

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.

The live webcast will be available at www.riotinto.com/en/invest/presentations/2023/annual-results.

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

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RioTinto

2022 Full Year Results

22 February 2023

Ulaanbaatar, Mongolia

Cautionary and supporting statements

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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.

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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.

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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%¹

25%

Capital expenditure

20.3

6.8

Free cash flow

36.1

9.0

Dividends paid

33.2

11.7

Taxes & government royalties²

29.2

8.4

¹Average over period | ²Taxes 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



Yarwun Alumina Refinery, Queensland

RioTinto

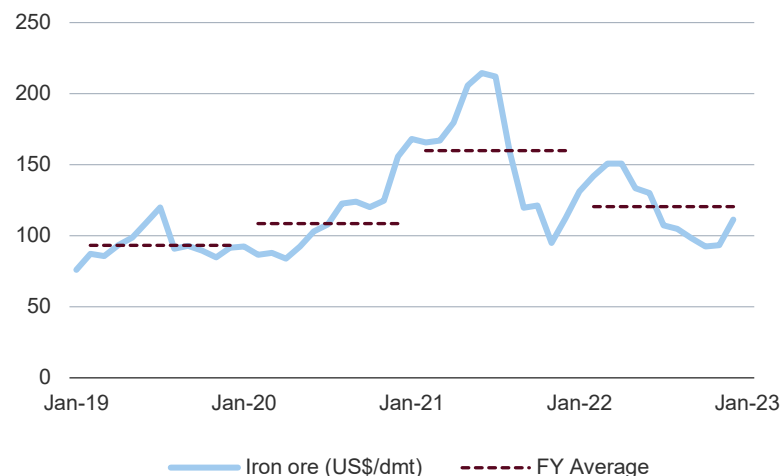
Solid results against all-time highs in 2021

\$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)		

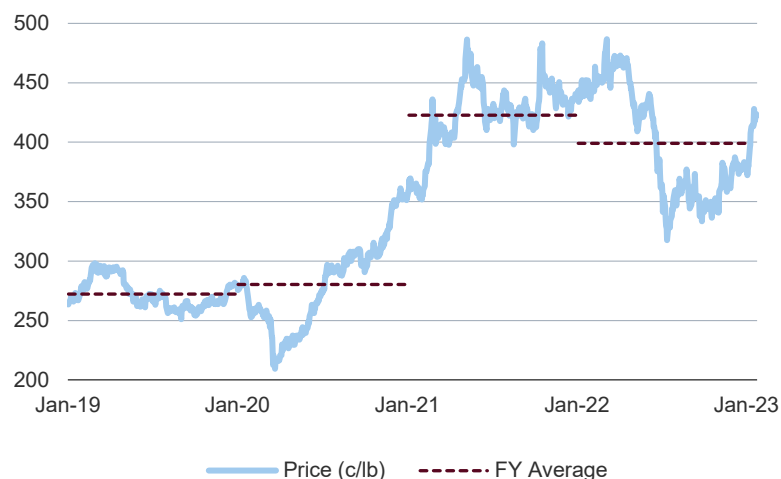


Significant headwinds from costs and price in the second half

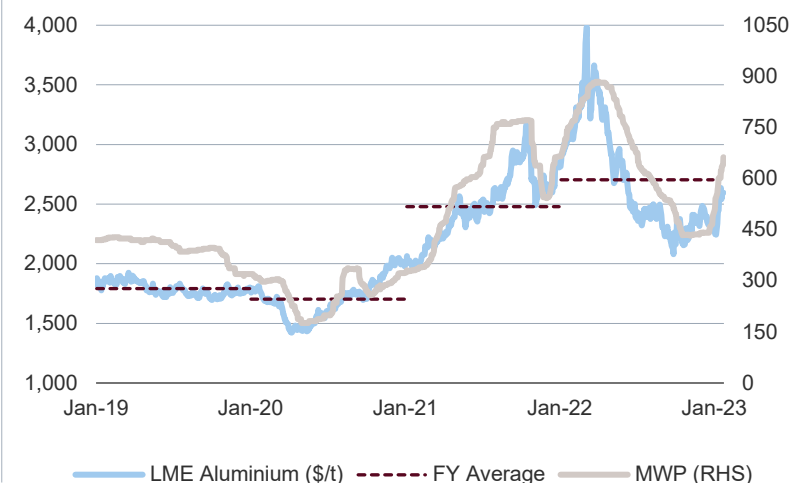
Iron Ore¹ (-25% YoY)



Copper² (-6% YoY)



Aluminium³ (+9% YoY)



Realised pricing

Iron ore (\$/dmt)

H1

121

H2

94

Delta

-22%

Copper (c/lb)

447

362

-19%

Realised pricing

Aluminium (\$/t)⁴

H1

3,808

H2

2,870

Delta

-25%

Aluminium raw materials \$/t index price

Coal tar pitch

1,103

1,476

+34%

Petroleum coke

695

719

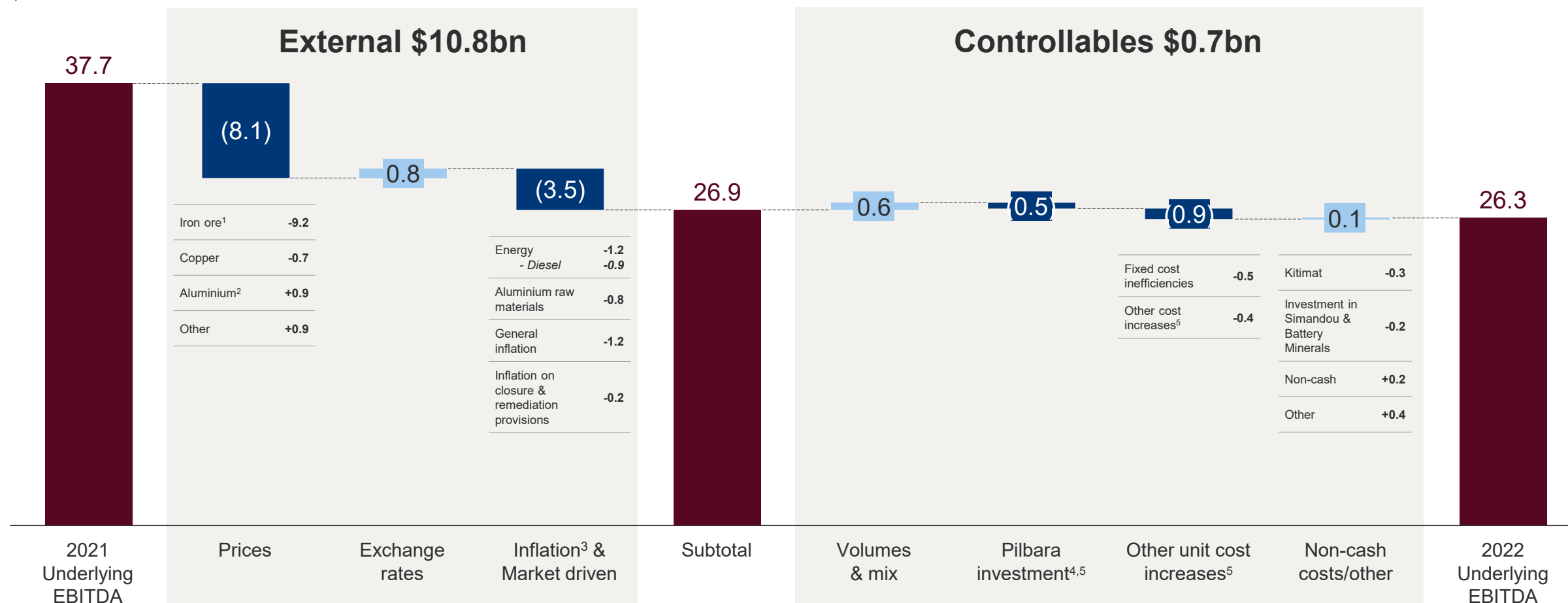
+3%

¹Monthly average Platts (CFR) index for 62% iron fines | ²Average LME price | ³Average LME price. MWP = US Midwest premium | ⁴LME 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



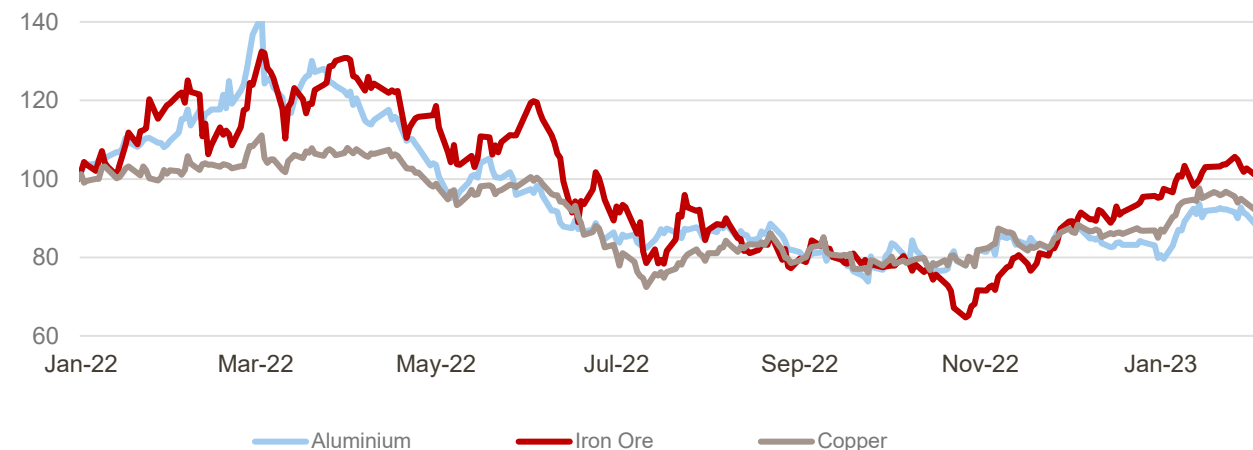
¹Iron ore includes Pilbara, portside trading and IOC | ²Aluminium includes alumina and bauxite | ³Inflation variance of -\$1.5bn comprises general inflation (-\$1.2bn), inflation on closure and remediation provisions (-\$0.2bn) and included in Aluminium raw materials (-\$0.1bn) | ⁴Gudai-Darri increased workforce to support ramp up and targeted investments in Pilbara pit health and system reliability | ⁵Total 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 ³	18.6	-33%	3.7	-16%	2.4	-40%	2.4	-7%
EBITDA margin ^{1,2}	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 ^{2,3}	62%	-38pp	10%	-6pp	6%	-8pp	22%	+1pp
Performance	- Operational records achieved; healthy stock levels - Lower pricing (Platts -25%) driving lower EBITDA - Continued focus on controllable costs in inflationary environment		- Kitimat and Boyne recovery progressing with full ramp-up in 2023 - 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		- Anticipated decrease in gold sales at Oyu Tolgoi and raw materials inflation impacted EBITDA - Average realised price decreased 5% in conjunction with negative provisional pricing (-\$175m)		- Safe Production System delivering operational improvements at IOC - Strong markets for TiO₂ and borates - Lower EBITDA due to weaker pricing for iron ore, inflationary pressures and higher cash costs	

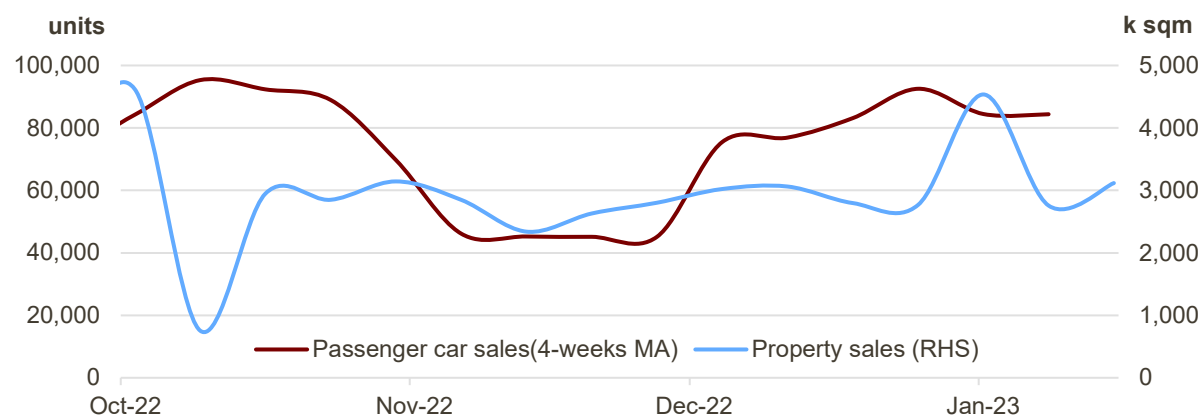
Looking ahead - physical markets remain tight

Key commodity price performance¹

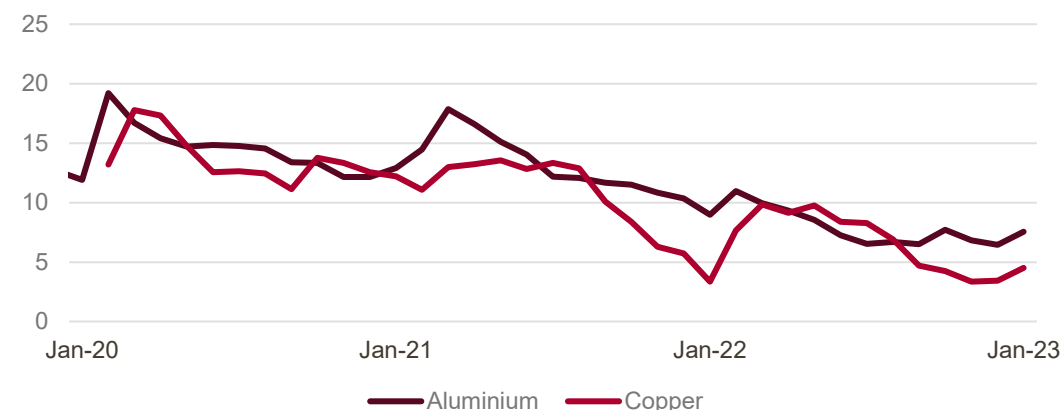


- **Commodity prices found some support** in recent months, albeit still lower than at the start of last year
- **China policy stance has pivoted to pro-growth**, with zero-COVID in rear view and the country's reopening providing economic recovery in Q2, although volatility still expected in Q1
- **Inflationary 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

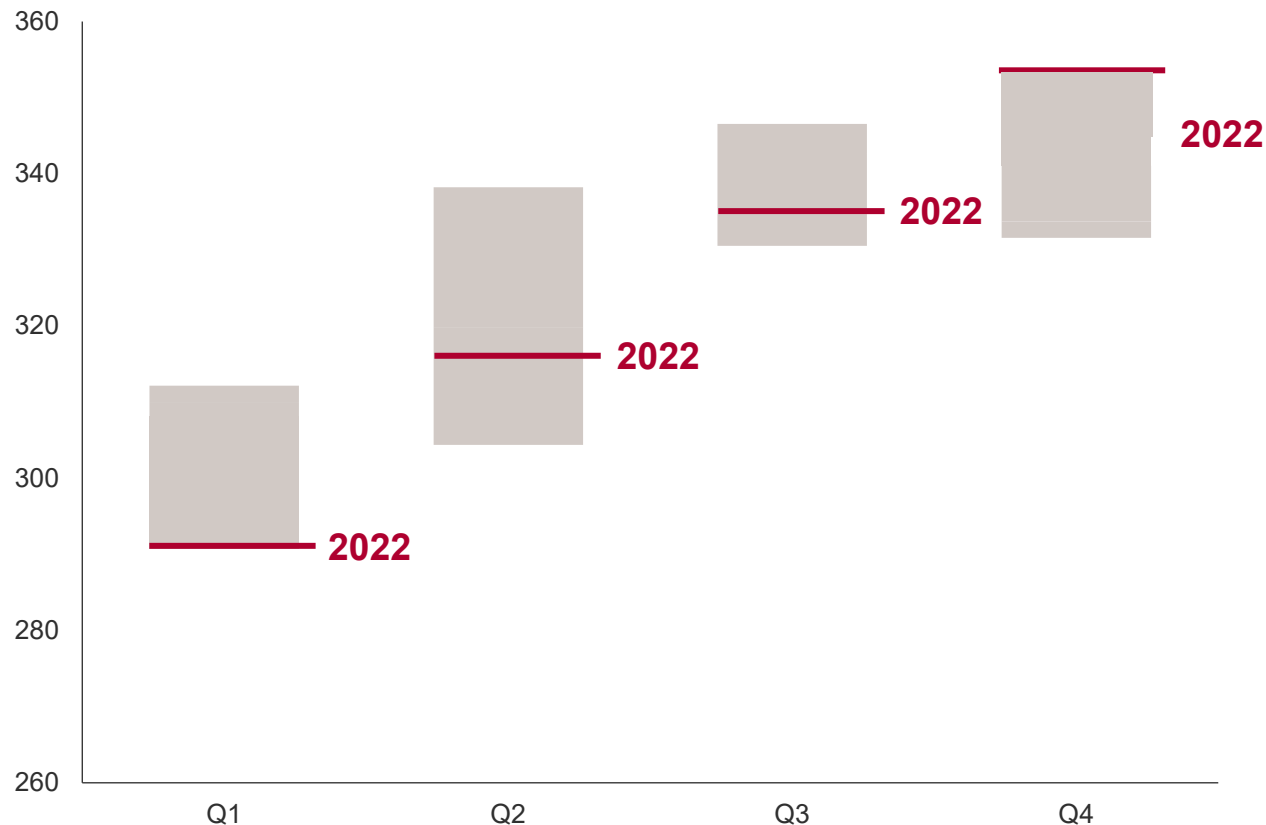


Metal global reported inventories as days of consumption²



Pilbara iron ore: finished the year with strong momentum

Mine production ranges by quarter¹
(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

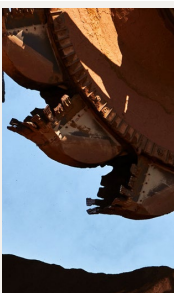
5% improvement compared to the rest of the site across collaboration, empowerment and resources

