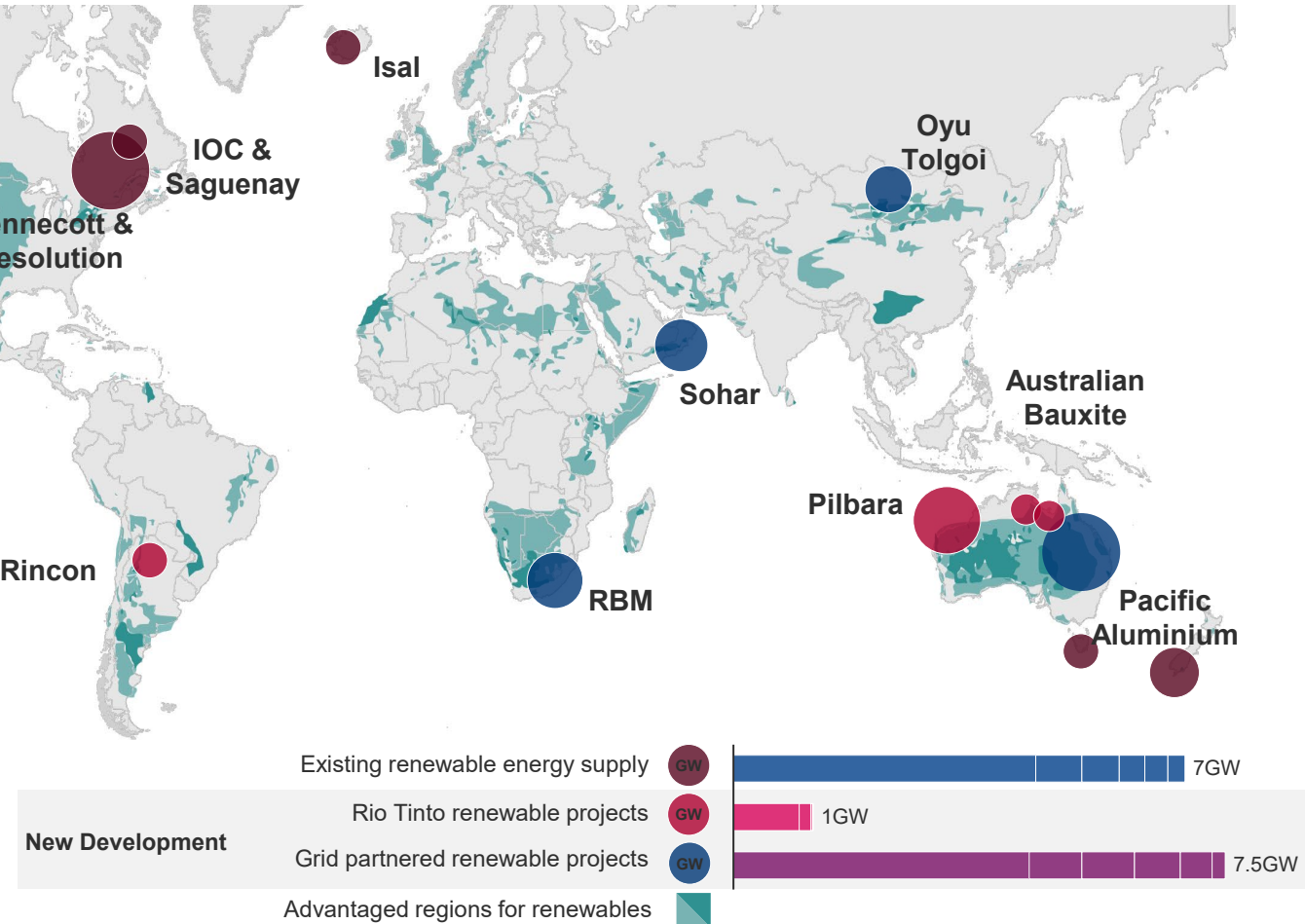
583.9Mt CO<sub>2</sub>e



# Decarbonisation abatement programmes

Programme	Description & Key Sites	Funding mechanism	Example project - Economics
<b>Pacific Operations Repower</b>	<b>Renewables: smelters</b> Boyne   Tomago	<ul style="list-style-type: none"> <li>Long-term market contracts</li> <li>Government partnerships</li> </ul>	<ul style="list-style-type: none"> <li>Commercial solutions achieved through government partnerships and long-term contracts</li> <li>Assets will need to remain competitive</li> </ul>
<b>Renewables</b>	<b>Solar &amp; wind renewables</b> Pilbara   Weipa QMM   Kennecott   RBM	<ul style="list-style-type: none"> <li>Capital - Build own operate</li> <li>Long-term market contracts</li> </ul>	<ul style="list-style-type: none"> <li>Phase 1 – 230MW solar + 200MWh of on-grid battery storage is value accretive at a carbon price of &lt;\$40/t driven by \$55m reduction in gas displacement costs at current prices</li> </ul>
<b>Diesel</b>	<b>HME &amp; Diesel switching</b> Ph I: Bio-fuels Ph II: Fleet electrification Pilbara   IOC	<ul style="list-style-type: none"> <li>Capital:</li> <li>Land acquisitions (non-edible feedstock)</li> <li>HME</li> </ul>	<ul style="list-style-type: none"> <li>Bio-fuels: comparable cost to diesel<sup>1</sup> &amp; de-risking of technical risk in fleet electrification</li> <li>Diesel cost savings post fleet electrification</li> </ul>
<b>Alumina process heat</b>	<b>Electrification of boilers</b> <b>Process &amp; energy efficiency</b> <b>H<sub>2</sub> calcination – replacement</b> Vaudreuil   QAL   Yarwun	<ul style="list-style-type: none"> <li>R&amp;D</li> <li>Capital</li> </ul>	<ul style="list-style-type: none"> <li>QAL double digestion is value accretive at zero carbon price driven by reducing bauxite, raw material and energy costs</li> <li>A subset of projects are value accretive at a carbon price of \$50/t to 100/t</li> </ul>
<b>Mineral processing</b>	<b>New technologies</b> <b>Electrification of boilers</b> IOC   RTIT   Borates	<ul style="list-style-type: none"> <li>R&amp;D</li> <li>Capital</li> <li>Government / industry partnerships</li> </ul>	<ul style="list-style-type: none"> <li>IOC steam plant fuel reduction - 40MW electric boiler conversion is value accretive at a zero carbon price</li> <li>Technology and economics remain progressing on a number projects</li> <li>The electrification of the boilers will require new commercial renewable energy contracts as well as capital</li> </ul>
