Notice to ASX/LSE

Rio Tinto releases fourth quarter production results

17 January 2023

Rio Tinto Chief Executive Jakob Stausholm, said: “We were fatality free for the fourth consecutive year, as we continue to put safety at the forefront of everything we do. A number of operational records were achieved in the second half across the Pilbara iron ore mine and rail system. Deployment of our Safe Production System resulted in improved performance at those sites and overall production was higher versus 2021 across all commodities, with the exception of aluminium and alumina.

“The acquisition of Turquoise Hill Resources strengthens our copper portfolio and demonstrates our ability to allocate capital with discipline to grow in materials the world needs for the energy transition and delivering long-term value for our shareholders. Copper guidance has been increased accordingly. We continue to invest in future growth, progressing the Rincon lithium project in Argentina and are working with our partners to progress the Simandou project in Guinea.

“We continue to work hard to transform our culture and invest in genuine partnerships. I am proud that we have reached new agreements with the Yindjibarndi and Puutu Kunti Kurrama and Pinikura peoples in Australia, and the Pekuakamiulnuatsh First Nation in Canada.

“In line with our new purpose of finding better ways to provide the materials the world needs, we will continue to progress our four objectives and strategy to strengthen the business, which will lead to profitable growth and continue to deliver attractive shareholder returns.”

Production*		**Q4 2022**	vs Q4 2021	vs Q3 2022	**Full Year 2022**	vs Full Year 2021
Pilbara iron ore shipments (100% basis)	**Mt**	**87.3**	+4%	+5%	**321.6**	0%
Pilbara iron ore production (100% basis)	**Mt**	**89.5**	+6%	+6%	**324.1**	+1%
Bauxite	**Mt**	**13.2**	+1%	-4%	**54.6**	+1%
Aluminium	**kt**	**783**	+3%	+3%	**3,009**	-4%
Mined copper	**kt**	**131**	-1%	-5%	**521**	+6%
Titanium dioxide slag	**kt**	**323**	+42%	+4%	**1,200**	+18%
IOC** iron ore pellets and concentrate	**Mt**	**2.5**	+1%	-9%	**10.3**	+6%

**Rio Tinto share unless otherwise stated*
***Iron Ore Company of Canada*

2022 operational highlights and other key announcements

- We continue to prioritise the safety, health and wellbeing of our workforce and communities where we operate. We experienced our fourth consecutive year with no fatalities at our managed operations, and continue to work hard with our partners to achieve the same results at our non-managed assets and marine operations.

- Pilbara operations produced 324.1 million tonnes (100% basis) in 2022, 1% higher than 2021. Shipments were 321.6 million tonnes (100% basis), in line with 2021. Performance improvements continued across the system and we achieved record second half performance across the mine and rail system. We expect Gudai-Darri to reach its nameplate capacity on a sustained basis during 2023.

- Bauxite production of 54.6 million tonnes was 1% higher than 2021, despite equipment reliability issues at Weipa and Gove in Australia.

- Aluminium production of 3.0 million tonnes was 4% lower than 2021 due to reduced output at our Kitimat smelter in British Columbia, Canada and Boyne smelter in Queensland, Australia. The rate of pot restarts at Kitimat picked up in the fourth quarter and Boyne smelter cell recovery efforts continued. Recovery at both smelters is progressing with full ramp-up expected to be completed during the course of 2023. All of our other aluminium smelters continued to demonstrate stable performance.

- On 1 December, we commissioned the second tunnel (T2) to carry water into the Kemano Powerhouse in British Columbia, marking the end of the Kemano T2 hydropower project. The new, 16-kilometre tunnel produced its first megawatt of electricity in July 2022 after construction was completed in May 2022. Both T1 and T2 are now operating together, ensuring the long-term reliability of the power supply for our aluminium smelter in Kitimat and neighbouring communities.

- Mined copper production of 521 thousand tonnes was 6% higher than 2021 due to higher grades at Kennecott and Escondida, partly offset by lower grades and recoveries at Oyu Tolgoi as a result of planned mine sequencing. Unplanned maintenance was required at Kennecott in the fourth quarter of 2022 in our anode furnaces leading to extended downtime and continued poor anode production, likely to result in weak cathode production in the first quarter of 2023. Refined copper production at Kennecott will continue to be challenged due to the smelter and refinery performance, until we undertake the largest rebuild in nine years which is planned for the second quarter of 2023 and is expected to take approximately three months.

- On 16 December, we completed the acquisition of Turquoise Hill Resources Ltd for a consideration of approximately $3.1 billion[1], simplifying ownership of the world-class Oyu Tolgoi mine in Mongolia, significantly strengthening Rio Tinto's copper portfolio, and demonstrating our long-term commitment to the project and Mongolia. We now hold a 66% direct interest in the Oyu Tolgoi project with the remaining 34% owned by the Government of Mongolia through Erdenes Oyu Tolgoi. Cash consideration of approximately $2.9 billion was paid in December 2022. Oyu Tolgoi production for 2022 remains on a 33.52% Rio Tinto share basis.

- Titanium dioxide slag production of 1,200 thousand tonnes was 18% higher than 2021, due to community disruptions at Richards Bay Minerals (RBM) in South Africa in 2021, and continued improved performance of operations at Rio Tinto Fer et Titane (RTFT), Canada. Production constraints related to nationwide electrical power loadshedding at RBM were experienced in the fourth quarter.

- Iron Ore Company of Canada (IOC) production of pellets and concentrate was 6% higher than 2021. Successful deployment of the Rio Tinto Safe Production System (SPS) at the concentrator was completed in the year, with record performance metrics achieved in the year, including monthly records for concentrate production and total material moved in the second quarter. Planning for SPS deployment at the pellet plant commenced in December.

- We achieved our SPS deployment target for 2022 with 30 deployments across 16 sites. Roll-outs are ongoing to continuously improve safety, strengthen employee engagement and sustainably lift operational performance across our global portfolio.

- As reported in the first half, higher rates of inflation have increased our closure liabilities with an impact to underlying earnings. This resulted in increased charges for the year of approximately $1.3 billion pre-tax within underlying earnings (first half 2022: $0.4 billion) compared with 2021, including a $1.1 billion full year increase in amortisation of discount (first half 2022: $0.3 billion), with the remainder impacting Underlying EBITDA.

- As part of the agreement reached with the Australian Taxation Office (ATO) in July, we paid the ATO additional tax of A$613 million for the period from 2010 to 2021 in August 2022.

- The sale of a royalty on an area including the Cortez mine operational area, a direct wholly-owned subsidiary of Royal Gold Inc., for $525 million in cash, was settled in August. This amount will be recorded in 'Sales of financial assets' in the group cash flow statement and is therefore not included in Free cash flow.

- The sale of our wholly owned Roughrider uranium development completed in October for total consideration of $150 million, including $80 million in cash, will be recorded in 'Disposal of subsidiaries' in the group cash flow statement and is therefore not included in Free cash flow.

- On 30 November, we provided a detailed update at our Investor Seminar on execution of our strategy and evolution of our culture, including SPS and decarbonisation activities, to strengthen the business, grow in a decarbonising world and continue to deliver attractive shareholder returns. Capital expenditure to decarbonise our assets of an estimated $7.5 billion to 2030 is being prioritised and phased. This remains subject to Traditional Owner and other stakeholder engagement, regulatory approvals and technology developments. New long-term power contracts will also be required for the aluminium business to meet targets. Our incremental operating expenditure on building new teams and energy efficiency initiatives remains around $200 million per annum in addition to Research and Development investment.

- On 19 December, we announced the appointment of Kaisa Hietala as a non-executive director to the Rio Tinto Board, commencing 1 March 2023. Ms Hietala, a Finnish citizen, played a central role in the commercial transformation of Neste, the world's largest and most profitable producer of renewable products, as Executive Vice President of Renewable Products. She serves on the Boards of Exxon Mobil and Smurfit Kappa Group, and is Chair of the Board at Tracegrow, a private Finnish sustainable fertilisers company.

- All figures in this report are unaudited. All currency figures in this report are US dollars, and comments refer to Rio Tinto's share of production, unless otherwise stated.

[1]Based on a value of C$43.00 per share and a USD/CAD FX rate of 1.3618 as of 15 December 2022 and includes amounts we expect to pay in 2023.

2023 guidance

Rio Tinto share, unless otherwise stated	2022 Guidance	2022 Actuals	2023
Pilbara iron ore (shipments, 100% basis) (Mt)	320 to 335[1]	322	**320 to 335**
Bauxite (Mt)	54 to 57	55	**54 to 57**
Alumina (Mt)	7.6 to 7.8	7.5	**7.7 to 8.0**
Aluminium (Mt)	3.0 to 3.1	3.0	**3.1 to 3.3**
Mined copper (kt)	500 to 575	521	**650 to 710[2]**
Refined copper (kt)	190 to 220	209	**180 to 210**
Diamonds (M carats)	4.5 to 5.0	4.7	**3.0 to 3.8**
Titanium dioxide slag (Mt)	1.1 to 1.4	1.2	**1.1 to 1.4**
IOC[3] iron ore pellets and concentrate (Mt)	10.0 to 11.0	10.3	**10.5 to 11.5**
Boric oxide equivalent (Mt)	~0.5	0.5	**~0.5**

[1]At the low end of range.
[2]Oyu Tolgoi production for 2022 remains on a 33.52% Rio Tinto share basis. Subsequent to Rio Tinto's acquisition of Turquoise Hill Resources which completed on 16 December, 2023 mined copper guidance now includes Oyu Tolgoi on a 100% consolidated basis and continues to reflect our 30% share of Escondida.
[3]Iron Ore Company of Canada continues to be reported at Rio Tinto share.