Employee Engagement

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

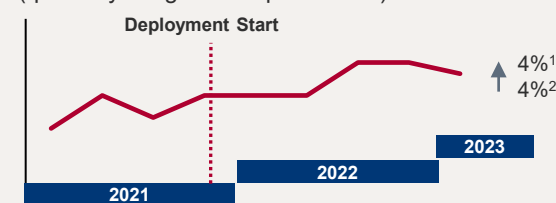
Productivity

SPS supports operating time by addressing asset stability and availability



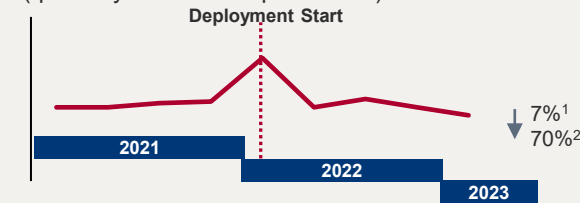
Operating Rate

(quarterly – higher = improvement)



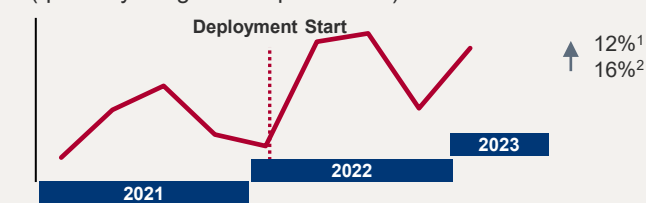
Operating Variability

(quarterly – lower = improvement)



Operating Time

(quarterly – higher = improvement)



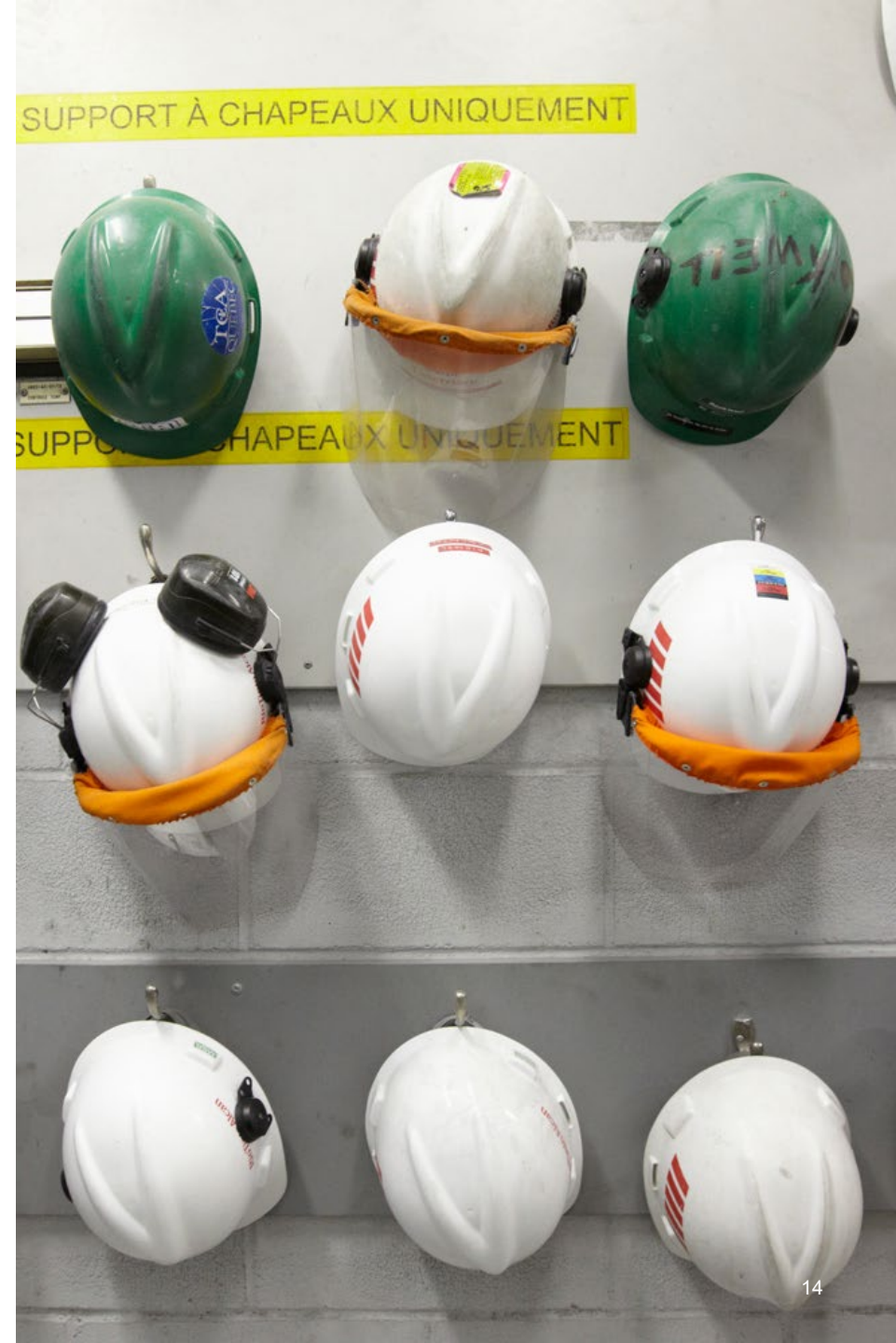
Replicating the successes across our assets

Product Group

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

Priorities in 2023:

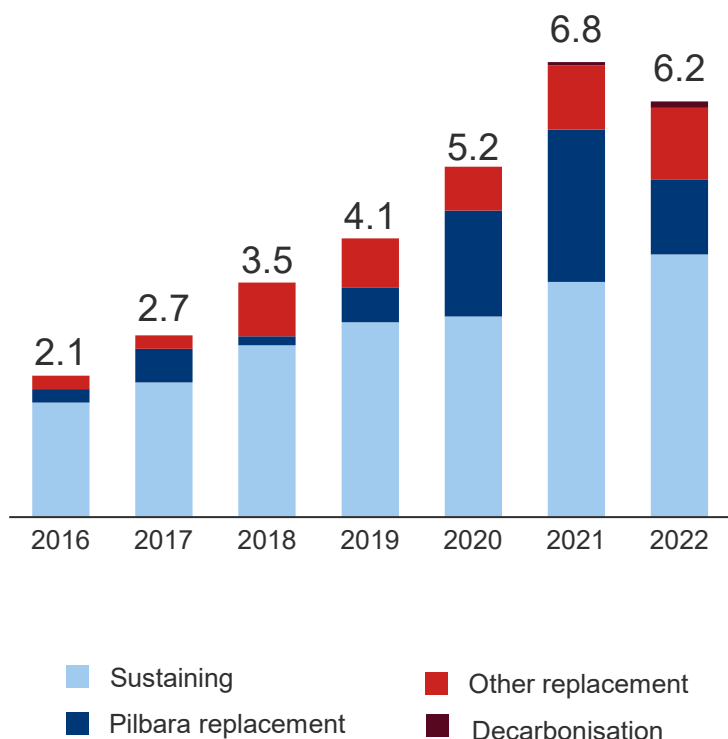
- Going deeper at existing sites where we have already deployed to increase sustainable impact
- New impact driven deployments
- Focus on improving asset health and performance to stabilise production variability
- Identify key Kaizens (problem solving opportunities) to address high-priority improvements,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



We will continue to invest consistently through the cycle

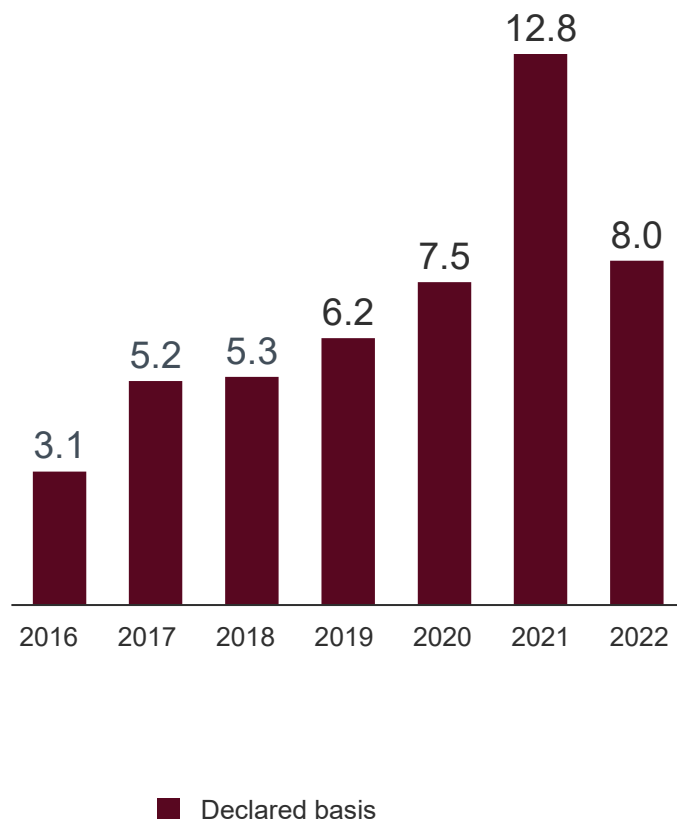
01 Essential capex

Integrity, Replacement, Decarbonisation

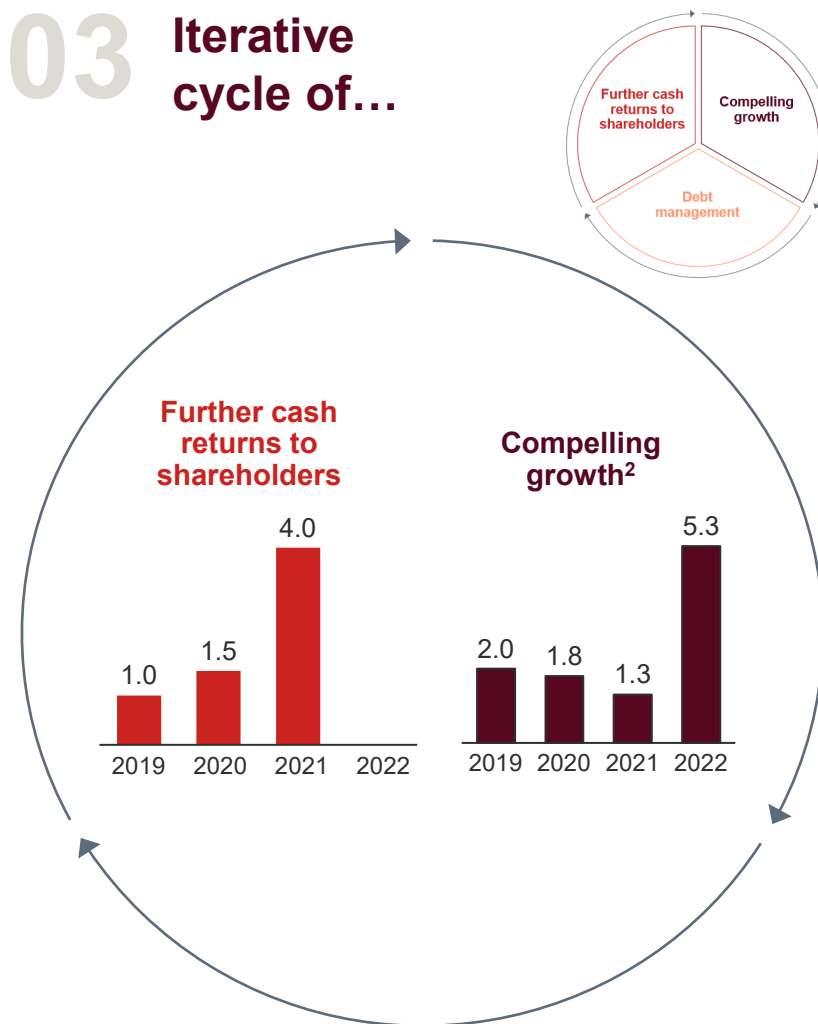


02 Ordinary dividends

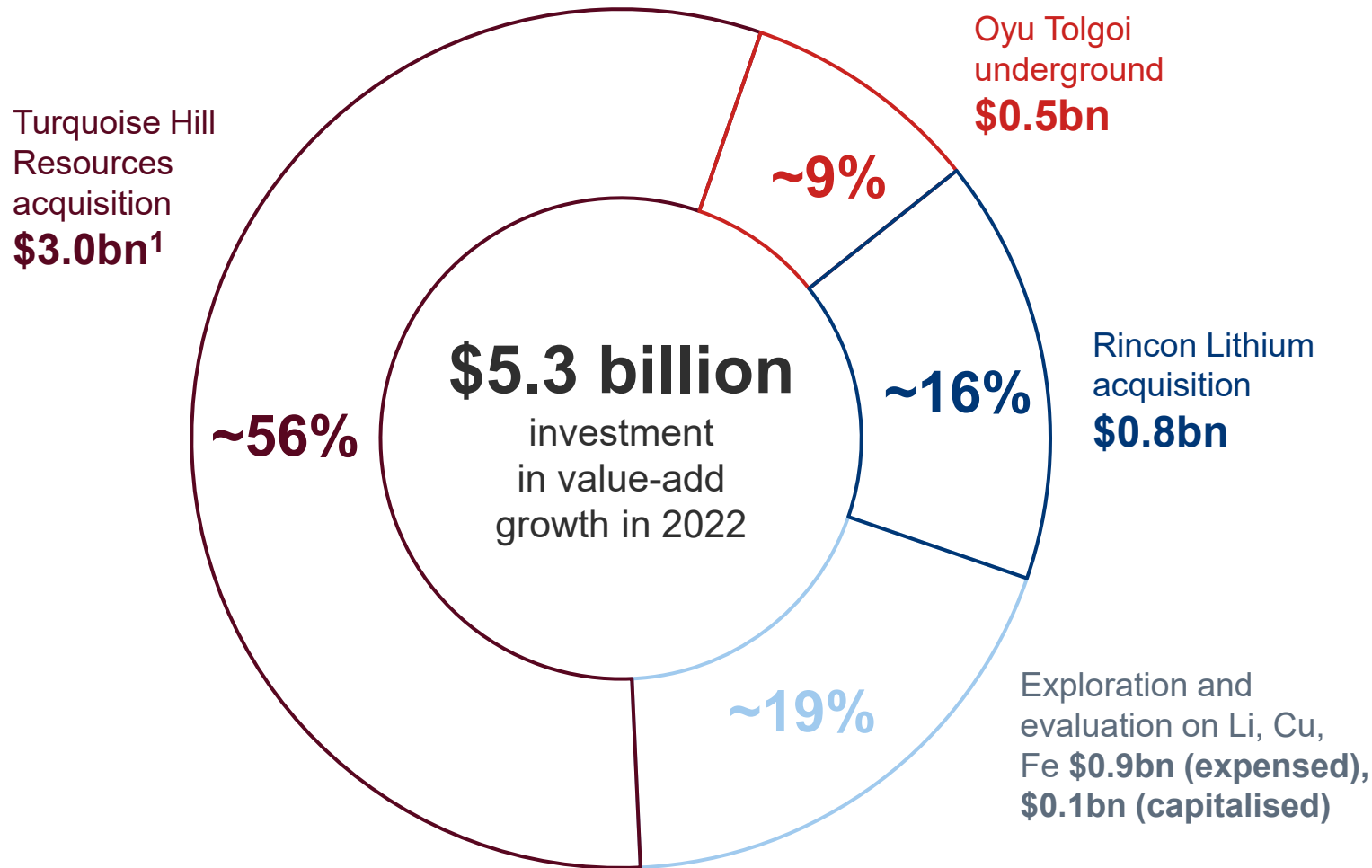
40-60% of underlying earnings on average through the cycle¹



03 Iterative cycle of...



Investment in compelling growth in 2022



- **Significant investments in growth²** 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)

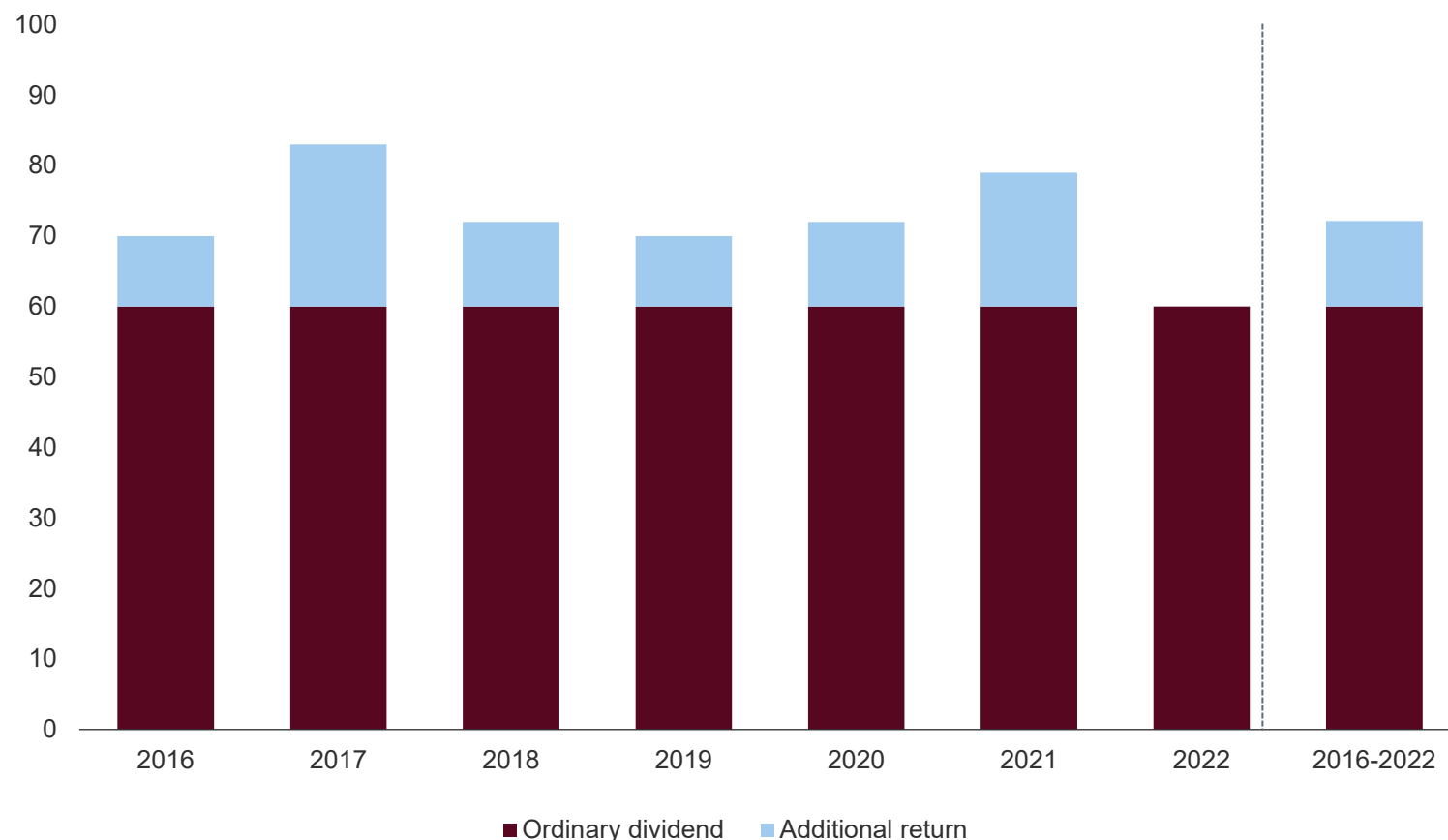
Continue to pay attractive dividends in line with our policy (consistent seven-year track record)