<b>Aluminium anodes</b>	<b>ELYSIS™ technology</b> All smelters	<ul style="list-style-type: none"> <li>R&amp;D</li> <li>Capital</li> </ul>	<ul style="list-style-type: none"> <li>Commercial scale technology from 2024</li> <li>Value generation through scale-up later</li> </ul>
<b>Nature-based Solutions</b>	<b>High quality offsets</b> 8 large scale sites	<ul style="list-style-type: none"> <li>Capital land acquisitions</li> <li>Operating costs</li> </ul>	<ul style="list-style-type: none"> <li>Development costs of high-quality projects on or near our assets are currently estimated at \$20-50/t CO<sub>2</sub>e, the range reflects varying project types and landscapes</li> </ul>

# Rio Tinto Energy Development is dedicated to developing and partnering for renewables



45 energy industry professionals recruited to focus solely on delivering new renewable supply to Rio Tinto's operations

Globally resourced team ensures industry best practice is delivered across all our sites

No one size fits all approach – optimize for security, LCOE, capex, ROCE, NPV

Partnerships and PPAs common in our major grids (e.g. Pacific Australia), direct investment preferred for our integrated production systems (e.g. Pilbara, Saguenay)

# Technical and innovation

# Our portfolio: Partnering to deliver value via technical breakthroughs

Working across the full breadth of Rio Tinto's commodities and assets



## Jadar Process Development

De-risking process development for Jadar lithium/borate deposit; including waste / residue



## Rincon

Rapid support to process development and implementation



## Nuton™

Primary copper sulphide heap leaching process development



## RIMs and KIMs<sup>1</sup>

Unique micro-analytical capability; ongoing development of orebody discovery techniques



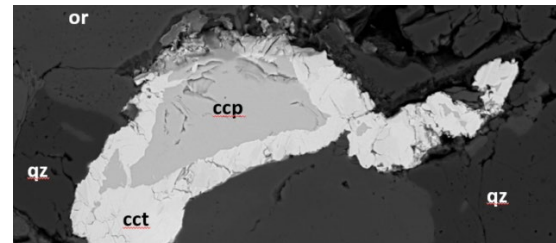
## Closure

Process development input for closure-related activities including water treatment options; regulator interactions



## Steel Decarbonisation

Technical development in use of biomass and hydrogen as reductants; dry processing alternatives



