

The background image shows a large concrete dam with multiple spillways, situated in a lush green valley. Behind the dam is a steep, densely forested mountain. The top of the mountain is covered in snow. In the foreground, there is a calm body of water reflecting the surrounding greenery. A small boat is visible on the right side of the water. The overall scene is a mix of natural beauty and industrial infrastructure.

RioTinto

2022 Half Year results

Grow, decarbonise and deliver
attractive shareholder returns

27 July 2022

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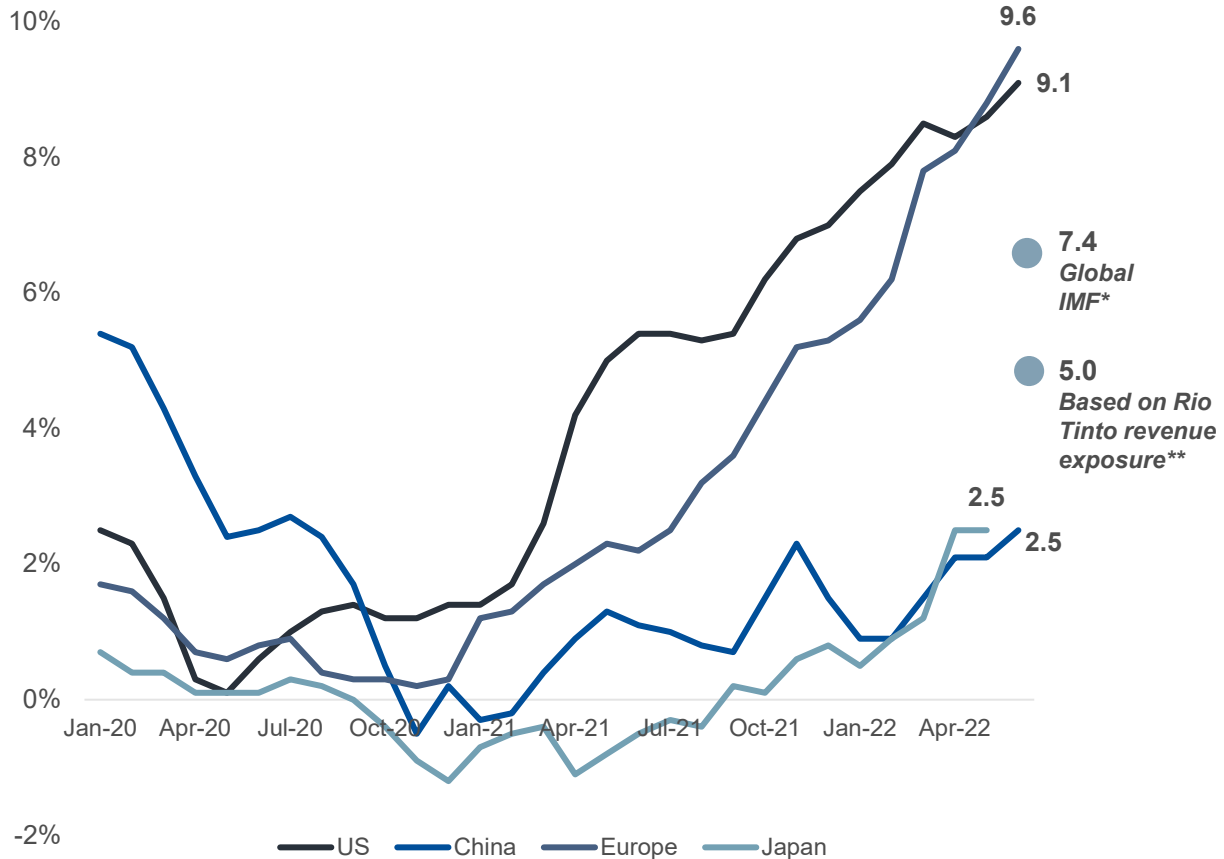
Jakob Stausholm

Chief Executive

Oyu Tolgoi, Mongolia

A dynamic world full of opportunities and some challenges

Consumer Price Index



- Short-term outlook remains unpredictable. Presents some challenges but offers many opportunities
- Heightened inflation is leading to intervention by Central Banks and Governments – in turn, adding to risk of potential recessions
- China has modest inflationary pressures and more room to maintain a supportive policy stance and introduce further easing measures to promote growth
- Longer term trends we identified are unchanged – underpinned by ongoing urbanisation and the energy transition
- We have the portfolio, people and strategy to deliver long term and sustainable value

Source: Bloomberg | * International Monetary Fund: World Economic Outlook, April 2022 | ** Weighted by first half 2022 revenue by destination

Foundations for a stronger Rio Tinto emerging

Best operator

Transform our safe operating performance

Empower our workforce through Rio Tinto Safe Production System

Impeccable ESG credentials

Accelerate our own decarbonisation

Help our customers develop products and services that decarbonise

Excel in development

Grow in commodities enabling the global energy transition

Deliver value-adding growth whilst maintaining financial strength and resilience

Social licence

Making long-term, positive change to our culture
Attractive partner to our customers and host countries
Partner and restore trust within the community for shared success

Robust financials; focused on strategy

0.35

All injury frequency rate (AIFR)

Gudai-Darri first ore

Ramping up

Oyu Tolgoi first draw bell

First sustainable production in H1 2023

Rincon lithium early works funding

Accelerate market entry and support a full scale operation

Rio Tinto Safe Production System

15 deployments across 11 sites

\$16bn

Underlying EBITDA

34%

Underlying ROCE

Free cash flow of \$7bn

Net cash of \$0.3bn

\$4.8bn*

Taxes & government royalties

\$4.3bn

Dividends declared to shareholders

* Taxes and government royalties in respect of underlying earnings in first half 2022





Peter Cunningham

Chief Financial Officer

Karratha rail, Western Australia

Robust financial results against all-time highs in 2021

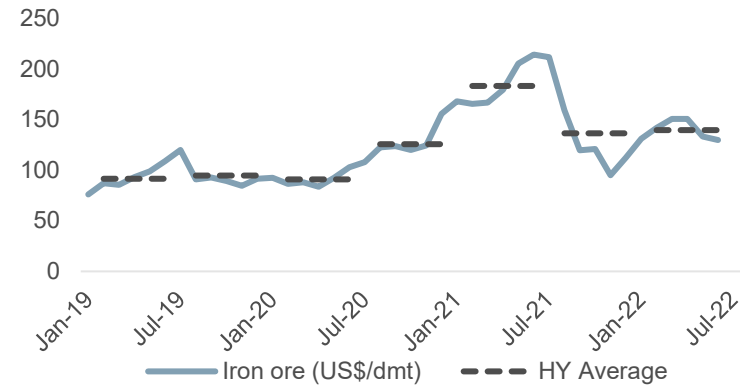
(\$bn, except where stated)	H1 2022	H1 2021	H1 2020	vs H1 2021	vs H1 2020
Consolidated sales revenue	29.8	33.1	19.4	- 10%	+54%
Underlying EBITDA	15.6	21.0	9.6	- 26%	+63%
Underlying earnings	8.6	12.2	4.8	- 29%	+79%
Net earnings	8.9	12.3	3.3	- 28%	+170%
Underlying ROCE	34%	50%	21%		
Cash flow from operations	10.5	13.7	5.6	- 23%	+88%
Capital expenditure	3.1	3.3	2.7	- 6%	+15%
Free cash flow	7.1	10.2	2.8	- 30%	+154%
Total dividend	4.3	9.1	2.5	- 53%	+72%
Total dividend per share (\$)	2.7	5.6	1.6	- 52%	+69%
Net cash	0.3	1.6*			

* At 31 December 2021



Rising macro economic uncertainty

Iron Ore¹ (-24% YoY)

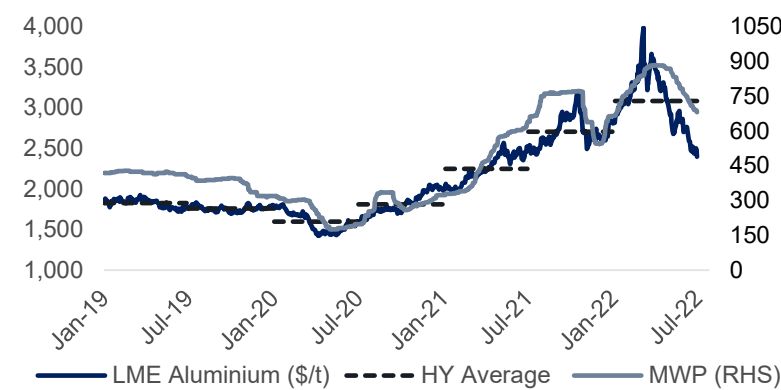


Extended COVID restrictions in China impacted steel demand to a greater extent than steel production and iron ore consumption. Demand recovery continues in the rest of the world

Total H1 22 seaborne supply contracted due to the war in Ukraine and lower exports from India. Aggregate shipments from the major low-cost producers remained flat compared to the previous year

Iron ore prices remained largely unchanged just below \$140/dmt CFR half-on-half supported by tight fundamentals, in turn reflecting lower shipments from Ukraine and Russia and challenges to non-majors supply

Aluminium² (+37% YoY)



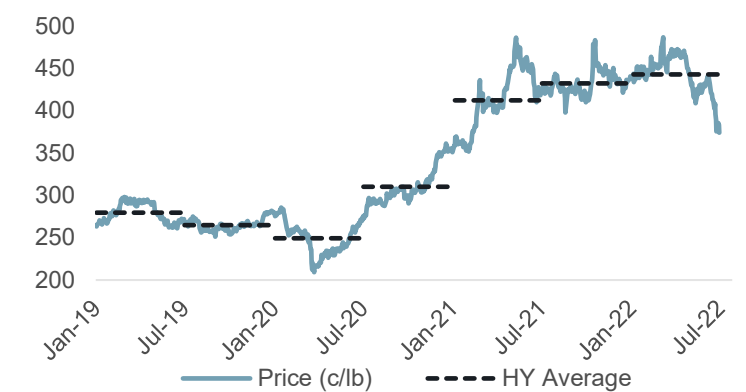
Firm demand in North America construction and packaging. China demand impacted by COVID lockdowns

Smelters remain at risk of closure in the US and Europe on high energy costs. Expected disruption to Russian aluminium did not materialise

Chinese output rises on restarts and commissioning of new capacity, adding ~4Mtpa in operational capacity

A decline in global inventories has been supportive of prices as physical markets remained tight

Copper³ (+7% YoY)



Demand prospects weakened by COVID restrictions in China, while inflation and tighter monetary policy affected consumer sentiment in rest of the world

Sharp reversal in speculative financial positions reversing a long position of over 1Mt in the first quarter to a c0.2Mt net short by the end of June

