

# Mark Davies

Bank of America SmartMine 4.0 conference

28 June 2023



# Cautionary and supporting statements

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

## Forward-looking statements

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

Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Rio Tinto, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements, particularly in light of the current economic climate and the significant volatility, uncertainty and disruption arising in connection with the Ukraine conflict and the Covid-19 pandemic. Such forward-looking statements are based on numerous assumptions regarding Rio Tinto’s present and future business strategies and the environment in which Rio Tinto will operate in the future. Among the important factors that could cause Rio Tinto’s actual results, performance or achievements to differ materially from those in the forward-looking statements include, but are not limited to: an inability to live up to Rio Tinto’s values and any resultant damage to its reputation; the impacts of geopolitics on trade and investment; the impacts of climate change and the transition to a low-carbon future; an inability to successfully execute and/or realise value from acquisitions and divestments; the level of new ore resources, including the results of exploration programmes and/or acquisitions; disruption to strategic partnerships that play a material role in delivering growth, production, cash or market positioning; damage to Rio Tinto’s relationships with communities and governments; an inability to attract and retain requisite skilled people; declines in commodity prices and adverse exchange rate movements; an inability to raise sufficient funds for capital investment; inadequate estimates of ore resources and reserves; delays or overruns of large and complex projects; changes in tax regulation; safety incidents or major hazard events; cyber breaches; physical impacts from climate change; the impacts of water scarcity; natural disasters; an inability to successfully manage the closure, reclamation and rehabilitation of sites; the impacts of civil unrest; the impacts of the Ukraine conflict and the Covid-19 pandemic; breaches of Rio Tinto’s policies, standard and procedures, laws or regulations; trade tensions between the world’s major economies; increasing societal and investor expectations, in particular with regard to environmental, social and governance considerations; the impacts of technological advancements; and such other risks identified in Rio Tinto’s most recent Annual Report and accounts in Australia and the United Kingdom and the most recent Annual Report on Form 20-F filed with the United States Securities and Exchange Commission (the “SEC”) or Form 6-Ks furnished to, or filed with, the SEC. Forward-looking statements should, therefore, be construed in light of such risk factors and undue reliance should not be placed on forward-looking statements. These forward-looking statements speak only as of the

date of this report. Rio Tinto expressly disclaims any obligation or undertaking (except as required by applicable law, the UK Listing Rules, the Disclosure Guidance and Transparency Rules of the Financial Conduct Authority and the Listing Rules of the Australian Securities Exchange) to release publicly any updates or revisions to any forward-looking statement contained herein to reflect any change in Rio Tinto’s expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