## Winu

Disciplined process development that builds on OBK<sup>1</sup> insights

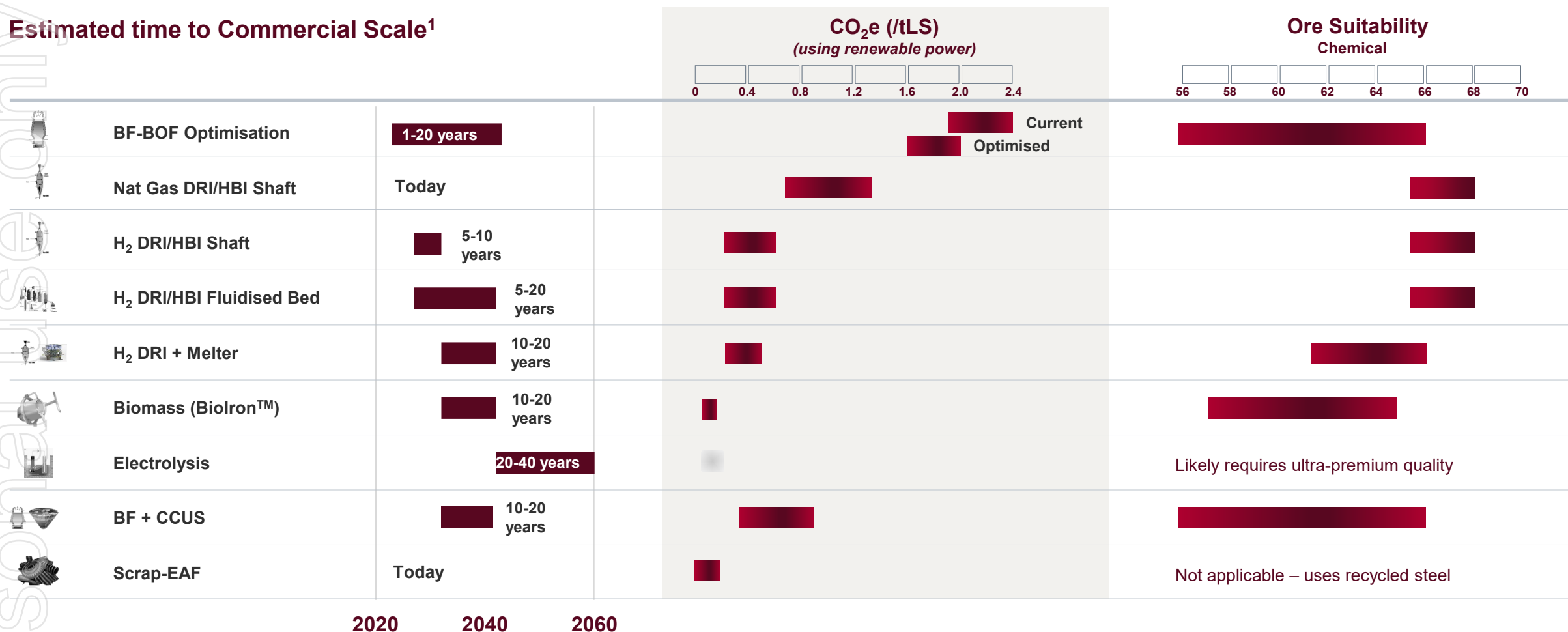


## RTX<sup>1</sup>: Opportunity Generation

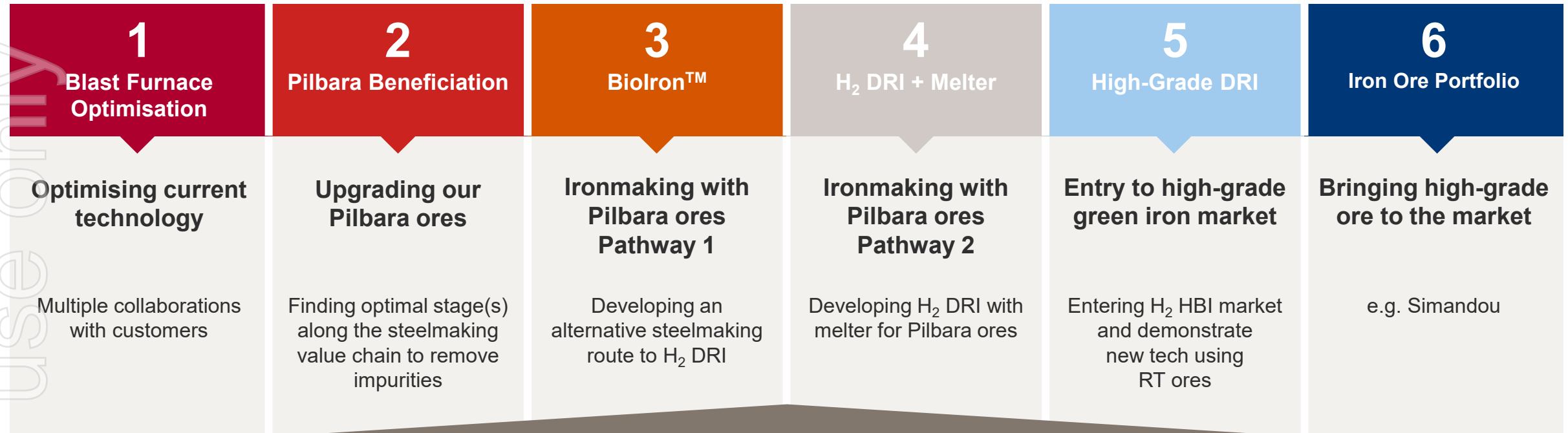
Early warning metallurgy and process route options