\$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 returns¹ 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

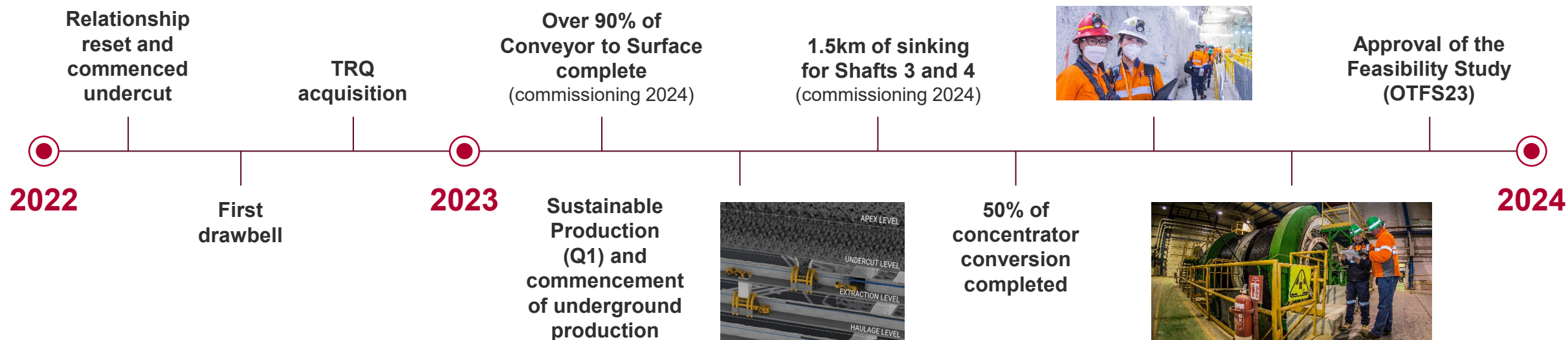
Chief Executive, Copper

Oyu Tolgoi underground, Mongolia

RioTinto



Oyu Tolgoi at an inflection point



4th largest copper-gold mine by 2030¹; first quartile of Cueq² cost curve

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

Estimated average production
~500ktpa Cu & ~330kozpa Au 2028-2036³

Industry leading **safety performance** and water intensity (0.4m³/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

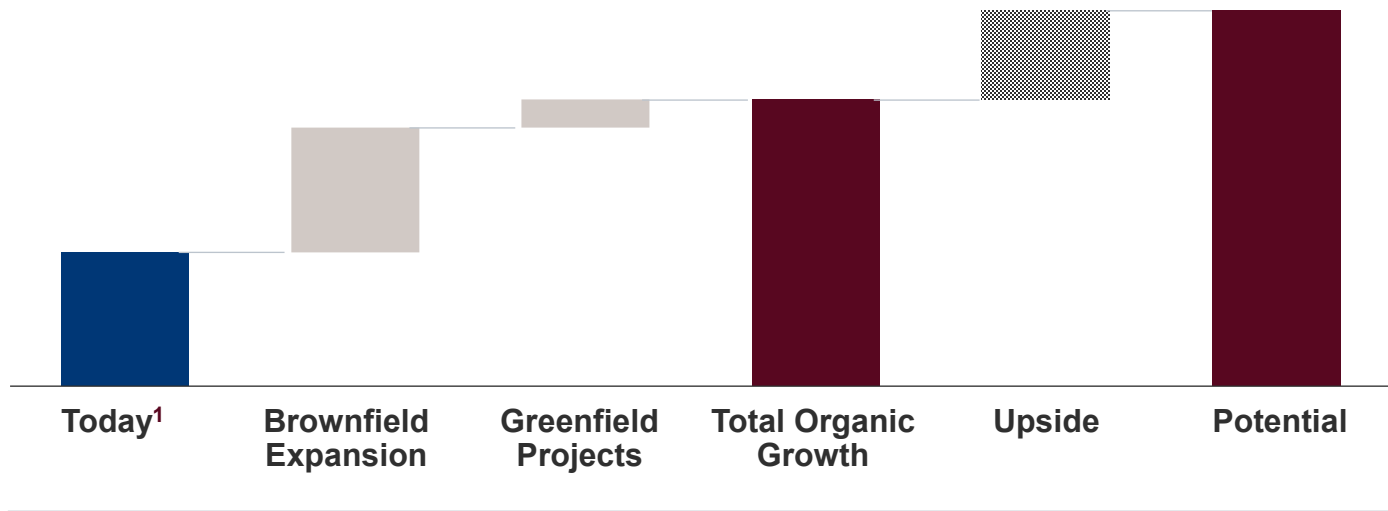


500+ national suppliers and **~\$15bn** spent in-country since 2010

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 2030²

	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 decade³
- 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

¹Represents 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% | ²Source: Wood Mackenzie Dec 2022, based on production from committed projects | ³Based 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

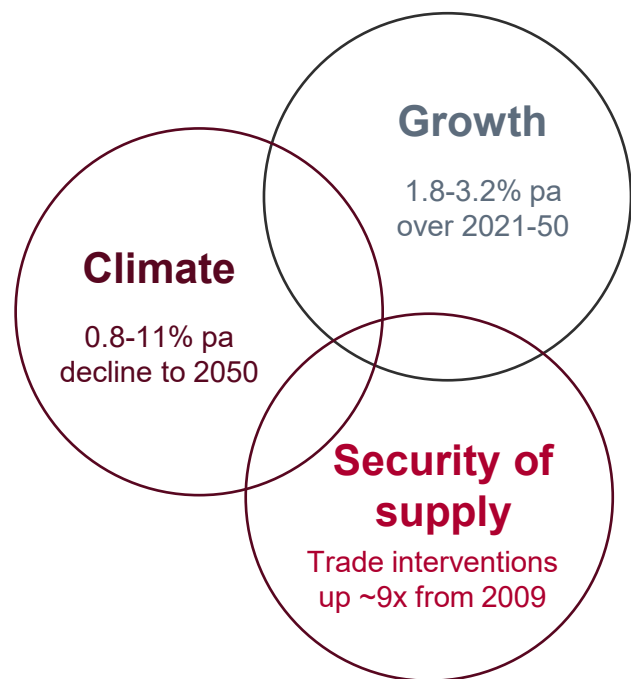
Decarbonisation

- 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



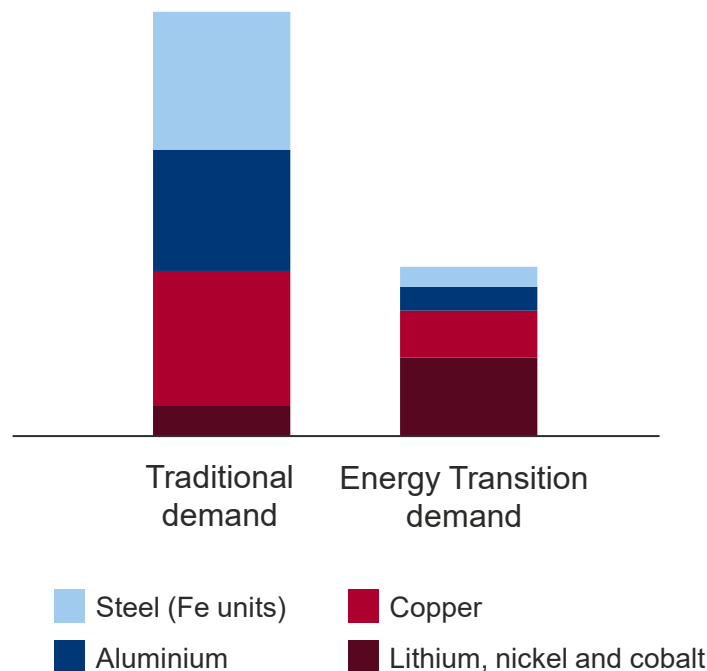
Outlook underpins a stronger Rio Tinto for the long term

Key drivers of global economy¹



Total commodity demand by 2035²

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



RioTinto

RioTinto

Appendices

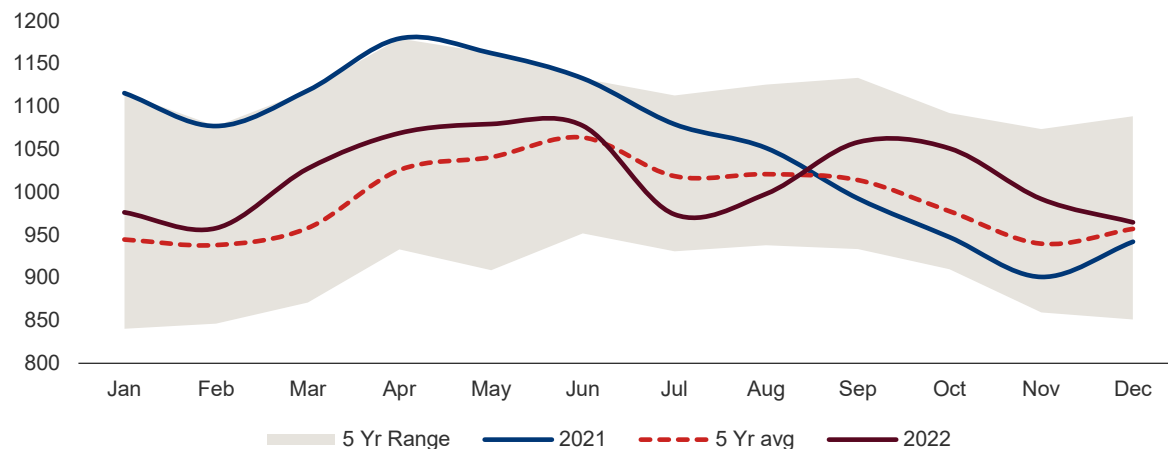
Full year results 2022



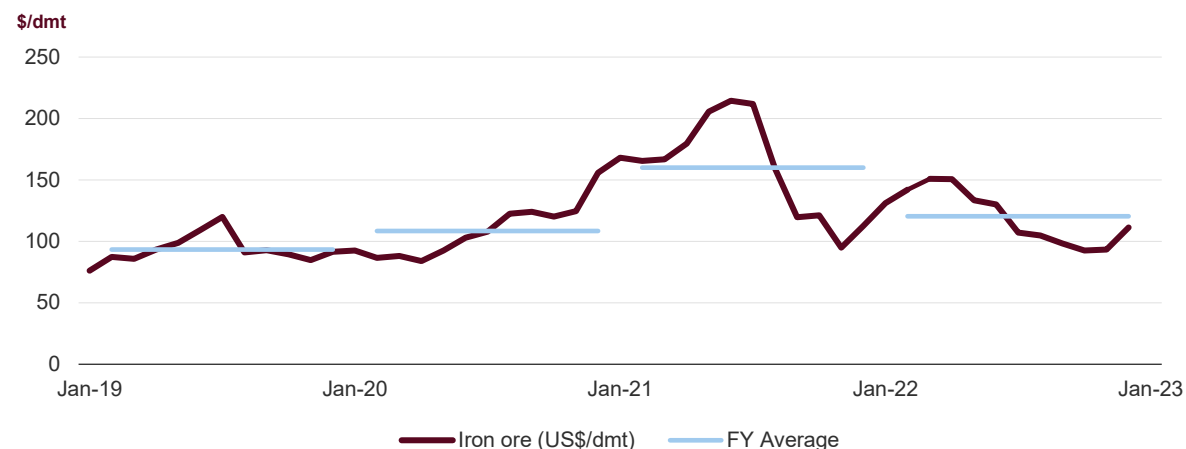
Markets

Iron ore market tighter than perceived in 2022

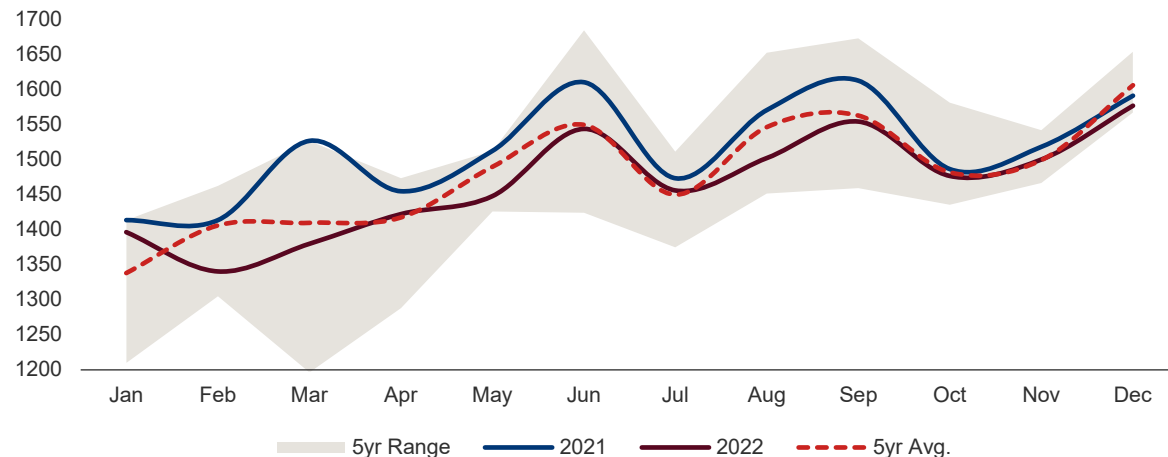
China's crude steel production (Mt annualised)



Iron Ore¹ (-25% YoY)



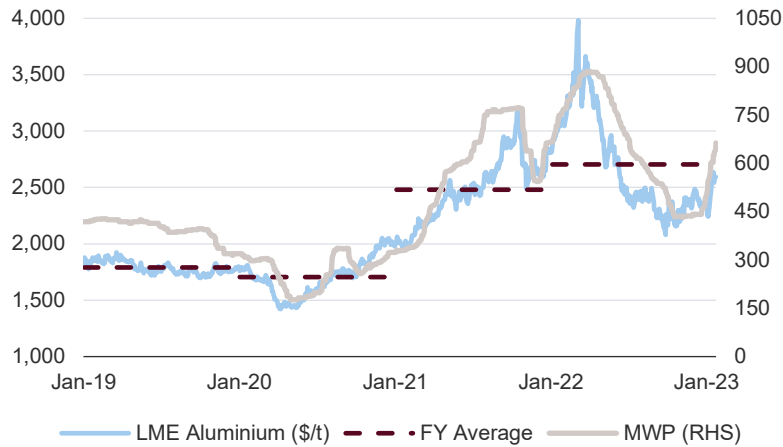
Seaborne Iron Ore supply run rate (Mt annualised²)



- 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

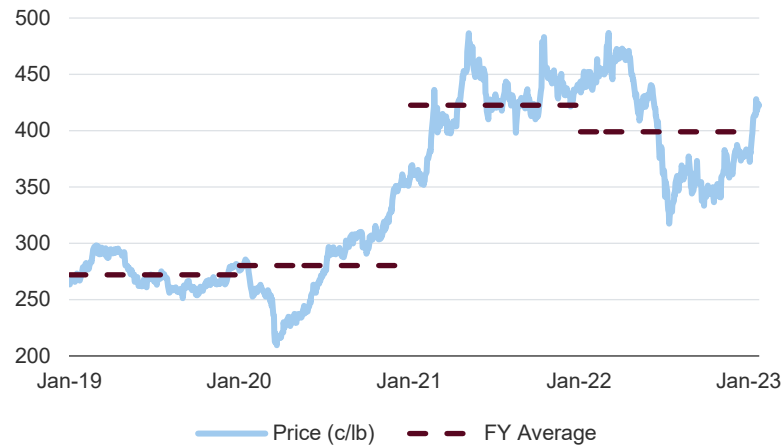
Price support for aluminium, copper and TiO₂

Aluminium¹ (+9% YoY)



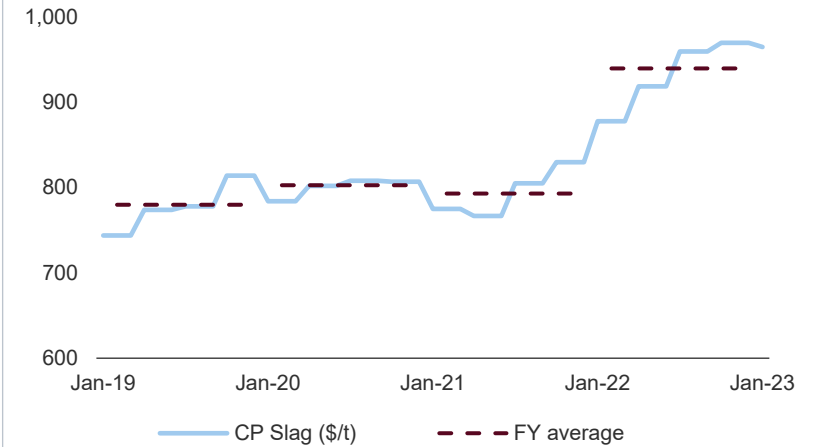
- Aluminium demand growth slowed in H222, first in Europe and Asia, then North America later in the year. However, Chinese aluminium export growth slowed from +34% YoY in H1, to +3% YoY in H2
- Aluminium production increased by 2% in 2022, driven by 4% growth in China. But low hydropower generation forced 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

Copper² (-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

TiO₂ (chloride slag) (+19% YoY)



- TiO₂ feedstock price appreciation supported by low inventories and tight supply through 2022
- Demand for TiO₂ 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
- TiO₂ feedstock supply growth has been moderate despite rising prices

