RioTinto

Notice to ASX/LSE

Rio Tinto releases first quarter production results

20 April 2022

Rio Tinto Chief Executive Jakob Stausholm, said: “We made notable progress during the quarter with the commencement of underground mining at Oyu Tolgoi following a comprehensive agreement reached with the Government of Mongolia, completed the acquisition of the Rincon lithium project in Argentina, and signed a framework agreement at the Simandou iron ore project in Guinea. These projects are all aligned with our strategy of growing in materials essential to a decarbonising world.

“Production in the first quarter was challenging as expected, re-emphasising a need to lift our operational performance. We launched seven more deployments of the Rio Tinto Safe Production System, building on the achievements from the previous rollouts. As we ramp up Gudai-Darri, our iron ore business will have greater production capacity and be better placed to produce additional tonnes of Pilbara Blend in the second half.

“We released an independent report on our workplace culture and are implementing all 26 recommendations to make positive and lasting changes. We also announced an agreement with the Yinhawangka Aboriginal Corporation on a new co-designed management plan to ensure the protection of significant social and cultural heritage values.

“These actions will ensure we continue to deliver attractive returns to shareholders, as we invest in sustaining and growing our portfolio, be a partner and employer of choice and progress our ambition to achieve net-zero carbon emissions."

Production*		**Q1 2022**	vs Q1 2021	vs Q4 2021
Pilbara iron ore shipments (100% basis)	**Mt**	**71.5**	-8%	-15%
Pilbara iron ore production (100% basis)	**Mt**	**71.7**	-6%	-15%
Bauxite	**Mt**	**13.6**	0%	+4%
Aluminium	**kt**	**736**	-8%	-3%
Mined copper	**kt**	**125**	+4%	-5%
Titanium dioxide slag	**kt**	**273**	-2%	+20%
IOC iron ore pellets and concentrate	**Mt**	**2.4**	+3%	-4%

**Rio Tinto share unless otherwise stated*

Q1 2022 operational highlights and other key announcements

- The safety, health and wellbeing of our workforce and the communities in which we operate are key priorities for our business. Our all injury frequency rate of 0.33 is an improvement from the first quarter of 2021 (0.36), and an improvement against the prior quarter (0.41). We experienced increased COVID-19 cases on-site in the Pilbara following the Western Australian border opening and spikes in cases across our other operations. We continue to monitor new variants and will remain vigilant.

- Pilbara operations had a challenging first quarter, as expected. We produced 71.7 million tonnes (100% basis), 6% lower than the first quarter of 2021. Pilbara shipments in the first quarter were 71.5 million tonnes (100% basis), 8% lower than the first quarter of 2021. We expect increased production volumes and improved product mix in the second half with the commissioning and ramp up of Gudai-Darri, commissioning of the Robe Valley wet plant and improved mine pit health. Full year shipments guidance remains unchanged.

- Bauxite production of 13.6 million tonnes was in line with the first quarter of 2021 with similar wet weather disruptions as the corresponding period.

- Aluminium production of 0.7 million tonnes was 8% lower than the first quarter of 2021 due to reduced capacity at our Kitimat smelter in British Columbia following the strike which commenced in July 2021. Preparations continue for the Kitimat smelter to progressively restart from June 2022 with full ramp up expected by the end of the year. All of our other smelters continued to have stable performance, despite considerable challenges related to unplanned employee absences due to COVID-19.

- Mined copper production of 125 thousand tonnes was 4% higher than the first quarter of 2021 due to higher recoveries and grades at Kennecott, partly offset by lower grades at Oyu Tolgoi and lower throughput at Escondida. On 1 April, we announced a new five-year Collective Bargaining Agreement had been reached with unions representing approximately 1,300 employees at the Kennecott operation.
- On 25 January, we announced we had reached agreement with Turquoise Hill Resources and the Government of Mongolia to move the Oyu Tolgoi project forward, resetting the relationship between the partners and increasing the value the project delivers for Mongolia. This step unlocks the most valuable part of the mine, with first sustainable production expected in the first half of 2023.
- On 14 March, we announced we had made a non-binding proposal to the Turquoise Hill Board to acquire the approximately 49% of the issued and outstanding shares of Turquoise Hill that Rio Tinto does not currently own. The proposed acquisition price is C$34 per share which values Turquoise Hill minority shareholdings at US$2.7 billion.
- Titanium dioxide slag production of 273 thousand tonnes was 2% lower than the first quarter of 2021 as a result of equipment reliability issues at Rio Tinto Fer et Titane (RTFT), Canada, partly offset by continuing ramp up at Richards Bay Minerals (RBM) in South Africa. On 18 March, we announced the lifting of force majeure on customer contracts at RBM, that had been in place since 30 June 2021.
- Production of pellets and concentrate at Iron Ore Company of Canada (IOC) was 3% higher than the first quarter of 2021, which was impacted by mine feed constraints. There is good progress on the initiation of Rio Tinto Safe Production System (RTSPS) at the concentrator.
- In the first quarter, we initiated seven more deployments of the RTSPS at five sites focusing on sustainably unlocking capacity across the Rio Tinto system. We are already seeing promising results for example at West Angelas achieving the best effective utilisation of its production drills across Pilbara iron ore.
- On 29 March, we announced the completion of the acquisition of the Rincon lithium project for $825 million, following approval from Australia's Foreign Investment Review Board. Rincon is a large undeveloped lithium brine project located in Argentina - the heart of the Latin American lithium triangle.
- In the first quarter, we entered into partnerships and progressed initiatives to accelerate decarbonising our own business and the value chains we operate. These include an agreement with the Tasmanian Government to jointly investigate how the Bell Bay smelter can help support the development of new industries, and with the US Department of Energy who have provided funding for a Rio Tinto-led team to explore carbon storage potential at the Tamarack nickel joint venture in central Minnesota.
- On 8 April, we released Taxes Paid: Our Economic Contribution 2021, showing that we made a total direct economic contribution of $66.6 billion in the countries and communities where we operate and paid $13.3 billion of taxes and royalties.
- On 24 February, we announced that Hinda Gharbi is stepping down as a non-executive director at the conclusion of the Rio Tinto plc AGM on 8 April 2022 to join Bureau Veritas, initially as Chief Operating Officer and transitioning in 2023 to the position of Chief Executive Officer.