# Green steel pathways: range of potential technology options available

## Estimated time to Commercial Scale<sup>1</sup>



# Supporting our customers - steel decarbonisation



## Key Partnerships



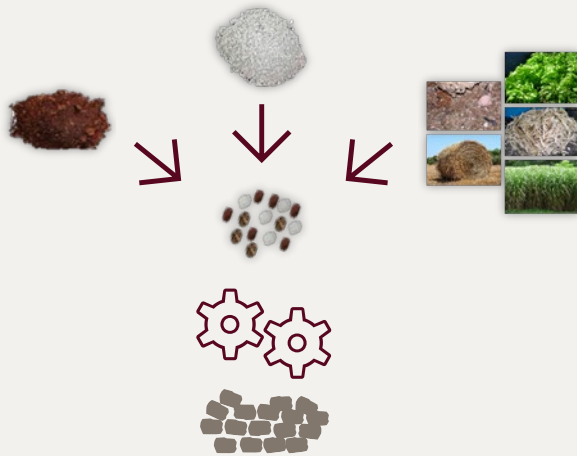
Metso:Outotec



# BiolIron™ - green alternative pathway for iron & steelmaking

## Simple Raw Material Preparation

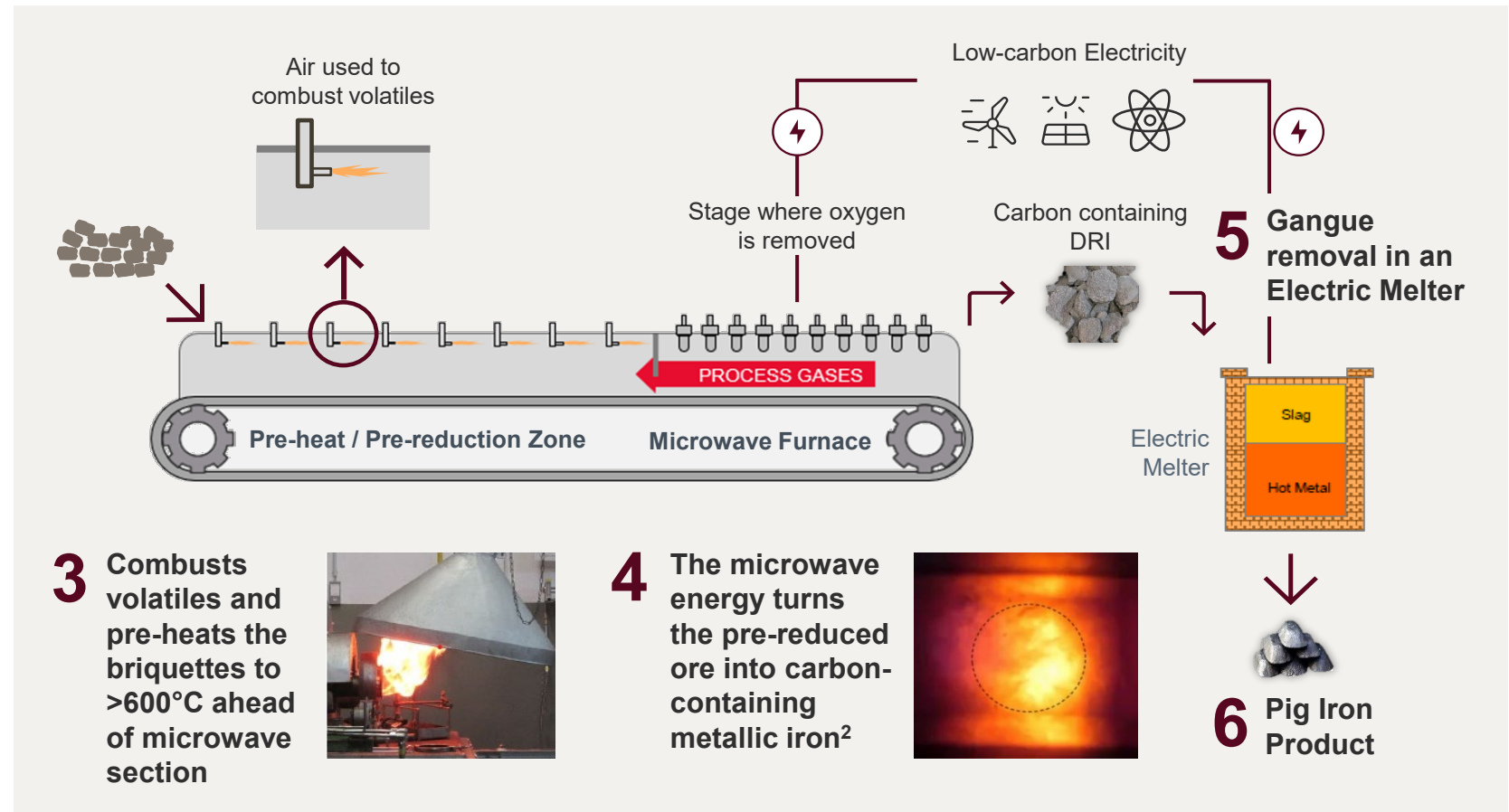
**1** Fine Iron Ore, Fluxes and Biomass are blended together...