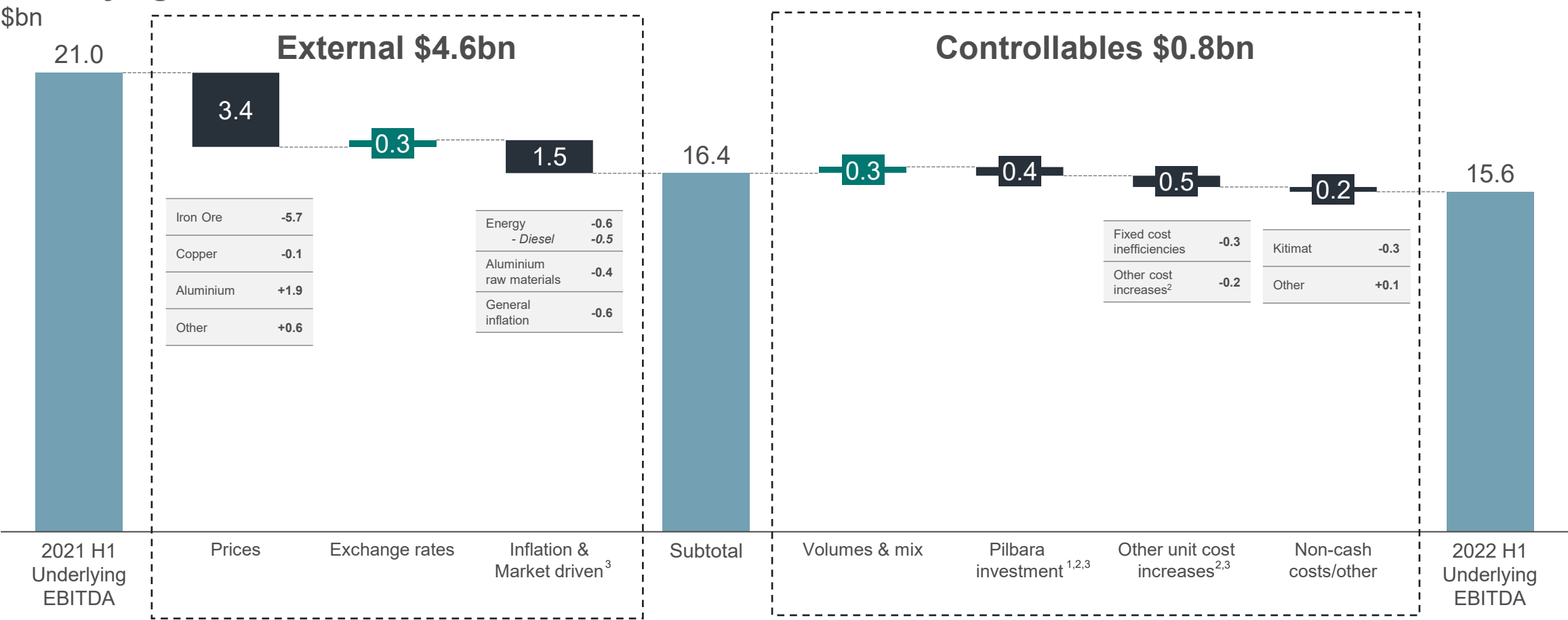
Expect growth from new mines and expansions but disruption risks persist due to weather, social, environmental and operating factors

Exchange inventories remain at multi-year lows

¹ Monthly average Platts (CFR) index for 62% iron fines | ² Average LME price. MWP = US Mid-West premium | ³ Average LME price | YoY = change in average price during first half compared to previous first half
Sources: Rio Tinto Market Analysis

Disciplined focus on cash costs in a period of rising inflation

Underlying EBITDA



¹ Gudai-Darri increased workforce to support ramp up and targeted investments in Pilbara pit health and system reliability | ² Includes a portion of above general inflationary cost pressures associated with higher contractor rates | ³ Total impact of the change in operating unit cash costs of -\$1.3bn comprises aluminium raw materials (-\$0.4bn), Pilbara investment (-\$0.4bn) and Other (-\$0.5bn)

RTSPS supports improvements across safety, people and productivity

RTSPS impact

Safety

Practices and training have improved safety performance

- AIFR measured at the asset



Kennecott Concentrator

AIFR

YTD – 0.36
2021 – 0.53

32% improvement YTD
compared to 2021

West Angelas Drill & Blast

AIFR

YTD – 0.33
2021 – 0.58

43% improvement YTD
compared to 2021

IOC Concentrator

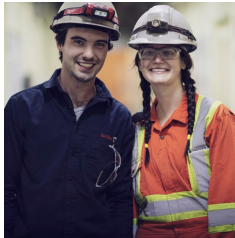
AIFR***

YTD – 0.37
2021 – 0.73

50% improvement YTD
compared to 2021*

People

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



+10%

at the deployment compared to overall site from previous survey

+7%

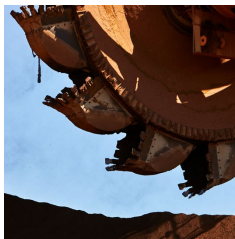
at the deployment compared to overall site change from previous survey

+16%

at the deployment compared to overall site from previous survey

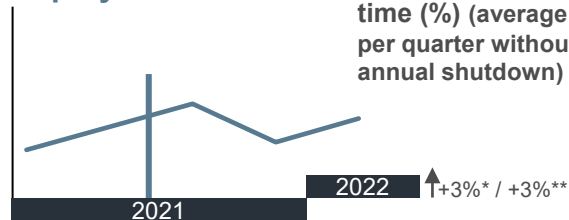
Productivity

SPS supports operating time by addressing asset stability and availability



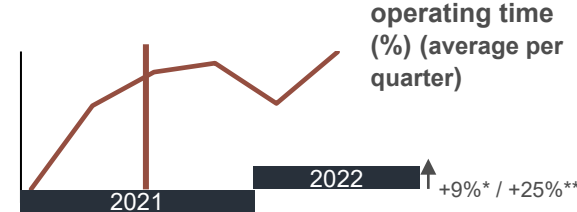
Deployment Start

Asset operating time (%) (average per quarter without annual shutdown)



Deployment Start

Production Drill operating time (%) (average per quarter)



Deployment Start**

Asset operating time (%) (monthly without annual shutdown)



RTSPS = Rio Tinto Safe Production System | AIFR = All Injury Frequency Rate | * Absolute change - H1 2022 vs H1 2021 (Kennecott & IOC data excludes annual shutdown) | ** Improvement change - H1 2022 vs H1 2021 (Kennecott & IOC data excludes annual shutdown) | *** IOC has been on a safety improvement journey for more than two years with RTSPS advancing efforts

Iron Ore

Ramp-up of Gudai-Darri is pivotal

Operating metrics	H1 2022	H1 2021 comparison	2022 guidance
Average realised price ^{1, 3}	\$120.5/t	- 28%	
Shipments ³ (100% basis)	151.4Mt	- 2%	320 – 335Mt
Unit cost ^{2, 3}	\$21.2/t	+ 22%	\$19.5 - \$21.0

Financial metrics (\$bn)			
Gross product sales	16.6	- 23%	
EBITDA	10.4	- 35%	
Margin (FOB) ³	70%	- 9pp	
Operating cash flow	8.5	- 23%	
Capex	1.5	- 23%	Sustaining ~\$1.5 ⁴
Free cash flow	7.0	- 23%	
Underlying ROCE	73%	- 48pp	

¹ Dry metric tonne, FOB basis | ² Unit costs are based on operating costs included in EBITDA and exclude royalties (state and third party), freight, depreciation, tax and interest. Unit costs are stated at an Australian dollar exchange rate of 0.71 and excludes COVID-19 response costs of 0.6 per tonne (0.5 in first half 2021) | ³ Pilbara only. All other figures reflect Pilbara operations, portside trading and Dampier Salt | ⁴ Subject to ongoing inflationary pressure

Continue to manage COVID-19: currently elevated levels of unplanned absences at our Pilbara operations due to spikes in cases

Recovery in production in Q2 supported by continued focus on mine pit health and commissioning of the Gudai-Darri mine

On track for full year guidance dependent on ramping up Gudai-Darri and replacement mines

Higher levels of SP10 due to delays in mine development sequence

Higher input prices for materials including diesel and labour; unit cost guidance maintained with increased volumes in the second half

Continue to progress new ways of working with Traditional Owner Groups: Puutu Kunti Kurrama and Pinikura and Yinhawangka co-management Heads of Agreement



Aluminium

Strong pricing lifted our industry-leading margins with smelter ramp-ups in the second half

Operating metrics	H1 2022	H1 2021 comparison	2022 guidance
Aluminium realised price ¹	\$3,808/t	+ 45%	
Average alumina price ²	\$397/t	+ 38%	
Production – bauxite	27.8Mt	+ 2%	54 to 57Mt
Production – alumina	3.8Mt	- 7%	7.6 to 7.8Mt
Production – aluminium	1.5Mt	- 9%	3.0 to 3.1Mt
Canadian smelters – hot metal cash costs ³	\$1,732	+ 37%	

Financial metrics (\$bn)			
Gross product sales	7.8	+ 31%	
EBITDA	2.9	+ 49%	
Margin (integrated operations)	41%	+ 5pp	
Operating cash flow	2.1	+ 51%	
Capex (excl. EAUs)	0.6	+ 28%	
Free cash flow	1.5	+ 65%	
Underlying ROCE	20%	+ 8pp	

¹ LME plus all-in premiums (product and market) | ² Platts Alumina PAX FOB Australia | ³ Operating costs defined as hot metal cash costs for the Canadian smelters (alumina at market price)

Substantial increase in FCF to \$1.5bn on strength in LME price and heightened demand for value-added product (VAP)

Higher input costs for key materials such as caustic soda, coke, pitch and anodes; higher raw materials also increasing inventory balances

Pacific refineries impacted by significant COVID-19 unplanned absences and above average rainfall in Eastern Australia

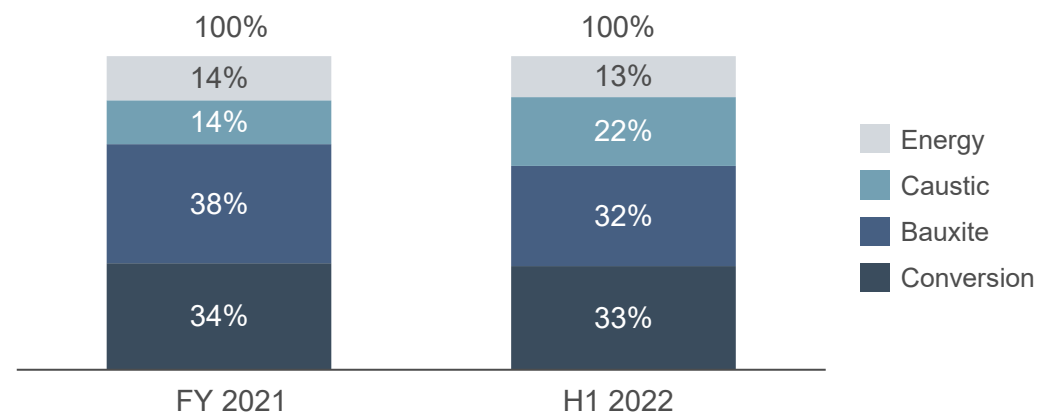
Controlled restart at Kitimat in Q2 2022 following strike action, with ramp-up progressing subject to plant stability. Production at Boyne stabilised and impacted cells ramping up