Other financials

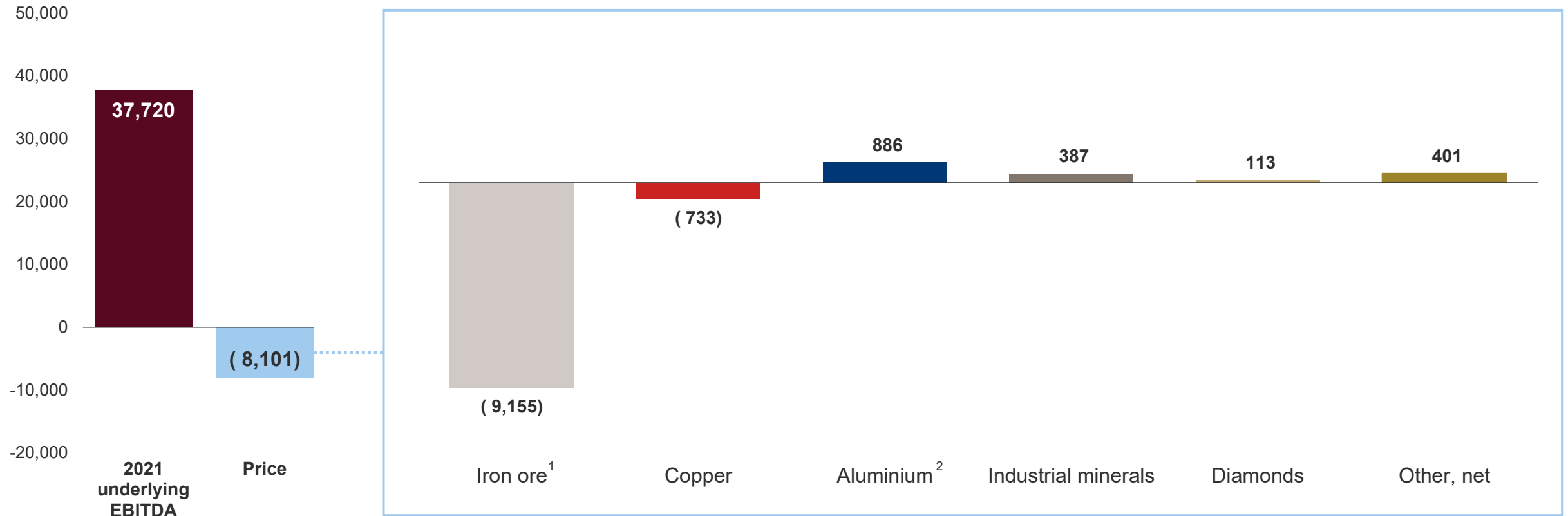
Oyu Tolgoi: Financial modelling

Ownership	66% Rio Tinto, 34% Government of Mongolia
Accounting treatment	100% consolidation of headline production (from 1 Jan 2023), sales revenue and underlying EBITDA Project finance included in Rio Tinto net debt
Project capex	\$7.06bn (100% consolidated) Includes Shafts 3 and 4, Primary Crusher 2 and Concentrator conversion
Production¹	~340ktpa copper average 2023 - 2027 ~500ktpa copper average 2028 - 2036 ~290ktpa copper average over ~30 year reserve life
By-products¹	~360kozpa gold average 2023 - 2027 ~330kozpa gold average 2028 - 2036 ~260kozpa gold and ~1,710kozpa silver average over ~30 year reserve life
C1 unit costs (c/lb)	\$0.82/lb - \$1.43/lb (Real, based on production ranges between ~350kt Cu and ~600kt Cu) over reserve life
Grade (% cu)¹	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
Sustaining capex²	\$304m average per annum 2023 - 2032 \$161m average per annum over ~30 year reserve life
Tax rate	Corporate Income 25%, Royalty 5%, VAT 10%

Significant movements in iron ore prices impacting EBITDA

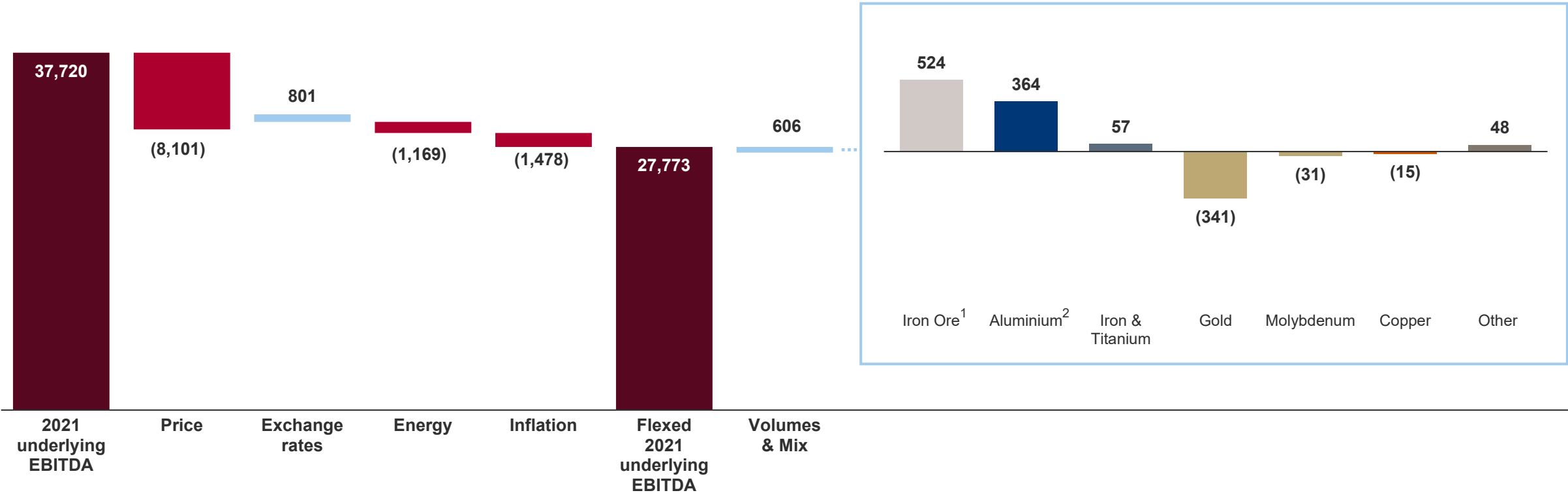
Underlying EBITDA 2022 vs 2021

\$m



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
Sales volume	2,204kt	1,010kt	594kt⁶	277.6Mt⁹
Average benchmark price	\$2,703/t	\$2,703/t	398c/lb ⁷	\$109.8/dmt ¹⁰
Premiums, provisional pricing, by-product sales, product mix, other	\$767/t ²	\$321/t ²	58c/lb	\$(3.7)/dmt
Revenue per unit	\$3,470/t³	\$3,024/t³	456c/lb	\$106.1/dmt
Unit cost	\$1,729/t ^{1,4}	\$2,237/t ^{1,4}	237c/lb ^{1,8}	\$21.3/t ¹¹
Other costs per unit	\$640/t ⁵	\$295/t ⁵	(6)c/lb ⁵	\$18.3/t ¹²
Margin per unit	\$1,101/t	\$492/t	225c/lb	\$66.5/t
Total EBITDA (\$m)	2,426	497	2,947	18,474

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

Iron Ore

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

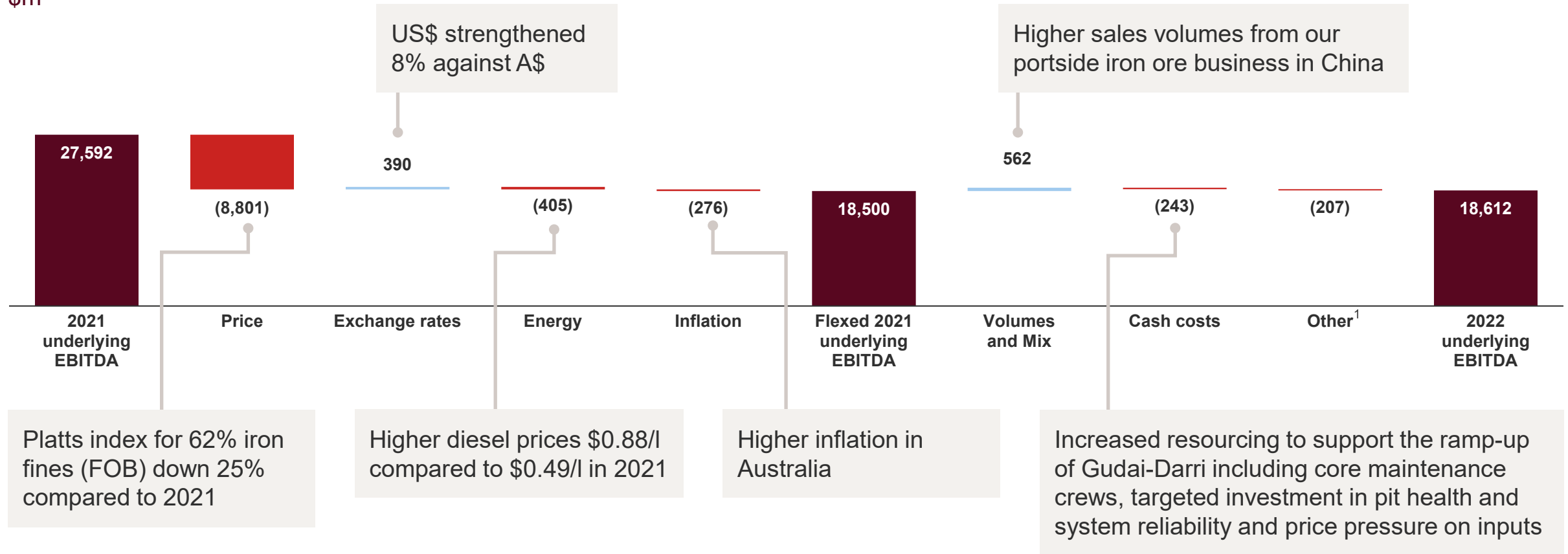
Shipments ³ (Mt, 100% basis)	2023 guidance	2022	2021	2020	2019	2018
Pilbara Blend		203.9	202.9	232.7	228.1	245.4
Robe Valley		25.5	25.2	30.3	27.4	32
Yandicoogina		56.9	56.9	57.7	57.1	57.4
SP10		35.4	36.6	9.9	14.8	3.4
Total	320-335	321.6	321.6	330.6	327.4	338.2

Iron Ore

Significant movement in price driving lower EBITDA

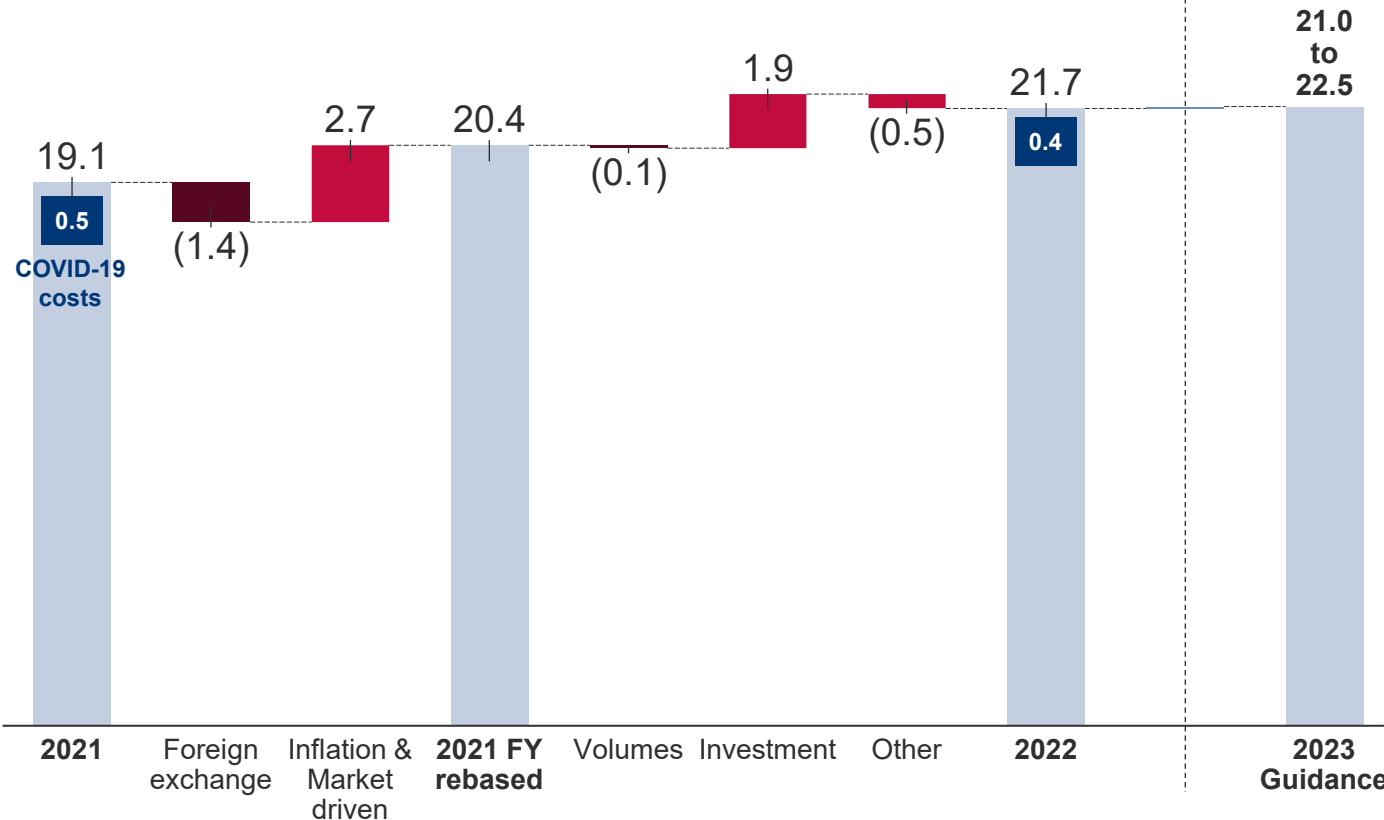
Underlying EBITDA 2022 vs 2021

\$m



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 ¹	\$3,330/t	+ 15%
Average alumina price ²	\$362/t	+ 10%
Canadian ³ smelters – hot metal cash cost ⁴	\$1,678	+ 22%

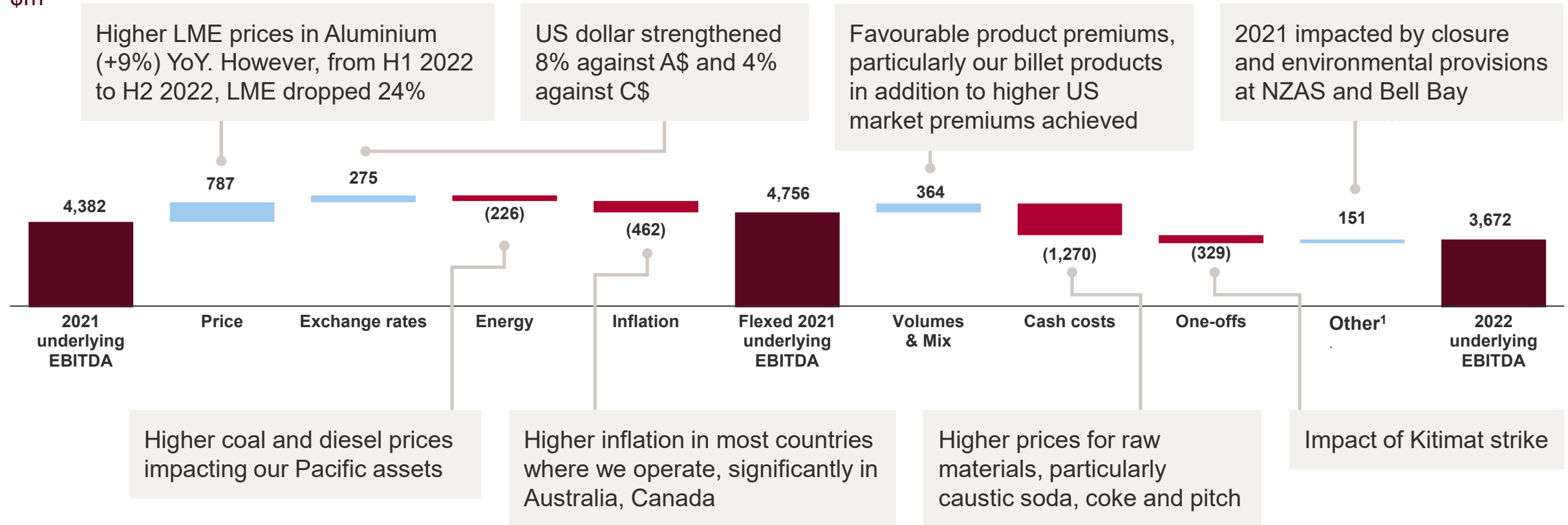
Production (Mt, Rio Tinto share)	2023 guidance	2022	2021	2020	2019	2018
Bauxite	54-57	54.6	54.3	56.1	55.1	50.4
Alumina	7.7-8.0	7.5	7.9	8.0	7.7	8.0
Aluminium	3.1-3.3	3.0	3.2	3.2	3.2	3.2