**2** ...and compacted into Green Briquettes



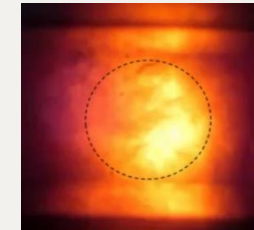
## Ironmaking<sup>1</sup>



**3** Combusts volatiles and pre-heats the briquettes to >600°C ahead of microwave section



**4** The microwave energy turns the pre-reduced ore into carbon-containing metallic iron<sup>2</sup>

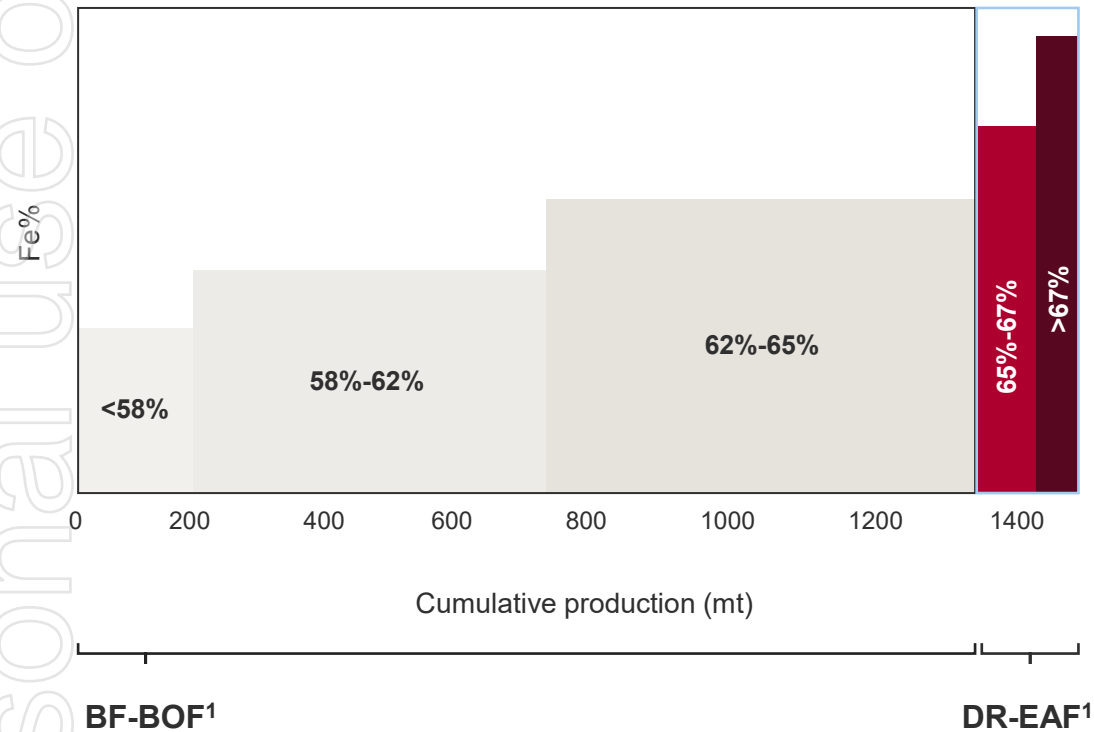


**6** Pig Iron Product

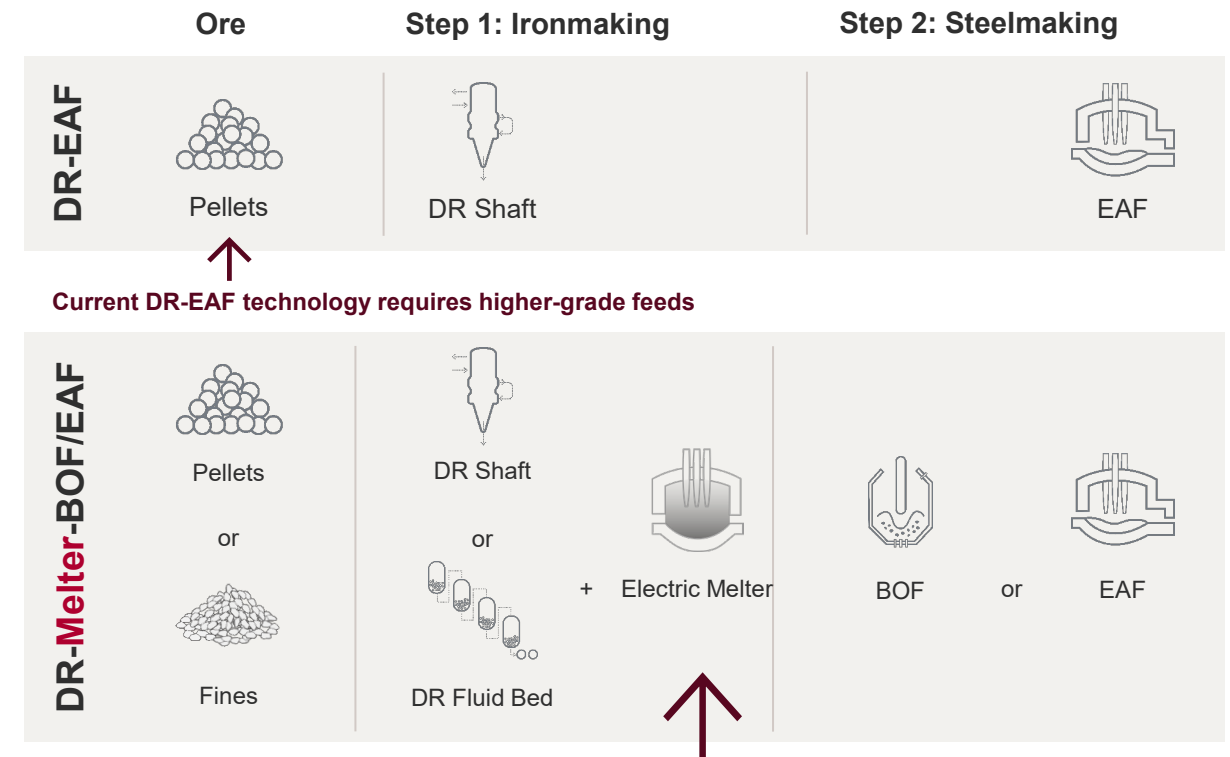
# H<sub>2</sub> DRI + Melter - Processing Pilbara ores with hydrogen