- On 6 March, we announced that we had reached a settlement with the Australian Securities and Investment Commission (ASIC) regarding the disclosure of the impairment of Rio Tinto Coal Mozambique, which was reflected in Rio Tinto's 2012 year-end accounts. As part of this court approved settlement between ASIC and Rio Tinto, there were no findings of fraud or any systemic or widespread failure by Rio Tinto.

- We continue to offer support to our team members of Ukrainian and Russian heritage and we have committed $5 million to humanitarian agencies. We are in the process of terminating commercial relationships with Russian businesses, while also ensuring the well being of our people, our contribution to communities, and the continued safe operation of our businesses. As a result of the Australian Government's sanction measures, we have taken on 100% of the capacity and governance of Queensland Alumina Limited (QAL) until further notice. QAL is 80% owned by Rio Tinto and 20% owned by Rusal. Our focus remains on ensuring the continued safe operation of QAL, as a significant employer and contributor to the local Gladstone and Queensland economies.
- 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.

2022 production guidance

Rio Tinto share, unless otherwise stated	2021 Actuals	Q1 2022 Actuals	**2022 Unchanged**
Pilbara iron ore[1] (shipments, 100% basis) (Mt)	322	71.5	**320 to 335**
Bauxite (Mt)	54	14	**54 to 57**
Alumina (Mt)	7.9	1.9	**8.0 to 8.4**
Aluminium (Mt)	3.2	0.7	**3.1 to 3.2**
Mined copper (kt)	494	125	**500 to 575**
Refined copper (kt)	202	55	**230 to 290**
Diamonds[2] (M carats)	3.8	1.0	**5.0 to 6.0**
Titanium dioxide slag (Mt)	1.0	0.3	**1.1 to 1.4**
IOC[3] iron ore pellets and concentrate (Mt)	9.7	2.4	**10.0 to 11.0**
Boric oxide equivalent (Mt)	0.5	0.1	**~0.5**

[1]Pilbara shipments guidance remains subject to risks around commissioning and ramp-up of new mines and management of cultural heritage.
[2]Reflects 100% ownership of Diavik (previously 60%) from 1st November 2021.
[3]Iron Ore Company of Canada.

- Iron ore shipments and bauxite production guidance remain subject to weather and market conditions.
- Our guidance assumes development of the pandemic does not lead to government-imposed restrictions and widespread protracted cases related to new highly contagious variants with high severity, which could result in a significant number of our production critical workforce and contractor base being unable to work due to illness and/or isolation requirements. This risk extends to prolonged interruption of service from a key partner or supplier which could lead to severely constrained operational activity of a key asset or project. This risk is exacerbated globally by tight labour markets and supply chain delays.
- Pilbara shipments guidance remains subject to commissioning and ramp up of Gudai-Darri and the Robe Valley wet plant, and management of cultural heritage, including any impacts from the Aboriginal Cultural Heritage Act 2021. Given the quality of our resource, we retain a range of development options in the Pilbara, subject to heritage and environmental approvals.

Operating costs

- Pilbara iron ore 2022 unit cost guidance of $19.5-$21.0 per tonne remains unchanged. Operating cost guidance is based on A$:US$ exchange rate of 0.75 and exclude any additional COVID-19 response costs.
- Copper C1 unit cost guidance in 2022 is unchanged at 130-150 US cents/lb.

Investments, growth and development projects

- We continue to proactively manage COVID-19 and prioritise work across critical projects. Capital expenditure for 2022 for our existing operations remains unchanged at around $8.0 billion, excluding any impact of the Rincon acquisition. The 2022 estimate takes into account potential increases of around 15% for the Pilbara replacement projects, as previously guided in the full year financial release. Capital expenditure for 2023 and 2024 is still expected to be between $9.0 and $10.0 billion, which includes the ambition to invest up to $3.0 billion in growth per year, depending on opportunities.

- Exploration and evaluation expense in the first quarter of 2022 was $168 million, $10 million (7%) higher than the first quarter of 2021, with continued ramp up of activities in Guinea and Australia.

Pilbara mine projects

- Commissioning and ramp up of Pilbara growth and brownfield mine replacement projects has continued to be impacted by resource shortages and supply chain quality issues including steel fabrication quality at Gudai-Darri and early commissioning failures at Robe Valley, compounded by COVID-19 and isolation requirements as cases in Western Australia increased following the easing of border restrictions in March.

- At Gudai-Darri, improved project performance during the quarter has seen a number of facilities progressed through to construction completion and in to commissioning stages. First ore via the main plant is still forecast in the second quarter of 2022.

- At Robe Valley, ongoing wet plant commissioning challenges continues to impact production ramp up. The wet plant at Mesa A is operating at reduced capacity ahead of some planned component replacement in the third quarter.

Oyu Tolgoi underground project[1]

Technical progress

- Commencement of undercut operations was achieved in January following Oyu Tolgoi Board approval to commence underground mining operations. Construction progress continued to be impacted by COVID-19 during the quarter with an increase in on-site COVID-19 cases in January reducing workforce availability to approximately 55% of planned requirements. Workforce levels have since improved to between 70% and 90% of planned requirements. The impact on project costs of the additional restrictions related to COVID-19 to the end of March is estimated to be $195 million ($20 million in the first quarter). Commissioning of the Materials Handling System 1 was completed in February.

- At the end of March, shaft 4 sinking recommenced with sinking advancement now at 181 metres below ground level and shaft 3 sinking commenced. The delay to the commissioning of shafts 3 and 4 is still expected to be approximately nine months per prior guidance based on known COVID-19 impacts to date. This delay has no impact on Panel 0 sustainable production with Panels 1 and 2 study work underway.

Other updates

- On 25 January, we announced we had reached agreement with Turquoise Hill Resources and the Government of Mongolia to move the Oyu Tolgoi project forward, resetting the relationship between the partners and increasing the value the project delivers for Mongolia. This step unlocks the most valuable part of the mine, with first sustainable production expected in the first half of 2023.

- A reforecast is underway to determine a revised cost and schedule estimate that will reflect: any further COVID-19 impacts; any additional time-based impacts and market price escalation arising from resequencing due to 2021 budget constraints (as a result of the Oyu Tolgoi Board not approving the capital budget uplift at the time the Definitive Estimate was finalised); and updated risk ranging reflecting the latest project execution risks. The market will be updated on any associated impacts in due course.