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

## Disclaimer

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

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

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

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

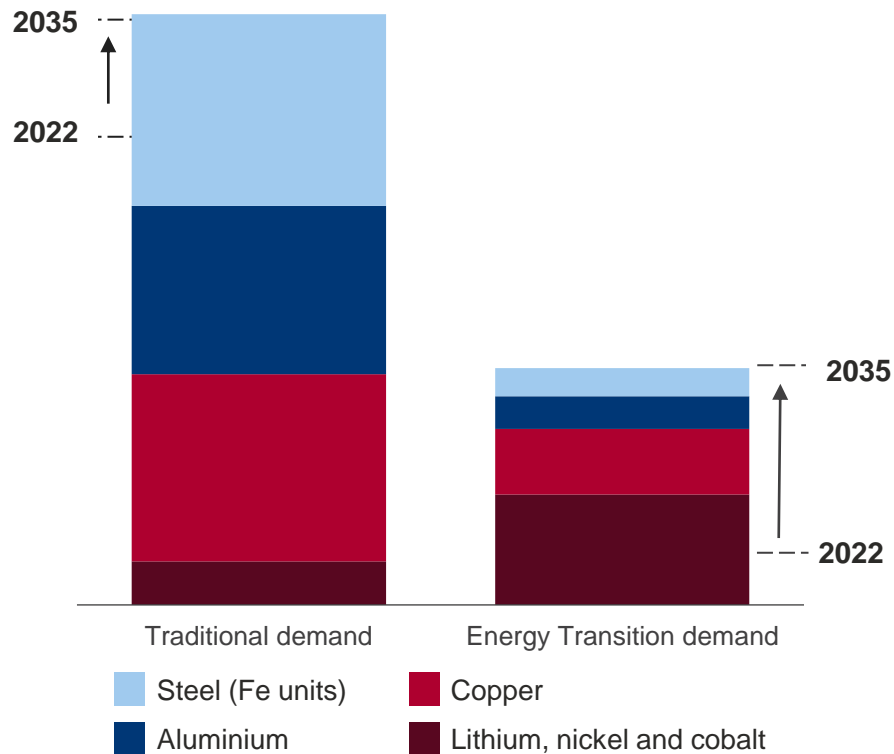


Finding better ways to  
provide the materials  
the world needs

# Outlook underpins a strong Rio Tinto for the long term

## Total commodity demand by 2035 (<2°C scenario, Cu eq)<sup>1</sup>

Total demand growth 3.9% CAGR between 2022 and 2035 with net demand uplift from Traditional and Energy Transition broadly equal