Transition to carbon-neutral: the industry is shifting from BF-BOF<sup>1</sup> to H<sub>2</sub> DR-EAF<sup>1</sup> steelmaking

Seaborne Iron Ore Product by Grade



Partnership with BlueScope explores adding an **Electric Melter** into the process



Current DR-EAF technology requires higher-grade feeds

Adding an Electric Melter to remove gangue enables the use of ore typically used in the blast furnace

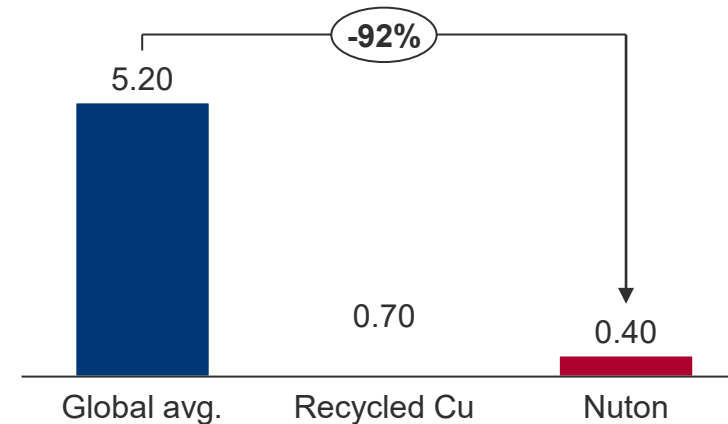
# Nuton™ is seen as a key growth lever for Rio Tinto and an enabler for low-carbon copper

## Nuton's potential

- Worldwide demand for copper is growing rapidly (i.e., transition to a low-carbon economy)
- Increasingly stringent requirements from external stakeholders concerning ESG issues (e.g. carbon footprint in copper production)

## Nuton has the potential to deliver leading ESG performance

Carbon intensity (CO<sub>2</sub>/t)



Reduced CO<sub>2</sub> emissions (CO<sub>2</sub>/t)



Efficient water consumption



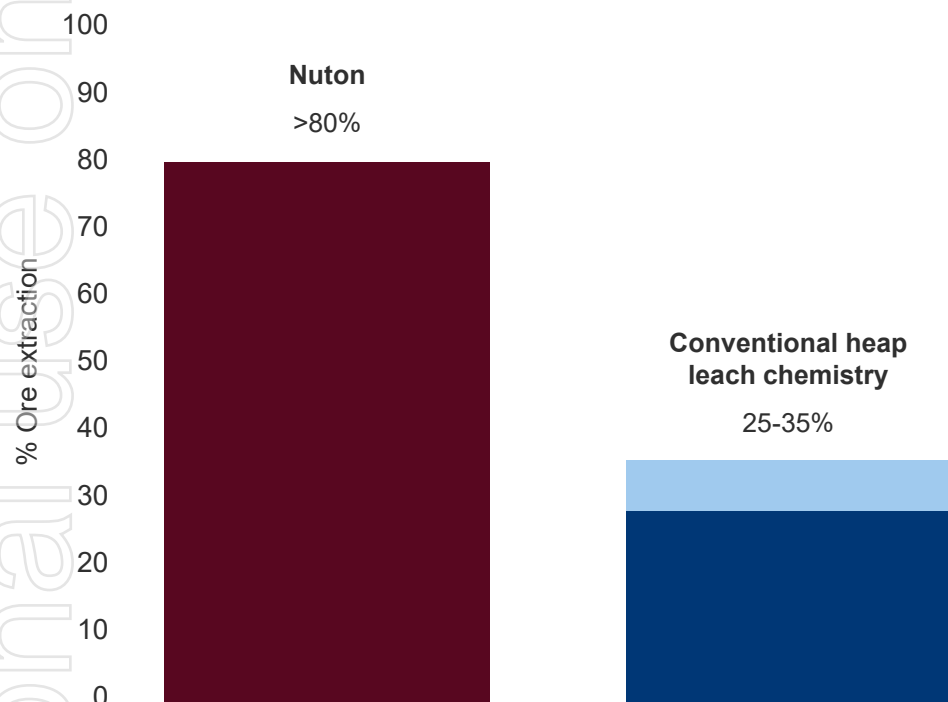
Ability to restore and reclaim mine sites by reprocessing mine waste