Kemano hydropower tunnel project achieved water flow in June ensuring the long-term, sustainable operation of Kitimat



Higher price environment for Aluminium raw materials

Alumina refining*

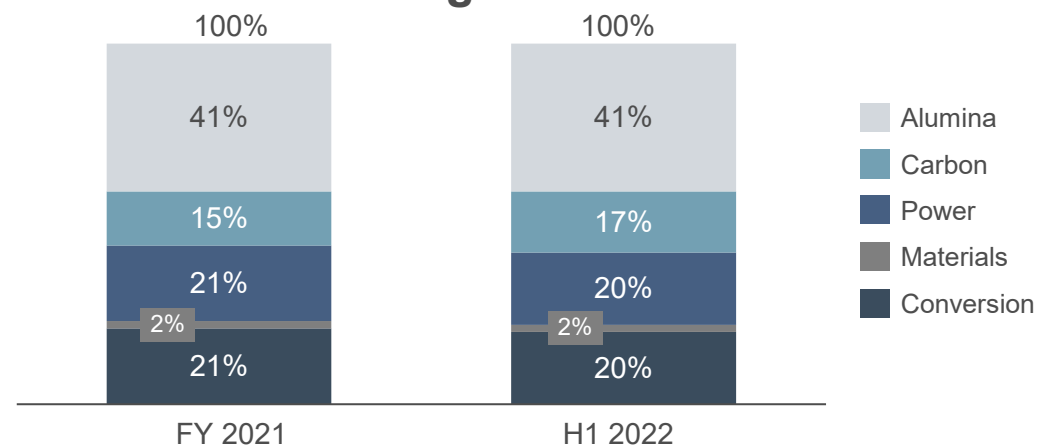


Input costs (nominal)	H1 2021 index price	H2 2021 index price	H1 2022 index price	Inventory flow ⁷	FY22 Annual cost sensitivity
Caustic Soda ¹	274 \$/t	535 \$/t	675 \$/t	3 - 4 months	\$10m per \$10/t
Natural Gas ²	2.85 \$/t	4.59 \$/t	6.02 \$/t	0 - 1 month	\$4m per \$0.10/GJ
Fuel Oil ³	64.6 \$/bbl	76.3 \$/bbl	105.9 \$/bbl	1 - 2 months	\$2m per \$10/barrel

^{1.} North East Asia FOB
^{2.} Henry Hub
^{3.} Brent

7. Based on quarterly standard costing (moving average)

Aluminium smelting*



Input costs (nominal)	H1 2021 index price	H2 2021 index price	H1 2022 index price	Inventory flow ⁸	FY22 Annual cost sensitivity
Alumina ⁴	288 \$/t	369 \$/t	395 \$/t	1 - 2 months	\$64m per \$10/t
Petroleum Coke ⁵	373 \$/t	491 \$/t	667 \$/t	2 - 3 months	\$11m per \$10/t
Coal Tar Pitch ⁶	748 \$/t	818 \$/t	1,103 \$/t	1 - 2 months	\$2m per \$10/t

^{4.} LME Australia
^{5.} US Gulf (FOB)
^{6.} North America (FOB)

8. Based on quarterly standard costing (moving average)

Copper

Continued progress at Oyu Tolgoi underground; strong average pricing offset by lower by-product volumes

Operating metrics	H1 2022	H1 2021 comparison	2022 guidance
Copper realised price ¹	447c/lb	+ 8%	
Production – mined copper	252kt	+ 7%	500 to 575kt
Production – refined copper	104kt	- 7%	230 to 290kt
Unit cost ²	148c/lb	+ 108%	130-150c/lb

Financial metrics (\$bn)			
Gross product sales	3.5	- 6%	
EBITDA	1.5	- 27%	
Margin (product group operations)	54%	- 7pp	
Operating cash flow	1.1	- 15%	
Capex	0.7	+ 9%	
Free cash flow	0.3	- 45%	
Underlying ROCE ³	10%	- 5pp	

¹ Average realised price for all units sold. Realised price does not include the impact of the provisional pricing adjustments, which negatively impacted revenues in the first half of 2022 by \$140m (first half 2021 positive impact of \$202m). | ² Unit costs for Kennecott, OT and Escondida utilises the C1 unit cost calculation where Rio Tinto has chosen Adjusted Operating Costs as the appropriate cost definition. C1 costs are direct costs incurred in mining and processing, plus site G&A, freight and realisation and selling costs. Any by-product revenue is credited against costs at this stage |

³ Underlying ROCE is defined as underlying earnings (product group operations) excluding net interest divided by average capital employed

Lower sales volumes at Kennecott due to unreliable smelter performance from significant COVID-19 disruptions and labour constraints. Lower by-products: gold at Oyu Tolgoi and gold and moly at Kennecott

Increased cost pressures from labour, consumables and raw materials at Kennecott and Oyu Tolgoi

Oyu Tolgoi first and second draw bells fired in June. Total cost and schedule reforecast for underground completed: \$7.06bn. First production in H1 2023. \$50m five-year funding programme for Khanbogd town

Escondida higher concentrator grade and higher throughput

Production of tellurium at Kennecott - one of only two US producers of the critical mineral used in solar panels



Minerals

Price support in some commodities however cost pressures at operations

Operating metrics	H1 2022	H1 2021 comparison	2022 guidance
IOC pellets price ¹	\$199/t	- 9%	
TiO ₂ slag price ²	\$913/t	+ 18%	
Production – IOC	5.0Mt	- 1%	10.0 to 11.0Mt
Production – TiO ₂	0.6Mt	- 2%	1.1 to 1.4Mt
Production – Borates	0.3Mt	+ 5%	~0.5Mt
Production – Diamonds ³	2.1Mct	+ 15%	4.5 to 5.0Mct

Financial metrics (\$bn)			
Gross product sales	3.4	+ 4%	
EBITDA	1.3	- 10%	
Margin (product group operations)	40%	- 6 pp	
Operating cash flow	0.6	+ 9%	
Capex	0.3	+ 29%	
Free cash flow	0.4	- 2%	
Underlying ROCE ⁴	21%	- 2 pp	

IOC – record safety performance and monthly records for concentrate production and total material moved

Borates improved reliability and higher grades

Operational disruptions at QMM in Madagascar following cyclones

Operations experienced cost pressures including fuel and other consumables. Also increased maintenance investment to support reliability at RBM and RTFT

Rincon lithium: accelerated development pathway. Approved funding for early works and small starter plant

Production of high purity scandium oxide at RTFT – first North American producer of critical mineral

¹ Wet metric tonne | ² TZMI chloride slag assessment in June 2022, excludes UGS | ³ Increase in production reflects 100% ownership of Diavik (previously 60%) from 1st November 2021 |

⁴ Underlying ROCE is defined as underlying earnings (product group operations) excluding net interest divided by average capital employed



Disciplined allocation of capital remains at our core

1 Essential capex
Integrity, Replacement, Decarbonisation

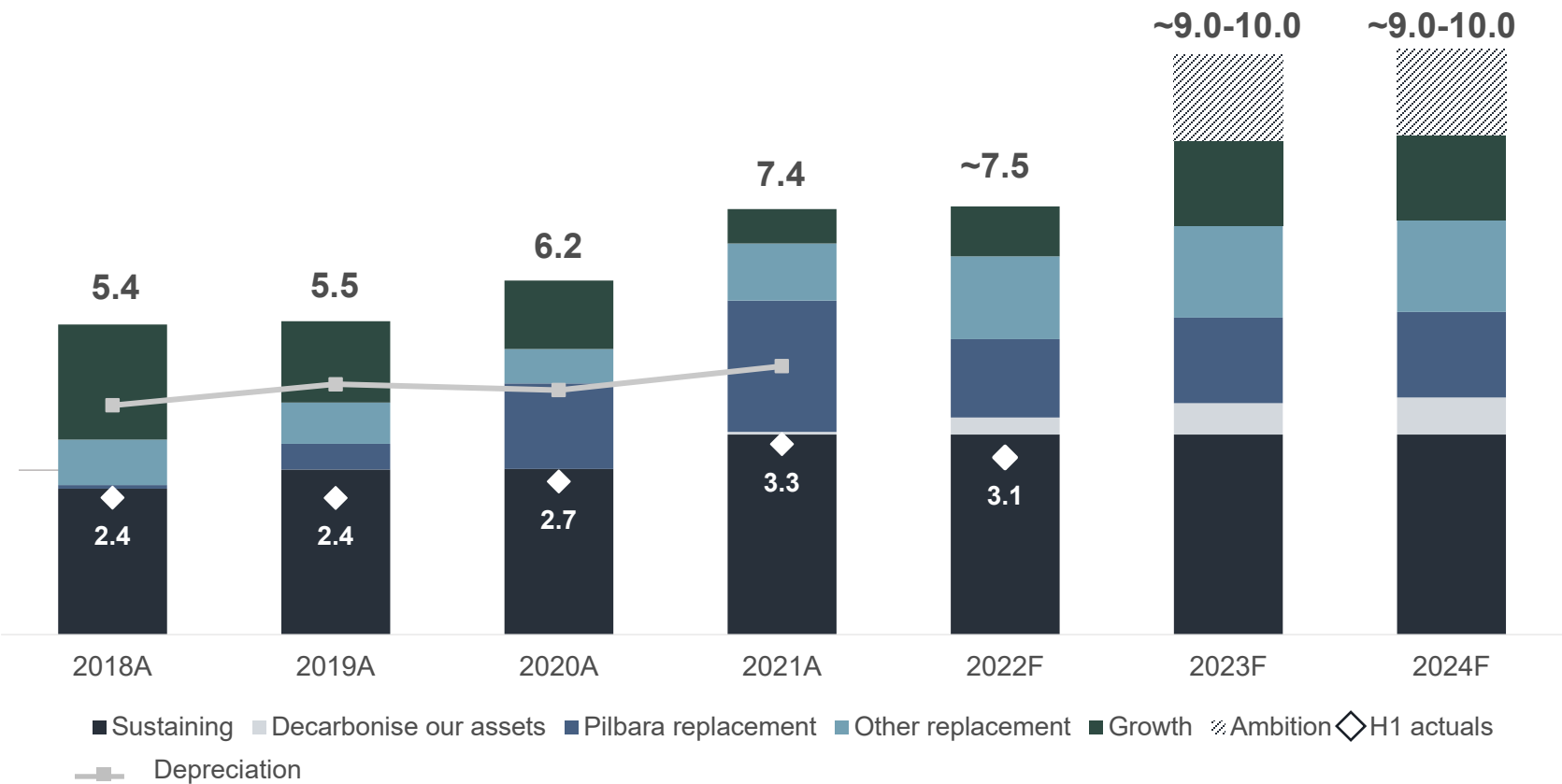
2 Ordinary dividends

3 Iterative cycle of...



Disciplined investing for growth and decarbonisation

Capital expenditure profile
\$bn



Reduced 2022 guidance due to stronger US dollar and rephasing of decarbonisation and development projects

Ambition to grow and decarbonise reflected in 2023-24 capex of up to ~\$9-10bn including up to \$3bn in growth investment, depending on opportunities

Total decarbonisation investment of ~\$7.5bn* from 2022 to 2030, predominantly in second half of decade