- The Oyu Tolgoi Board has approved the Electricity Supply Agreement to provide Oyu Tolgoi with a long-term source of power from the Mongolian grid, under terms already agreed with the Government of Mongolia. An agreement in-principle has been reached between the National Power Transmission Grid (NPTG) and the Inner Mongolia Power International Cooperation Company (IMPIC) for an extension of current power import arrangements from China. This is for a three-year fixed term extension to 2026, followed by an extension to up to 2030, if required (the current agreement expires in July 2023). Outstanding commercial terms are in the process of being finalised.
- On 14 March, we announced we had made a non-binding proposal to the Turquoise Hill Board to acquire the approximately 49% of the issued and outstanding shares of Turquoise Hill that Rio Tinto does not currently own. This proposal values the Turquoise Hill minority share capital at approximately US$2.7 billion.
- Rio Tinto and Oyu Tolgoi continue to work closely with the Technical Working Group established by the Government to progress the feasibility study.

Other key projects and exploration and evaluation

- The Zulti South project in South Africa remains on full suspension.
- At the Kemano hydropower tunnel project in British Columbia, Canada, the tunnel boring machine has been dismantled and removed from the tunnel. The project has seen a reduction in on-site COVID-19 cases during the quarter and project completion remains on schedule for the second half of 2022.
- At the Resolution Copper project in Arizona, we continue to work with the US Forest Service to ensure republication of the Final Environmental Impact Statement (EIS). We continue to engage with Native American Tribes and local communities, and mine studies have progressed in parallel.
- At the Winu project in Western Australia, planned drilling, fieldwork and study activities continue. We are working through the environmental and cultural heritage aspects of the project in advance of submitting the necessary regulatory request. We remain focused on building transparent, credible and trusting relationships with our Traditional Owner partners. Timelines to sanction and first production will be disclosed on completion of relevant agreements and permitting processes.
- At the Simandou iron ore project in Guinea, a framework agreement setting out co-development of port and rail infrastructure was signed by Simfer S.A (the joint venture through which Rio Tinto has a 45% interest in the project) on 25 March with Winning Consortium Simandou (WCS) and the Government of Guinea. In May, the Rio Tinto Board provided in-principle approval of this path forward and we continue to progress jointly with WCS to deliver a definitive agreement within 60 days of the framework agreement. We remain committed to delivering Simandou in accordance with international ESG standards, ensuring that the project results in sustainable benefits to Guinea and its people, along with our shareholders and customers.
- At the Jadar lithium-borate project in Serbia, we remain committed to exploring all options and are reviewing the implications for our activities and our people in Serbia. We acknowledge the concerns from local communities and are committed to meaningful engagement to explore ways to address these.
- On 2 February, we noted Energy Resources of Australia Ltd (ERA) release of the preliminary findings from its reforecast of the cost and schedule for the Ranger rehabilitation project in Australia's Northern Territory, which have been subject to independent review (www.energyres.com.au). Rio Tinto is reviewing the preliminary findings of this reforecast and has advised ERA that it is committed to ensure the rehabilitation of the Ranger Project Area is successfully achieved to a standard that will establish an environment similar to the adjacent Kakadu National Park.

[1]Project baseline reporting is against the 2020 Definitive Estimate. Oyu Tolgoi LLC's updated Mongolian Feasibility Study incorporating the Definitive Estimate schedule, costs and refined Panel 0 mine design is subject to review and approval pursuant to Mongolian regulatory requirements. The definitive estimate assumed COVID-19 restrictions in 2021 that were no more stringent than those experienced in September 2020 and noted that should COVID-19 constraints continue beyond 2021 or should the COVID-19 situation escalate further in 2021 leading to tougher restrictions, additional costs and schedule impacts would arise. Since the definitive estimate, at the end of 2020, Mongolia implemented additional restrictions in response to community transmission cases, and in March 2021 the first cases of COVID-19 were identified at Oyu Tolgoi resulting in temporary site shutdown, quarantine measures and further travel and movement restrictions. The impact of these and other additional restrictions, which have continued throughout this period and are beyond those experienced in September 2020, is ongoing. To date, the impact on project costs of the additional restrictions experienced to 31 March 2022 is estimated to be $195 million. Additional costs and schedule impacts continue to be incurred and the final impact is still to be determined. A revised schedule forecast is in progress to assess the overall impact of additional COVID-19 restrictions and the re-sequencing of procurement and construction works arising from restricted budgets in 2021.

Sustainability highlights

We continue to focus on becoming a more outward-looking and humane company, ensuring that everyone at Rio Tinto can count on a safe, respectful and inclusive workplace. On 1 February, we published a comprehensive external review of our workplace culture, commissioned as part of our commitment to ensure sustained cultural change across our global operations. The review, which was carried out by former Australian Sex Discrimination Commissioner Elizabeth Broderick, is part of the work being undertaken by Rio Tinto's Everyday Respect task force, which was launched in March 2021 to better understand, prevent and respond to harmful behaviours in the workplace.

As part of our commitment to fostering a more inclusive, fulfilling and diverse workplace, on 10 March, we announced improvements to our minimum global paid parental leave standards for employees, by removing distinctions between primary and secondary carers so that all new parents are eligible for 18 weeks paid parental leave. The benefits will be rolled out over the course of 2022/2023 and will be adjusted according to local regulations, customs and context.

Communities & Social Performance (CSP)

We have established an internal global Indigenous Coordination Committee (ICC) to advance, align and promote the company's approach and strategy for Indigenous and other land connected peoples. The ICC meets monthly and comprises senior representatives from CSP, Indigenous Affairs Australia, External Affairs and Legal in addition to the Product Groups and Business Units. Examples of ICC topics include: aligning North American and Australian Indigenous strategies, sharing good practices in different geographies i.e. ranger and tribal monitoring programs; social cultural heritage management plans and monitoring external activities i.e. reconciliation in Canada and Australia.

On 7 March, we announced a donation of A$1.5 million to disaster relief and recovery efforts supporting people affected by widespread floods in Queensland and New South Wales. We are also offering immediate financial support to employees directly impacted by the floods, as well as providing staff involved in recovery efforts with full paid leave. In addition to this, the company will match any staff donations to flood relief causes.