## Current Progress

- In development for +25 years, with first leaching tests taking place at Bundoora in 1996
- Launched Nuton as a corporate start-up 12 months ago
- 3 partnerships announced in 2022
- +10 ongoing collaborative viability studies

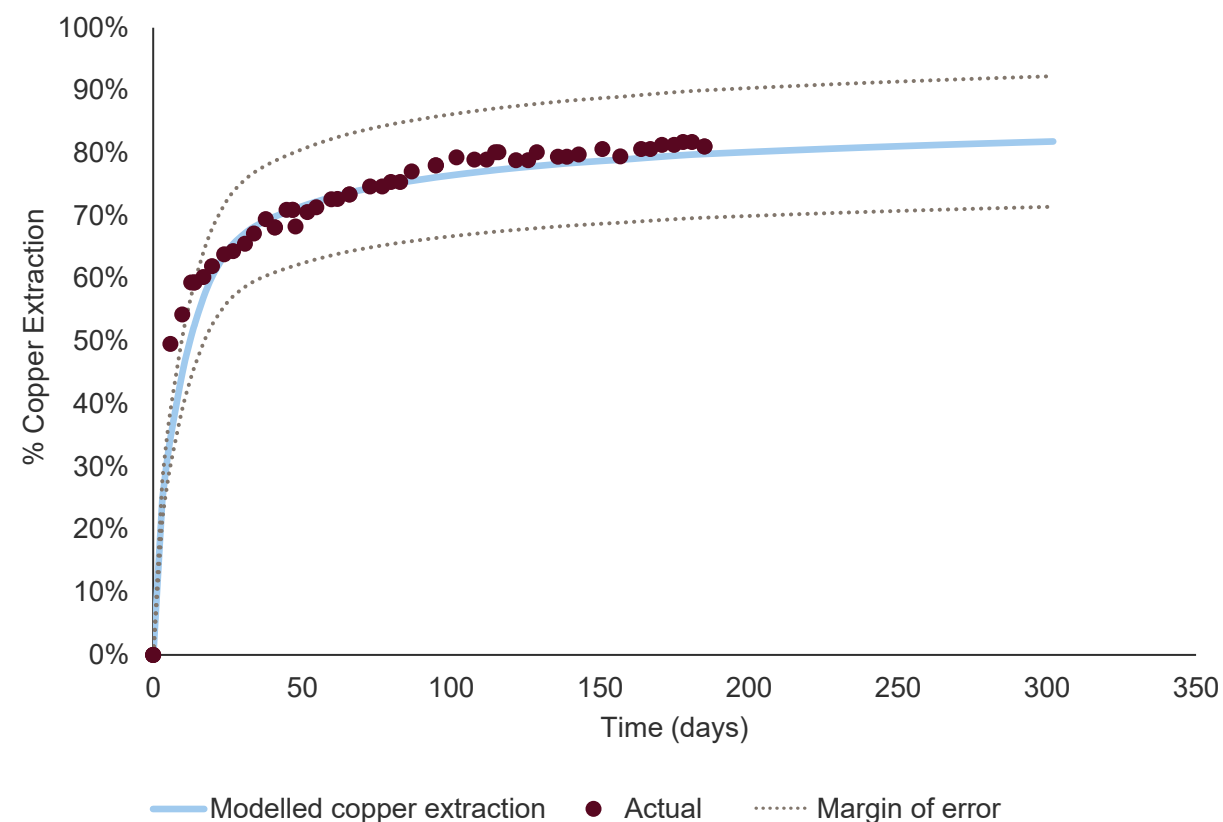
# Nuton™ offers exceptional recovery performance

Nuton extracts up to >80% of copper from primary copper sulphides compared to 25-35% in tradition heap leach process



\* Percentage extractions are from primary copper mineralogy

Nuton modelling capabilities reduce requirement for extensive test programs



# Building a pipeline of opportunities

## Yerington, Nevada-US (Lion Copper Gold)



### Historic Mine

- Option to earn in
- Stage 1 work in progress

## Cactus, Arizona-US (Arizona Sonoran Copper Company)



### Brownfield

- 7.4% interest in Arizona Sonoran Copper Company
- Nuton collaboration work program underway