~\$1.5bn* to decarbonise our assets from 2022 to 2024

Sustaining capital of ~\$3.5bn per year including Pilbara Iron Ore of ~\$1.5bn**

Replacement spending unchanged at \$2-3bn per year

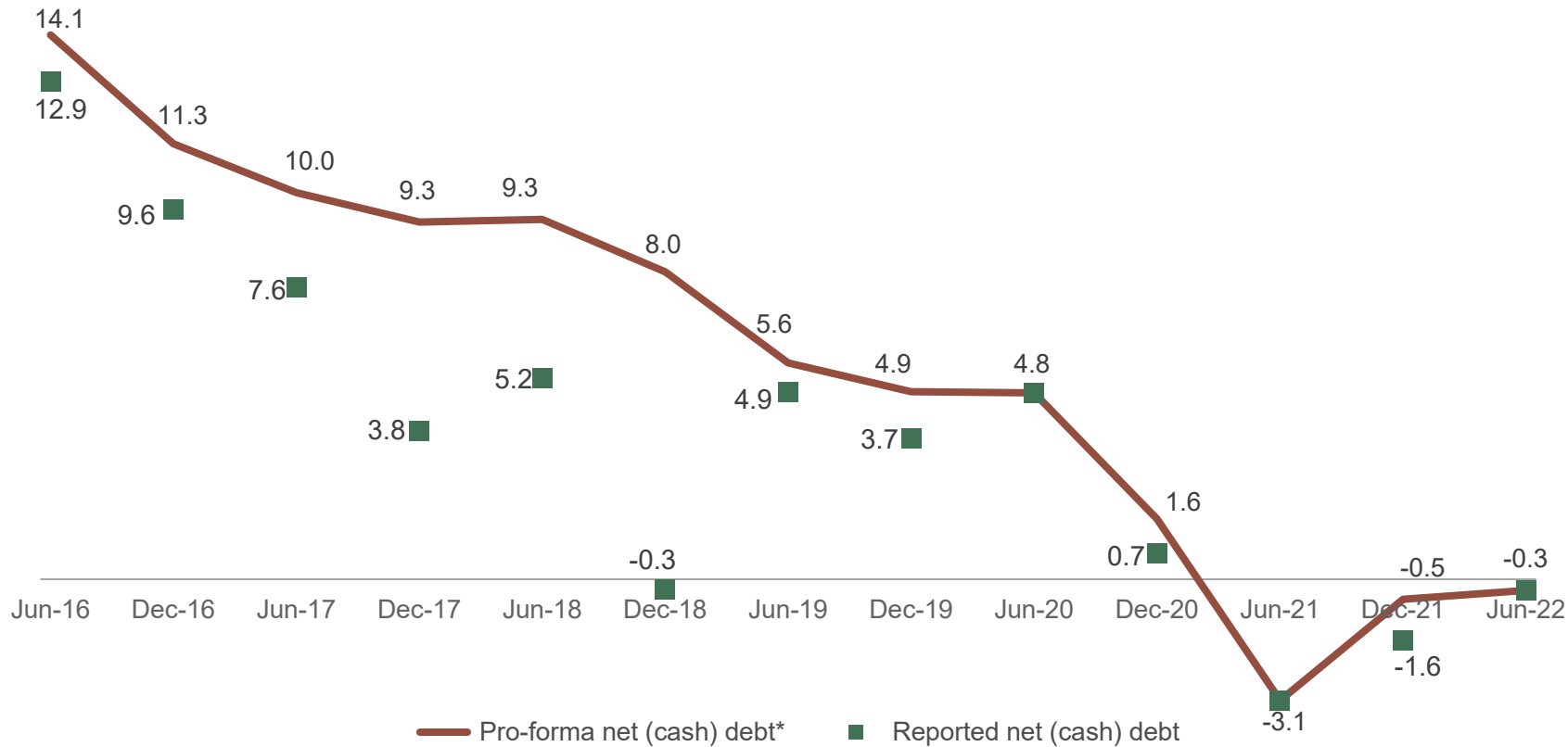
M&A is in addition

* Estimated investment as of 30 June 2022 (Rio Tinto share of capital investment, refer to Financial Release pg. 73) | ** Subject to ongoing inflationary pressure Marginal Abatement Cost Curves (MACC) and large decarbonisation projects will be updated regularly

Balance sheet is strong; we will maintain our discipline

Net (cash)/debt

\$bn



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

Gearing -0.5% and net (cash)/debt to
LTM[^] EBITDA of -0.01x

Operating cash flow of \$10.5bn

Invested \$3.1bn, spent \$0.8bn on
Rincon acquisition and distributed
\$7.6bn of cash to shareholders

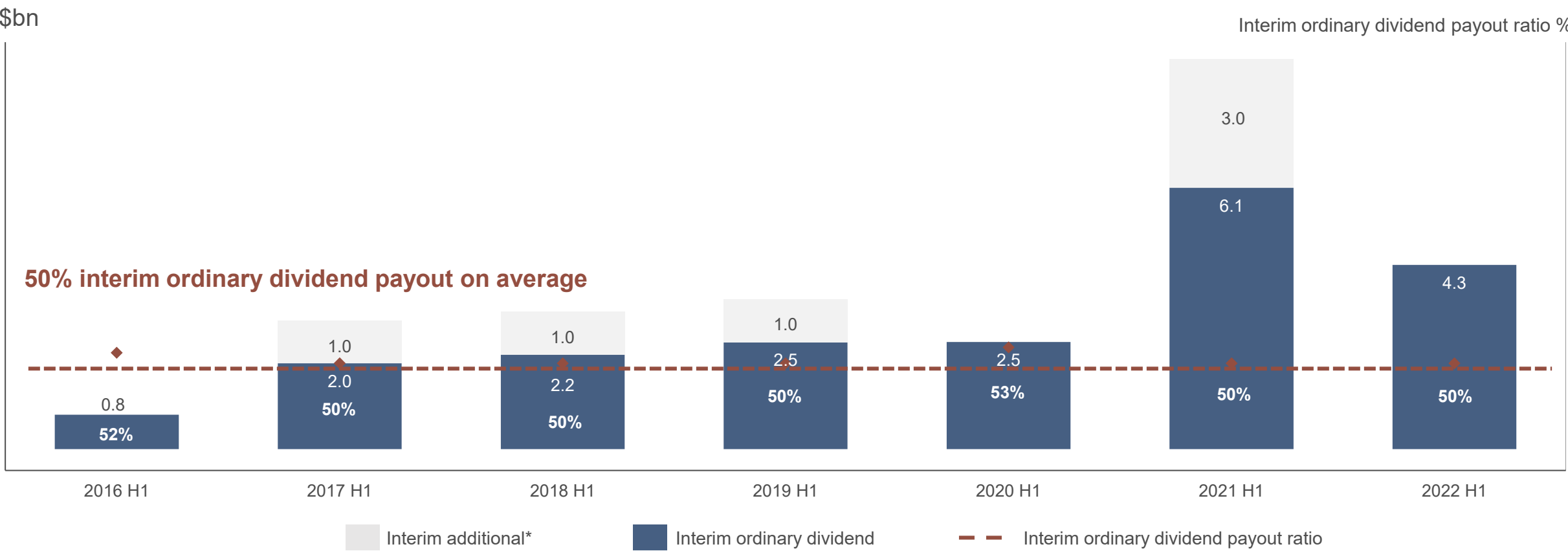
Our financial strength allows us
to simultaneously:

- Reinvest for growth
- Accelerate our own decarbonisation
- Continue to pay attractive dividends
in line with our policy

* Pro-forma net debt adjusts for the remainder of previously announced buy-backs from operations, lags in shareholder returns from disposal proceeds, Australian tax lag and disposal-related tax lag and the impact of IFRS 16 Leases accounting change for the prior periods. This lease accounting change is reflected in the June and December 2019 reported net (cash)/debt | [^]LTM = Last Twelve Months

Attractive dividends remain paramount

Shareholder returns of 40-60% of underlying earnings on average through the cycle



Excluding divestment proceeds returned to shareholders | * 2017 and 2018 additional returns were executed as share buybacks



Jakob Stausholm

Chief Executive

Gobi desert, Mongolia

Getting the right culture is essential for successful execution

More
caring

Greater
trust

Less
hierarchical

Strengthening relationships with communities and Traditional Owners: Puutu Kunti Kurrama and Pinikura and Yinhawangka co-management plans

Implementing all 26 recommendations **from the Everyday Respect** report, including a target of 80% of leaders to attend foundational training

Improvements in our **Business Conduct Office and myVoice reporting programme** to create a more people centric response to reports of harmful behaviour

Extensive Leadership Development – leadership programme for all senior leaders and through RTSPS for frontline leaders

RTSPS = Rio Tinto Safe Production System



Foundations for a stronger Rio Tinto emerging

Best operator

Three and a half years fatality free on a managed site, 0.35 AIFR in Q2 2022

RTSPS*: 15 deployments at 11 sites, 30 rapid improvement projects (Kaizens), on track to meet 2022 target

57% of leaders have undertaken the Everyday Respect training at 30 June

Impeccable ESG credentials

Increased female representation by one percentage point (or 11%) vs Dec 2021

Climate partnerships with: Salzgitter AG, Corona Canada, Nano One, Ford

Critical minerals extracted from waste streams: tellurium, scandium

100MW proposed solar farm near Karratha, initial site to meet 1GW | RFP for 4GW renewables in East Australia**

Excel in development

Oyu Tolgoi underground project: fired first and second draw bells

Rincon lithium in Argentina early works funding: Board approval to develop small starter plant and support a full-scale operation

Delivery of first ore from main plant at Gudai-Darri; Western Range project approvals progressed

Completed Kemano hydropower tunnel

Proposal to acquire TRQ

Social licence

Creating a **safe, respectful and inclusive** work environment

Oyu Tolgoi MOU to execute the Khanbogd Master Plan - **\$50m over 5 years**

MOU with four TO groups in Weipa region around closure planning for East Weipa bauxite mine

* Rio Tinto Safe Production System | ** Request for Proposal

Decarbonising our business and value chain

- Mobilising teams; significant amount of work on the ground
- Our emissions are flat year on year (15.5mt in the first half of 2022)
- Cannot do it alone; partnership with Government, suppliers and partners critical
- Execution and investment will follow

Renewables

- RFP* for 4GW of wind and solar projects in QLD supporting ongoing engagement with Queensland Government on overall solution
- 109k hectare under lease in Pilbara to support 1GW renewable additions to Rio Tinto grid