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

Cultural heritage management

On 14 February, we announced an agreement with the Yinhawangka Aboriginal Corporation on a new co-designed management plan to ensure the protection of significant social and cultural heritage values as part of our proposed development of the Western Range iron ore project in the Pilbara region of Western Australia. The Social, Cultural Heritage Management Plan is the result of strong collaboration over the past year between the Yinhawangka people and Rio Tinto.

We continue work to improve our approach to social and cultural heritage management with Traditional Owners in the Pilbara and we are engaging with other Traditional Owner groups to develop similar plans.

On April 8, we welcomed the findings of an archaeological excavation led by Traditional Owners on a site at the Channar operation in the Pilbara which affirmed the presence of the Yinhawangka People in the region for more than 50,000 years. Rio Tinto acknowledges the significance of the Yirra site and is committed to working in partnership with the Yinhawangka People to ensure it is preserved for future generations. We are planning to fund further Traditional Owner-led cultural research and archaeological excavations.

On 14 March, we welcomed the release of a joint Commonwealth Government and First Nations Heritage Protection Alliance Discussion Paper designed to strengthen state and federal cultural heritage protection laws. These reforms must ensure that Aboriginal and Torres Strait Islander peoples are placed at the centre of decision-making on matters relating to protection of their cultural heritage.

Australian Advisory Group (AAG)

We have established an AAG to provide guidance on current and emerging issues, and better manage policies and positions that are important to both Australian communities and our broader business. We have confirmed the inaugural Chairperson as Professor Peter Yu, and other members include Michelle Deshong, Nyadol Nyuon, Yarlalu Thomas, Djawa Yunupingu, Cris Parker and Shona Reid. The first AAG meeting was held in March.

Climate change and our value chain

We progressed initiatives in the first quarter in line with our pathway to decarbonise our business and actively develop technologies that will enable our customers and our customers' customers to decarbonise.

- We continue to develop a phased plan for roll out of the 1GW of renewables to support our Pilbara operations. We are working on the schedule for deployment of distributed renewables (mix of wind and solar), completing detailed design on the preferred sites for the first phase, progressing engineering studies to integrate variable renewable capacity and storage with our existing gas fired generation and engaging with Traditional Owners, Western Australian Government and other key stakeholders to progress final site selection and appropriate approvals.
- In the quarter, we established a small team to identify opportunities to invest in nature-based solutions on or near our landholdings. We will look for high quality, high integrity projects that could deliver carbon offsets with biodiversity and community benefits. While we are undertaking the urgent and immediate action required to decarbonise our operations, we know this action alone will not be enough to meet our climate commitments aligned with the Paris agreement. Our work to progress nature-based solutions will complement our wider investment in decarbonisation and is not a substitute for achieving emissions reductions at our mines and smelters.
- Research work on the Low Carbon Research Project announced in October 2021 is continuing. We are investigating iron making with Pilbara iron ore fines using sustainable raw biomass as a coking coal replacement, and microwaves as a highly efficient supplementary energy source. Initial testing at a plant has resulted in the successful production of highly metallised directly reduced iron with targeted levels of carbon, from the biomass. These results have enabled us to progress the design of a larger scale continuous pilot plant to further our research and development and assess the potential of the process at commercial scale. In parallel, we continue to progress the other five focus areas for iron and steel decarbonisation.
- On 20 February, we announced a partnership with the Tasmanian Government to jointly investigate how Bell Bay Aluminum's smelting manufacturing capacity and electricity demand can help support the development of new industries and more renewable energy supply in the region. We also committed to explore how we could further decarbonise the smelter and investigate options for future investment to secure the competitiveness of the smelter.
- On 14 February, we announced that the US Department of Energy has awarded $2.2 million to a Rio Tinto led team to explore carbon storage potential at the Tamarack nickel joint venture in central Minnesota. We have assembled a team of climate innovation and research leaders to explore new approaches in carbon mineralisation technology as a way to safely and permanently store carbon as rock. We will contribute $4 million in funding for the 3-year project, in addition to the funding from the Department of Energy.
- On 29 March, we announced the commissioning of a new remelt furnace at our Laterrière Plant, adding 22,000 metric tons of recycling capacity to our aluminium operations in the Saguenay, Lac-Saint-Jean region of Quebec. The $8.4 million project has been completed over two years and will enable the development of new sustainable products combining low-carbon and recycled aluminium for customers in the North American market. The remelt furnace is equipped with highly efficient burners to minimise its carbon footprint.

Our markets

Economic growth and commodity demand started positively this year as the world continues to recover from the pandemic downturn. However, market expectations have been revised downwards amidst sustained high inflation, the outbreak of the Russia-Ukraine war, and a resurgence of COVID-19 lockdowns in China. Further downside risks include a prolonged war and other geopolitical tensions, extended labour and supply shortages, and monetary policy adjustments to curb inflation.

- Commodity prices have been elevated due to actual and expected disruptions to supply. We expect commodity demand to be underpinned by the global energy transition which is creating new demand for our products and near-term Chinese policies that are becoming more growth focused. Recent input cost increases are the largest raw material cost hike since the Oil Crisis in 1973. Rising interest rates globally pose downside risks to economic growth.

- China is transitioning from tightening to easing policies following a slowdown in the second half of 2021, with mild pro-growth measures in place to support property, infrastructure and consumption. Economic stability remains a top priority this year amidst significant economic headwinds, including COVID-19 restrictions. We expect China to continue to finetune its policies to balance multiple priorities.

- In the United States, there has been a rebound in demand post-Omicron and the labour market is extremely tight, leading to strong income growth. However, the Fed has started to tighten monetary policy to combat sustained high inflation, raising concerns of an economic slowdown if interest rates are raised too quickly in a short period.

- The economic recovery in the Eurozone has been dampened by escalating conflict and further decoupling from the Russian economy. Inflation hit record highs, up from 5.9% in February to 7.5% in March, with a strong acceleration in energy and food components. The auto industry has also been impacted by increasing supply chain issues arising from the war.