- 2023 production guidance is unchanged since November 2022 with the exception of mined copper. On a Rio Tinto share basis, mined copper production guidance changed from 550 to 600 thousand tonnes to 600 to 655 thousand tonnes. This reflects our increased ownership in Oyu Tolgoi from 33% to 66%. Our headline production guidance of 650 to 710 thousand tonnes now includes 100% of Oyu Tolgoi, in line with the consolidation of Oyu Tolgoi in Consolidated sales revenue and Underlying EBITDA in our group financial statements.
- Iron ore shipments and bauxite production guidance remain subject to weather and market conditions. Pilbara shipments guidance remains subject to progressing the ramp-up of shipments from new mines and management of cultural heritage.

Operating costs

- Our 2022 Pilbara iron ore unit cash costs are likely to end up slightly above the top end of our $19.5-21.0 per tonne guidance range, primarily due to inflation, diesel prices and labour costs.
- Guidance for 2023 Pilbara iron ore unit cash costs is unchanged at $21.0 to $22.5 per tonne, based on A$:US$ exchange rate of 0.70.
- Guidance for 2023 copper C1 unit costs is unchanged at 160 to 180 US cents/lb.
- Working capital has stabilised but remains somewhat elevated with commodity price volatility, higher raw material prices and global supply chain pressures.

Aluminium modelling

As reported in the first half of 2022, to assist with modelling of aluminium operating costs during a volatile price environment for raw materials we provide the following breakdown and sensitivities for the alumina and aluminium metal segments (Primary Metal and Pacific Aluminium). This excludes the effect of intra and inter segment eliminations on group profit. Higher raw material prices are also increasing inventory balances.

Alumina refining

Production cash cost (%)	FY 21	H1 22	H2 22	FY 22
Bauxite	39	32	30	31
Conversion	34	33	32	32
Caustic	14	22	24	23
Energy	13	13	14	14
Total	100	100	100	100

Input costs (nominal)	H1 21 Index price	H2 21 Index price	H1 22 Index price	H2 22 Index price	FY 22 Annual cost sensitivity impact on underlying EBITDA
Caustic soda[1] ($/t)	274	535	675	595	$10m per $10/t
Natural gas[2] ($/mmbtu)	2.85	4.59	6.02	7.01	$4m per $0.10/GJ
Brent oil ($/bbl)	64.6	76.3	105.9	93.8	$2m per $10/bbl

[1]North East Asia FOB | [2]Henry Hub

Aluminum smelting

Production cash cost (%)	FY 21	H1 22	H2 22	FY 22
Alumina	41	42	39	41
Power	21	20	19	19
Conversion	21	17	17	17
Carbon	15	19	23	21
Materials	2	2	2	2
Total	100	100	100	100

Input costs (nominal)	H1 21 Index price	H2 21 Index price	H1 22 Index price	H2 22 Index price	FY 22 Annual cost sensitivity impact on underlying EBITDA
Alumina[1] ($/t)	288	369	395	328	$64m per $10/t
Petroleum coke[2] ($/t)	373	491	695	719	$11m per $10/t
Coal tar pitch[3] ($/t)	748	818	1,103	1,476	$2m per $10/t

[1]LME Australia | [2]US Gulf FOB | [3]North America FOB

Investments, growth and development projects

- Exploration and evaluation expense in 2022 was $897 million, $171 million (24%) higher than 2021, with continued ramp-up of activities in Guinea, Argentina and Australia. Our annual budget for greenfield exploration remains around $250 million, mainly focused on copper, with a growing battery minerals programme.

Pilbara mine projects

- We have safely completed required works and demobilised from our recently commissioned Pilbara mine replacement projects during the period. We expect Gudai-Darri to reach its nameplate capacity on a sustained basis during 2023.

- At Robe Valley, the Mesa A wet plant performance verification was successfully completed during the quarter and construction resources have demobilised from site.

- We have now received all primary environmental and Australian government approvals for the Western Range Iron Ore project (Greater Paraburdoo), a joint venture between Rio Tinto (54 per cent) and China Baowu Steel Group Co. Ltd (46 per cent). The joint venture remains subject to Chinese regulatory approvals. Rio Tinto commenced early works site mobilisation and major contracts for bulk earthworks and Civil, Structural, Mechanical, Piping, Electrical and Instrumentation have been awarded. Heritage surveying continued with final surveys planned for the first quarter of 2023.

- In addition, we continue to progress our next tranche of Pilbara mine projects including Hope Downs 1 Sustaining (Hope Downs 2 and Bedded Hilltop) and Brockman 4 Sustaining (Brockman Syncline 1). We expect to complete the Rhodes Ridge order of magnitude study in 2023.

Oyu Tolgoi underground project

- At the end of the quarter, a total of 19 drawbells had been fired. Drawbell progression accelerated as a result of improvement initiatives implemented by the Oyu Tolgoi teams, bringing projected first sustainable production from Panel 0 forward to the first quarter of 2023 (previously first half of 2023).
- At the end of December, shafts 3 and 4 sinking reached 378 metres and 507 metres below ground level, respectively. Operational safety sinking pauses have caused some delays against the 2022 reforecast[1] to shaft sinking across the fourth quarter. Final depths required for shafts 3 and 4 are 1,148 and 1,149 metres below ground level, respectively. Construction of conveyor to surface works continued during the quarter with civil scope of works completed and other contractors mobilised to site.

- Study work for Panels 1 and 2 (which are required to support the ramp-up to 95,000 tonnes of ore per day) remains on track to be completed in the first half of 2023. It will incorporate any ventilation impacts due to the shaft 3 and 4 delays as a result of COVID-19 restrictions and reprioritisation of the mobilised workforce over the course of 2022, as previously reported.

- During the quarter, Rio Tinto and the Government of Mongolia continued to focus on supporting Oyu Tolgoi to reach the sustainable production milestone and continuing progress on the remaining measures contained in Mongolian Parliamentary Resolution 103 which enabled the agreement to reset the relationship and commence underground mining operations in January 2022.

- Rio Tinto now has a 66% direct interest in Oyu Tolgoi following the successful completion of the acquisition of Turquoise Hill Resources Ltd. This is allowing Rio Tinto to focus fully on strengthening its relationship with the Government of Mongolia and moving the project forward with a simpler and more efficient ownership and governance structure.

Other key projects and exploration and evaluation

- At the Resolution Copper project in Arizona, the US Forest Service continued work to progress the Final Environmental Impact Statement (FEIS) and complete actions necessary for the land exchange. We continued to advance partnership discussions with several federally-recognised Native American Tribes who are part of the formal consultation process. We note the US Ninth Circuit Court of Appeals' decision in November to re-hear the appeal before the entire bench of judges. This same court of appeal previously upheld the lower court's ruling, which denied Apache Stronghold's request for injunctive relief. While there is significant local support for the project, we respect the views of groups who oppose it and will continue our efforts to address and mitigate these concerns. Costs attributable to the Resolution project in 2022 were $122 million[3].

- At the Winu copper-gold project in Western Australia, we continued to strengthen our relationships and advanced agreement making over the quarter with our host Traditional Owners, the Martu and Nyangumarta groups. Planned drilling, fieldwork and study activities continued over the period strengthening the development pathway ahead of applications for regulatory and other required approvals. Costs attributable to the Winu project in 2022 were $56 million[3].

- At the Simandou iron ore project in Guinea, negotiations towards the co-development of project infrastructure progressed with the December signing of a non-binding term sheet between Rio Tinto joint venture Simfer, Baowu Resources, Winning Consortium (WCS) and the Government of Guinea[2]. The term sheet further establishes the co-development principles following the incorporation of La Compagnie du TransGuinéen on 27 July 2022, and is a pivotal next step towards securing the shareholder agreement, cost estimates and regulatory authority approvals necessary to progress the co-development of rail and port facilities. Progress was also made on enabling works at Rio Tinto Simfer blocks 3 and 4 and the projected rail spur connection line. We also progressed land access agreements with communities and upgrade works to camp facilities. The award of contracts for key work packages continued in the quarter, including the major package tender evaluations for bulk earthworks and mine process plant equipment. Costs attributable to the Simandou project in 2022 were $189 million[3].

- We continue to believe that the Jadar lithium-borate project in Serbia has the potential to be a world-class asset, that will support the development of other future industries in Serbia, acting as a catalyst for tens of thousands of jobs for current and future generations, and sustainably produce materials critical to the energy transition. We are focused on consultation with all stakeholders to explore all options related to the project's future.

- At the Rincon lithium project in Argentina, development of the three thousand tonne per annum lithium carbonate starter plant progressed. To optimise the process and recoveries, we continue to produce battery-grade lithium carbonate from raw brine from the existing pilot plant operating at site. Early works construction activities progressed on phase one camp facilities with rooms for 250 persons completed. In the period, airstrip permits were received and contractors mobilised. Detailed studies for the full scale operation were advanced, and the exploration campaign progressed to further understand Rincon's basin and brine reservoir. We continue to engage with communities, the province of Salta and the Government of Argentina to ensure an open and transparent dialogue with stakeholders about the works underway.

- Costs attributable to Battery Materials were $161 million[3].

[1]A cost and schedule reforecast was performed in June 2022 and estimates that $7.06 billion is required to complete the Hugo North 1 project (an increase of $0.3 billion beyond the 2020 Definitive Estimate). The 2022 Reforecast excludes impacts of COVID-19 restrictions arising after June 2022. The 2022 reforecast remains subject to Oyu Tolgoi Board approval.
[2]This followed notification to Rio Tinto and the Government of Guinea, of Baowu's earlier entry into a term sheet agreement with WCS in respect of an investment into WCS InfraCo and WCS MineCo (blocks 1 and 2) – an agreement welcomed by Rio Tinto. Baowu Resources Co. is a member of China Baowu Steel Group Corporation Limited.
[3]Costs are included in the total 2022 exploration and evaluation expense. Excludes amounts capitalised in the period.