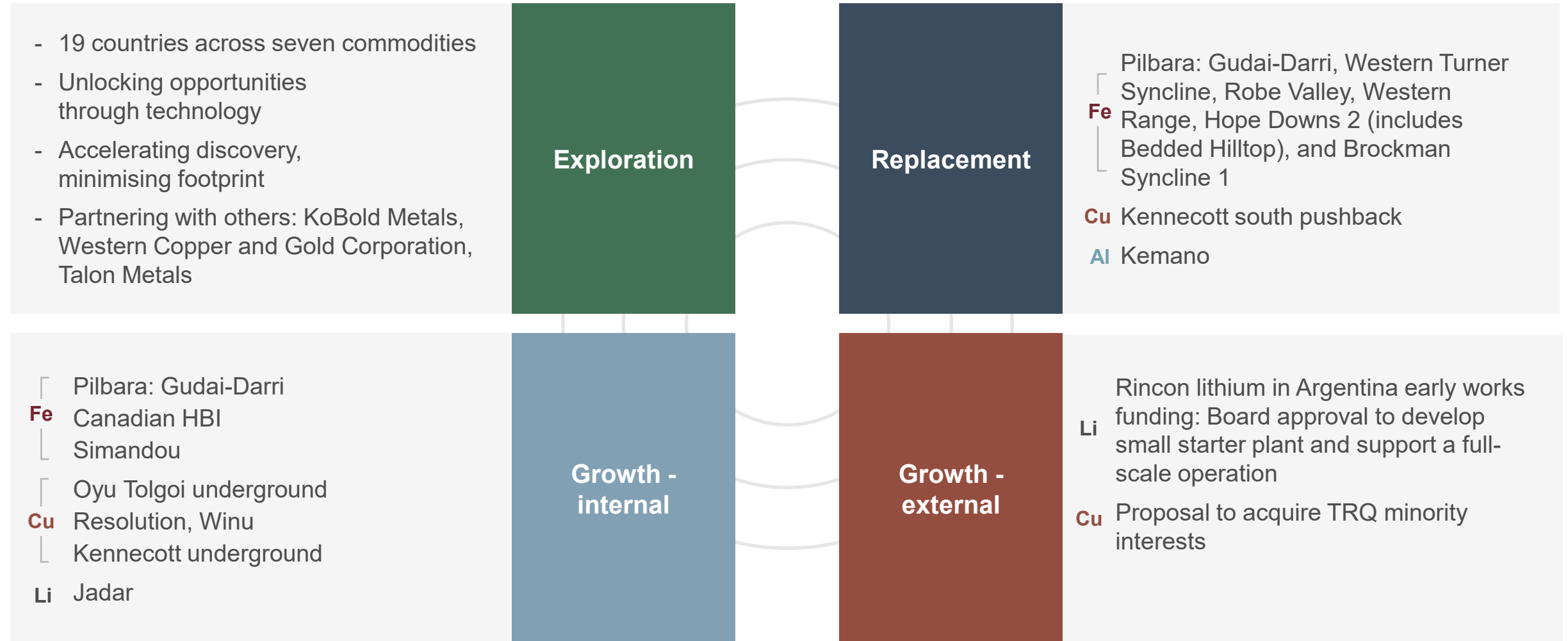
Nature Based Climate Solutions

- Studying six high-potential areas on or near our assets. >600k hectare of land under evaluation for conservation, restoration or regenerative practices

Technology

- ELYSIS™, R&D Partnerships, Hydrogen and Battery pilot projects, Technology venture investments

Pursuing our growth agenda



Strong foundation for growth, decarbonisation and shareholder returns

Outstanding foundation

- Long-life, low cost assets
- All materials we produce are vital
- Resilient cash flows through the cycle
- Capital discipline
- Robust balance sheet
- Advantageous renewables position
- World-class pipeline of projects

Delivery on strategy

- Best operator, Impeccable ESG, Excel in development, Strengthening our social licence
- Accelerate our own decarbonisation
- Grow in materials enabling the global energy transition
- Develop products and services that help our customers to decarbonise
- Make choices – we are opportunity rich. Exit projects and stop initiatives if outlook is not appealing

Compelling investment proposition

- Unique resilience through the cycle
- Attractive partner to our customers and host countries
- Reduce risks by accelerating our own low-carbon transition
- Deliver value-adding growth
- Continue to pay attractive dividends in line with our policy

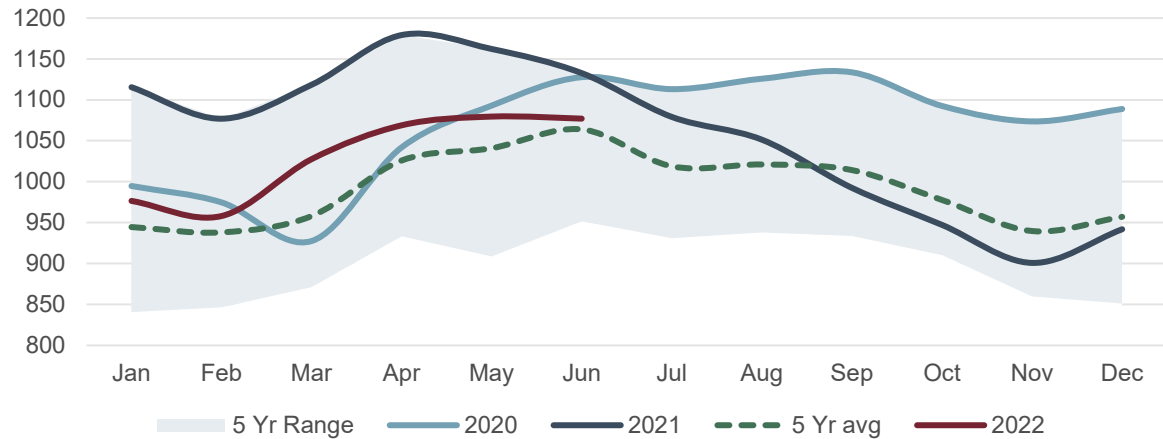
RioTinto

Appendices

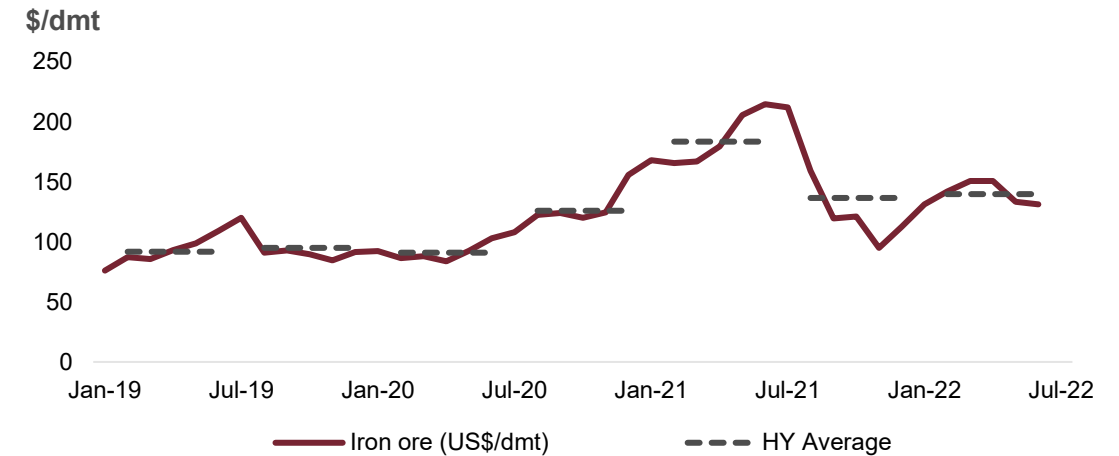


Iron ore market tight despite slowdown in China

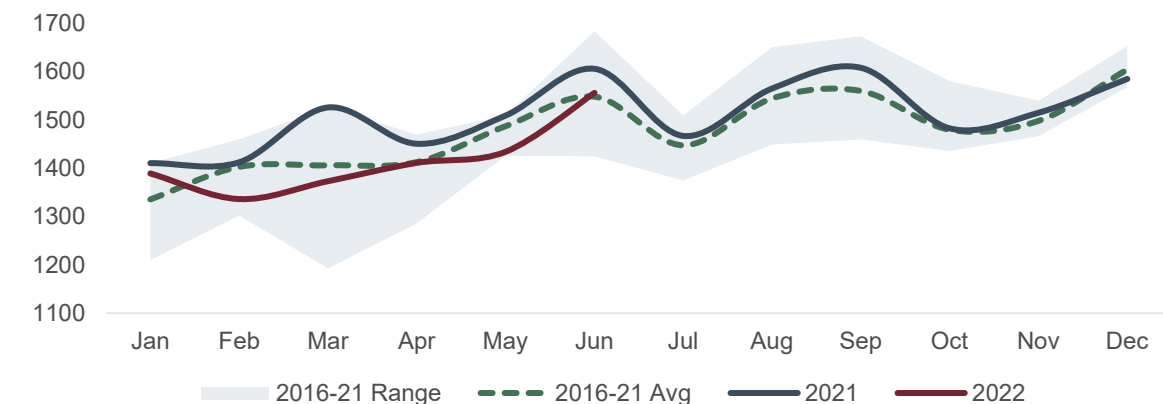
China's crude steel production (Mt annualised)



Iron Ore¹ (-24% YoY)



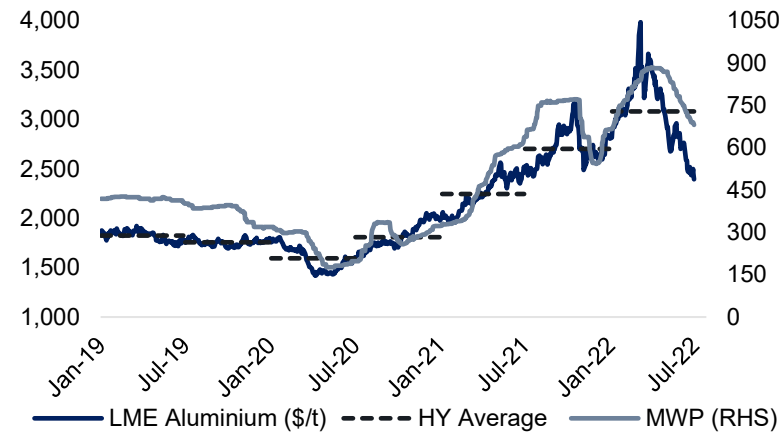
Seaborne Iron Ore supply run rate (Mt annualised²)



- Extended COVID restrictions in China impacted steel demand to a greater extent than steel production and iron ore consumption. Demand recovery continues in the rest of the world
- Total H1 22 seaborne supply contracted due to the war in Ukraine and lower exports from India, although aggregate shipments from the major low-cost producers remained flat compared to previous year
- Iron ore prices remained largely unchanged just below \$140/dmt CFR half-on-half supported by tight fundamentals and falling stockpiles

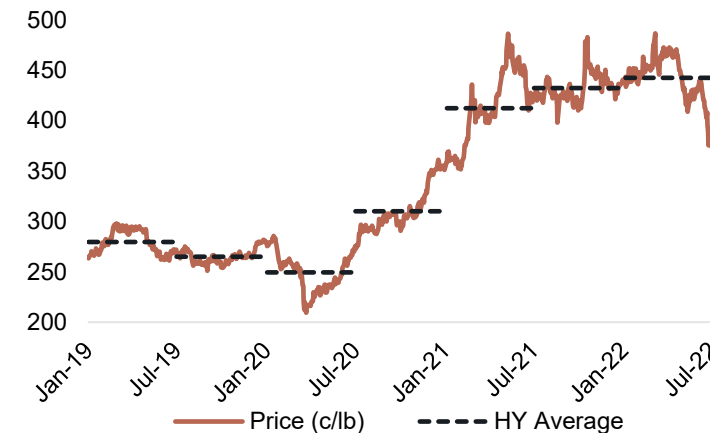
Price support for aluminium, copper and TiO₂