- Iron ore prices have been volatile, with the Platts 62% Fe index up 33% at the end of the first quarter ($158/dmt). Since late February, supply concerns due to the war in Ukraine has outweighed muted demand growth and a crackdown on speculative trading behaviour in China. China's economy is getting a boost with infrastructure spending, but COVID-19 lockdowns pose downside risks to near-term construction activity.

- The aluminium LME price was volatile ending up 25% at the end of the first quarter, and above $3,500/t, supported by disruptions from the Russia-Ukraine war, high energy prices and supply tightness in Europe and China. The price hit a record high of almost $4,000/t on 7 March as fear gripped the market that supply from Russia will become inaccessible. Tight physical metal markets and low inventory levels have also supported increased market premia across US and Europe during the first quarter.

- Copper has not experienced a price rally to the extent seen in other base metals, although the price was up 7% at the end of the first quarter ($4.69/lb). The global market continues to be tight, with exchange stocks near 16-year lows, and is still susceptible to supply disruptions. However, rising global production later in 2022 should help to offset disruptions.

- Prices for key battery metals have continued to increase as strong demand outpaces supply, amidst low spodumene feedstocks. Lithium carbonate prices have more than doubled in the first quarter and seen a six-fold increase year on year. Nevertheless, mine supply growth should pick up due to the ramp up of idled mine capacity and new projects coming online, especially in Australia.

IRON ORE

Rio Tinto share of production (Million tonnes)	**Q1 2022**	vs Q1 2021	vs Q4 2021
Pilbara Blend and SP10 Lump[1]	**17.1**	-5%	-16%
Pilbara Blend and SP10 Fines[1]	**25.7**	-9%	-20%
Robe Valley Lump	**1.1**	-20%	-9%
Robe Valley Fines	**1.7**	-22%	-16%
Yandicoogina Fines (HIY)	**14.5**	+7%	+1%
Total Pilbara production	**60.1**	-5%	-14%
Total Pilbara production (100% basis)	**71.7**	-6%	-15%

Rio Tinto share of shipments (Million tonnes)	**Q1 2022**	vs Q1 2021	vs Q4 2021
Pilbara Blend Lump	**10.8**	-16%	-16%
Pilbara Blend Fines	**21.7**	-24%	-11%
Robe Valley Lump	**0.7**	-34%	-36%
Robe Valley Fines	**1.7**	-28%	-23%
Yandicoogina Fines (HIY)	**14.5**	+2%	+3%
SP10 Lump[1]	**3.4**	+28%	-30%
SP10 Fines[1]	**7.5**	+157%	-30%
Total Pilbara shipments[2]	**60.3**	-7%	-14%
Total Pilbara shipments (100% basis)[2]	**71.5**	-8%	-15%
Total Pilbara Shipments (consolidated basis)[2, 3]	**61.8**	-7%	-14%

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

Pilbara operations had a challenging first quarter, as expected, as ongoing mine depletion was not offset by mine replacement projects, with delayed commissioning of Gudai-Darri (first ore still forecast for the second quarter of 2022) and ongoing commissioning challenges at the Mesa A wet plant continuing to impact production ramp up at Robe Valley. COVID-19 constraints impacted labour supply as we experienced increased cases on-site in the Pilbara following the Western Australian border opening in March. First quarter shipments of 71.5 million tonnes (Rio Tinto share 60.3 million tonnes) were 8% lower than the first quarter of 2021. We produced 71.7 million tonnes (Rio Tinto share 60.1 million tonnes) in the first quarter, 6% lower than the corresponding period of 2021. We expect increased production volumes and improved product mix in the second half with the commissioning and ramp up of Gudai-Darri, commissioning of the Robe Valley wet plant and improved mine pit health. Full year shipments guidance remains unchanged.

The focus on pit health and mine development activities delivered record first quarter total material moved, with higher waste movement (+9% year on year) and drill and blast volumes (+12% year on year). Deployment of the Rio Tinto Safe Production System continues and we are seeing some promising results, with improved drill and blast performance at West Angelas and improved fixed plant performance at Yandicoogina. We are now focused on replicating the improvements at West Angelas and Yandicoogina and commencing new deployments at the Tom Price and Brockman 4 operations.

Approximately 11% of sales in the first quarter 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 or on the spot market. Approximately 31% of sales in the first quarter were made on a free on board (FOB) basis, with the remainder sold including freight.

China Portside Trading

We continue to increase our iron ore portside sales in China, with 7.0 million tonnes of sales in the first quarter of 2022 (1.8 million tonnes in the first quarter of 2021). This included an inventory drawdown of 31% from the higher levels at the end of 2021 due to elevated SP10 production volumes (11.4 million tonnes, including 8.8 million tonnes of Pilbara product). At 31 March, inventory levels are 7.9 million tonnes, including 5.3 million tonnes of Pilbara product. We continue to develop our partnerships with the Chinese ports and grow our product screening and blending capabilities. In the first quarter of 2022 approximately 70% of our portside sales were either screened or blended in Chinese ports.

ALUMINIUM

Rio Tinto share of production ('000 tonnes)	Q1 2022	vs Q1 2021	vs Q4 2021
Bauxite	**13,625**	0%	+4%
Bauxite third party shipments	**10,135**	+12%	+13%
Alumina	**1,901**	-7%	-1%
Aluminium	**736**	-8%	-3%

Bauxite

Bauxite production of 13.6 million tonnes was in line with the first quarter of 2021 with similar wet weather disruptions as the corresponding period.

We shipped 10.1 million tonnes of bauxite to third parties in the first quarter, 12% higher than the same period of 2021 with less direct shipping interruptions from the major weather events.

Alumina

Alumina production of 1.9 million tonnes was 7% lower than the first quarter of 2021, as a result of unplanned outages at our refineries.

As a result of the Australian Government's sanction measures, we have taken on 100% of the capacity and governance of Queensland Alumina Limited (QAL) until further notice. QAL is 80% owned by Rio Tinto and 20% owned by Rusal. Our focus remains on ensuring the continued safe operation of QAL, as a significant employer and contributor to the local Gladstone and Queensland economies.