Sustainability highlights

We are implementing the 26 recommendations of the Everyday Respect report in line with the management team's commitment to a safe, respectful and inclusive Rio Tinto. We are creating an open and transparent environment which will make positive and lasting change and strengthen our workplace culture for the long term. We exceeded our leadership training target of 80% by the end of the year, achieving 91% completion. On 15 November, we announced the launch of an innovative pilot programme, 'Building Safe and Respectful Workplaces', with BHP and Fortescue, aimed at helping to eliminate disrespectful behaviour in the resources industry including sexual harassment, bullying and racism. The three companies have worked together with leading experts to design and develop the industry-first program aimed at educating new entrants to the sector.

On 30 October, we announced a partnership agreement with BHP to accelerate the development of technology that could significantly increase water recovery from mine tailings, and in turn reduce potential safety risks and environmental footprints associated with tailings storage facilities. The first project will involve testing the application of an innovative large-volume filter unit at a BHP copper mine in Chile, which would remove up to 80% of the water in the tailings stream before it is deposited in a storage facility.

On 6 December, we announced a collaboration with Oz Minerals and Boliden to unlock new and innovative technologies for managing tailings, helping the mining industry to further reduce risk while extracting the materials the world needs for the energy transition from what was previously regarded as 'waste'. The collaboration will support innovators by providing materials, funding, technical guidance and the potential for field trials at mine operations. Innovators will retain ownership of their intellectual property rights, with a licence to use those rights granted to the companies that support them.

Communities & Social Performance (CSP)

On 3 November, we announced an investment of A$5.6 million over five years into the Pilbara Cultural Land Management Project (PCLMP) that enables Pilbara Traditional Owners to work together to preserve their Country and culture and keep their people strong. The PCLMP has continued to evolve over the past two years as its members drive the design and development of a program to support cultural and conservation management across their native title determinations. On 21 November, we announced a A$250 million commitment to the State Government's new Resources Community Investment Initiative. An initial pipeline of projects has already been identified. We will work with Western Australian Government to further define the projects that we will contribute funding towards over the next 10 years.

On 27 November, the Puutu Kunti Kurrama and Pinikura Aboriginal Corporation and Rio Tinto agreed to create the Juukan Gorge Legacy Foundation after signing a remedy agreement regarding the tragic destruction of two rock shelters at Juukan Gorge in May 2020. Financial support will be provided to the Traditional Owner-led foundation to progress major cultural and social projects including a new keeping place for storage of important cultural materials. The agreement forms part of our commitment to remedying and rebuilding the relationship with the Puutu Kunti Kurrama and Pinikura people.

On 9 November 2022, we signed an updated agreement with Yindjibarndi Aboriginal Corporation. This agreement will deliver social and economic outcomes for future generations, and reflects our commitment to create more opportunities for Yindjibarndi people to participate in our operations.

On 15 December, Pekuakamiulnuatsh First Nation and Rio Tinto signed their first agreement named Kuessilueu, which means "the wind is turning" in Nelueun. This new agreement marks the beginning of a new era and sets the foundation for an innovative and sustainable partnership. Multidisciplinary teams will identify opportunities for collaboration and establish recommendations in six shared priorities areas - employment and training, business opportunities, cultural heritage and environment, partnerships, energy transition and governance. The goal is to finalise a long-term partnership agreement within 18 months to provide long-term shared benefits across the Saguenay–Lac-Saint-Jean region in Quebec.

In December, we released our revised Human Rights policy. The Policy has been developed to advance our human rights performance in line with our business objectives, values, emerging regulatory requirements and stakeholder expectations. Building on our existing commitments, the revised Policy aims to strengthen our position to respect the rights of affected stakeholders and prevent and address our involvement in adverse impacts through our activities and value chain.

Key highlights from the quarter are outlined above, with further information available on our website.

Climate change, product stewardship and our value chain

On 30 November, we provided an update at our Investor Seminar on execution of our strategy and evolution of our culture, including Safe Production System (SPS) and decarbonisation activities, to strengthen the business, grow in a decarbonising world and continue to deliver attractive shareholder returns. Details were provided on projects underway to meet challenging decarbonisation targets to halve our Scope 1 and 2 emissions by 2030. Six large emissions abatement programmes are focused on renewable power, process heat, diesel and the ELYSIS™ zero carbon aluminium smelting technology to drive the transition to net zero by 2050, supported by high-quality nature based solutions. Capital expenditure to decarbonise our assets of an estimated $7.5 billion to 2030 is being prioritised and phased. This remains subject to Traditional Owner and other stakeholder engagement, regulatory approvals and technology developments. New long-term power contracts will also be required for the aluminium business to meet targets. Our incremental operating expenditure on building new teams and energy efficiency initiatives remains around $200 million in addition to Research and Development investment.

In the fourth quarter, we progressed initiatives to decarbonise our business and actively develop technologies to decarbonise our value chains.

- On 22 November, we announced that we had proved the effectiveness of our low-carbon iron-making process using ores from our mines in Australia in a small-scale pilot plant in Germany. We are now planning a larger-scale pilot plant to further assess its potential to help decarbonise the steel value chain. The process, known as BioIron™, uses raw biomass instead of metallurgical coal as a reductant and microwave energy to convert Pilbara iron ore to metallic iron in the steelmaking process. BioIron™ has the potential to support near-zero CO_2 steel-making, and can result in net negative emissions if linked with carbon capture and storage.

- On 30 November, we announced an intention to invest a further $600 million in renewable energy assets in the Pilbara as part of our efforts to decarbonise our Western Australian iron ore operations. The investment is intended to fund the construction of two 100MW solar power facilities as well as 200MWh of on-grid battery storage in the Pilbara by 2026. This is in addition to the 34MW of solar power installed at the recently commissioned Gudai-Darri iron ore mine.

- In November, during the China International Import Expo in Shanghai, Rio Tinto and other industry participants signed various Memorandum of Understandings (MoUs) with the China Mineral Resources Group. Our MoU highlights areas we plan to collaborate which includes steel decarbonisation cooperation, creating long-term sustainable and efficient value chains, and mineral resource supply development including cooperation on international resource identification and development.

- In December, we signed a MoU with Mitsui & Co. to explore ways to reduce emissions across supply chains - from steel decarbonisation to alternative fuels for mining vehicles and shipping.

Our markets

Commodity prices found some support during the fourth quarter of 2022. The global economy continues to slow, but some external pressures have eased, with the change in China's stance on COVID controls, the fall in energy prices alleviating cost pressures, and markets anticipating a slower pace of interest rate hikes. Global supply chain pressures have also improved and freight rate pressures have eased. However, the Russia-Ukraine war continues to pose energy and food security risks, while fears of recession in the US and Europe remain.

- China continues to provide support to its economy on various fronts, including the infrastructure and property sectors. However, the end to COVID controls in December and the subsequent wave of COVID cases bring high volatility in the coming quarter, with increased short-term risks of supply chain disruptions and labour shortages. Although more financing is being provided, consumers remain cautious of the property market. The country's trade balance remains healthy, but slowing global demand poses downside risks to exports.

- The US economy has been more resilient than previously envisaged despite interest rate hikes. The labour market added more jobs compared to consensus forecasts, and the unemployment rate remained low. The Federal Reserve continued its tightening monetary policy with a 50 basis points hike in December, following four consecutive 75 basis point increases, and is expected to further tighten albeit at a slower pace until inflation rate is kept under control. Risk of a recession remains as consumer spending will likely be constrained by rising interest rates and depleted savings.

- The Eurozone economy showed signs of a downturn, as industrial activity contracted with persistent low demand while inflation remains high. The European Central Bank (ECB) tightened its monetary policy with the latest 50 basis point increase in December and is expected to continue into this year. Although the region reduced the chances of a winter energy crisis through rebuilding of gas inventories, uncertainty remains as the spill over impacts of the ban on Russian crude oil and refined petroleum set in.

- Iron ore Platts CFR prices rebounded 22% in the quarter, although the average price of $99/t in the fourth quarter was 4% lower than the third quarter. Market sentiment strengthened after Beijing released three stimulus packages in November to stabilise the real estate market by lifting all previously applied financing constraints on property developers. Prices trended above $110/dmt at year-end as China began dismantling its zero-COVID policy and gradually reopening the economy, while mills also started to replenish in-plant inventories ahead of the Lunar New Year holidays. Steel demand recovery hinges on the country's ability to control the COVID outbreak.

- The LME cash aluminium price increased 8% in the quarter, although the average price of $2,324/t in the fourth quarter was 1% lower than the third quarter. The market was supported by low reported levels of inventories, and expectations of improving Chinese demand. In North America, shipments of extrusions and rolled products softened over the quarter, mainly on weaker extrusion shipments into the building and construction sector. Aluminium demand growth from renewables and Electric Vehicles (EVs) remains firm. LME stocks are now at their lowest level in 22 years, and Chinese warehouse stocks are at a six-year low.

- The copper LME price rose 10% in the fourth quarter to $3.80/lb, as market sentiment turned more positive on a series of supply disruptions and low and declining visible stocks, which remain at historically low levels. Price support came in the form of Chinese government policy changes such as in the property market and easing COVID-19 restrictions, together with demand growth in renewables and EVs, plus the return of the investor net long position in copper.