Aluminium¹ (+37% YoY)



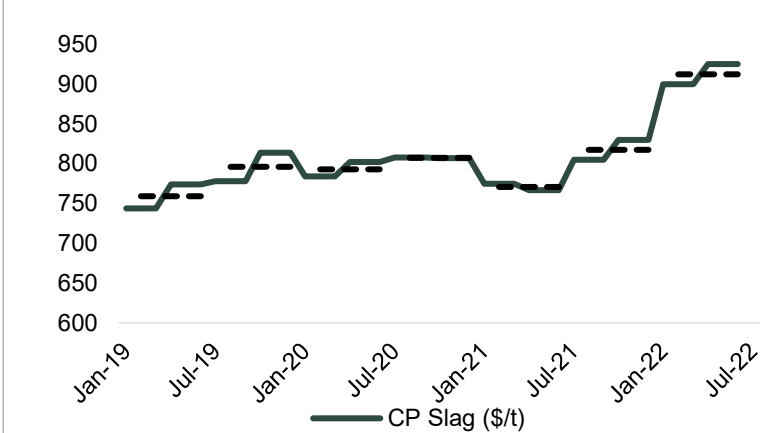
- Firm demand in North America construction and packaging. China demand impacted by COVID lockdown
- Chinese output rises on restarts and commissioning of new capacity, adding c4Mtpa in operational capacity from Q4 21 to Q2 22. Exports rising
- Expected disruption to Russian aluminium did not materialise. Smelters remain at risk of closure in the US and Europe on high energy costs
- Global inventories are relatively low

Copper² (+7% YoY)



- Demand prospects weakened by COVID restrictions in China, while inflation and tighter monetary policy affected consumer sentiment in rest of the world
- Sharp reversal in speculative financial positions reversing a long position of over 1Mt in the first quarter to a c0.2Mt net short by the end of June
- Expect growth from new mines and expansions but disruption risks persist due to weather, social, environmental and operating factors
- Exchange inventories remain at multi-year lows

TiO₂ (chloride slag) (+18% YoY)



- Elevated TiO₂ utilisation rates and rising pigment prices continued to support feedstock demand in H1
- Limited new high-grade feedstock production available in the first half
- Tight supply encouraging positive purchasing sentiment

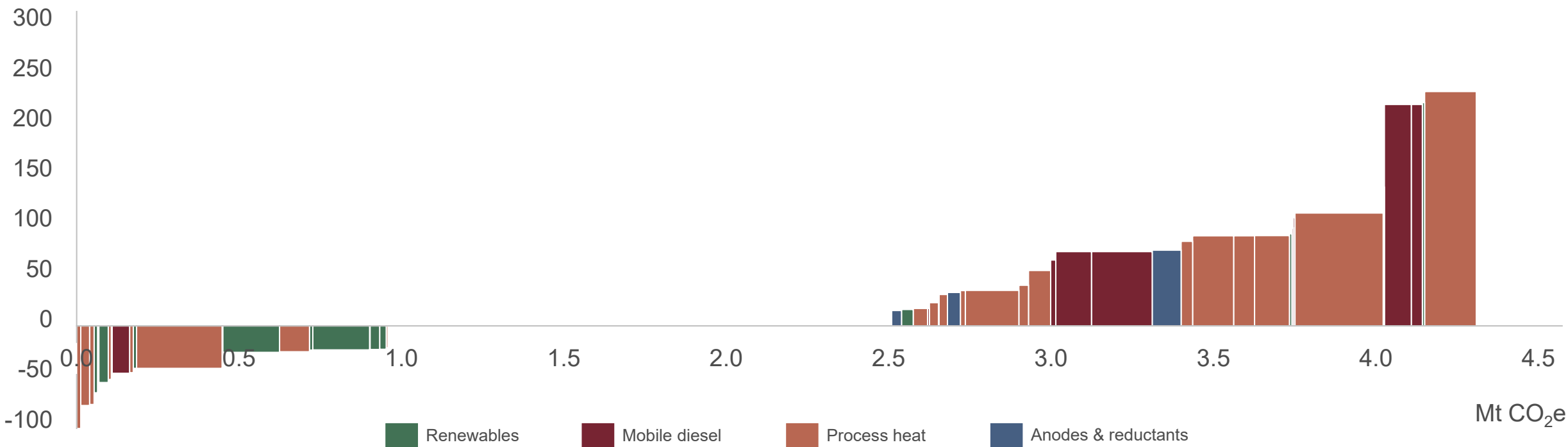
¹ Average LME price. MWP = US Mid-West premium | ² Average LME price | YoY = change in average price during first half compared to previous half | Source: Rio Tinto Market Analysis

Accelerating current abatement projects

Our Marginal Abatement Cost Curve for Scope 1 & 2 emissions

(excl. Pilbara and Pacific Operations repowering, ELYSIS™, energy efficiency and carbon offsets)

USD\$/t CO₂e



As of 30 September 2021

Weipa solar extension project

Project summary:

Increase renewable energy generation and storage to support Weipa and Andoom mining operations and Weipa township.

Overview:

First abatement	2022
Full abatement (2025)	20ktpa CO ₂ e

Details:

- Addition of a new 4MW solar farm next to existing 1.6MW solar farm
- Installation of a 4MW/4MWh Battery Energy Storage System next to Weipa Power Station and facilitating infrastructure.
- Interconnection of the Weipa and Andoom 22kV networks to provide steady base load demand for both Andoom and East Weipa mines with the smaller Andoom generators managing demand variability.
- In a separate project, we are exploring options for renewable energy generation to support Amrun mining operations, with a view to abate 31ktpa.



Reducing anode effects at Alma

Project summary:

The Electrolysis team at Alma smelter identified and implemented a process improvement to address anode effects.

Overview:

First abatement	2021
Full abatement	30ktpa CO ₂ e
Process improvement	36% reduction in anode effects

Details:

“Anode effects” can occur if oxygen levels inside the pot are too low, leading to emissions. The team carried out tests on trial pots to review and refine algorithms. Using this data, the Electrolysis team now receives live information about pot status from the Aluminium Operations Centre via text message, enabling employees to intervene quickly and efficiently.



QMM wind and solar project

Project summary:

QMM has signed a 20-year power purchase agreement using renewable energy with CrossBoundary Energy to supply their mine operations in southern Madagascar. This project will enable QMM to meet all of its electricity needs during peak periods and up to 60% of its annual electricity consumption.

Overview:

First abatement	2022
Full abatement (2024)	>26ktpa CO₂e

Details:

The renewable power supply will reduce QMM's heavy fuel oil purchases by up to 8.5kt per year

8MW solar energy facility (~18,000 solar panels)

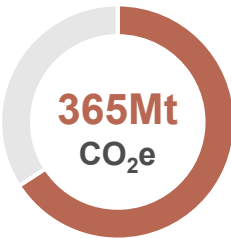
- Operational in 2022
- Site preparation complete and construction started July (footings and frames)
- On track for completion November 2022

12MW wind power facility On track for completion in 2023



Our products enable the energy transition and we need to be part of net zero value chains

Iron ore



365Mt
CO₂e

Customer partnerships

- Baowu / Tsinghua (2019)
- Nippon Steel (2020)
- POSCO (2021)
- BlueScope (2021)
- Salzgitter (2022)

Technology partnerships and investments

Blast furnace optimisation	Pilbara beneficiation	Low-carbon research project
H ₂ DRI and melter	H ₂ DRI Canada	Simandou

2022 customer engagements

28% of our customers have public targets and net zero ambition;

We will engage with our direct customers, representing 75% of our iron ore scope 3

Aluminium



145Mt
CO₂e

ELYSIS™

On track for zero emission technology to be available for installation from 2024

Limited influence on power-related emissions

74% of our downstream aluminium value chain Scope 3 emissions are from our customers (and customer's customers) use of electricity, predominantly in China

2022 customer engagements

We will engage with all our bauxite customers to seek collaboration in alumina refining decarbonisation projects

Shipping



8.6Mt
CO₂e

Net zero by 2050

from shipping of our products

Net zero vessels in our portfolio by 2030

40% intensity reduction by 2025

five years ahead of IMO deadline

01

Improving existing vessels efficiency

02

Increasing use of transition fuels (LNG and biofuels)

03

Partnering for development of net zero fuels (green ammonia)



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Partnering to reduce the carbon footprint of our value chains

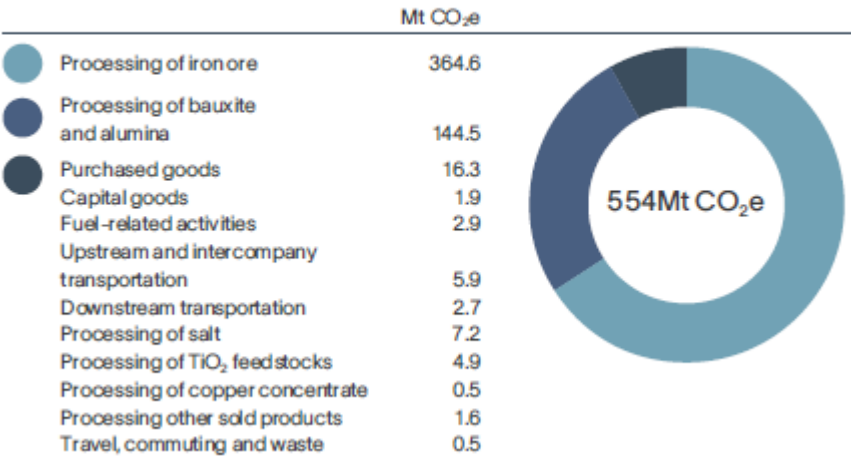
95% of Scope 3 emissions is from the processing of iron ore, bauxite and other products by our customers

94% of these processing emissions take place at our customer facilities in China, South Korea, Japan and other countries that have pledged to be carbon neutral by around mid-century

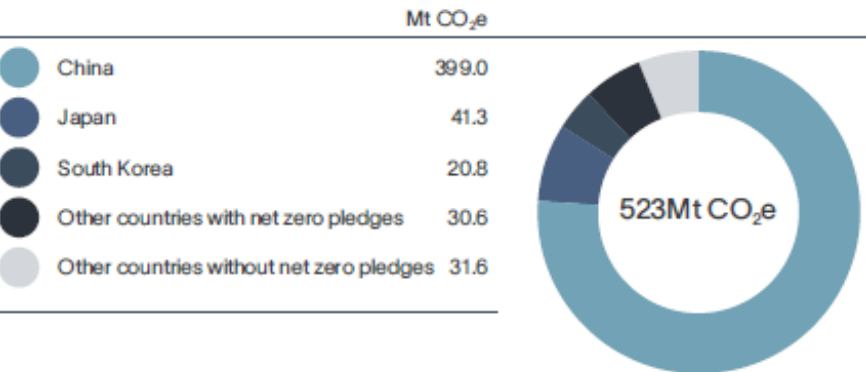
About 28% of our iron sales are directly to steel producers that have already set public targets for their Scope 1 and 2 emissions (our Scope 3), and have ambitions to reach net zero by around mid-century