### Each 1MW wind turbine requires<sup>2</sup>:

85-210t steel  
2-12t Cu  
1-2t Al  
~200kg rare earths



### Each 1MW solar panel requires:

35-45t steel  
4.5t Cu  
3.5-8t Al<sup>3</sup>



### Each electric vehicle<sup>4</sup> requires:

900kg steel  
80kg Cu  
280kg Al  
~40kg Li<sub>2</sub>CO<sub>3</sub> eq

# Rio Tinto has a strong heritage of innovation

**New routes to extraction – titanium from ilmenite, copper smelting**



**High amperage alumina refinery & aluminum smelting**



**Commercial innovation – Pilbara Blend, Pink Diamonds**

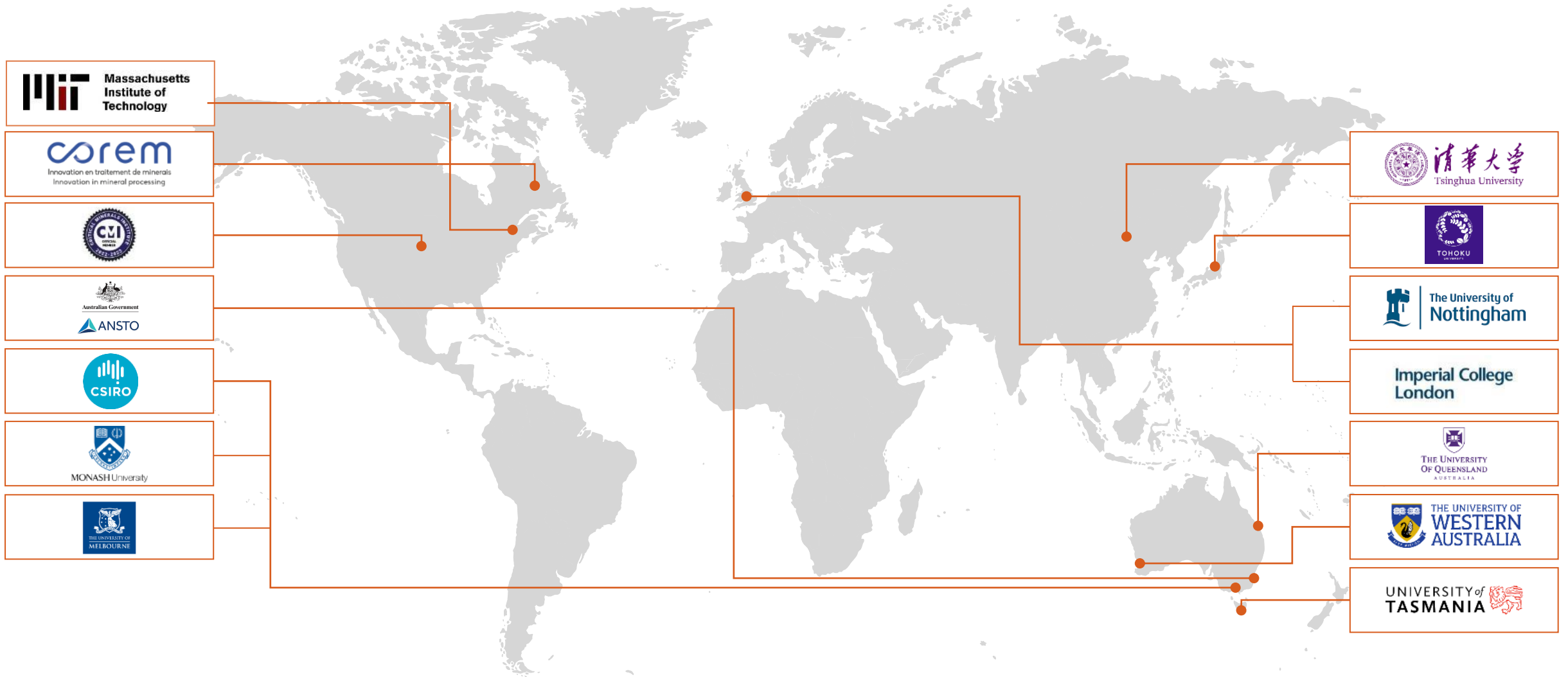


**Heavy mining equipment automation**



**... our future ambition requires us to provide the materials for the global energy transition quicker and with a significantly reduced carbon footprint**