- The EV market continues to experience strong growth supported by China as lithium carbonate prices remain elevated on the back of strong global demand in the quarter. Short-term uncertainty is expected to remain as the global economy slows and rising interest rates dampen consumers' discretionary spending. Nonetheless, the long-term outlook remains favourable as governments continue their push for EV adoption.

Average realised prices achieved for our major commodities

	Units	H1 2022	H2 2022	**2022**	2021
Pilbara iron ore	FOB, $/wmt	110.9	86.0	**97.6**	132.3
Pilbara iron ore	FOB, $/dmt	120.5	93.5	**106.1**	143.8
Aluminium*	Metal $/t	3,808	2,870	**3,330**	2,899
Copper**	US c/lb	447	362	**403**	424
IOC pellets	FOB $/wmt	199.0	180.1	**190.3**	214.4

*LME plus all-in premiums (product and market).
**Average realised price for all units sold. Realised price does not include the impact of the provisional pricing adjustments, which negatively impacted revenues in 2022 by $175 million (2021 positive impact of $246 million).

IRON ORE

Rio Tinto share of production (Million tonnes)	Q4 2022	vs Q4 2021	vs Q3 2022	Full Year 2022	vs Full Year 2021
Pilbara Blend and SP10 Lump[1]	**21.4**	+5%	+1%	**79.2**	+4%
Pilbara Blend and SP10 Fines[1]	**35.1**	+9%	+8%	**123.6**	+3%
Robe Valley Lump	**1.6**	+43%	+18%	**5.3**	+3%
Robe Valley Fines	**2.5**	+24%	+18%	**8.3**	-2%
Yandicoogina Fines (HIY)	**15.2**	+5%	+12%	**56.6**	-1%
Total Pilbara production	**75.9**	+8%	+7%	**272.9**	+2%
Total Pilbara production (100% basis)	**89.5**	+6%	+6%	**324.1**	+1%

Rio Tinto share of shipments (Million tonnes)	Q4 2022	vs Q4 2021	vs Q3 2022	Full Year 2022	vs Full Year 2021
Pilbara Blend Lump	**15.1**	+18%	-1%	**53.9**	+5%
Pilbara Blend Fines	**32.7**	+34%	+3%	**111.1**	+1%
Robe Valley Lump	**1.2**	+17%	-3%	**4.2**	+5%
Robe Valley Fines	**2.9**	+29%	+21%	**9.3**	-1%
Yandicoogina Fines (HIY)	**14.7**	+4%	+8%	**56.9**	0%
SP10 Lump[1]	**2.8**	-42%	+71%	**12.8**	-21%
SP10 Fines[1]	**5.1**	-53%	+34%	**22.7**	+11%
Total Pilbara shipments[2]	**74.4**	+6%	+7%	**270.8**	+1%
Total Pilbara shipments (100% basis)[2]	**87.3**	+4%	+5%	**321.6**	0%
Total Pilbara Shipments (consolidated basis)[2, 3]	**76.3**	+6%	+7%	**277.6**	+1%

[1]SP10 includes other lower grade products.
[2]Shipments includes material shipped from the Pilbara to our portside trading facility in China which may not be sold onwards by the group in the same period.
[3]While Rio Tinto has a 53% net beneficial interest in Robe River Iron Associates, it recognises 65% of the assets, liabilities, sales revenues and expenses in its accounts (as 30% is held through a 60% owned subsidiary and 35% is held through a 100% owned subsidiary). The consolidated basis sales reported here include Robe River Iron Associates on a 65% basis to enable comparison with revenue reported in the financial statements.

Pilbara operations

We produced 89.5 million tonnes (Rio Tinto share 75.9 million tonnes) in the fourth quarter, 6% higher than the corresponding period of 2021, and 6% higher than the prior quarter.

Fourth quarter shipments of 87.3 million tonnes (Rio Tinto share 74.4 million tonnes) were 4% higher than the fourth quarter of 2021, and 5% higher than the prior quarter.

Performance improvements continued across the system during the quarter and we achieved record second half performance across the mine and rail system. We expect Gudai-Darri to reach its nameplate capacity on a sustained basis during 2023. System inventories at the end of December are healthy including strong blasted stocks, mine and port stocks.

Approximately 10% of sales in 2022 were priced by reference to the prior quarter's average index lagged by one month. The remainder was sold either on current quarter average, current month average, average of two months, forward month or on the spot market. Approximately 25% of sales in the fourth quarter were made on a free on board (FOB) basis, with the remainder sold including freight.

Achieved realised pricing in 2022 was $97.6 per wet metric tonne on an FOB basis, equivalent to $106.1 per dry metric tonne, at 8% moisture assumption. This compares to the monthly average Platts index for 62% fines converted to an FOB basis of $109.8 per dry metric tonne. In 2021, average realised pricing was $132.3 per wet metric tonne ($143.8 per dry metric tonne).

In October, representatives of the Robe River Joint Venture partners, Rio Tinto, Mitsui and Nippon Steel, gathered in Perth to celebrate the 50-year anniversary of the venture's first shipment of iron ore from the Pilbara to Japan. Since 1972, the Robe River Joint Venture has shipped more than 1.7 billion tonnes of iron ore.

China Portside Trading

Our iron ore portside sales in China were 4.8 million tonnes in the fourth quarter of 2022 (5.1 million tonnes in the fourth quarter of 2021), leading to a total of 24.3 million tonnes in 2022 (14.0 million tonnes in 2021). At the end of the December, inventory levels were 7.8 million tonnes, including 5.5 million tonnes of Pilbara product. In 2022 approximately 80% of our portside sales were either screened or blended in Chinese ports.

ALUMINIUM

Rio Tinto share of production ('000 tonnes)	Q4 2022	vs Q4 2021	vs Q3 2022	Full Year 2022	vs Full Year 2021
Bauxite	**13,181**	+1%	-4%	**54,618**	+1%
Bauxite third party shipments	**9,233**	+3%	+2%	**38,016**	+1%
Alumina	**1,941**	+2%	+6%	**7,544**	-4%
Aluminium	**783**	+3%	+3%	**3,009**	-4%

Bauxite

Bauxite production of 13.2 million tonnes was 1% higher than the fourth quarter of 2021, despite being 4% lower than the prior quarter due to equipment downtime at Amrun and Gove in Australia as well as lower production from Compagnie des Bauxites de Guinée (CBG).

We shipped 9.2 million tonnes of bauxite to third parties in the fourth quarter, 3% higher than the same period of 2021.

Alumina

Alumina production of 1.9 million tonnes was 2% higher than the fourth quarter of 2021, and 6% higher than the prior quarter, as a result of the timing of shutdowns and improved processing performance at Yarwun in Queensland, partly offset by plant reliability and unplanned outages at Queensland Alumina Limited (QAL). Production at the Vaudreuil refinery in Quebec, Canada remained stable year on year.

As the result of QAL activation of a step-in process following sanction measures by the Australian Government, Rio Tinto has taken on 100% of capacity for as long as the step-in continues. This results in use of Rusal's 20% share of capacity by Rio Tinto under the tolling arrangement with QAL. This additional output is excluded from the production tables in this report as QAL remains 80% owned by Rio Tinto and 20% owned by Rusal.

Aluminium

Aluminium production of 0.8 million tonnes was 3% higher than the fourth quarter of 2021, and 3% higher than the prior quarter, as the rate of pot restarts at Kitimat picked up in the fourth quarter and Boyne smelter cell recovery efforts continued. Recovery at both smelters is progressing with full ramp-up expected to be completed during the course of 2023. All of our other smelters continued to demonstrate stable performance.

Average realised aluminium prices including both product and market premiums for value-added products (VAP) and remelt increased by 15% to $3,330 per tonne in 2022 (2021: $2,899 per tonne). This is despite weakened pricing in the second half of 2022 with average realised pricing $2,870 per tonne versus $3,808 in the first half of 2022. The LME price increased by 9% to $2,703 per tonne (2021: $2,480 per tonne), whilst the mid-west premium duty paid increased by 12% to $655 per tonne in 2022 (2021: $584 per tonne). Our VAP sales comprised 50% of primary metal sold in 2022 (2021: 50%). Product premiums for VAP sales averaged $431 per tonne of VAP sold (2021: $230 per tonne).

The coal contracts for the Gladstone Power Station supplying power to the Boyne smelter in Australia were renewed in late 2022. We continue to support the potential development of multiple new wind and solar power projects that can, in parallel with firming solutions, start supplying power to our Gladstone assets through the Queensland grid by 2030.

COPPER

Rio Tinto share of production ('000 tonnes)	Q4 2022	vs Q4 2021	vs Q3 2022	Full Year 2022	vs Full Year 2021
Mined copper					
Kennecott	**47.5**	-4%	-6%	**179.2**	+12%
Escondida	**73.0**	+5%	-3%	**298.6**	+7%
Oyu Tolgoi	**10.8**	-17%	-11%	**43.4**	-21%
Refined copper					
Kennecott	**36.1**	+42%	-8%	**148.3**	+3%
Escondida	**14.9**	+3%	0%	**60.9**	+4%

Kennecott

Mined copper production was 4% lower than the fourth quarter of 2021 due to mine sequencing in an area of the pit with lower head grade.

Refined copper production was 42% higher than the fourth quarter of 2021 due to the furnace failure in September 2021 which led to the smelter being offline until the end of October. Unplanned maintenance was required in the fourth quarter of 2022 in our anode furnaces leading to extended downtime and continued poor anode production, likely to result in weak cathode production in the first quarter of 2023. Refined copper production will continue to be challenged at Kennecott due to the smelter and refinery performance, until we undertake the largest rebuild in nine years which is planned for the second quarter of 2023 and is expected to take approximately three months.