Aluminium

Aluminium production of 0.7 million tonnes was 8% lower than the first quarter of 2021 due to reduced capacity at our Kitimat smelter in British Columbia following the strike which commenced in July 2021. The reduced capacity has been partly offset by the continued stable performance across all remaining smelters, despite considerable challenges related to unplanned employee absences due to COVID-19.
Agreement with the labour union and employees was reached in October and preparations continue for the Kitimat smelter to progressively restart from June 2022 with full ramp up expected by the end of the year.

COPPER

Rio Tinto share of production ('000 tonnes)	Q1 2022	vs Q1 2021	vs Q4 2021
Mined copper			
Kennecott	**47.1**	+42%	-5%
Escondida	**68.2**	-5%	-2%
Oyu Tolgoi	**10.2**	-33%	-22%
Refined copper			
Kennecott	**40.2**	-11%	+58%
Escondida	**14.4**	+3%	-1%

Kennecott

Mined copper production was 42% higher than the first quarter of 2021, with higher grades (+35%) and recoveries due to mining higher grade ores following the transition into the south wall which was completed in 2021.

Refined copper production was 11% lower than the first quarter of 2021 due to significant COVID-19 workforce impacts at the smelter. Refined copper production was 58% higher than the prior quarter due to challenges with the furnace failure and associated recovery last year.

On 1 April, we announced a new Collective Bargaining Agreement had been reached with unions representing approximately 1,300 employees at the Kennecott operation. The new five-year agreement was ratified through a vote by union members held on 31 March 2022, following seven weeks of constructive negotiations. This agreement, effective 1 April 2022, delivers fair and competitive wages and enhanced benefits for all represented Kennecott employees, and new pathways to career progression.

Escondida

Mined copper production was 5% lower than the first quarter of 2021 mainly due to 7% lower throughput as a result of COVID-19 workforce impacts, public road blockades associated with social unrest and extension of ball mill planned maintenance.

Oyu Tolgoi

Mined copper production from the open pit was 33% lower than the first quarter of 2021 due to lower copper grades and recoveries as a result of planned mine sequencing. A planned concentrator shutdown in February was completed safely and successfully on schedule.

We continue to work closely with the Mongolian and Chinese authorities and our customers to manage the risk of supply chain disruptions. Cross-border concentrate shipments into China have resumed with measures in place to transport greater volumes in a safe and efficient manner, however uncertainty continues to exist with the rate of COVID-19 cases in Mongolia. The force majeure declared on shipments from 30 March 2021 remains in place.

MINERALS

Rio Tinto share of production (million tonnes)	Q1 2022	vs Q1 2021	vs Q4 2021
Iron ore pellets and concentrate			
IOC	**2.4**	+3%	-4%

Rio Tinto share of production ('000 tonnes)	Q1 2022	vs Q1 2021	vs Q4 2021
Minerals			
Borates - B_2O_3 content	**123**	+1%	+5%
Titanium dioxide slag	**273**	-2%	+20%

Rio Tinto share of production ('000 carats)	Q1 2022	vs Q1 2021	vs Q4 2021
Diavik[1]	**991**	-2%	-14%

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

Iron Ore Company of Canada (IOC)

Iron ore production was 3% higher than the first quarter of 2021, which was impacted by mine feed constraints. There is good progress on the initiation of Rio Tinto Safe Production System at the concentrator.

Borates

Borates production in the first quarter was 1% higher than the corresponding period of 2021 with stable refinery operating rates following the successful implementation of productivity initiatives supporting system stability. We expect logistical challenges to continue with elevated congestion at the Port of Los Angeles and shipping rate escalation. Labour availability is also posing a threat to supply chain stability.

Iron and Titanium

Titanium dioxide production was 2% lower than the first quarter of 2021, but 20% higher than the prior quarter as a result of the restart at Richards Bay Minerals (RBM) in South Africa and improved stability of operations at Rio Tinto Fer et Titane (RTFT), Canada. RBM has continued its path to stable operations following last year's disruptions and RTFT has made progress addressing the equipment reliability issues in 2021. On 18 March, we announced the lifting of force majeure on customer contracts at RBM, that had been in place since 30 June 2021.

The province of KwaZulu-Natal in South Africa, where our RBM operation is located, has experienced devastating floods in the past weeks. While the Richards Bay area has been largely spared and our people are safe, our local teams have set aside funds which will be used to support our partners in managing this unfolding humanitarian crisis. Engagement with the relevant authorities are underway to understand needs and priorities.

Diamonds

At Diavik, carats recovered in the first quarter were 2% lower than the first quarter of 2021 due to lower availability of ore driven by significant impacts from COVID-19 including unplanned employee absences, offset by an increased share of production from November 2021. Processing throughput was also impacted by an unplanned outage in the first quarter.

EXPLORATION AND EVALUATION

Pre-tax and pre-divestment expenditure on exploration and evaluation charged to the income statement in the first quarter of 2022 was $168 million, compared with $157 million in the first quarter of 2021. Approximately 41% of this expenditure was incurred by Copper (includes Simandou), 34% by central exploration, 15% by Minerals and 10% by Iron Ore.

There were no significant divestments of central exploration properties in the first quarter of 2022.

Exploration highlights
Rio Tinto has a strong portfolio of projects with activity in 18 countries across seven commodities in early exploration and studies stages. All projects have followed government COVID-19 requirements and guidelines while focusing on protecting well-being and health of local communities. The bulk of the exploration expenditure in the first quarter focused on copper in Australia, Chile, Colombia, Peru and Zambia, diamonds projects in Canada, and nickel projects in Finland and Canada. Mine-lease exploration continued at Rio Tinto managed businesses including Pilbara Iron in Australia and Diavik in Canada. Activities on the ground at the Falcon diamonds project in Saskatchewan, Canada are limited to care and maintenance while Rio Tinto continues to carry out studies and review information acquired in previous programmes.