# ...complemented by partnerships



# Disciplined technology roadmap

## Health & Safety 9 projects

Reducing frontline exposure to hazards

Managing health and wellbeing of our people

## ESG 19 projects

Reducing water consumption

Improving water treatment

Dry tailings

Dry processing

Closure


## Growth 32 projects


Discovering new orebodies


Reducing capital intensity


⊕ Creating new revenue streams

## Carbon 21 projects

 Green steel and low carbon products

 Storage options

 Green processing

 Green energy

 Green fleet

## Productivity 54 projects

Maximise value from each ore body

Equipment utilisation

Automation

Energy efficiency

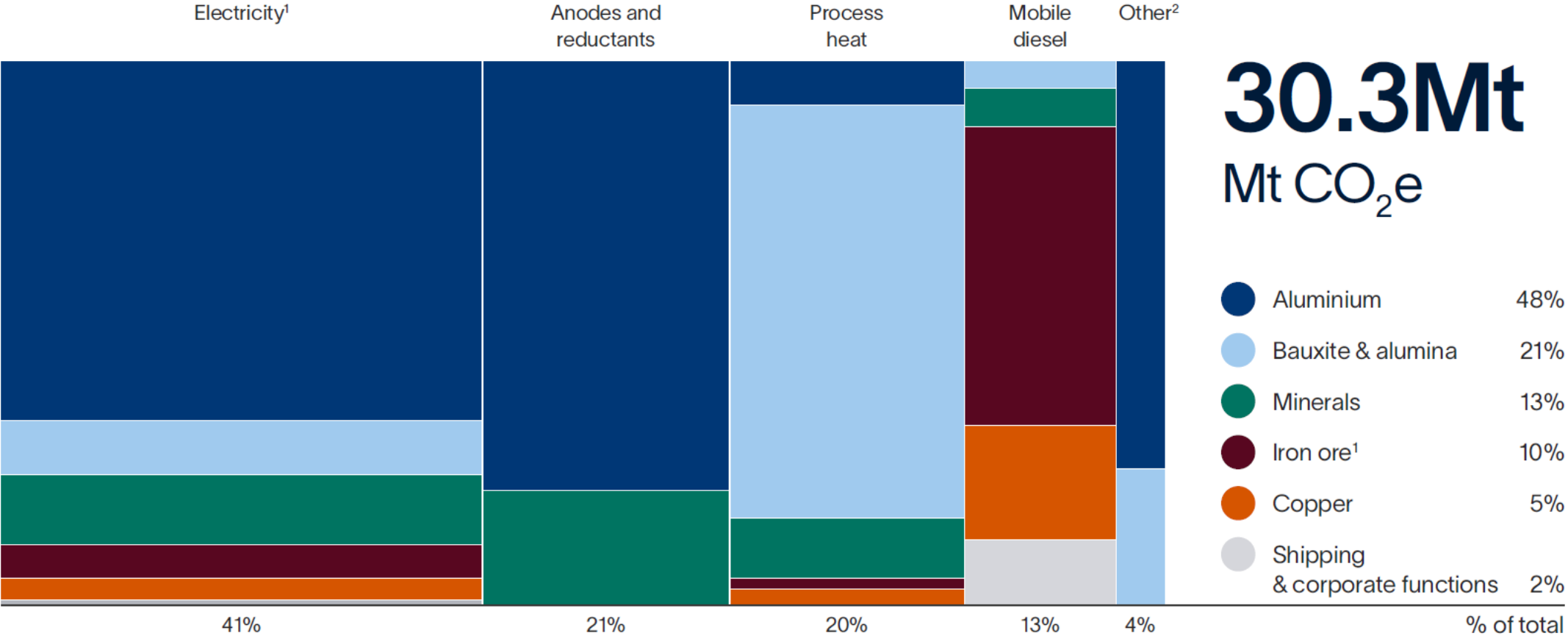
Impeccable ESG credentials

Excel in Development

Best Operator