Escondida

Mined copper production was 5% higher than the fourth quarter of 2021 due to 7% higher concentrator feed grade in line with mine sequencing in the higher grade area of the pit, partly offset by lower throughput and the impact of road blockades in Northern Chile. Mined copper production was 7% higher than 2021 due to 9% higher concentrator feed grade and 18% higher copper recoverable from ore stacked for leaching due to higher volume of material stacked in both oxide and sulphide leach pads.

Oyu Tolgoi

Mined copper production from the open pit was 17% lower than the fourth quarter of 2021 due to lower copper grades and recoveries as a result of planned mine sequencing. Gold grades were significantly lower than the fourth quarter of the prior year (0.21g/t vs 0.38g/t), due to the mine sequence.

Provisional pricing

At 31 December 2022, the Group had approximately 221 million pounds of copper sales that were provisionally priced at 368 cents per pound. The final price of these sales will be determined during the first half of 2023. This compares with 201 million pounds of open shipments at 31 December 2021, provisionally priced at 436 cents per pound. Provisional pricing adjustments negatively impacted revenues in 2022 by $175 million (2021 positive impact of $246 million).

Nuton™

In December, Rio Tinto made a $15 million investment in Regulus Resources Inc. through its copper leaching technology venture, Nuton. Regulus and Nuton will jointly undertake copper sulphide leach testing utilising Nuton technologies with samples from the AntaKori copper-gold-silver project in northern Peru.

MINERALS

Rio Tinto share of production (million tonnes)	Q4 2022	vs Q4 2021	vs Q3 2022	Full Year 2022	vs Full Year 2021
Iron ore pellets and concentrate					
IOC	**2.5**	+1%	-9%	**10.3**	+6%

Rio Tinto share of production ('000 tonnes)	Q4 2022	vs Q4 2021	vs Q3 2022	Full Year 2022	vs Full Year 2021
Minerals					
Borates - B_2O_3 content	**141**	+20%	+9%	**532**	+9%
Titanium dioxide slag	**323**	+42%	+4%	**1,200**	+18%

Rio Tinto share of production ('000 carats)	Q4 2022	vs Q4 2021	vs Q3 2022	Full Year 2022	vs Full Year 2021
Diavik[1]	**1,319**	+14%	+11%	**4,651**	+21%

[1]Reflects 100% ownership of Diavik (previously 60%) from 1st November 2021.

Iron Ore Company of Canada (IOC)

Iron ore production was 1% higher than the fourth quarter of 2021, despite the fourth quarter being 9% lower than the previous quarter, due to equipment availability at the loadout. Successful deployment of the Rio Tinto Safe Production System (SPS) at the concentrator was completed in the year, with record performance metrics achieved in the year, including monthly records for concentrate production and total material moved in the second quarter. Planning for SPS deployment at the pellet plant commenced in December.

Borates

Borates production in the fourth quarter was 20% higher than the corresponding period of 2021 with strong production rates and higher grades as well as improved equipment reliability versus the same period in 2021. There was some easing of supply chain constraints in the fourth quarter, enabling the business to achieve more than a 10% increase in container and rail shipments compared to 2021 levels. Production in 2022 was 9% higher than 2021, at its highest annual level in more than a decade.

Iron and Titanium

Titanium dioxide production was 42% higher than the fourth quarter of 2021 due to community disruptions at Richards Bay Minerals in South Africa in 2021, and continued improved performance of operations at Rio Tinto Fer et Titane, Canada. Production constraints related to nationwide electrical power loadshedding at RBM were experienced in the fourth quarter.

Diamonds

At Diavik, our share of carats was 14% higher than the fourth quarter of 2021 due to the benefit of our increased share of production since taking 100% ownership of Diavik from November 2021, partly offset by lower carats recovered due to lower throughput.

EXPLORATION AND EVALUATION

Pre-tax and pre-divestment expenditure on exploration and evaluation charged to the profit and loss account in 2022 was $897 million, compared with $726 million in 2021. Approximately 45% of this expenditure was incurred by Copper (includes Simandou), 28% by central exploration, 19% by Minerals, 7% by Iron Ore and 1% by Aluminium.

Our annual budget for greenfield exploration remains around $250 million, mainly focused on copper, with a growing battery minerals programme.

Exploration highlights

Rio Tinto has a strong portfolio of projects with activity in 18 countries across seven commodities in early exploration and studies stages. The bulk of the exploration expenditure in the fourth quarter of 2022 focused on copper in Australia, Colombia, Namibia, Peru, United States and Zambia diamonds in Angola and heavy mineral sands projects in Australia and South Africa. Exploration is ongoing for nickel in Canada and Finland and in lithium across all regions, with opportunities emerging in the United States and Africa. Mine-lease exploration continued at Rio Tinto managed businesses including Pilbara Iron in Australia, Diavik in Canada and Cape York in Australia.

A summary of activity for the quarter is as follows:

Commodities	Studies Stage	Advanced projects	Greenfield/ Brownfield programmes
Bauxite		Amargosa, Brazil*, Sanxai, Laos*	Melville Island, Australia Cape York, Australia
Battery Materials	Rincon Lithium, Argentina Lithium borates: Jadar, Serbia Nickel: Tamarack, US (3rd party operated)		Nickel Greenfield: Australia, Canada, Finland, Peru Lithium Greenfield: US, Australia
Copper	Copper/molybdenum: Resolution, US Copper/Gold: Winu, Australia	Copper: La Granja, Peru, Pribrezhniy, Kazakhstan Calibre-Magnum, Australia	Copper Greenfield: Australia, Brazil, Canada, Chile, China, Colombia, Finland, Kazakhstan, Namibia, Laos, Peru, Serbia, US, Zambia
Diamonds	Falcon, Canada*		Diamonds Greenfield: Canada, Angola Diamonds Brownfield: Diavik
Iron Ore	Pilbara, Australia Simandou, Guinea	Pilbara, Australia	Greenfield and Brownfield: Pilbara, Australia
Minerals	Potash: KL262*, Canada Heavy mineral sands: Mutamba, Mozambique		Heavy mineral sands Greenfield: Australia, South Africa

**Limited activity during the quarter. The Falcon Project in Saskatchewan, Canada, is currently in care and maintenance whilst Rio Tinto considers alternative commercial options, including potential exit.*

FORWARD-LOOKING STATEMENT

This announcement 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 announcement, 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 and any statements related to the ongoing impact of the COVID-19 pandemic), are forward-looking statements. The words "intend", "aim", "project", "anticipate", "estimate", "plan", "believes", "expects", "may", "would", "should", "could", "will", "target", "set to", "seek", "risk" 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. 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 are levels of actual production during any period, levels of demand and market prices, the ability to produce and transport products profitably, the impact of foreign currency exchange rates on market prices and operating costs, operational problems, political uncertainty and economic conditions in relevant areas of the world, the actions of competitors, activities by governmental authorities such as changes in taxation or regulation, the risks and uncertainties associated with the ongoing impacts of COVID-19 or other pandemic and such other risk factors 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. The above list is not exhaustive. Forward-looking statements should, therefore, be construed in light of such risk factors and undue reliance should not be placed on forward-looking statements, particularly in light of the current economic climate and the significant volatility, uncertainty and disruption caused by the outbreak of COVID-19. These forward-looking statements speak only as of the date of this announcement. 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 announcement 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.

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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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Classification: 3.1 Additional regulated information required to be disclosed under the laws of a Member State

Rio Tinto production summary

Rio Tinto share of production

		Quarter			Full Year		% change		
		2021 Q4	2022 Q3	**2022 Q4**	2021	**2022**	Q4 22 vs Q4 21	Q4 22 vs Q3 22	2022 vs 2021
Principal commodities									
Alumina	**('000 t)**	1,911	1,838	**1,941**	7,894	**7,544**	+2%	+6%	-4%
Aluminium	**('000 t)**	757	759	**783**	3,151	**3,009**	+3%	+3%	-4%
Bauxite	**('000 t)**	13,095	13,680	**13,181**	54,326	**54,618**	+1%	-4%	+1%
Borates	**('000 t)**	117	130	**141**	488	**532**	+20%	+9%	+9%
Copper - mined	**('000 t)**	132.3	138.0	**131.3**	493.5	**521.1**	-1%	-5%	+6%
Copper - refined	**('000 t)**	40.0	54.1	**51.0**	201.9	**209.2**	+28%	-6%	+4%
Diamonds	**('000 cts)**	1,155	1,192	**1,319**	3,847	**4,651**	+14%	+11%	+21%
Iron Ore	**('000 t)**	72,561	73,726	**78,415**	276,557	**283,247**	+8%	+6%	+2%
Titanium dioxide slag	**('000 t)**	228	310	**323**	1,014	**1,200**	+42%	+4%	+18%
Other Metals & Minerals									
Gold - mined	**('000 oz)**	73.9	58.2	**55.7**	344.9	**235.0**	-25%	-4%	-32%
Gold - refined	**('000 oz)**	31.5	30.5	**30.3**	176.4	**113.9**	-4%	-1%	-35%
Molybdenum	**('000 t)**	1.1	0.8	**1.1**	7.6	**3.3**	-1%	+33%	-56%
Salt	**('000 t)**	1,471	1,674	**1,458**	5,848	**5,757**	-1%	-13%	-2%
Silver - mined	**('000 oz)**	1,108	1,040	**1,042**	4,148	**3,940**	-6%	0%	-5%
Silver - refined	**('000 oz)**	516	571	**512**	2,671	**1,950**	-1%	-10%	-27%

Throughout this report, figures in italics indicate adjustments made since the figure was previously quoted on the equivalent page or reported for the first time. Production figures are sometimes more precise than the rounded numbers shown, hence small differences may result between the total of the quarter figures and the year to date figures.