In 2022, we commit to engage with all our direct iron ore customers, representing approximately 75% of our iron ore sales and related Scope 3 emissions

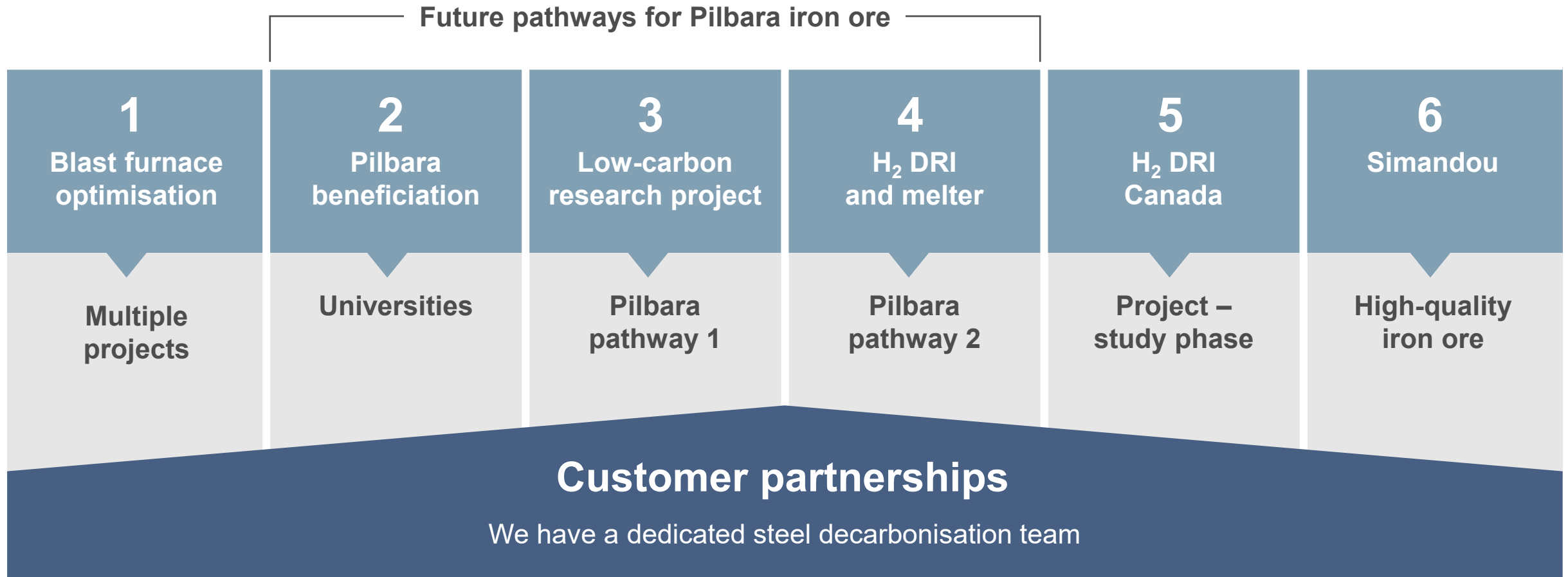
2021 Scope 3 emissions by category (equity basis)



2021 Scope 3 emissions from product processing by country



Our focus areas for iron and steel decarbonisation



ELYSIS™ zero carbon metal meets new market demand

LOW CARBON FOOTPRINT PRODUCTS: AN IRREVERSIBLE TREND

Aluminium has always been the leading choice for sustainable product development due to its light-weight, strength and infinite recyclability. This technology takes the miracle metal's **sustainable advantage to a new level**. ELYSIS™ technology will allow the production of widely used products with less impact on our environment.



CARBON-FREE SMELTING. LOWER OPERATING COST. HIGHER PRODUCTIVITY.

THE BENEFITS OF THE TECHNOLOGY ARE NUMEROUS :



Completely **eliminates direct greenhouse gas emissions** and **other by-products** in the aluminium smelting process.



Potential to reduce GHG emissions in Canada by approximately 7 million metric tons. This would represent close to **20% of both Quebec and British Columbia's total industrial emissions**.



Will allow the **production of greener products**: smartphones, cars, planes, construction supplies, etc.



Reduces operating costs through the reduction of anode consumption.



Increases the **productivity of aluminium smelters**.

Strong market demand emerging

- **Q3 2020:** Apple's 16" MacBook Pro is world's first device manufactured using ELYSIS metal, delivered through Rio Tinto's commercial network.
- **Q4 2020:** Rio Tinto supplied ELYSIS metal to AB InBev as part of partnership to produce their most sustainable can – piloted with Michelob ULTRA.
- **Q2 2021:** Selected our Alma smelter in Saguenay-Lac-Saint-Jean, Quebec, for the first installation and demonstration of its inert anode technology at a commercial size of 450 kiloamperes (kA) and start of construction of the first prototype cells.
- **Q4 2021:** Successfully produced aluminium without any direct greenhouse emissions at its Industrial Research and Development Center in Saguenay, Canada.
- **Q2 2022:** Partnership with Corona Canada, the launch of Canada's first specially-marked, low carbon beverage can. The cans were made using aluminium from Rio Tinto and leveraging ELYSIS™ technology.

Kaizens continuing to supplement RTSPS deployments for immediate value

Iron Ore – Marandoo dewatering bore turnover time

- Dewatering bore turnover time was risking access to 30.5Mt of saleable ore at Marandoo over a five-year period
- Kaizen addressed alignment of accountabilities, replication opportunities and processes simplification
- Kaizen target was to achieve bore turnover rate reduction from 36 to 21 days. Achieved 14 days in April



Copper – Kennecott shovel shift change

- Addressing productivity opportunities with shovel loads and stacking delays
- Kaizen resulted in a 14% improvement in shovel loads over the shift change with an increase of ~10kt per day. Increase in supervisor field time



Automation Drill System (ADS) – supporting delivery of first ore at Gudai-Darri

We have the world's largest autonomous drill fleet - 30 drills supporting both Caterpillar and Epiroc platforms

Since 2014, Pilbara iron ore has drilled more than 25 million metres autonomously since formally deploying the technology at West Angelas in 2014

Iron ore has delivered safe, automated production drilling, supervised from a remote location of up to 8 drills per operator. Performance and data quality exceeds traditional manned operations

Value drivers are:

- Improves productivity (20% uplift in productivity with demonstrated drill Effective Utilisation above 60%)
- Reduces production variability. Plan vs actual of drill accuracy reduces errors and allows tighter control
- Safety benefits of no personnel in cab during operation. Also offers more controlled interactions with other mobile assets and personnel when working on a blast bench

- Delivers quality production data to enable and support other compatible technologies e.g. the Rio Tinto Smart Charge Truck and blast optimisation automation initiative. This will fundamentally drive improved blast outcomes and reduce the likelihood of heritage area damage due to poor drill and blast practices

We integrated the new Caterpillar MD6310 drill platform into the current fleet of drills that operate from the Operations Centre in Perth allowing for:

- More sustained and stable operations during COVID-19 periods
- Perth-based rosters for drill controllers
- Skill development for drill operators to include supervision, management and optimisation of a fleet of drills, beyond operating a single drill on site
- We have partnered with Komatsu North America to develop and integrate the ADS package onto a Komatsu cable electric drill. This is for Iron Ore Canada to retrofit their 12 drill fleet from 2024



Agile mining and right sized trucks driving zero emissions productivity

- The Agile Mining/Right Size Autonomous Trucks (RSATe) programme is underway in partnership with Scania, with a trial happening at the Channar mine in the Pilbara
- The programme is testing whether smaller, civil size trucks can be used in mining, and looks to revolutionise the way we mine in the future. Agile mining with smaller trucks can be more selective, leading to more ore being produced in our operations
- By introducing automation and electrification to the mix, we're increasing operator safety, and helping to reach our decarbonisation goals. RSATe bring a step change in productivity and resource recovery with zero emissions
- Resource recovery is improved by up to 3%, with a 10% strip ratio and mine footprint reduction
- Development speed is faster and more flexible by partnering with automotive companies. Greenfield construction time is reduced due to size of associated mine infrastructure
- Lower unit capital expenditure costs (10-25%) and anticipated lower operating expenditure, compared to ultra-class fleets



Inflation impacts on closure liabilities

- At the balance sheet date we reflect the latest view of closure cost obligations in current year real terms, which is achieved by adjusting the existing estimate for current year inflation
- Inflation expectations have risen significantly over the last 12 months. Assumptions and outcomes across the Group's most significant regions have averaged around 2% in recent years.
- 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.

02.

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

03.

Increase in amortisation charge when compared with the same period in 2021.

- The increased amortisation charge reflects the adjustment needed to take account of prevailing inflation expectations at the start of the year (around 6%). Adjustments (1) and (2) relate to the increase to inflation assumptions during the first six months of the year.
- The long-term discount rate in USD real-terms of 1.5% remains unchanged.

Inflation impacts on closure liabilities

Higher rates of inflation have increased our closure liabilities with an impact to underlying earnings.

In 2022 first half, this resulted in increased charges of approximately US\$400 million ^C pre-tax within underlying earnings compared with 2021 first half, including a \$300 million ^A increase in amortisation of discount, with the remainder ^B impacting underlying EBITDA.

Impact of inflation on H122 earnings vs H121 (US\$million)