Social Licence

# Processing accounts for the majority of our carbon footprint

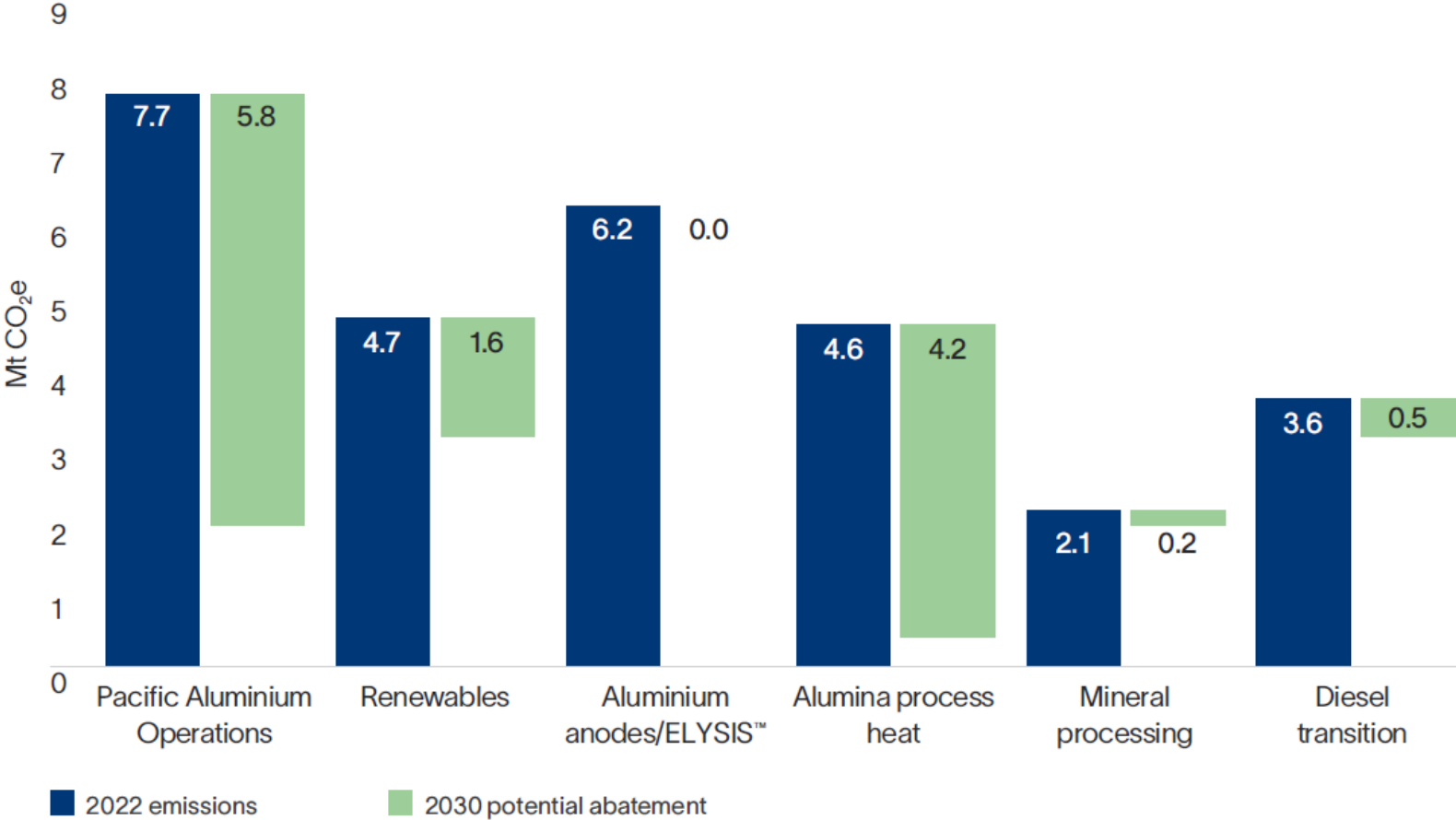


1. Our Iron Ore product group is primarily our operations in the Pilbara and includes some salt production. Our Minerals product group includes the Iron Ore Company of Canada (IOC). Our 2022 equity emissions do not include the additional equity share of the Oyu Tolgoi mine that was purchased in mid-December 2022.

2. Other includes perfluorocarbons and land-based emissions. Note the sum of the categories may be slightly different to the total due to rounding.

# Pursuing an abatement pathway to reach our 2030 target

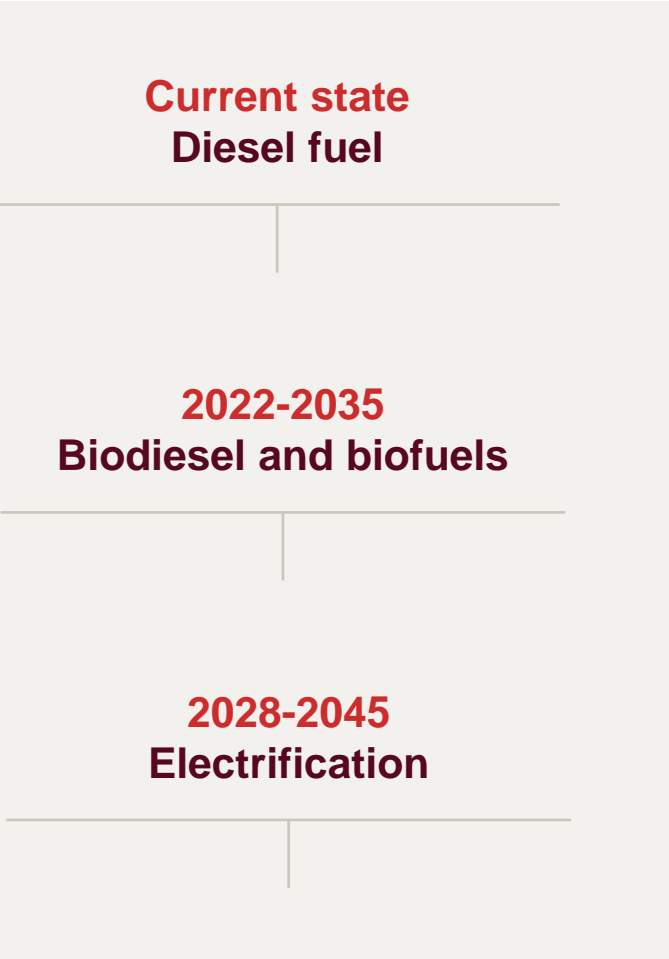
## 2030 pathway: emissions reduction potential by major abatement programme