Aluminium

Significant margin squeeze, particularly in second half

Underlying EBITDA 2022 vs 2021

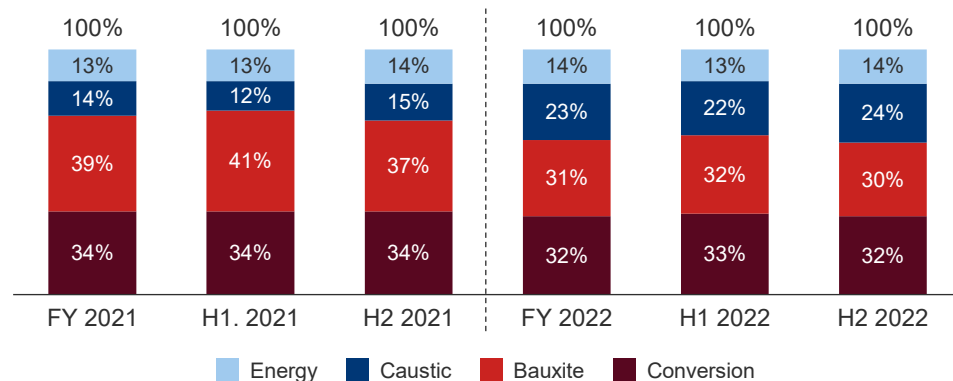
\$m



Composition of alumina and aluminium production costs

Production cash costs

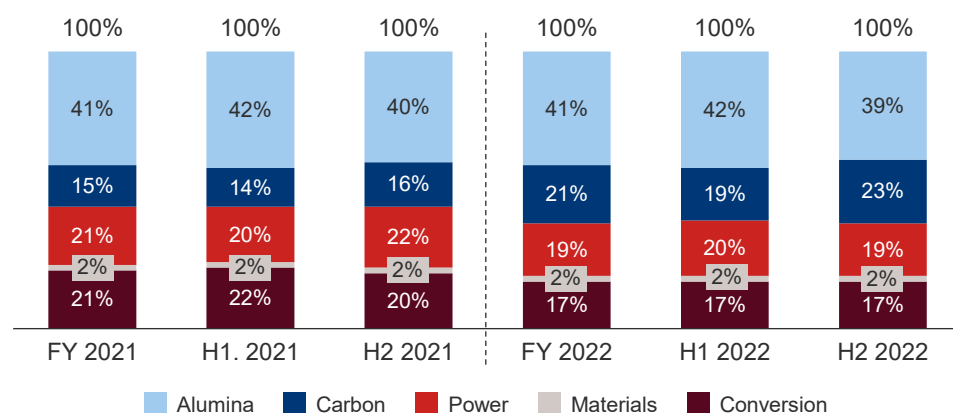
Alumina refining



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

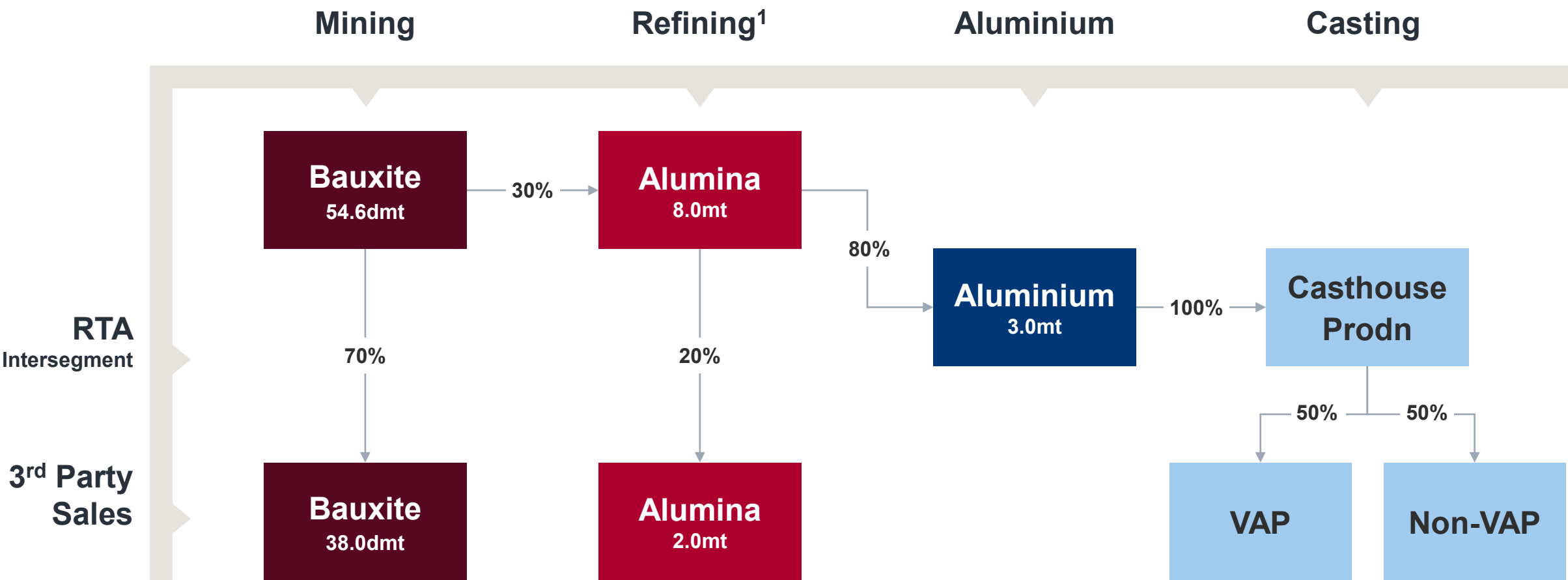


Input Costs (Index price)	H1 2021	H2 2021	H1 2022	H2 2022	Inventory Flow ⁸	FY22 Annual Cost Sensitivity
Alumina ⁵ (\$/t)	288	369	395	328	1 - 2 months	\$64m per \$10/t
Petroleum Coke ⁶ (\$/t)	373	491	695	719	2 - 3 months	\$11m per \$10/t
Coal Tar Pitch ⁷ (\$/t)	748	818	1,103	1,476	1 - 2 months	\$2m per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



¹As 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 ⁴	6%	- 8pp	
Copper realised price ¹	403c/lb	- 5%	
Unit cost ³	163c/lb	+ 99%	160-180c/lb

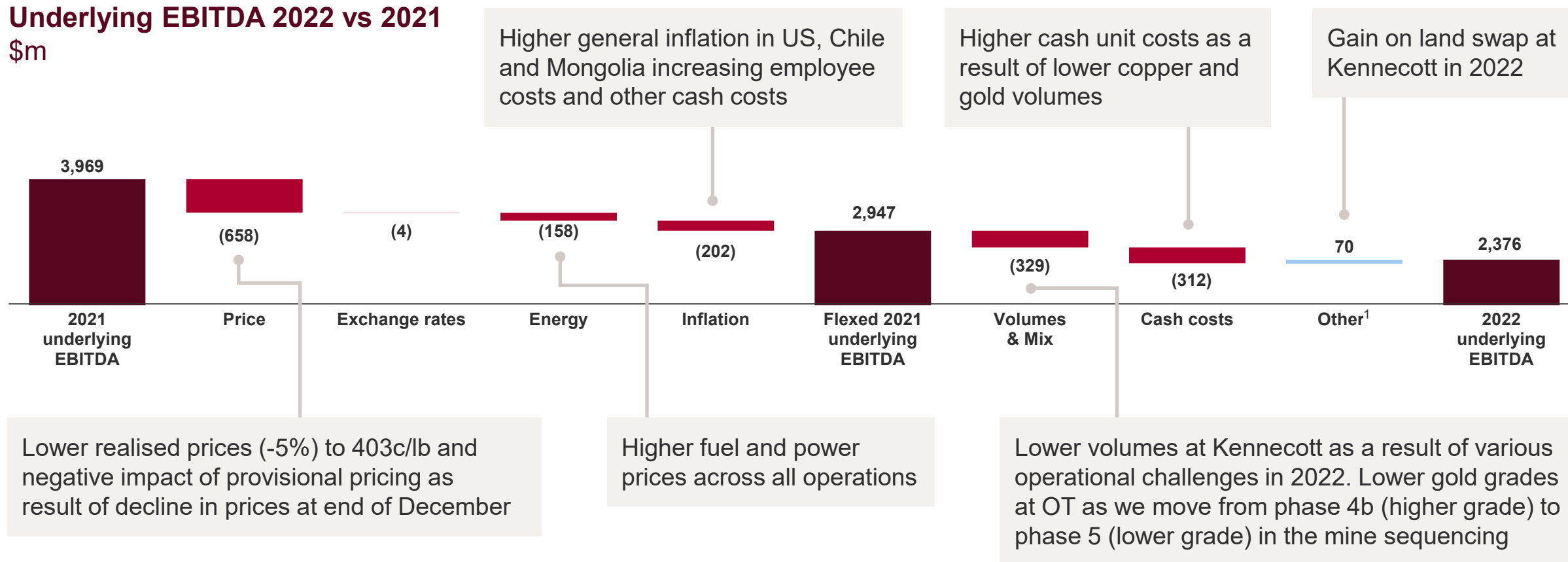
Production (kt, Rio Tinto share)	2023 guidance	2022	2021	2020	2019	2018
Mined copper	650 to 710 ²	521	494	528	577	608
Refined copper	180 to 210	209	202	155	260	275

Copper

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

Underlying EBITDA 2022 vs 2021

\$m



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 ⁴	22%	+ 1 pp
IOC pellets price ¹	\$190/t	- 11%
TiO ₂ slag price ²	\$940/t	+ 19%

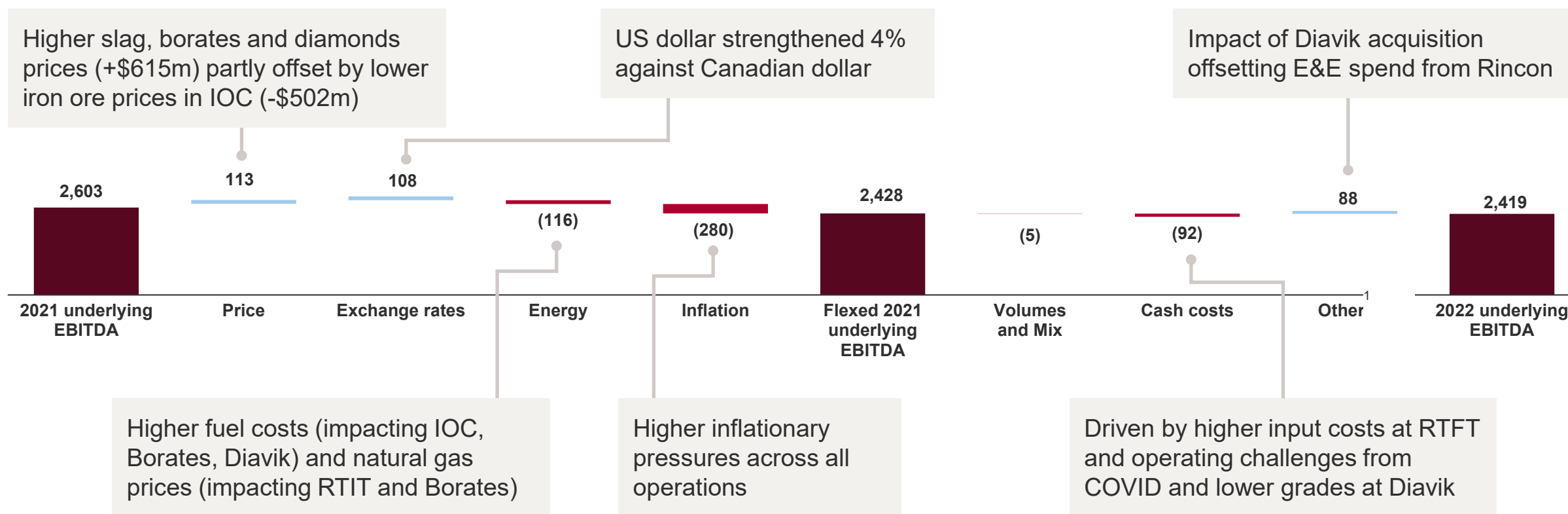
Production (Rio Tinto share)	2023 guidance	2022	2021	2020	2019	2018
IOC (Mt)	10.5-11.5	10.3	9.7	10.4	10.5	9.0
Borates – B ₂ O ₃ content (kt)	~0.5Mt	532	488	480	520	512
Titanium dioxide slag (kt)	1.1-1.4Mt	1,200	1,014	1,120	1,206	1,116
Diamonds ³ (kt)	3.0-3.8Mt	4,651	3,847	3,731	4,031	4,358

Minerals

Resilient portfolio despite inflationary pressures

Underlying EBITDA 2022 vs 2021

\$m



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 ¹	Jun inflation assumption ¹	Dec inflation assumption ¹
	%	%	%
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
Charged/(credited) to profit:				
– 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
Utilised in year	(256)	(353)	(609)	(541)
Transfers and other movements	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 underling 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) ¹	(1,888)
– Impairment of investments in equity accounted units after tax	202	(202) ²	-
– Loss on disposal of interest in subsidiary	105	(105) ²	-
– Impairment reversals	(150)	150 ²	-
– Depreciation and amortisation	5,010		
– Provisions (including exchange differences on provisions)	1,006	(180) ²	826
Utilisation of provisions	(1,039)		(1,039)
Change in working capital	(465)		(465)
Other items	(1,242)	693	(548)
Cash flows from consolidated operations	23,158		
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)
Net cash generated from operating activities	16,134		
Purchases of PPE			(6,750)
Lease principal payments			(374)
Free cash flow			9,010

Utilisation of provisions

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

Change in working capital

Inventories	(1,185)
Trade and other receivables	20
Trade and other payables	700
	(465)

Other items

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

Income Statement: exclusions

	2022			2021		
	Per Annual Report	Exclusions	Underlying	Per Annual Report	Exclusions	Underlying
Consolidated sales revenue	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)
Operating profit	19,933	(419)	19,514	29,817	1,080	30,897
Share of profit after tax of equity accounted units	777		777	1,042		1,042
Impairment of investments in equity accounted units	(202)	202	—	—		—
Profit before finance items and taxation	20,508	(217)	20,290	30,859	1,080	31,939
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)
Finance items	(1,846)	168	(1,678)	(26)	(572)	(598)
Profit before taxation	18,662	(49)	18,613	30,833	508	31,341
Taxation	(5,586)	902	(4,684)	(8,258)	(224)	(8,482)
Profit after tax for the year	13,076	853	13,929	22,575	284	22,859
– 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

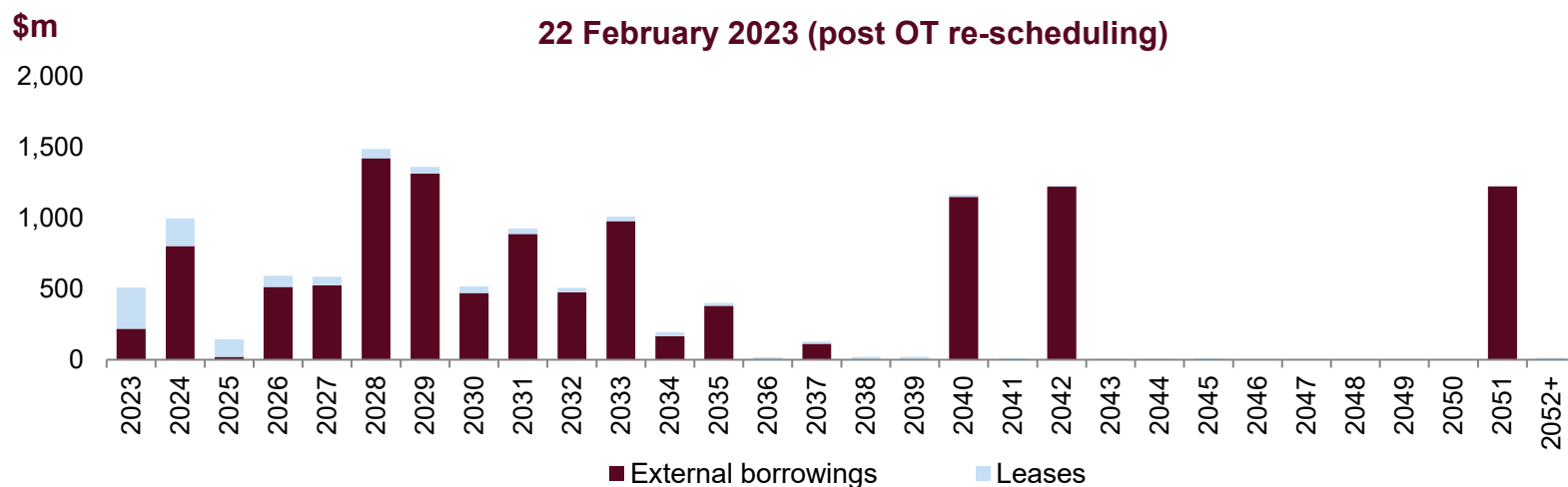
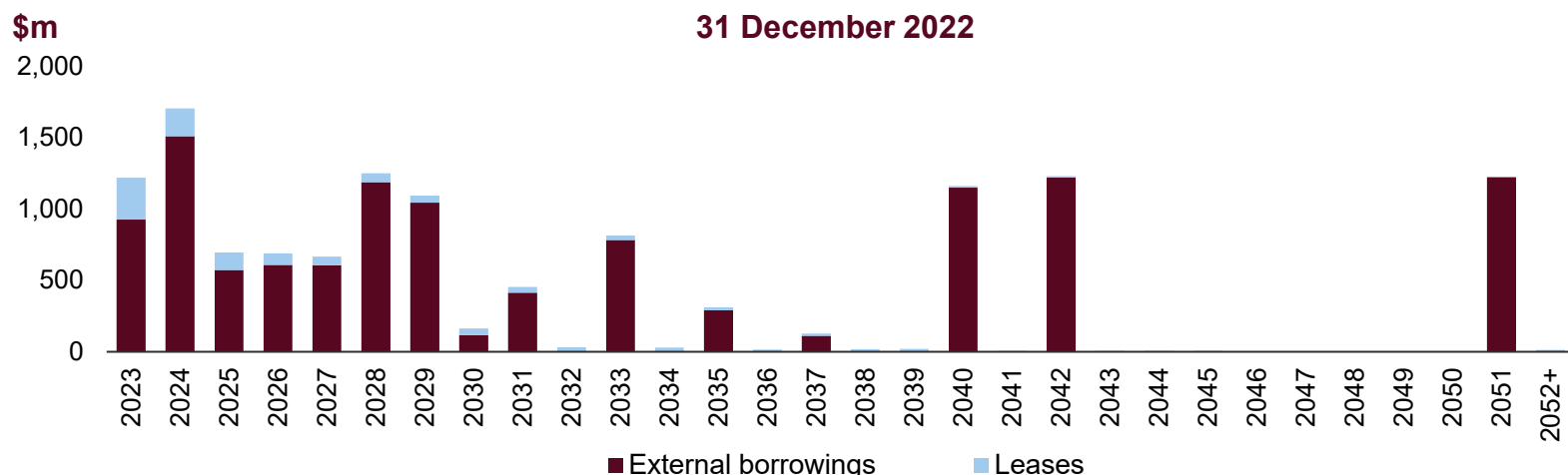
Modelling EBITDA