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	Lithium: Rincon, Lithium borates: Jadar, Serbia Nickel: Tamarack, US (3rd party operated)		Nickel Greenfield: Canada, Finland 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, Nicaragua, 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: South Africa

**Limited activity during the quarter*

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 Q1	2021 Q4	**2022 Q1**	2021	Q1 22 vs Q1 21	Q1 22 vs Q4 21
Principal commodities							
Alumina	**('000 t)**	2,034	**1,911**	**1,901**	7,894	-7%	-1%
Aluminium	**('000 t)**	803	**757**	**736**	3,151	-8%	-3%
Bauxite	**('000 t)**	13,566	**13,095**	**13,625**	54,326	0%	+4%
Borates	**('000 t)**	122	**117**	**123**	488	+1%	+5%
Copper - mined	**('000 t)**	120.5	**132.3**	**125.5**	493.5	+4%	-5%
Copper - refined	**('000 t)**	59.2	**40.0**	**54.7**	201.9	-8%	+37%
Diamonds	**('000 cts)**	*1,007*	**1,155**	**991**	*3,847*	-2%	-14%
Iron Ore	**('000 t)**	65,681	**72,561**	**62,465**	276,557	-5%	-14%
Titanium dioxide slag	**('000 t)**	279	**228**	**273**	1,014	-2%	+20%
Other Metals & Minerals							
Gold - mined	**('000 oz)**	96.4	73.9	**68.5**	344.9	-29%	-7%
Gold - refined	**('000 oz)**	56.8	31.5	**32.2**	176.4	-43%	+2%
Molybdenum	**('000 t)**	5.0	1.1	**1.1**	7.6	-79%	-1%
Salt	**('000 t)**	1,411	1,471	**1,595**	5,848	+13%	+8%
Silver - mined	**('000 oz)**	1,005	1,108	**1,012**	4,148	+1%	-9%
Silver - refined	**('000 oz)**	812	516	**577**	2,671	-29%	+12%

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	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
ALUMINA							
Production ('000 tonnes)							
Jonquière (Vaudreuil)	100 %	352	349	325	338	**334**	1,364
Jonquière (Vaudreuil) specialty Alumina plant	100 %	22	28	29	28	**25**	107
Queensland Alumina	80 %	743	756	738	727	**704**	2,964
São Luis (Alumar)	10 %	95	97	75	99	**94**	366
Yarwun	100 %	822	782	770	719	**745**	3,093
Rio Tinto total alumina production		2,034	2,012	1,937	1,911	**1,901**	7,894
ALUMINIUM							
Production ('000 tonnes)							
Australia - Bell Bay	100 %	46	47	48	48	**46**	189
Australia - Boyne Island	59 %	74	75	75	75	**73**	298
Australia - Tomago	52 %	75	75	77	78	**75**	305
Canada - six wholly owned	100 %	385	391	343	325	**318**	1,444
Canada - Alouette (Sept-Îles)	40 %	62	63	64	63	**62**	251
Canada - Bécancour	25 %	28	29	29	30	**28**	116
Iceland - ISAL (Reykjavik)	100 %	49	51	52	52	**50**	203
New Zealand - Tiwai Point	79 %	65	65	67	67	**66**	264
Oman - Sohar	20 %	20	20	20	20	**19**	79
Rio Tinto total aluminium production		803	816	774	757	**736**	3,151
BAUXITE							
Production ('000 tonnes) (a)							
Gove	100 %	2,879	3,030	3,067	2,787	**3,093**	11,763
Porto Trombetas	12 %	254	364	332	416	**240**	1,366
Sangaredi	(b)	1,887	1,755	1,763	1,704	**1,765**	7,109
Weipa	100 %	8,545	8,550	8,805	8,188	**8,527**	34,088
Rio Tinto total bauxite production		13,566	13,699	13,967	13,095	**13,625**	54,326

(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	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
BORATES							
Production ('000 tonnes B_2O_3 content)							
Rio Tinto Borates - borates	100 %	122	126	123	117	**123**	488

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
COPPER							
Mine production ('000 tonnes) (a)							
Bingham Canyon	100 %	33.2	33.7	42.8	49.7	**47.1**	159.4
Escondida	30 %	72.1	69.5	68.4	69.6	**68.2**	279.5
Oyu Tolgoi (b)	34 %	15.2	12.3	14.1	13.0	**10.2**	54.6
Rio Tinto total mine production		120.5	115.5	125.2	132.3	**125.5**	493.5
Refined production ('000 tonnes)							
Escondida	30 %	14.0	15.3	14.7	14.5	**14.4**	58.6
Rio Tinto Kennecott (c)	100 %	45.2	36.9	35.7	25.5	**40.2**	143.3
Rio Tinto total refined production		59.2	52.3	50.5	40.0	**54.7**	201.9

(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) Rio Tinto owns a 33.52% indirect interest in Oyu Tolgoi through its 50.79% interest in Turquoise Hill Resources Ltd.
(c) We continue to process third party concentrate to optimise smelter utilisation, including 1.3 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.

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
DIAMONDS							
Production ('000 carats)							
Diavik (a)	100 %	1,007	851	834	1,155	**991**	3,847

(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 interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
GOLD							
Mine production ('000 ounces) (a)							
Bingham Canyon	100 %	36.2	30.5	38.1	34.7	**37.8**	139.5
Escondida	30 %	11.4	11.7	12.6	12.9	**10.9**	48.5
Oyu Tolgoi (b)	34 %	48.8	37.9	43.8	26.3	**19.8**	156.9
Rio Tinto total mine production		96.4	80.1	94.5	73.9	**68.5**	344.9
Refined production ('000 ounces)							
Rio Tinto Kennecott	100 %	56.8	43.6	44.5	31.5	**32.2**	176.4

(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 owns a 33.52% indirect interest in Oyu Tolgoi through its 50.79% interest in Turquoise Hill Resources Ltd.