2018 emissions baseline	32.5
Emissions reduction to 2022	-2.2
<b>2022 emissions</b>	<b>30.3</b>
Growth to 2030	1.1
Abatement programmes	-12.3
Other required abatement (includes NbS)	2.8
<hr/>	
<b>2030 emissions (50% reduction)</b>	<b>16.2</b>
New projects will need to be carbon neutral or have emissions mitigated elsewhere in the portfolio.	

Aluminium anodes pre-2030 is contributing to growth of Net Zero Aluminium rather than abating existing production tonnes and is therefore showing no abatement to 2030  
 Nature-based Solutions projects are expected to result in CO<sub>2</sub> removals and avoided emissions  
 Other will flex over time based on abatement project delivery, growth, closures and asset changes

# Fleet electrification will require time and technology breakthroughs



## Battery pathways

	Drill	Charge	Dozer	Loader	Truck
<b>Trial stage 2024</b>					
<b>Early deployment 2026</b>					
<b>At scale</b>					

Diesel    
 Cable power    
 Battery Electric

# Supporting our customers - steel decarbonisation

1 Blast Furnace Optimisation	2 Pilbara Beneficiation	3 Biolron™	4 H <sub>2</sub> DRI + Melter	5 High-Grade DRI	6 Iron Ore Portfolio
<b>Optimising current technology</b>	<b>Upgrading our Pilbara ores</b>	<b>Ironmaking with Pilbara ores Pathway 1</b>	<b>Ironmaking with Pilbara ores Pathway 2</b>	<b>Entry to high-grade green iron market</b>	<b>Bringing high-grade ore to the market</b>
Multiple collaborations with customers	Finding optimal stage(s) along the steelmaking value chain to remove impurities	Developing an alternative steelmaking route to H <sub>2</sub> DRI	Developing H <sub>2</sub> DRI with melter for Pilbara ores	Entering H <sub>2</sub> HBI market and demonstrate new tech using RT ores	e.g. Simandou

## Key Partnerships



Metso:Outotec



# Breakthrough technologies create new revenue streams

## Green aluminium



### Low carbon aluminium

Apple has used the world's first aluminium from zero carbon smelting at an industrial scale ELYSIS cell

Investing \$1.1 billion to expand AP60 aluminium smelter equipped with low-carbon technology at Complexe Jonquière in Canada

## Processing waste



Rio Tinto Fer et Titane

### Critical minerals from waste

Scandium production at Rio Tinto Fer et Titane (RTFT) from spent acid stream

Tellurium production at Kennecott delivering a new domestic supply to the US Solar industry

Spodumene concentrate produced at RTFT



Nuton™ technology pilot plant, Bundoora, Australia

### Copper from waste

Nuton™ and related sulphide leaching technology targeting legacy copper waste and traditional orebodies with detritical challenges

Commercialising through strategic partnerships in the Americas

## Carbon mineralisation



Tamarack, Minnesota

### Storing carbon as rock

Rio Tinto-led team exploring carbon storage potential at the Tamarack nickel joint venture in central Minnesota

Partnership with Sichuan University to research methods for carbon mineralization

# Technology to enable growth



## Maximizing our ore bodies

Getting more from our existing assets



## Ore body characterization

Improving our understanding of targets



## Geophysics & remote sensing

Finding new ore bodies



## Advanced analytics & Artificial Intelligence

Turning big data into big insights

**RioTinto**