Rio Tinto share of production

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
ALUMINA								
Production ('000 tonnes)								
Jonquière (Vaudreuil)	100 %	338	334	325	336	**368**	1,364	**1,364**
Jonquière (Vaudreuil) specialty Alumina plant	100 %	28	25	30	30	**29**	107	**114**
Queensland Alumina	80 %	727	704	697	662	**678**	2,964	**2,740**
São Luis (Alumar)	10 %	99	94	91	95	**97**	366	**377**
Yarwun	100 %	719	745	721	715	**769**	3,093	**2,949**
Rio Tinto total alumina production		1,911	1,901	1,864	1,838	**1,941**	7,894	**7,544**
ALUMINIUM								
Production ('000 tonnes)								
Australia - Bell Bay	100 %	48	46	44	46	**48**	189	**185**
Australia - Boyne Island	59 %	75	73	61	65	**68**	298	**267**
Australia - Tomago	52 %	78	75	75	76	**76**	305	**302**
Canada - six wholly owned	100 %	325	318	323	341	**360**	1,444	**1,341**
Canada - Alouette (Sept-Îles)	40 %	63	62	63	64	**63**	251	**251**
Canada - Bécancour	25 %	30	28	29	29	**29**	116	**115**
Iceland - ISAL (Reykjavik)	100 %	52	50	50	51	**52**	203	**202**
New Zealand - Tiwai Point	79 %	67	66	66	67	**68**	264	**267**
Oman - Sohar	20 %	20	19	20	20	**20**	79	**79**
Rio Tinto total aluminium production		757	736	731	759	**783**	3,151	**3,009**
BAUXITE								
Production ('000 tonnes) (a)								
Gove	100 %	2,787	3,093	2,637	2,905	**2,874**	11,763	**11,510**
Porto Trombetas	12 %	416	240	308	393	**391**	1,366	**1,332**
Sangaredi	(b)	1,704	1,765	1,946	1,953	**1,588**	7,109	**7,252**
Weipa	100 %	8,188	8,527	9,240	8,429	**8,328**	34,088	**34,525**
Rio Tinto total bauxite production		13,095	13,625	14,131	13,680	**13,181**	54,326	**54,618**

(a) Mine production figures for metals refer to the total quantity of metal produced in concentrates, leach liquor or doré bullion irrespective of whether these products are then refined onsite, except for the data for bauxite and iron ore which represent production of marketable quantities of ore plus concentrates and pellets.
(b) Rio Tinto has a 22.95% shareholding in the Sangaredi mine but benefits from 45.0% of production.

Rio Tinto share of production

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
BORATES								
Production ('000 tonnes B_2O_3 content)								
Rio Tinto Borates - borates	100 %	117	123	137	130	**141**	488	**532**
COPPER								
Mine production ('000 tonnes) (a)								
Bingham Canyon	100 %	49.7	47.1	33.9	50.7	**47.5**	159.4	**179.2**
Escondida	30 %	69.6	68.2	82.3	75.1	**73.0**	279.5	**298.6**
Oyu Tolgoi (b)	66 %	13.0	10.2	10.2	12.2	**10.8**	54.6	**43.4**
Rio Tinto total mine production		132.3	125.5	126.4	138.0	**131.3**	493.5	**521.1**
Refined production ('000 tonnes)								
Escondida	30 %	14.5	14.4	16.7	14.9	**14.9**	58.6	**60.9**
Rio Tinto Kennecott (c)	100 %	25.5	40.2	32.7	39.2	**36.1**	143.3	**148.3**
Rio Tinto total refined production		40.0	54.7	49.4	54.1	**51.0**	201.9	**209.2**

(a) Mine production figures for metals refer to the total quantity of metal produced in concentrates, leach liquor or doré bullion irrespective of whether these products are then refined onsite, except for the data for bauxite and iron ore which represent production of marketable quantities of ore plus concentrates and pellets.
(b) Production data in the table represent 33.52% ownership in Oyu Tolgoi. On 16 December 2022, Rio Tinto completed the acquisition of 100% of Turquoise Hill Resources Ltd, increasing our ownership in Oyu Tolgoi from 33.52% to 66%. From 1 January 2023, our share of production will be updated to reflect this change. We will also separately report production from open pit and underground operations.
(c) We continue to process third party concentrate to optimise smelter utilisation, including 4.8 thousand tonnes of cathode produced from purchased concentrate in year-to-date 2022. Purchased and tolled copper concentrates are excluded from reported production figures and production guidance. Sales of cathodes produced from purchased concentrate are included in reported revenues.

DIAMONDS								
Production ('000 carats)								
Diavik (a)	100 %	1,155	991	1,149	1,192	**1,319**	3,847	**4,651**

(a) On 17 November 2021, Rio Tinto's ownership interest in Diavik increased from 60% to 100%. Production is reported including this change from 1 November 2021.

GOLD								
Mine production ('000 ounces) (a)								
Bingham Canyon	100 %	34.7	37.8	22.8	32.5	**29.7**	139.5	**122.7**
Escondida	30 %	12.9	10.9	13.7	11.5	**14.5**	48.5	**50.6**
Oyu Tolgoi (b)	66 %	26.3	19.8	16.0	14.3	**11.5**	156.9	**61.6**
Rio Tinto total mine production		73.9	68.5	52.5	58.2	**55.7**	344.9	**235.0**
Refined production ('000 ounces)								
Rio Tinto Kennecott	100 %	31.5	32.2	20.9	30.5	**30.3**	176.4	**113.9**

(a) Mine production figures for metals refer to the total quantity of metal produced in concentrates, leach liquor or doré bullion irrespective of whether these products are then refined onsite, except for the data for bauxite and iron ore which represent production of marketable quantities of ore plus concentrates and pellets.
(b) Production data in the table represent 33.52% ownership in Oyu Tolgoi. On 16 December 2022, Rio Tinto completed the acquisition of 100% of Turquoise Hill Resources Ltd, increasing our ownership in Oyu Tolgoi from 33.52% to 66%. From 1 January 2023, our share of production will be updated to reflect this change. We will also separately report production from open pit and underground operations.

Rio Tinto share of production

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	**Full Year 2021**	**Full Year 2022**
IRON ORE								
Production ('000 tonnes) (a)								
Hamersley mines	(b)	55,049	47,678	52,636	56,650	**61,339**	210,329	**218,304**
Hope Downs	50 %	6,567	5,830	6,385	6,264	**5,945**	24,642	**24,425**
Iron Ore Company of Canada	59 %	2,498	2,404	2,603	2,776	**2,530**	9,727	**10,312**
Robe River - Pannawonica (Mesas J and A)	53 %	3,196	2,774	3,054	3,540	**4,178**	13,514	**13,546**
Robe River - West Angelas	53 %	5,252	3,779	3,961	4,496	**4,424**	18,345	**16,660**
Rio Tinto iron ore production ('000 tonnes)		72,561	62,465	68,640	73,726	**78,415**	276,557	**283,247**
Breakdown of Production:								
Pilbara Blend and SP10 Lump (c)		20,374	17,081	19,309	21,317	**21,443**	76,431	**79,152**
Pilbara Blend and SP10 Fines (c)		32,081	25,658	30,240	32,592	**35,097**	119,947	**123,587**
Robe Valley Lump		1,152	1,051	1,180	1,389	**1,645**	5,102	**5,264**
Robe Valley Fines		2,044	1,724	1,874	2,151	**2,533**	8,412	**8,281**
Yandicoogina Fines (HIY)		14,412	14,548	13,433	13,501	**15,168**	56,938	**56,650**
Pilbara iron ore production ('000 tonnes)		70,063	60,061	66,037	70,951	**75,886**	266,830	**272,934**
IOC Concentrate		1,009	962	1,282	1,237	**1,186**	3,863	**4,667**
IOC Pellets		1,489	1,442	1,321	1,539	**1,343**	5,864	**5,646**
IOC iron ore production ('000 tonnes)		2,498	2,404	2,603	2,776	**2,530**	9,727	**10,312**
Breakdown of Shipments:								
Pilbara Blend Lump		12,832	10,809	12,684	15,301	**15,089**	51,522	**53,883**
Pilbara Blend Fines		24,308	21,698	25,156	31,597	**32,659**	109,569	**111,110**
Robe Valley Lump		1,061	675	971	1,281	**1,244**	3,981	**4,171**
Robe Valley Fines		2,237	1,731	2,309	2,392	**2,896**	9,395	**9,329**
Yandicoogina Fines (HIY)		14,121	14,487	14,201	13,530	**14,661**	56,889	**56,880**
SP10 Lump (c)		4,841	3,827	4,456	1,647	**2,824**	16,078	**12,753**
SP10 Fines (c)		10,684	7,067	6,775	3,766	**5,062**	20,487	**22,672**
Pilbara iron ore shipments ('000 tonnes) (d)		70,084	60,295	66,552	69,515	**74,435**	267,921	**270,798**
Pilbara iron ore shipments - consolidated basis ('000 tonnes) (d) (f)		71,972	61,818	68,114	71,379	**76,303**	275,161	**277,613**
IOC Concentrate		989	600	1,083	1,316	**1,174**	4,110	**4,174**
IOC Pellets		1,711	1,412	1,484	1,443	**1,036**	5,865	**5,375**
IOC Iron ore shipments ('000 tonnes) (d)		2,700	2,012	2,567	2,759	**2,210**	9,976	**9,548**
Rio Tinto iron ore shipments ('000 tonnes) (d)		72,784	62,307	69,119	72,274	**76,645**	277,897	**280,346**
Rio Tinto iron ore sales ('000 tonnes) (e)		69,489	66,683	*71,263*	74,587	**75,337**	273,153	**287,871**