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 profile¹

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

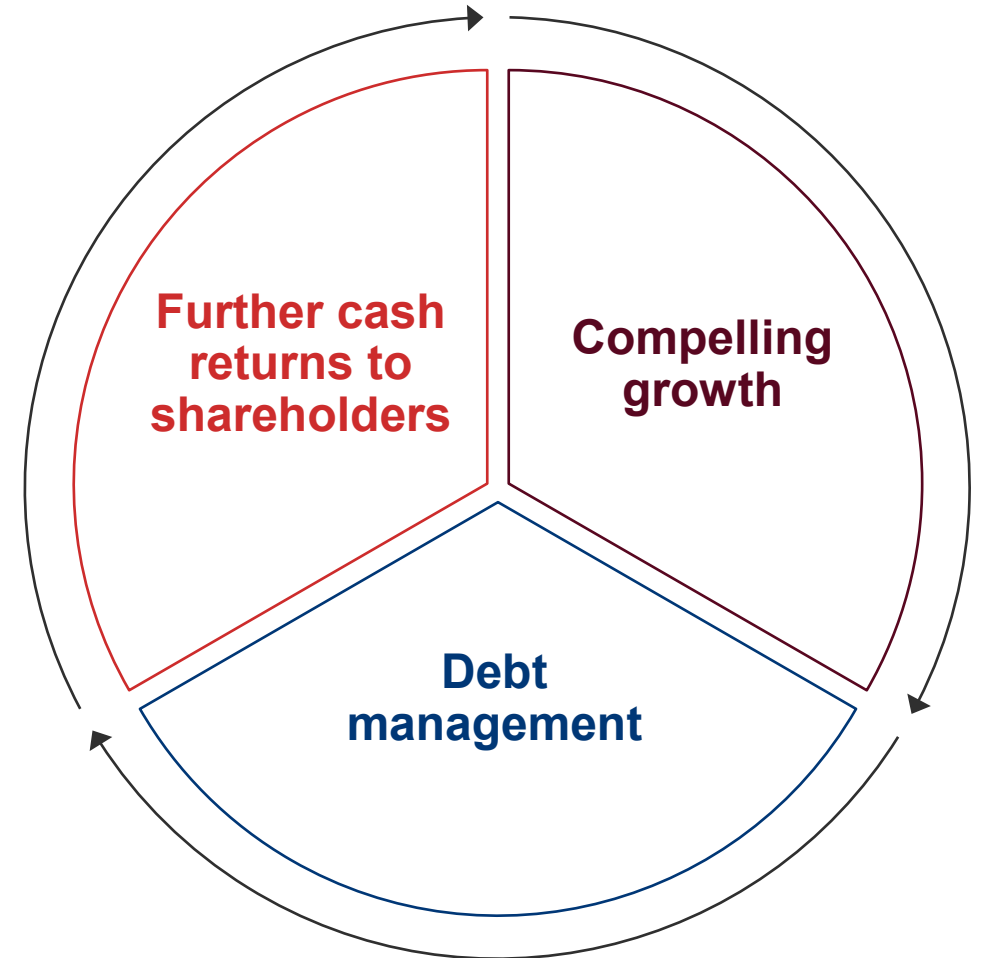
Guidance

Balancing near-term returns to shareholders

1 **Essential capex**
Integrity, Replacement, Decarbonisation

2 **Ordinary dividends**

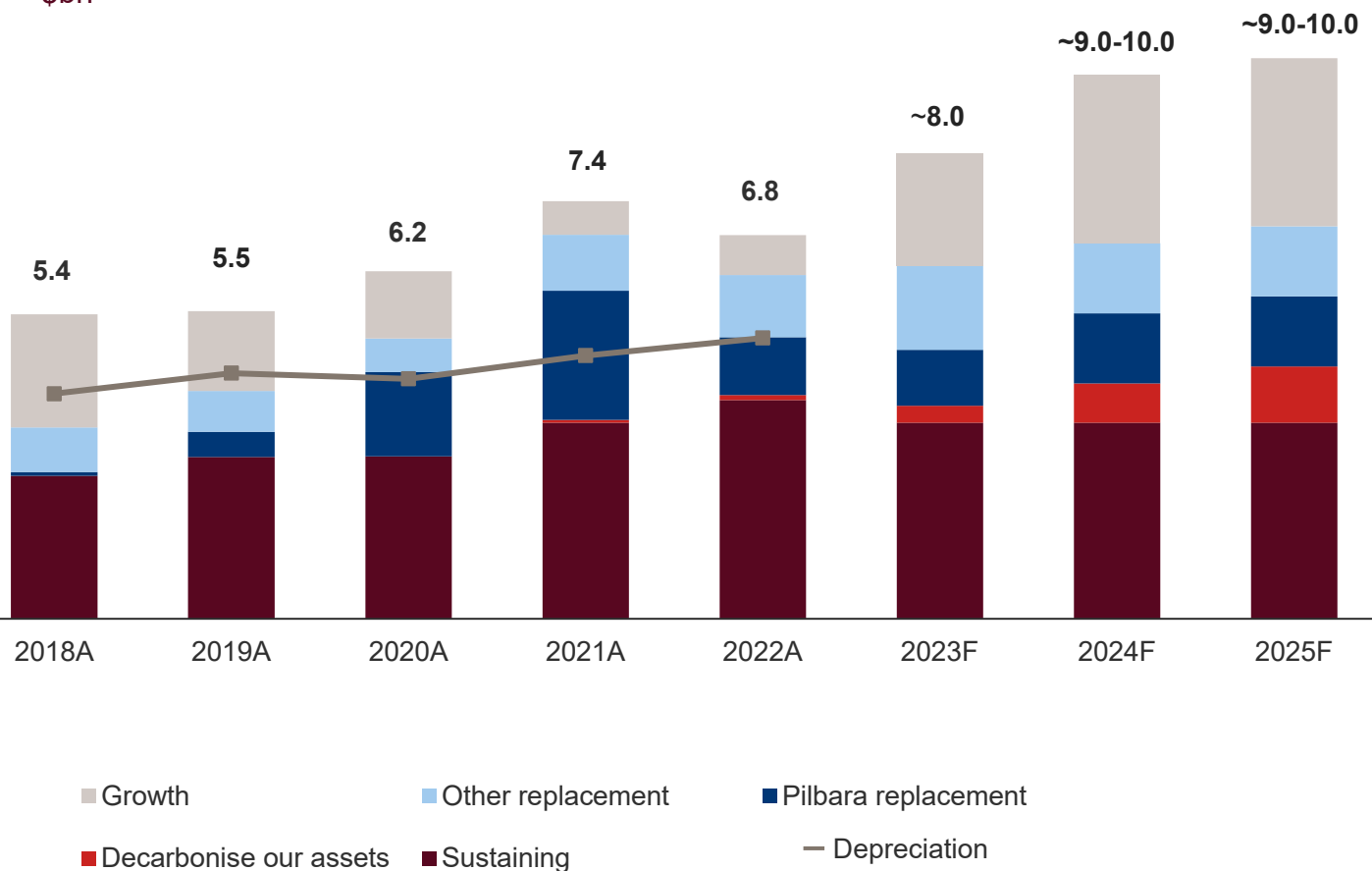
3 **Iterative cycle of**



Disciplined investing for growth and decarbonisation

Capital expenditure profile (Rio Tinto share)

\$bn



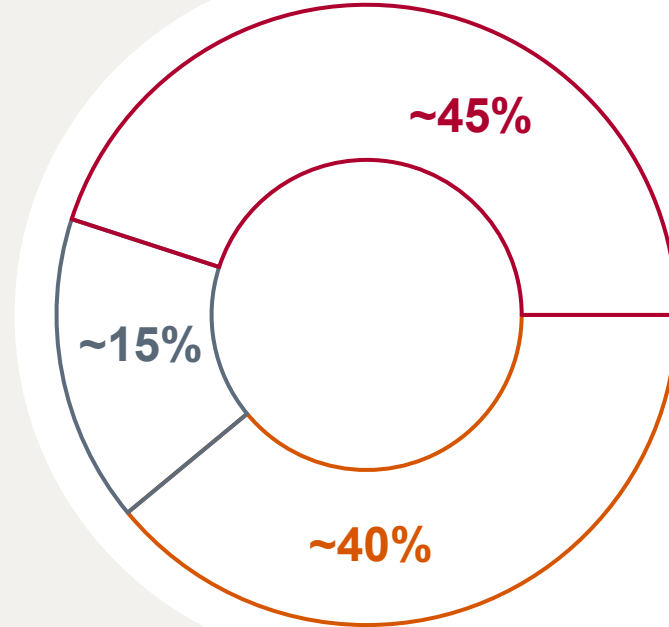
- In 2023, we expect our share of capital investment to be around \$8.0bn (previously \$8.0 to \$9.0bn), including growth capital¹ of around \$2.0bn, depending on the ramp-up of spend at Simandou
- Ambition to grow and decarbonise reflected in 2024-25 capex of ~\$9-10bn including up to \$3bn in growth investment, depending on opportunities
- Direct decarbonisation investment of ~\$7.5bn² 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
CAPEX			
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 ^{1,2}	~\$1.5bn ²	~\$1.5bn ²
– \$1.5bn to decarbonise our assets over next three years – Total decarbonisation investment of ~\$7.5bn¹ in this decade, predominantly in second half – Ambition to grow and decarbonise reflected in 2023-24 capex of \$9-10bn including up to \$3bn in growth spending, depending on opportunities – Replacement spending \$2-3bn per year			
Effective tax rate	~30%		
Returns	Total returns of 40 – 60% of underlying earnings through the cycle		

Product group level guidance

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

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

Application of the returns policy

Capital return considerations	Comments
Results for FY 2022	– Operating cash flow of \$16.1bn – FCF of \$9.0bn¹ – 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

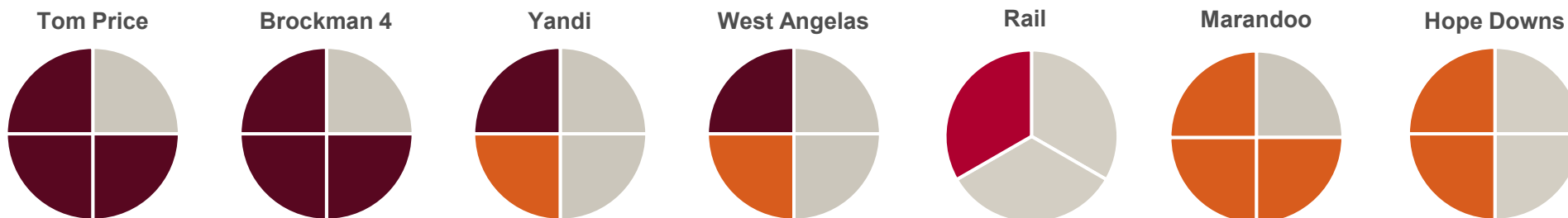
Courage

Curiosity

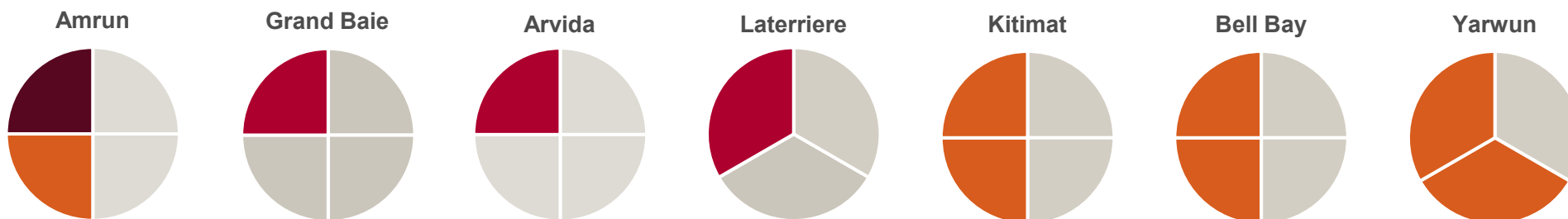


Site-by-site progression: 30 deployments in 16 sites (end of December 2022)

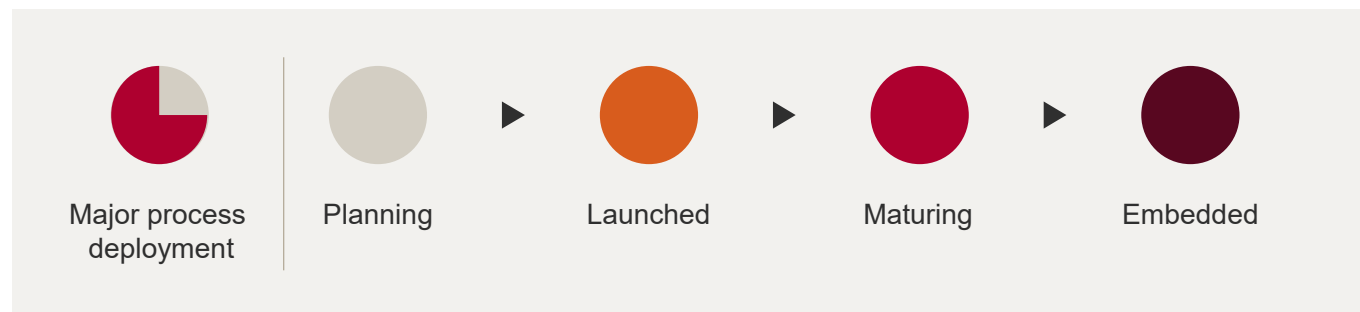
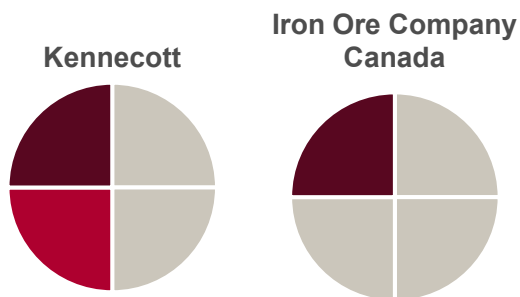
Iron Ore sites deployed



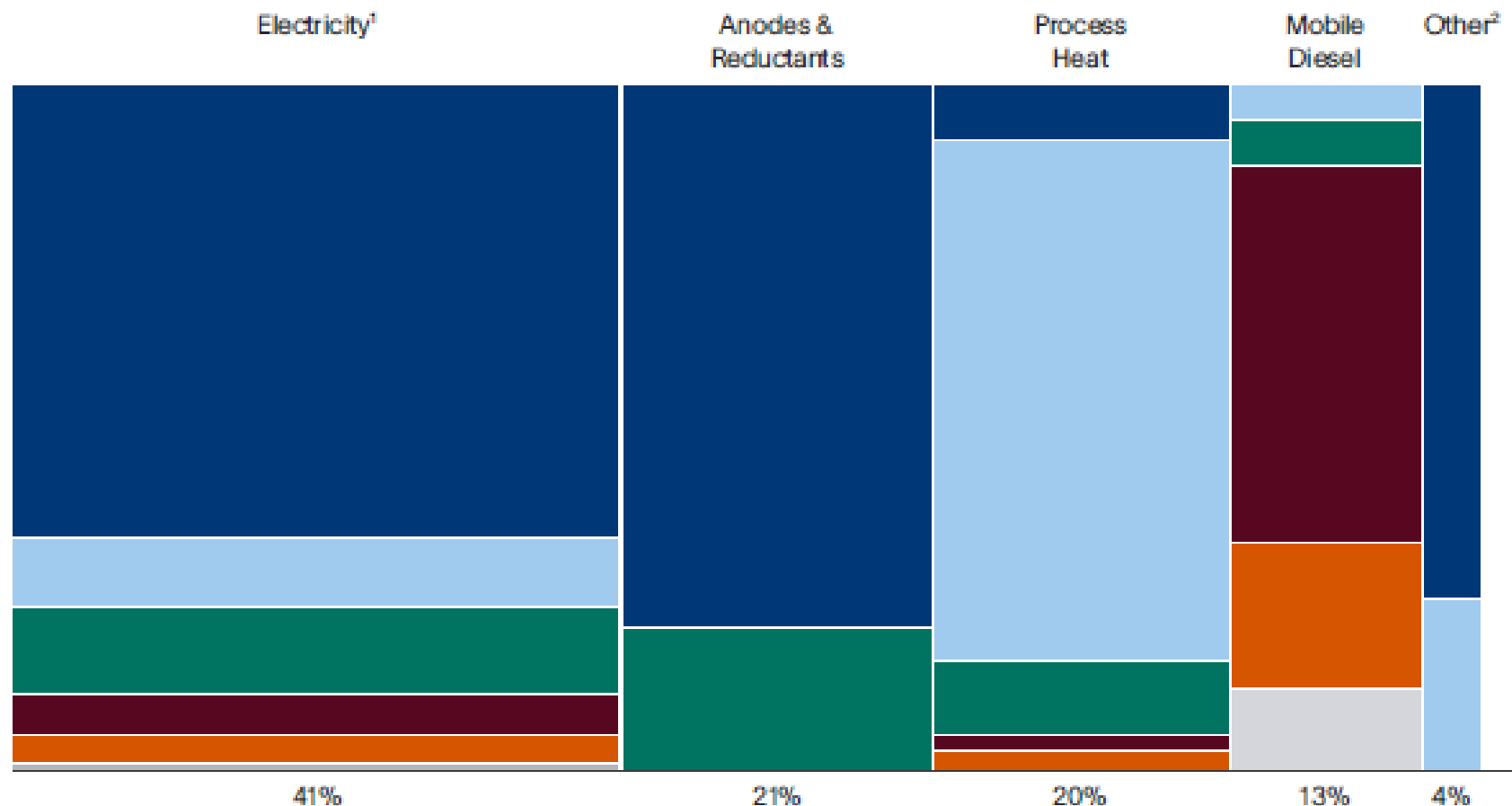
Aluminium sites deployed



Copper/Minerals sites deployed



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



2022

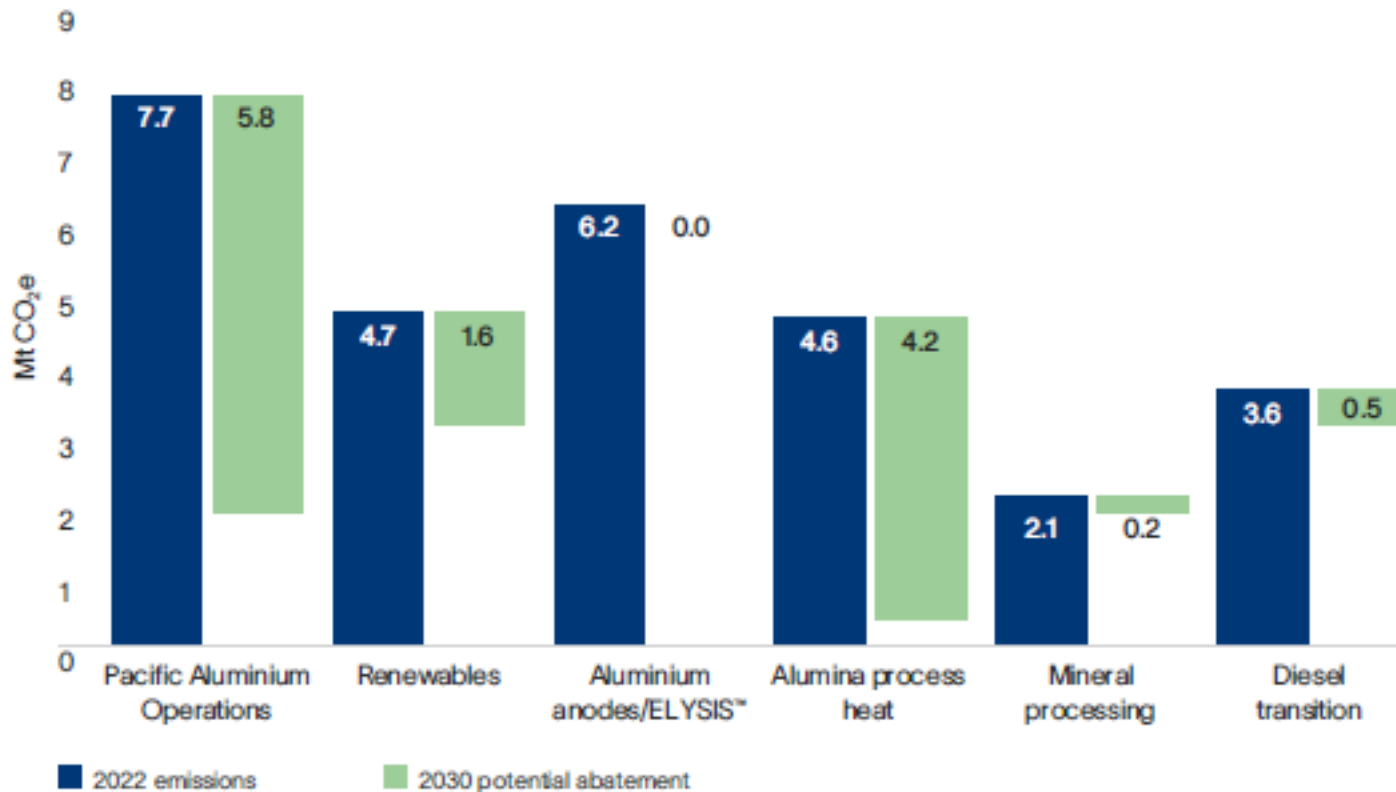
equity basis

30.3
Mt CO₂e

- Aluminium 48%
 - Bauxite & Alumina 21%
 - Minerals 13%
 - Iron Ore 10%
 - Copper 5%
 - Shipping & corporate functions 2%
- % of total