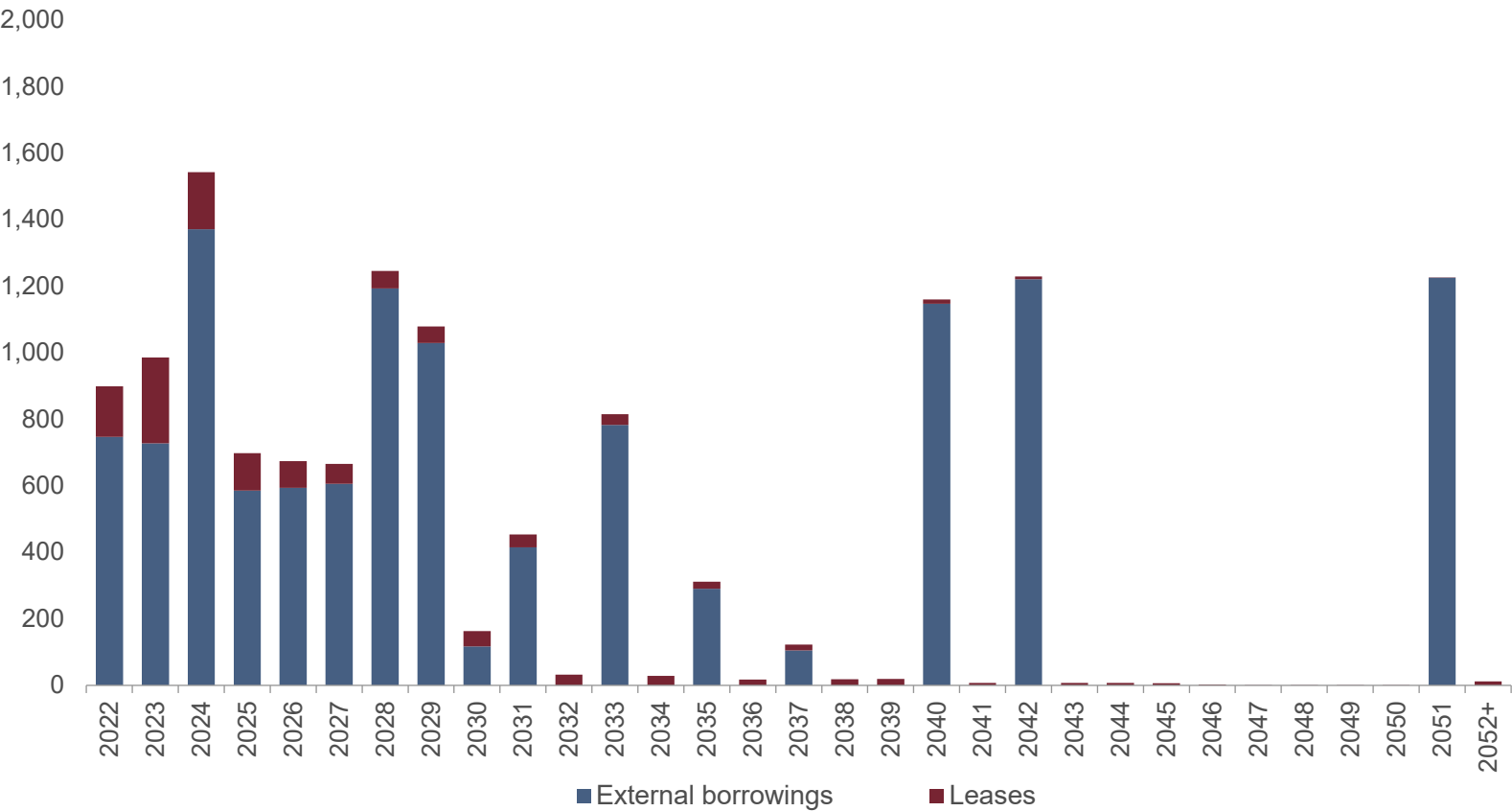
	2022	2021	Change
A. Amortisation of discount (opening inflation assumption at January)	503	206	297
B. Charged to operating costs / underlying EBITDA (inflation assumptions June update)	137	-	137
C. Increase in P&L charges arising from higher rates of inflation			434

	Provision at 1 Jan		Amortisation of discount		Jan inflation assumption	June inflation assumption	Impact of June inflation update	Impact made up of:		
	US\$m	%	US\$m	%				Capitalised to closure assets	Excluded from underlying earnings	Charged to operating costs
Australia	7,605	7.1	271	5.5	12.4	269	85			
USA	4,057	6.7	136	5.2	12.9	162	125			
Canada	1,662	8.2	68	6.6	13.6	60	115			
Rest of world	1,218	5.3	28			49	35			
	14,542		503			540	360	43		137

Debt maturity profile

30 June 2022 debt maturity profile*

\$ million



Average outstanding debt maturity of corporate bonds ~15 years (~10 years for Group debt)

No corporate bond maturities until 2024

Liquidity remains strong under stress tests

\$7.5bn back-stop Revolving Credit Facility matures in November 2026. It has two additional one-year extension options

* Numbers based on June 2022 accounting value. The debt maturity profile shows \$1.3 billion of capitalised leases under IFRS 16

Group level financial guidance

	2022	2023	2024
CAPEX			
Total Group	~\$7.5bn	~\$9.0 – 10.0bn	~\$9.0 – 10.0bn
Sustaining Capex Group	~\$3.5bn	~\$3.5bn	~\$3.5bn
Pilbara Sustaining Capex	~\$1.5bn*	~\$1.5bn	~\$1.5bn
- \$1.5bn** to decarbonise our assets from 2022 to 2024 - Total decarbonisation investment of ~\$7.5bn* from 2022 to 2030, predominantly in second half of decade		- 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% expected in H2		
Returns	Total returns of 40 – 60% of underlying earnings through the cycle		

* Subject to ongoing inflationary pressure | ** Estimated investment as of 30 June 2022. Marginal Abatement Cost Curves (MACC) and large decarbonisation projects will be updated regularly



Product group level guidance

	2022 Production Guidance	2022 Costs
Iron Ore Shipments	320 – 335Mt ¹ (100% basis)	\$19.5-21.0/wmt (FOB), based on an Australian dollar exchange rate of \$0.71
Copper		
Mined Copper	500 to 575kt	C1 Copper unit costs
Refined Copper	230 – 290kt	130-150 US c/lb
Aluminium		
Bauxite	54 – 57Mt	Modelling guidance provided (slide 14)
Alumina	7.6 – 7.8Mt	
Aluminium	3.0 – 3.1Mt	
Minerals		
TiO ₂	1.1 to 1.4Mt	
IOC pellets and concentrate ²	10.0 – 11.0Mt	
B ₂ O ₃	~0.5Mt	
Diamonds ³	4.5 – 5.0m carats	

¹ Pilbara shipments guidance remains subject to risks around ramp-up of new mines and management of cultural heritage. | ² Iron Ore Company of Canada. | ³ Reflects 100% ownership of Diavik (previously 60%)



Modelling EBITDA

Underlying EBITDA sensitivity

	Average published price/exchange rate for HY 2022	US\$ million impact on full year 2022 underlying EBITDA of a 10% change in prices/exchange rates
Copper	442c/lb	629
Aluminium	\$3,082/t	1,374
Gold	\$1,874/oz	69
Iron ore realised price (62% Fe CFR freight-adjusted)	\$120.5/dmt	3,112
A\$	0.72US\$	671
C\$	0.79US\$	346
Oil (Brent)	\$105.9/bbl	203

Note: The sensitivities give the estimated effect on underlying EBITDA assuming that each individual price or exchange rate moved in isolation. The relationship between currencies and commodity prices is a complex one and movements in exchange rates can affect movements in commodity prices and vice versa. The exchange rate sensitivities include the effect on operating costs but exclude the effect of revaluation of foreign currency working capital

Application of the returns policy

Capital return considerations	Comments
Results for HY 2022	– Operating cash flow of \$10.5 billion – FCF of \$7.1 billion¹ – Underlying earnings down 29% to \$8.6 billion
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 cash of \$291 million
40-60 per cent of underlying earnings through the cycle	– Interim pay-out of 50% based on (i) Strong financial performance in first half 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 payout policy
Outlook	– The economic outlook is weakening due to the Russia-Ukraine war, tighter monetary policy to curb rising inflation, and targeted COVID-19 restrictions in China

¹ Free cash flow is defined as net cash generated from operating activities less purchases of PP&E less lease principal payments plus sales of PP&E

Group Income Statement and Cash flow statement

	Rio Tinto Group		Oyu Tolgoi and Turquoise Hill ⁽¹⁾		Proforma Rio Tinto Group (excluding OT and TRQ) ⁽²⁾	
	Jun-22 YTD US\$m	Jun-21 YTD US\$m	Jun-22 YTD US\$m	Jun-21 YTD US\$m	Jun-22 YTD US\$m	Jun-21 YTD US\$m
Consolidated sales revenue	29,775	33,083	805	844	28,970	32,239
Profit after tax for the period	9,413	13,068	422	426	8,911	12,642
– attributable to owners of Rio Tinto (net earnings)	8,908	12,313	215	215	8,693	12,098
– attributable to non-controlling interests	505	755	207	211	298	544
Alternative performance measures (as per Financial Information by Business Unit)						
Underlying EBITDA	15,597	21,037	313	528	15,284	20,509
Underlying Earnings	8,627	12,166	142	152	8,485	12,014
Cash flows from operations	14,545	18,905	365	95	14,180	18,810
Capital expenditure	(3,146)	(3,336)	(484)	(460)	(2,662)	(2,876)

Oyu Tolgoi (OT) and Turquoise Hill Resources (TRQ) are fully consolidated in the Rio Tinto accounts – Rio Tinto's economic ownership is 33.5%. These tables are provided to be able to see the OT/TRQ accounts on a stand alone basis.

(1) Represents the amounts shown in the subsidiaries' financial statements prepared in accordance with IFRS under Rio Tinto Group accounting policies, including fair value adjustments, and before intercompany eliminations.

(2) Includes income and expenses arising in other Rio Tinto group companies from transactions with Oyu Tolgoi and Turquoise Hill.

Group Balance Sheet

	Rio Tinto Group		Oyu Tolgoi and Turquoise Hill ⁽¹⁾		Proforma Rio Tinto Group (excluding OT and TRQ)	
	Jun-22 YTD US\$m	Dec-21 YTD US\$m	Jun-22 YTD US\$m	Dec-21 YTD US\$m	Jun-22 YTD US\$m	Dec-21 YTD US\$m
Non-current assets	78,488	78,464	12,982	12,250	65,506	66,214
Current assets	23,417	24,432	807	1,129	22,610	23,303
Total assets	101,905	102,896	13,789	13,379	88,116	89,517
Current liabilities	(13,109)	(12,627)	(1,275)	(954)	(11,834)	(11,673)
Non-current liabilities ⁽²⁾	(31,698)	(33,679)	(3,766)	(4,085)	(27,932)	(29,594)
Total liabilities	(44,807)	(46,306)	(5,041)	(5,039)	(39,766)	(41,267)
Net assets	57,098	56,590	8,748	8,340	48,350	48,250
Equity attributable to non-controlling interests	6,541	5,158	4,248	2,846	2,293	2,312
Equity attributable to owners of Rio Tinto	50,557	51,432	4,500	5,494	46,057	45,938
Total equity	57,098	56,590	8,748	8,340	48,350	48,250

Alternative performance measures (as per Financial Information by Business Unit)

Operating assets	50,266	49,856	8,246	8,998	42,020	40,858
Net cash/(debt)	291	1,576	(3,746)	(3,504)	4,037	5,080
Equity attributable to owners of Rio Tinto	50,557	51,432	4,500	5,494	46,057	45,938

Oyu Tolgoi (OT) and Turquoise Hill Resources (TRQ) are fully consolidated in the Rio Tinto accounts – Rio Tinto's economic ownership is 33.5%. These tables are provided to be able to see the OT/TRQ accounts on a stand alone basis.

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Common acronyms

T	Tonne
Mt	Million tonnes
Gt	Giga tonnes
tCO₂	Tonne of carbon dioxide
tCO₂e	Tonne of carbon dioxide equivalent
Pa	Per annum
PJ	Petajoule
Mtpa	Million tonnes per annum
CO₂	Carbon dioxide
GHG	Greenhouse gas
MACC	Marginal Abatement Cost Curve
Mwh	Megawatt hour
MW	Megawatt
GW	Gigawatt

RTSPS	Rio Tinto Safe Production System
ROCE	Return on capital employed
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortisation
CAGR	Compound annual growth rate
USD	United States dollar
Bn	Billion
NPV	Net present value
ESG	Environmental, Social, and Governance
IRR	Internal rate of return
R&D	Research and development
VAP	Value-added product