(a) Mine production figures for metals refer to the total quantity of metal produced in concentrates, leach liquor or doré bullion irrespective of whether these products are then refined onsite, except for the data for bauxite and iron ore which represent production of marketable quantities of ore plus concentrates and pellets.
(b) Includes 100% of production from Paraburdoo, Mt Tom Price, Western Turner Syncline, Marandoo, Yandicoogina, Brockman, Nammuldi, Silvergrass, Channar, Gudai-Darri and the Eastern Range mines. Whilst Rio Tinto owns 54% of the Eastern Range mine, under the terms of the joint venture agreement, Hamersley Iron manages the operation and is obliged to purchase all mine production from the joint venture and therefore all of the production is included in Rio Tinto's share of production. Rio Tinto's ownership interest in Channar mine increased from 60% to 100%, following conclusion of its joint venture with Sinosteel Corporation upon reaching planned 290 million tonnes production on 22 October 2020.
(c) SP10 includes other lower grade products.
(d) Shipments includes material shipped to our portside trading facility in China which may not be sold onwards in the same period.
(e) Represents the difference between amounts shipped to portside trading and onward sales from portside trading, and third party volumes sold.
(f) While Rio Tinto has a 53% net beneficial interest in Robe River Iron Associates, it recognises 65% of the assets, liabilities, sales revenues and expenses in its accounts (as 30% is held through a 60% owned subsidiary and 35% is held through a 100% owned subsidiary). The consolidated basis sales reported here include Robe River Iron Associates on a 65% basis to enable comparison with revenue reported in the financial statements.

Rio Tinto share of production

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	**Full Year 2021**	**Full Year 2022**
MOLYBDENUM								
Mine production ('000 tonnes) (a)								
Bingham Canyon	100 %	1.1	1.1	0.4	0.8	**1.1**	7.6	**3.3**

(a) Mine production figures for metals refer to the total quantity of metal produced in concentrates, leach liquor or doré bullion irrespective of whether these products are then refined onsite, except for the data for bauxite and iron ore which represent production of marketable quantities of ore plus concentrates and pellets.

SALT								
Production ('000 tonnes)								
Dampier Salt	68 %	1,471	1,595	1,030	1,674	**1,458**	5,848	**5,757**
SILVER								
Mine production ('000 ounces) (a)								
Bingham Canyon	100 %	589	561	385	591	**521**	2,228	**2,057**
Escondida	30 %	439	381	393	363	**453**	1,591	**1,590**
Oyu Tolgoi (b)	66 %	80	71	67	86	**68**	328	**292**
Rio Tinto total mine production		1,108	1,012	846	1,040	**1,042**	4,148	**3,940**
Refined production ('000 ounces)								
Rio Tinto Kennecott	100 %	516	577	290	571	**512**	2,671	**1,950**

(a) Mine production figures for metals refer to the total quantity of metal produced in concentrates, leach liquor or doré bullion irrespective of whether these products are then refined onsite, except for the data for bauxite and iron ore which represent production of marketable quantities of ore plus concentrates and pellets.
(b) Production data in the table represent 33.52% ownership in Oyu Tolgoi. On 16 December 2022, Rio Tinto completed the acquisition of 100% of Turquoise Hill Resources Ltd, increasing our ownership in Oyu Tolgoi from 33.52% to 66%. From 1 January 2023, our share of production will be updated to reflect this change. We will also separately report production from open pit and underground operations.

TITANIUM DIOXIDE SLAG								
Production ('000 tonnes)								
Rio Tinto Iron & Titanium (a)	100 %	228	273	293	310	**323**	1,014	**1,200**

(a) Quantities comprise 100% of Rio Tinto Fer et Titane and Rio Tinto's 74% interest in Richards Bay Minerals (RBM).

Production figures are sometimes more precise than the rounded numbers shown, hence small differences may result between the total of the quarter figures and the year to date figures.

Rio Tinto percentage interest shown above is at 31 December 2022.

Rio Tinto operational data

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
ALUMINA								
Smelter Grade Alumina - Aluminium Group								
Alumina production ('000 tonnes)								
Australia								
Queensland Alumina Refinery - Queensland	80 %	909	880	871	827	**847**	3,705	**3,425**
Yarwun refinery - Queensland	100 %	719	745	721	715	**769**	3,093	**2,949**
Brazil								
São Luis (Alumar) refinery	10 %	993	940	910	946	**975**	3,662	**3,771**
Canada								
Jonquière (Vaudreuil) refinery - Quebec (a)	100 %	338	334	325	336	**368**	1,364	**1,364**

(a) Jonquière's (Vaudreuil's) production shows smelter grade alumina only and excludes hydrate produced and used for specialty alumina.

Speciality Alumina - Aluminium Group								
Speciality alumina production ('000 tonnes)								
Canada								
Jonquière (Vaudreuil) plant – Quebec	100 %	28	25	30	30	**29**	107	**114**

Rio Tinto percentage interest shown above is at 31 December 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
ALUMINIUM								
Primary Aluminium								
Primary aluminium production ('000 tonnes)								
Australia								
Bell Bay smelter - Tasmania	100 %	48	46	44	46	**48**	189	**185**
Boyne Island smelter - Queensland	59 %	126	123	103	110	**114**	502	**450**
Tomago smelter - New South Wales	52 %	150	145	145	148	**147**	592	**586**
Canada								
Alma smelter - Quebec	100 %	119	117	121	122	**122**	471	**482**
Alouette (Sept-Îles) smelter - Quebec	40 %	157	154	157	159	**158**	629	**628**
Arvida smelter - Quebec	100 %	43	42	42	43	**44**	168	**171**
Arvida AP60 smelter - Quebec	100 %	15	14	14	15	**15**	60	**58**
Bécancour smelter - Quebec	25 %	119	111	117	116	**116**	463	**459**
Grande-Baie smelter - Quebec	100 %	58	57	58	59	**58**	230	**232**
Kitimat smelter - British Columbia	100 %	25	25	26	38	**57**	263	**145**
Laterrière smelter - Quebec	100 %	64	63	63	64	**64**	252	**253**
Iceland								
ISAL (Reykjavik) smelter	100 %	52	50	50	51	**52**	203	**202**
New Zealand								
Tiwai Point smelter	79 %	85	83	83	85	**85**	333	**336**
Oman								
Sohar smelter	20 %	100	97	98	100	**100**	395	**395**

Rio Tinto percentage interest shown above is at 31 December 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
BAUXITE								
Bauxite production ('000 tonnes)								
Australia								
Gove mine - Northern Territory	100 %	2,787	3,093	2,637	2,905	**2,874**	11,763	**11,510**
Weipa mine - Queensland	100 %	8,188	8,527	9,240	8,429	**8,328**	34,088	**34,525**
Brazil								
Porto Trombetas (MRN) mine	12 %	3,469	2,000	2,569	3,275	**3,256**	11,383	**11,100**
Guinea								
Sangaredi mine (a)	23 %	3,786	3,922	4,323	4,339	**3,530**	15,797	**16,115**
Rio Tinto share of bauxite shipments								
Share of total bauxite shipments ('000 tonnes)		13,031	13,876	14,054	13,294	**13,561**	54,278	**54,784**
Share of third party bauxite shipments ('000 tonnes)		8,988	10,135	9,599	9,049	**9,233**	37,596	**38,016**

(a) Rio Tinto has a 22.95% shareholding in the Sangaredi mine but benefits from 45.0% of production.

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
BORATES								
Rio Tinto Borates - borates	100 %							
US								
Borates ('000 tonnes) (a)		117	123	137	130	**141**	488	**532**

(a) Production is expressed as B_2O_3 content.

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
COPPER & GOLD								
Escondida	30 %							
Chile								
Sulphide ore to concentrator ('000 tonnes)		35,787	30,235	34,318	32,894	**33,911**	133,872	**131,358**
Average copper grade (%)		0.71	0.81	0.87	0.83	**0.76**	0.75	**0.82**
Mill production (metals in concentrates):								
Contained copper ('000 tonnes)		203.6	191.5	239.5	214.6	**212.8**	815.5	**858.4**
Contained gold ('000 ounces)		42.9	36.3	45.8	38.2	**48.4**	161.7	**168.7**
Contained silver ('000 ounces)		1,462	1,270	1,311	1,210	**1,510**	5,305	**5,301**
Recoverable copper in ore stacked for leaching ('000 tonnes) (a)		28.4	35.9	34.8	35.8	**30.4**	116.3	**136.9**
Refined production from leach plants:								
Copper cathode production ('000 tonnes)		48.4	48.1	55.7	49.6	**49.7**	195.3	**203.1**

(a) The calculation of copper in material mined for leaching is based on ore stacked at the leach pad.