Pursuing an abatement pathway to reach our 2030 target

Mt CO₂e 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

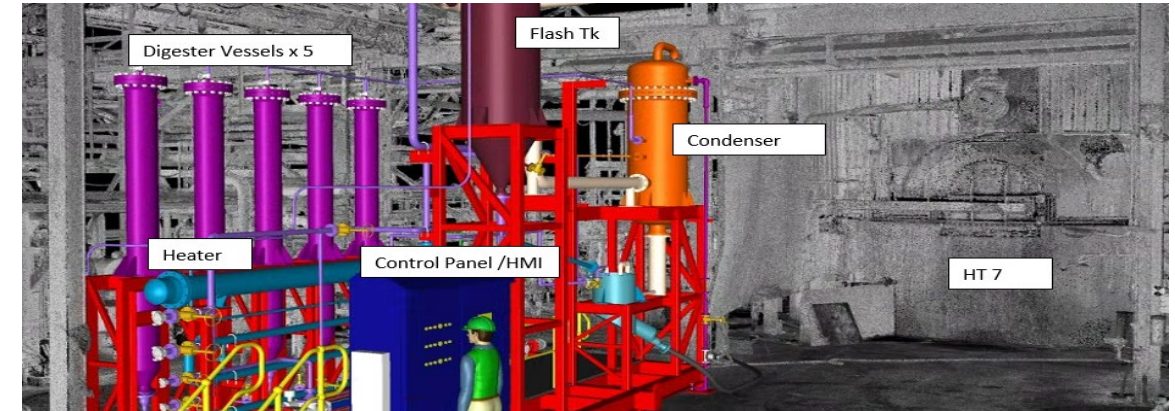


**Value
accretive
at ~\$40/t
carbon price**

- 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 CO₂e emissions, upside based on tracking rather than fixed assembly for some assets

Alumina process heat

QAL double digestion¹

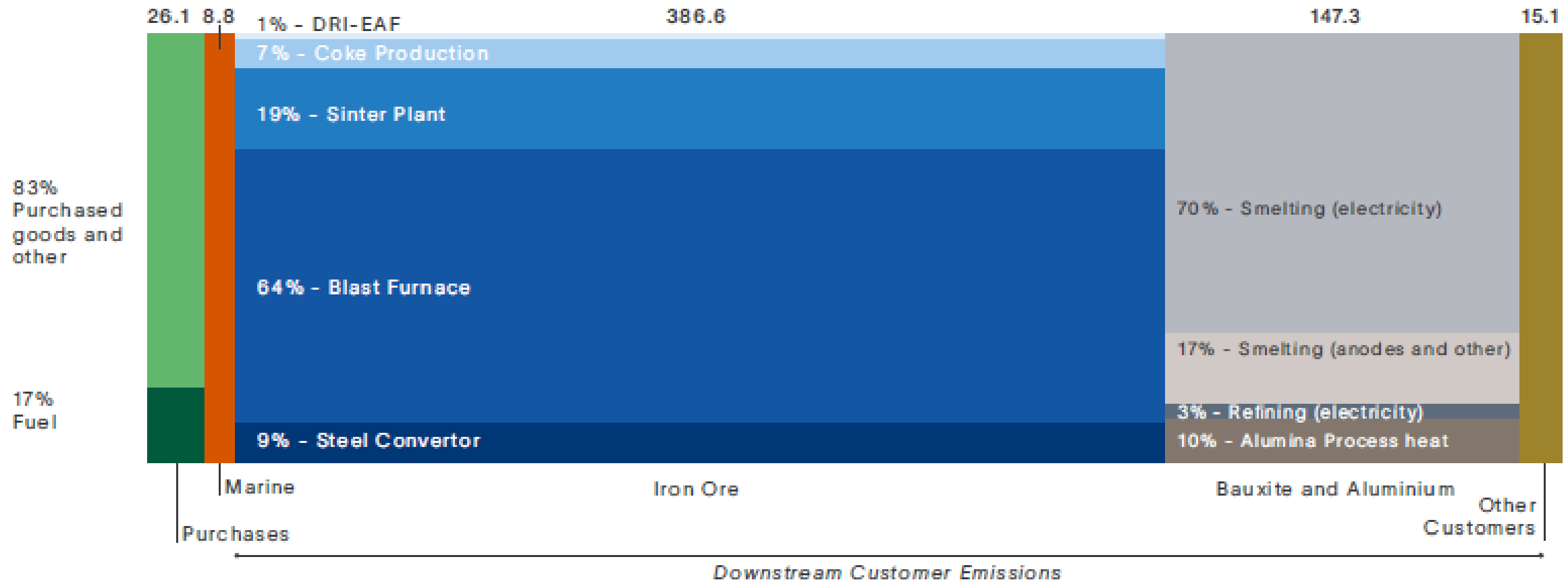


**Value
accretive
at zero
carbon price**

- Energy efficient digestion process
- Capex \$0.3bn
- ~\$80m pa opex cost saving by reducing bauxite, raw material and energy costs
- Abatement reduction of ~350kt CO₂e emissions
- 2023 pilot plant; replication opportunity at Yarwun

Supply chain emissions: scope 3 (equity basis)

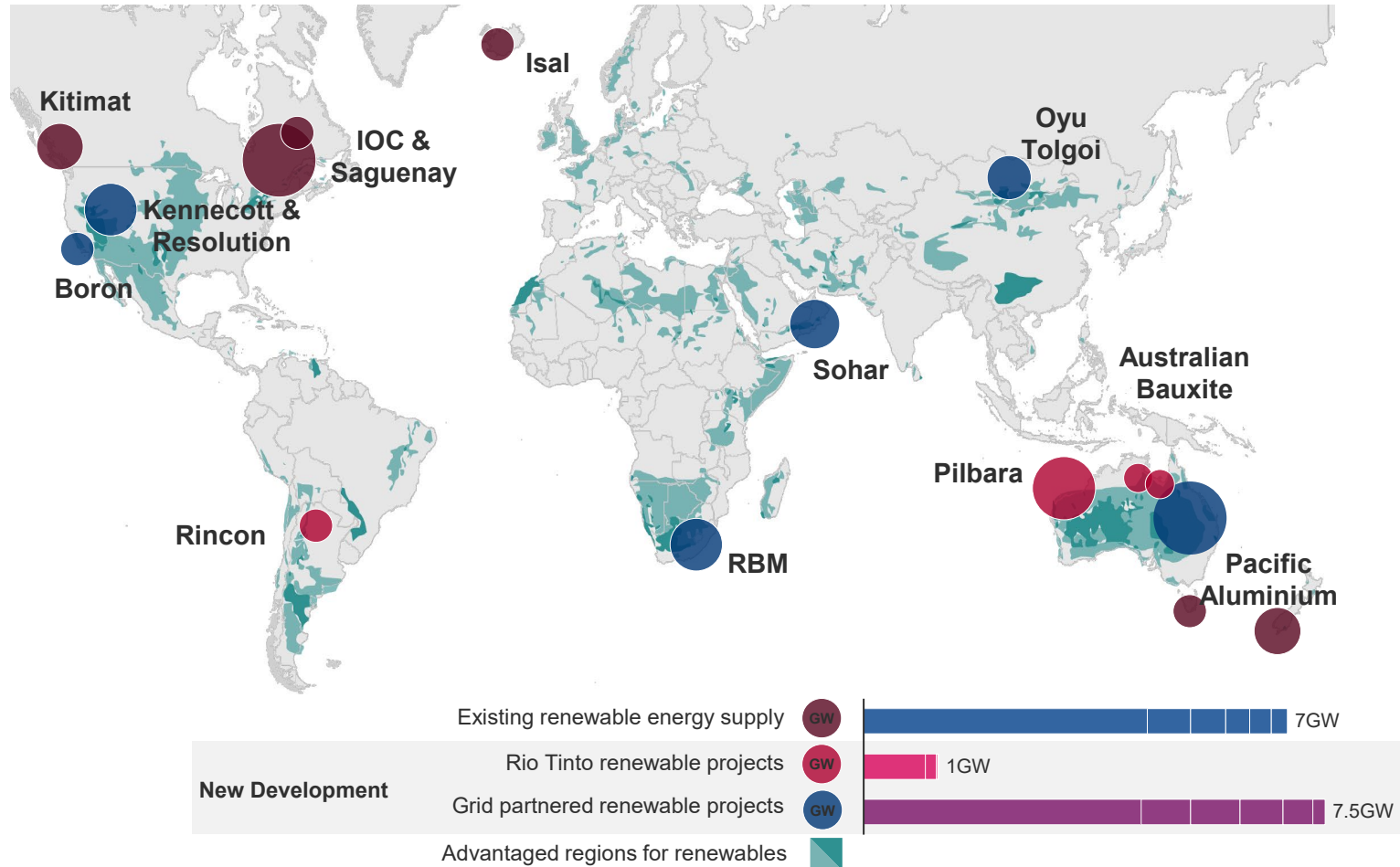
583.9Mt CO₂e



Decarbonisation abatement programmes

Programme	Description & Key Sites	Funding mechanism	Example project - Economics
Pacific Operations Repower	Renewables: smelters Boyne Tomago	– Long-term market contracts – Government partnerships	– Commercial solutions achieved through government partnerships and long-term contracts – Assets will need to remain competitive
Renewables	Solar & wind renewables Pilbara Weipa QMM Kennecott RBM	– Capital - Build own operate – Long-term market contracts	– Phase 1 – 230MW solar + 200MWh of on-grid battery storage is value accretive at a carbon price of <\$40/t driven by \$55m reduction in gas displacement costs at current prices
Diesel	HME & Diesel switching Ph I: Bio-fuels Ph II: Fleet electrification Pilbara IOC	– Capital: – Land acquisitions (non-edible feedstock) – HME	– Bio-fuels: comparable cost to diesel¹ & de-risking of technical risk in fleet electrification – Diesel cost savings post fleet electrification
Alumina process heat	Electrification of boilers Process & energy efficiency H₂ calcination – replacement Vaudreuil QAL Yarwun	– R&D – Capital	– QAL double digestion is value accretive at zero carbon price driven by reducing bauxite, raw material and energy costs – A subset of projects are value accretive at a carbon price of \$50/t to 100/t
Mineral processing	New technologies Electrification of boilers IOC RTIT Borates	– R&D – Capital – Government / industry partnerships	– IOC steam plant fuel reduction - 40MW electric boiler conversion is value accretive at a zero carbon price – Technology and economics remain progressing on a number projects – The electrification of the boilers will require new commercial renewable energy contracts as well as capital
Aluminium anodes	ELYSIS™ technology All smelters	– R&D – Capital	– Commercial scale technology from 2024 – Value generation through scale-up later
Nature-based Solutions	High quality offsets 8 large scale sites	– Capital land acquisitions – Operating costs	– Development costs of high-quality projects on or near our assets are currently estimated at \$20-50/t CO₂e, the range reflects varying project types and landscapes

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 KIMs¹

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



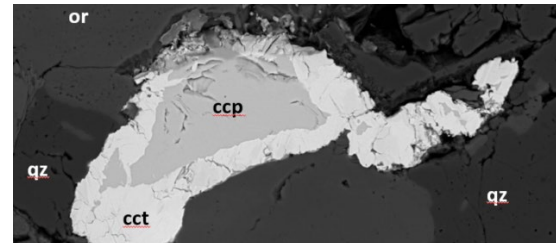
Closure

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 OBK¹ insights

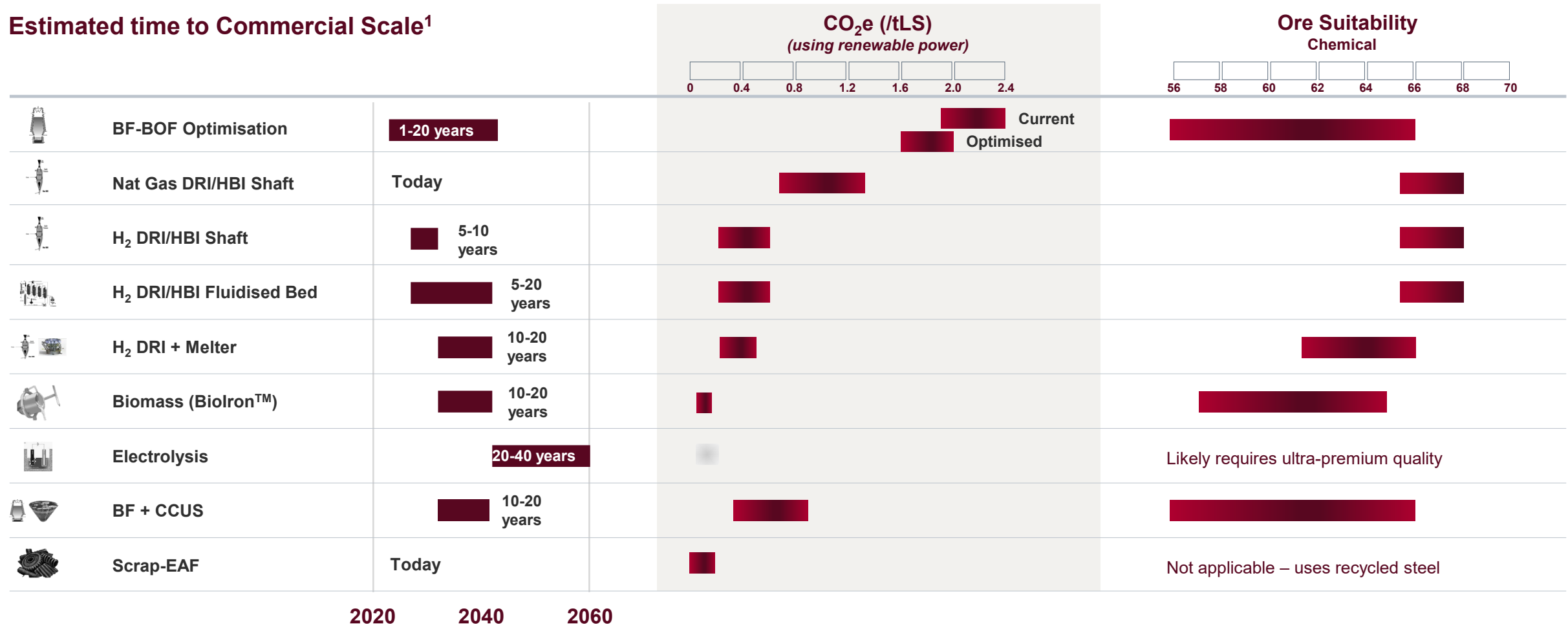


RTX¹: Opportunity Generation

Early warning metallurgy and process route options

Green steel pathways: range of potential technology options available

Estimated time to Commercial Scale¹



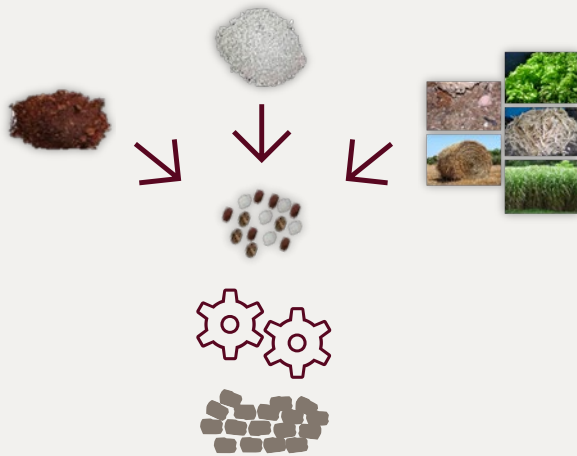
Supporting our customers - steel decarbonisation