## Los Azules, San Juan-Argentina (McEwen Copper)



### Greenfield

- 9.8% interest in McEwen Copper
- Nuton collaboration work program underway

# Common acronyms

<b>AHS</b>	Autonomous Haulage System	<b>EC</b>	European Commission	<b>Mtpa</b>	Million tonnes per annum	<b>RTFT</b>	Rio Tinto Fer et Titane
<b>AIFR</b>	All Injury Frequency Rate	<b>EMEA</b>	Europe, Middle East and Africa	<b>MACC</b>	Marginal Abatement Cost Curve	<b>RTIO</b>	Rio Tinto Iron Ore
<b>Al</b>	Aluminium	<b>ESG</b>	Environmental, Social, and Governance	<b>MW</b>	Megawatt	<b>RTX</b>	Rio Tinto Exploration
<b>AL<sub>2</sub>O<sub>3</sub></b>	Aluminium oxide	<b>EU</b>	European Union	<b>MWh</b>	Megawatt hour	<b>SPS</b>	Safe Production System
<b>ARDC</b>	Arvida Research and Development Centre	<b>Fe</b>	Iron	<b>NbS</b>	Nature-based Solutions	<b>S&amp;P</b>	Standard & Poor's
<b>ASX</b>	Australian Stock Exchange	<b>FOB</b>	Free On Board	<b>NPV</b>	Net present value	<b>T</b>	Tonne
<b>ATS</b>	Aluminium Technology Solutions	<b>FS</b>	Feasibility Study	<b>O&amp;M</b>	Operation & Maintenance	<b>t/ha</b>	Tonnes per hectare
<b>B<sub>2</sub>O<sub>3</sub></b>	Boric oxide	<b>GHG</b>	Greenhouse gas	<b>OT</b>	Oyu Tolgoi	<b>tLS</b>	Tonnes of liquid steel
<b>Bn</b>	Billion	<b>GFC</b>	Global Financial Crisis	<b>Pa</b>	Per annum	<b>tCO<sub>2</sub>e</b>	Tonne of carbon dioxide equivalent
<b>BF</b>	Blast furnace	<b>Gt</b>	Giga tonnes	<b>PJ</b>	Petajoule	<b>TiO<sub>2</sub></b>	Titanium dioxide
<b>BOF</b>	Blast Oxygen Furnace	<b>GW</b>	Gigawatt	<b>PPA</b>	Power Purchasing Agreement	<b>tpa</b>	Tonnes per annum
<b>BSL</b>	Boyne Smelter Limited	<b>H<sub>2</sub></b>	Hydrogen	<b>PP&amp;E</b>	Plant, Property & Equipment	<b>TWh</b>	Terawatt hour
<b>CAGR</b>	Compound annual growth rate	<b>HBI</b>	Hot briquetted iron	<b>QAL</b>	Queensland Alumina Limited	<b>UB</b>	Ulaanbaatar
<b>CCGT</b>	Combined Cycle Gas Turbine	<b>HG</b>	High grade ore	<b>QMM</b>	QIT Madagascar Minerals	<b>USD</b>	United States dollar
<b>CCUS</b>	Carbon capture, utilisation and storage	<b>HME</b>	Heavy Mining Equipment	<b>R&amp;D</b>	Research and development	<b>VAP</b>	Value-added product
<b>CCS</b>	Carbon Capture and Storage	<b>IEA</b>	International Energy Agency	<b>RBM</b>	Richards Bay Minerals	<b>WA</b>	Western Australia
<b>CO<sub>2</sub></b>	Carbon dioxide	<b>IOC</b>	Iron Ore Company of Canada	<b>RE</b>	Renewable Energy	<b>WTS</b>	Western Turner Syncline
<b>CO<sub>2</sub>e</b>	Carbon dioxide equivalent	<b>IRR</b>	Internal rate of return	<b>RRF</b>	Recovery and Resilience Facility	<b>YoY</b>	Year on Year
<b>Cu</b>	Copper	<b>JV</b>	Joint Venture	<b>ROCE</b>	Return on capital employed	<b>YTD</b>	Year to date
<b>DRI</b>	Direct Reduction Iron	<b>LCE</b>	Lithium Carbonate Equivalent	<b>RT</b>	Rio Tinto		
<b>EAF</b>	Electric Arc Furnace	<b>LCOE</b>	Levelised Cost of Energy	<b>RTE</b>	Round trip efficiency		
<b>EBITDA</b>	Earnings Before Interest, Taxes, Depreciation and Amortisation	<b>M</b>	Millions				
		<b>Mt</b>	Million tonnes				

# Definitions

## Calculated abatement carbon price

The levelised marginal cost of abatement at a zero carbon price

### Calculation:

Discounted sum of all abatement costs over time at a zero carbon price / Discounted sum of all abated emissions over time

*Discounted at the hurdle rate RT uses for all investment decisions*

ersonal use only

RioTinto