Rio Tinto percentage interest shown above is at 31 December 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
COPPER & GOLD (continued)								
Rio Tinto Kennecott								
Bingham Canyon mine	100 %							
Utah, US								
Ore treated ('000 tonnes)		9,809	10,130	6,862	10,125	**10,449**	37,776	**37,565**
Average ore grade:								
Copper (%)		0.55	0.51	0.55	0.56	**0.52**	0.47	**0.53**
Gold (g/t)		0.21	0.19	0.17	0.16	**0.14**	0.21	**0.16**
Silver (g/t)		2.55	2.36	2.39	2.50	**2.20**	2.57	**2.36**
Molybdenum (%)		0.020	0.021	0.017	0.021	**0.020**	0.029	**0.020**
Copper concentrates produced ('000 tonnes)		187	176	136	192	**184**	648	**688**
Average concentrate grade (% Cu)		26.3	26.8	24.9	26.2	**25.6**	24.5	**26.0**
Production of metals in copper concentrates:								
Copper ('000 tonnes) (a)		49.7	47.1	33.9	50.7	**47.5**	159.4	**179.2**
Gold ('000 ounces)		34.7	37.8	22.8	32.5	**29.7**	139.5	**122.7**
Silver ('000 ounces)		589	561	385	591	**521**	2,228	**2,057**
Molybdenum concentrates produced ('000 tonnes):		2.2	2.1	0.9	1.8	**2.0**	14.8	**6.8**
Molybdenum in concentrates ('000 tonnes)		1.1	1.1	0.4	0.8	**1.1**	7.6	**3.3**
Kennecott smelter & refinery	100 %							
Copper concentrates smelted ('000 tonnes)		157	213	152	166	**194**	665	**725**
Copper anodes produced ('000 tonnes) (b)		32.9	45.8	27.9	46.2	**24.5**	142.5	**144.5**
Production of refined metal:								
Copper ('000 tonnes) (c)		25.5	40.2	32.7	39.2	**36.1**	143.3	**148.3**
Gold ('000 ounces) (d)		31.5	32.2	20.9	30.5	**30.3**	176.4	**113.9**
Silver ('000 ounces) (d)		516	577	290	571	**512**	2,671	**1,950**

(a) Includes a small amount of copper in precipitates.
(b) New metal excluding recycled material.
(c) We continue to process third party concentrate to optimise smelter utilisation, including 4.8 thousand tonnes of cathode produced from purchased concentrate in year-to-date 2022. Purchased and tolled copper concentrates are excluded from reported production figures and production guidance. Sales of cathodes produced from purchased concentrate are included in reported revenues.
(d) Includes gold and silver in intermediate products.

Rio Tinto percentage interest shown above is at 31 December 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
COPPER & GOLD (continued)								
Turquoise Hill Resources								
Oyu Tolgoi mine (a)	66 %							
Mongolia								
Ore Treated ('000 tonnes)		10,573	9,581	9,685	10,685	**9,411**	39,124	**39,361**
Average mill head grades:								
Copper (%)		0.46	0.40	0.40	0.42	**0.45**	0.50	**0.42**
Gold (g/t)		0.38	0.32	0.26	0.22	**0.21**	0.54	**0.25**
Silver (g/t)		1.27	1.25	1.15	1.32	**1.21**	1.26	**1.24**
Copper concentrates produced ('000 tonnes)		182.7	144.3	146.0	173.6	**151.9**	749.6	**615.8**
Average concentrate grade (% Cu)		21.3	21.0	20.9	20.9	**21.3**	21.7	**21.0**
Production of metals in concentrates:								
Copper in concentrates ('000 tonnes)		38.9	30.3	30.6	36.3	**32.3**	163.0	**129.5**
Gold in concentrates ('000 ounces)		78.6	59.2	47.6	42.7	**34.2**	468.1	**183.8**
Silver in concentrates ('000 ounces)		239	211	201	256	**204**	977	**871**
Sales of metals in concentrates:								
Copper in concentrates ('000 tonnes)		34.4	29.9	35.3	41.8	**25.3**	139.4	**132.3**
Gold in concentrates ('000 ounces)		102.2	57.4	67.9	56.0	**26.2**	434.7	**207.5**
Silver in concentrates ('000 ounces)		192	179	224	282	**152**	783	**836**

(a) Production data in the table represent 33.52% ownership in Oyu Tolgoi. On 16 December 2022, Rio Tinto completed the acquisition of 100% of Turquoise Hill Resources Ltd, increasing our ownership in Oyu Tolgoi from 33.52% to 66%. From 1 January 2023, our share of production will be updated to reflect this change. We will also separately report production from open pit and underground operations.

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
DIAMONDS								
Diavik Diamonds (a)	100 %							
Northwest Territories, Canada								
Ore processed ('000 tonnes)		596	496	537	590	**535**	2,540	**2,158**
Diamonds recovered ('000 carats)		1,356	991	1,149	1,192	**1,319**	5,843	**4,651**

(a) On 17 November 2021, Rio Tinto's ownership interest in Diavik increased from 60% to 100%. Production is reported including this change from 1 November 2021.

Rio Tinto percentage interest shown above is at 31 December 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
IRON ORE								
Rio Tinto Iron Ore								
Western Australia								
Pilbara Operations								
Saleable iron ore production ('000 tonnes)								
Hamersley mines	(a)	55,049	47,678	52,636	56,650	**61,339**	210,329	**218,304**
Hope Downs	50 %	13,133	11,660	12,771	12,529	**11,891**	49,284	**48,850**
Robe River - Pannawonica (Mesas J and A)	53 %	6,031	5,234	5,762	6,679	**7,882**	25,497	**25,558**
Robe River - West Angelas	53 %	9,909	7,130	7,474	8,484	**8,347**	34,613	**31,435**
Total production ('000 tonnes)		84,122	71,703	78,643	84,342	**89,458**	319,724	**324,146**
Breakdown of total production:								
Pilbara Blend and SP10 Lump (b)		24,998	20,827	23,228	25,452	**25,251**	92,463	**94,758**
Pilbara Blend and SP10 Fines (b)		38,681	31,094	36,220	38,709	**41,158**	144,826	**147,180**
Robe Valley Lump		2,173	1,982	2,226	2,621	**3,103**	9,626	**9,932**
Robe Valley Fines		3,857	3,252	3,536	4,058	**4,779**	15,871	**15,625**
Yandicoogina Fines (HIY)		14,412	14,548	13,433	13,501	**15,168**	56,938	**56,650**
Breakdown of total shipments:								
Pilbara Blend Lump		16,616	13,626	16,043	18,860	**18,153**	64,697	**66,682**
Pilbara Blend Fines		31,620	27,915	32,243	38,186	**38,835**	138,203	**137,179**
Robe Valley Lump		2,001	1,273	1,832	2,417	**2,348**	7,512	**7,870**
Robe Valley Fines		4,221	3,266	4,357	4,514	**5,464**	17,727	**17,602**
Yandicoogina Fines (HIY)		14,121	14,487	14,201	13,530	**14,661**	56,889	**56,880**
SP10 Lump (b)		4,841	3,827	4,456	1,647	**2,824**	16,078	**12,753**
SP10 Fines (b)		10,684	7,067	6,775	3,766	**5,062**	20,487	**22,672**
Total shipments ('000 tonnes) (c)		84,104	71,462	79,907	82,920	**87,347**	321,592	**321,636**

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
Iron Ore Company of Canada	59 %							
Newfoundland & Labrador and Quebec in Canada								
Saleable iron ore production:								
Concentrates ('000 tonnes)		1,718	1,638	2,183	2,106	**2,020**	6,578	**7,947**
Pellets ('000 tonnes)		2,535	2,456	2,250	2,621	**2,288**	9,986	**9,615**
IOC Total production ('000 tonnes)		4,254	4,094	4,433	4,727	**4,308**	16,564	**17,562**
Shipments:								
Concentrates ('000 tonnes)		1,684	1,022	1,845	2,241	**1,999**	7,000	**7,108**
Pellets ('000 tonnes)		2,914	2,405	2,527	2,457	**1,764**	9,988	**9,153**
IOC Total Shipments ('000 tonnes) (c)		4,598	3,427	4,372	4,699	**3,763**	16,989	**16,261**
Global Iron Ore Totals								
Iron Ore Production ('000 tonnes)		88,375	75,797	83,076	89,069	**93,766**	336,288	**341,708**
Iron Ore Shipments ('000 tonnes)		88,702	74,889	84,279	87,619	**91,110**	338,581	**337,897**
Iron Ore Sales ('000 tonnes) (d)		85,256	79,194	*86,108*	89,689	**89,650**	333,185	**344,641**

(a) Includes 100% of production from Paraburdoo, Mt Tom Price, Western Turner Syncline, Marandoo, Yandicoogina, Brockman, Nammuldi, Silvergrass, Channar, Gudai-Darri and the Eastern Range mines. Whilst Rio Tinto owns 54% of the Eastern Range mine, under the terms of the joint venture agreement, Hamersley Iron manages the operation and is obliged to purchase all mine production from the joint venture and therefore all of the production is included in Rio Tinto's share of production. Rio Tinto's ownership interest in Channar mine increased from 60% to 100%, following conclusion of its joint venture with Sinosteel Corporation upon reaching planned 290 million tonnes production on 22 October 2020.
(b) SP10 includes other lower grade products.
(c) Shipments includes material shipped to our portside trading facility in China which may not be sold onwards in the same period.
(d) Include Pilbara and IOC sales adjusted for portside trading movements and third party volumes sold.

Rio Tinto percentage interest shown above is at 31 December 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q4 2021	Q1 2022	Q2 2022	Q3 2022	**Q4 2022**	Full Year 2021	**Full Year 2022**
SALT								
Dampier Salt	68 %							
Western Australia								
Salt production ('000 tonnes)		2,152	2,333	1,507	2,449	**2,133**	8,555	**8,422**
TITANIUM DIOXIDE SLAG								
Rio Tinto Iron & Titanium	100 %							
Canada and South Africa								
(Rio Tinto share) (a)								
Titanium dioxide slag ('000 tonnes)		228	273	293	310	**323**	1,014	**1,200**

(a) Quantities comprise 100% of Rio Tinto Fer et Titane and Rio Tinto's 74% interest in Richards Bay Minerals' production. Ilmenite mined in Madagascar is being processed in Canada.

Rio Tinto percentage interest shown above is at 31 December 2022. The data represents production and sales on a 100% basis unless otherwise stated.