BiolIron™ - green alternative pathway for iron & steelmaking

Simple Raw Material Preparation

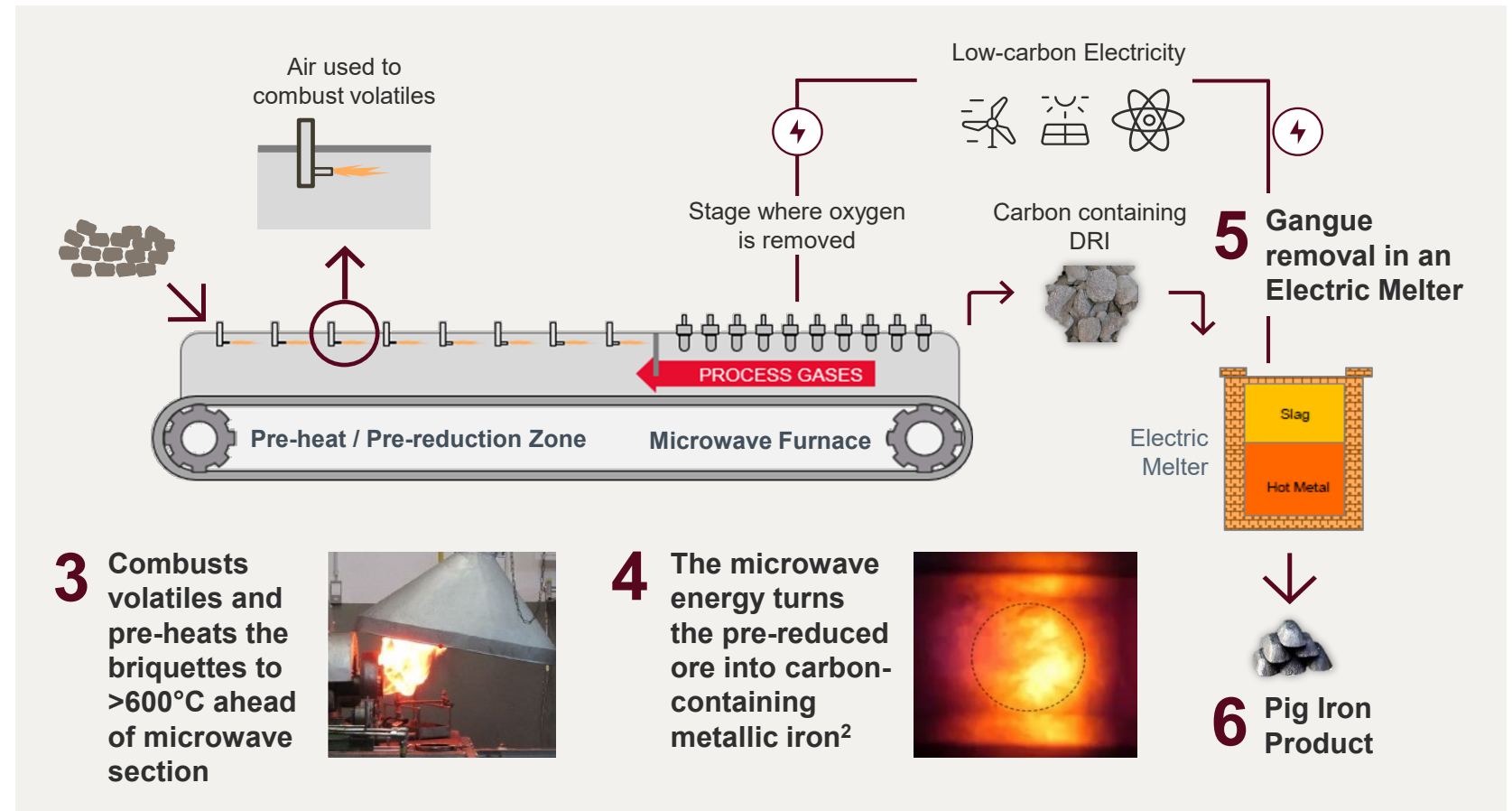
1 Fine Iron Ore, Fluxes and Biomass are blended together...



2 ...and compacted into Green Briquettes



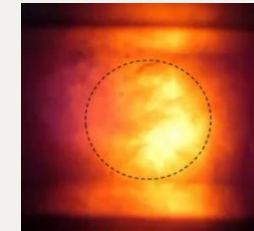
Ironmaking¹



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 iron²

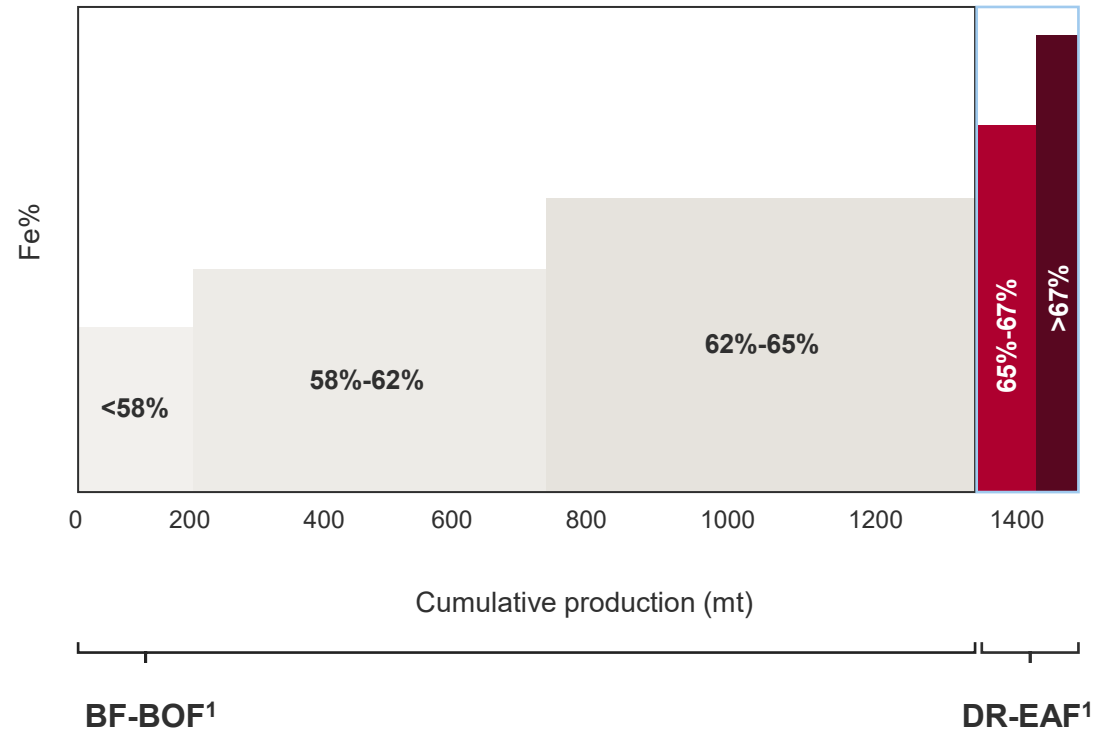


6 Pig Iron Product

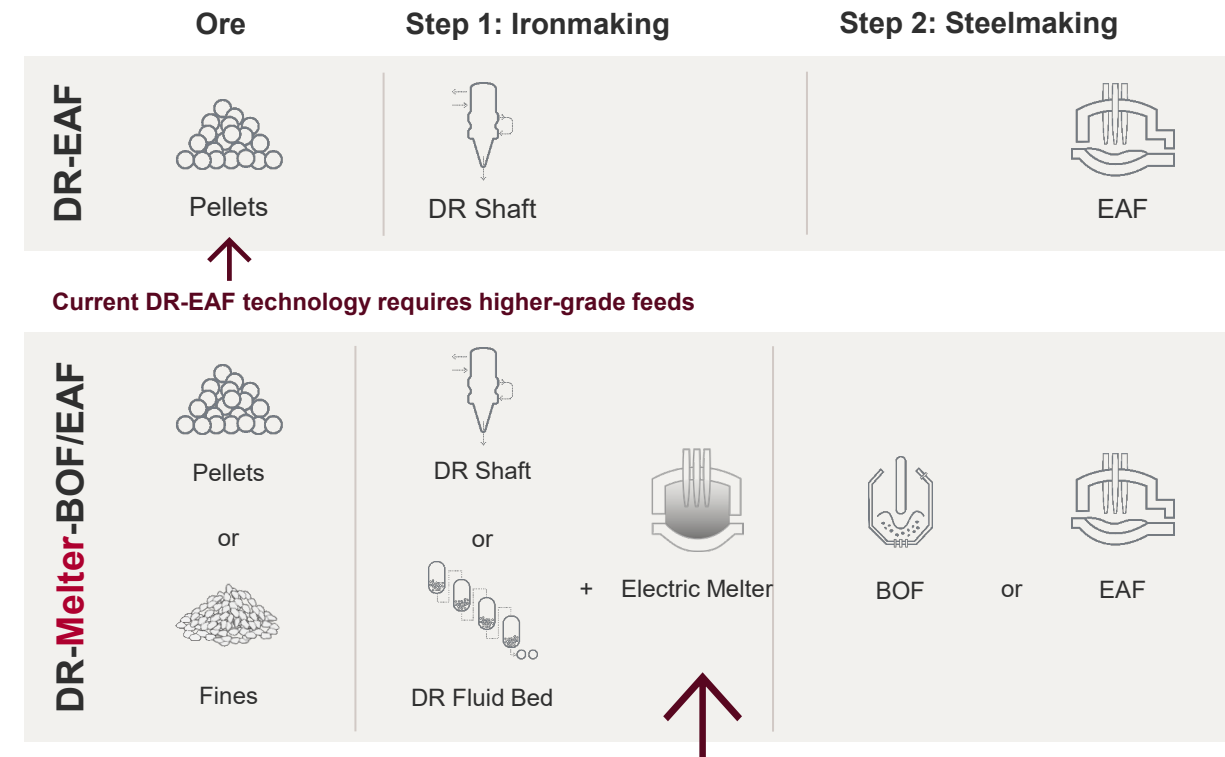
H₂ DRI + Melter - Processing Pilbara ores with hydrogen

Transition to carbon-neutral: the industry is shifting from BF-BOF¹ to H₂ DR-EAF¹ steelmaking

Seaborne Iron Ore Product by Grade



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



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

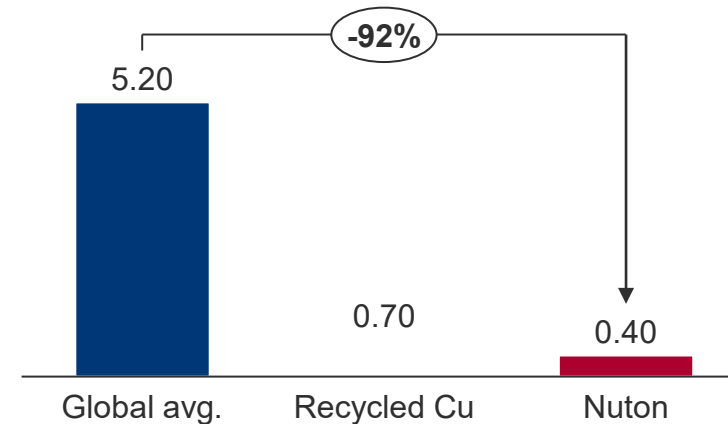
Nuton™ is seen as a key growth lever for Rio Tinto and an enabler for low-carbon copper

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 (CO₂/t)



Reduced CO₂ emissions (CO₂/t)



Efficient water consumption



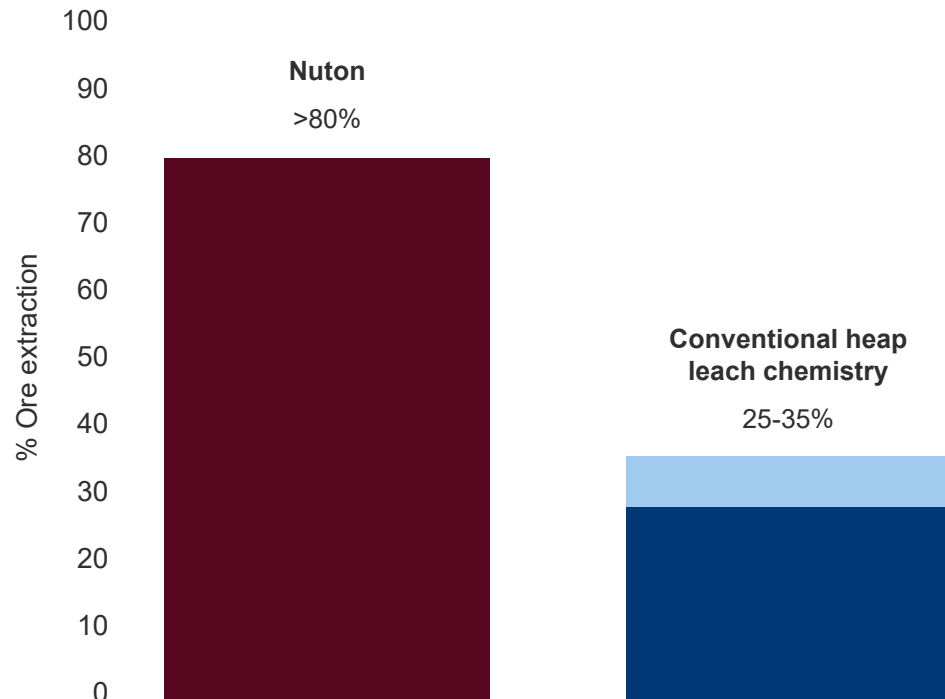
Ability to restore and reclaim mine sites by reprocessing mine waste

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

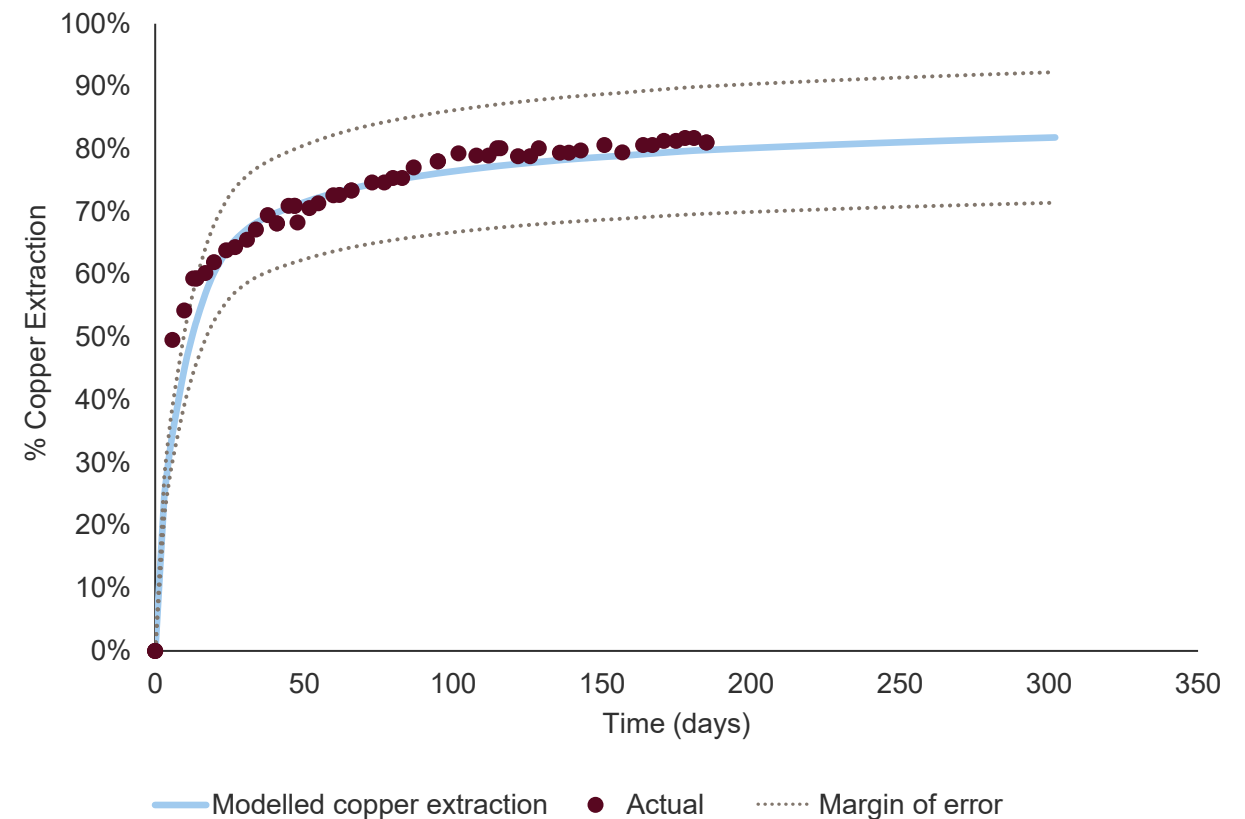
Nuton™ offers exceptional recovery performance

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

AHS	Autonomous Haulage System	EC	European Commission	Mtpa	Million tonnes per annum	RTFT	Rio Tinto Fer et Titane
AIFR	All Injury Frequency Rate	EMEA	Europe, Middle East and Africa	MACC	Marginal Abatement Cost Curve	RTIO	Rio Tinto Iron Ore
Al	Aluminium	ESG	Environmental, Social, and Governance	MW	Megawatt	RTX	Rio Tinto Exploration
AL₂O₃	Aluminium oxide	EU	European Union	MWh	Megawatt hour	SPS	Safe Production System
ARDC	Arvida Research and Development Centre	Fe	Iron	NbS	Nature-based Solutions	S&P	Standard & Poor's
ASX	Australian Stock Exchange	FOB	Free On Board	NPV	Net present value	T	Tonne
ATS	Aluminium Technology Solutions	FS	Feasibility Study	O&M	Operation & Maintenance	t/ha	Tonnes per hectare
B₂O₃	Boric oxide	GHG	Greenhouse gas	OT	Oyu Tolgoi	tLS	Tonnes of liquid steel
Bn	Billion	GFC	Global Financial Crisis	Pa	Per annum	tCO₂e	Tonne of carbon dioxide equivalent
BF	Blast furnace	Gt	Giga tonnes	PJ	Petajoule	TiO₂	Titanium dioxide
BOF	Blast Oxygen Furnace	GW	Gigawatt	PPA	Power Purchasing Agreement	tpa	Tonnes per annum
BSL	Boyne Smelter Limited	H₂	Hydrogen	PP&E	Plant, Property & Equipment	TWh	Terawatt hour
CAGR	Compound annual growth rate	HBI	Hot briquetted iron	QAL	Queensland Alumina Limited	UB	Ulaanbaatar
CCGT	Combined Cycle Gas Turbine	HG	High grade ore	QMM	QIT Madagascar Minerals	USD	United States dollar
CCUS	Carbon capture, utilisation and storage	HME	Heavy Mining Equipment	R&D	Research and development	VAP	Value-added product
CCS	Carbon Capture and Storage	IEA	International Energy Agency	RBM	Richards Bay Minerals	WA	Western Australia
CO₂	Carbon dioxide	IOC	Iron Ore Company of Canada	RE	Renewable Energy	WTS	Western Turner Syncline
CO₂e	Carbon dioxide equivalent	IRR	Internal rate of return	RRF	Recovery and Resilience Facility	YoY	Year on Year
Cu	Copper	JV	Joint Venture	ROCE	Return on capital employed	YTD	Year to date
DRI	Direct Reduction Iron	LCE	Lithium Carbonate Equivalent	RT	Rio Tinto		
EAF	Electric Arc Furnace	LCOE	Levelised Cost of Energy	RTE	Round trip efficiency		
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortisation	M	Millions				
		Mt	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

RioTinto