Rio Tinto share of production

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	**Full Year 2021**
IRON ORE							
Production ('000 tonnes) (a)							
Hamersley mines	(b)	*49,313*	*50,333*	*55,634*	*55,049*	***47,678***	*210,329*
Hope Downs	50 %	5,616	5,960	6,500	6,567	**5,830**	24,642
Iron Ore Company of Canada	59 %	2,345	2,721	2,163	2,498	**2,404**	9,727
Robe River - Pannawonica (Mesas J and A)	53 %	3,506	3,090	3,721	3,196	**2,774**	13,514
Robe River - West Angelas	53 %	4,900	4,137	4,056	5,252	**3,779**	18,345
Rio Tinto iron ore production ('000 tonnes)		65,681	66,241	72,074	72,561	**62,465**	276,557
Breakdown of Production:							
Pilbara Blend and SP10 Lump (c)		18,050	18,265	19,742	20,374	**17,081**	76,431
Pilbara Blend and SP10 Fines (c)		28,245	28,796	30,825	32,081	**25,658**	119,947
Robe Valley Lump		1,307	1,219	1,423	1,152	**1,051**	5,102
Robe Valley Fines		2,199	1,871	2,297	2,044	**1,724**	8,412
Yandicoogina Fines (HIY)		13,534	13,369	15,623	14,412	**14,548**	56,938
Pilbara iron ore production ('000 tonnes)		63,336	63,520	69,910	70,063	**60,061**	266,830
IOC Concentrate		871	1,154	829	1,009	**962**	3,863
IOC Pellets		1,474	1,567	1,335	1,489	**1,442**	5,864
IOC iron ore production ('000 tonnes)		2,345	2,721	2,163	2,498	**2,404**	9,727
Breakdown of Shipments:							
Pilbara Blend Lump		12,842	12,830	13,018	12,832	**10,809**	51,522
Pilbara Blend Fines		28,565	27,795	28,901	24,308	**21,698**	109,569
Robe Valley Lump		1,025	934	962	1,061	**675**	3,981
Robe Valley Fines		2,402	2,190	2,567	2,237	**1,731**	9,395
Yandicoogina Fines (HIY)		14,222	13,640	14,906	14,121	**14,487**	56,889
SP10 Lump (c)		2,664	3,748	4,826	4,841	**3,397**	16,078
SP10 Fines (c)		2,923	2,817	4,063	10,684	**7,497**	20,487
Pilbara iron ore shipments ('000 tonnes) (d)		64,642	63,953	69,242	70,084	**60,295**	267,921
Pilbara iron ore shipments - consolidated basis ('000 tonnes) (d) (f)		66,431	65,627	71,131	71,972	**61,818**	275,161
IOC Concentrate		1,019	1,048	1,054	989	**600**	4,110
IOC Pellets		1,477	1,303	1,374	1,711	**1,412**	5,865
IOC Iron ore shipments ('000 tonnes) (d)		2,496	2,352	2,428	2,700	**2,012**	9,976
Rio Tinto iron ore shipments ('000 tonnes) (d)		67,137	66,305	71,671	72,784	**62,307**	277,897
Rio Tinto iron ore sales ('000 tonnes) (e)		65,551	67,145	70,967	69,489	**66,683**	273,153

(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 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. Historic data remains unchanged.
(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	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	**Full Year 2021**
MOLYBDENUM							
Mine production ('000 tonnes) (a)							
Bingham Canyon	100 %	5.0	1.1	0.4	1.1	**1.1**	7.6

(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.

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	**Full Year 2021**
SALT							
Production ('000 tonnes)							
Dampier Salt	68 %	1,411	1,458	1,508	1,471	**1,595**	5,848
SILVER							
Mine production ('000 ounces) (a)							
Bingham Canyon	100 %	524	476	639	589	**561**	2,228
Escondida	30 %	395	370	387	439	**381**	1,591
Oyu Tolgoi (b)	34 %	85	79	84	80	**71**	328
Rio Tinto total mine production		1,005	925	1,110	1,108	**1,012**	4,148
Refined production ('000 ounces)							
Rio Tinto Kennecott	100 %	812	609	733	516	**577**	2,671

(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 owns a 33.52% indirect interest in Oyu Tolgoi through its 50.79% interest in Turquoise Hill Resources Ltd.

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	**Full Year 2021**
TITANIUM DIOXIDE SLAG							
Production ('000 tonnes)							
Rio Tinto Iron & Titanium (a)	100 %	279	298	209	228	**273**	1,014

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

ERA ceased processing operations on 8 January 2021, as required by the Ranger Authority. No data for these operations are included in the Share of production table.

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 March 2022.

Rio Tinto operational data

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
ALUMINA							
Smelter Grade Alumina - Aluminium Group							
Alumina production ('000 tonnes)							
Australia							
Queensland Alumina Refinery - Queensland	80 %	929	945	922	909	**880**	3,705
Yarwun refinery - Queensland	100 %	822	782	770	719	**745**	3,093
Brazil							
São Luis (Alumar) refinery	10 %	953	968	748	993	**940**	3,662
Canada							
Jonquière (Vaudreuil) refinery - Quebec (a)	100 %	352	349	325	338	**334**	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 %	22	28	29	28	**25**	107

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

Rio Tinto operational data

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
ALUMINIUM							
Primary Aluminium							
Primary aluminium production ('000 tonnes)							
Australia							
Bell Bay smelter - Tasmania	100 %	46	47	48	48	**46**	189
Boyne Island smelter - Queensland	59 %	124	127	125	126	**123**	502
Tomago smelter - New South Wales	52 %	145	146	150	150	**145**	592
Canada							
Alma smelter - Quebec	100 %	117	117	119	119	**117**	471
Alouette (Sept-Îles) smelter - Quebec	40 %	155	157	159	157	**154**	629
Arvida smelter - Quebec	100 %	40	42	42	43	**42**	168
Arvida AP60 smelter - Quebec	100 %	15	15	15	15	**14**	60
Bécancour smelter - Quebec	25 %	112	117	115	119	**111**	463
Grande-Baie smelter - Quebec	100 %	56	57	58	58	**57**	230
Kitimat smelter - British Columbia	100 %	95	97	46	25	**25**	263
Laterrière smelter - Quebec	100 %	62	63	63	64	**63**	252
Iceland							
ISAL (Reykjavik) smelter	100 %	49	51	52	52	**50**	203
New Zealand							
Tiwai Point smelter	79 %	82	82	84	85	**83**	333
Oman							
Sohar smelter	20 %	98	99	100	100	**97**	395

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

Rio Tinto operational data

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
BAUXITE							
Bauxite production ('000 tonnes)							
Australia							
Gove mine - Northern Territory	100 %	2,879	3,030	3,067	2,787	**3,093**	11,763
Weipa mine - Queensland	100 %	8,545	8,550	8,805	8,188	**8,527**	34,088
Brazil							
Porto Trombetas (MRN) mine	12 %	2,117	3,033	2,764	3,469	**2,000**	11,383
Guinea							
Sangaredi mine (a)	23 %	4,194	3,899	3,919	3,786	**3,922**	15,797
Rio Tinto share of bauxite shipments							
Share of total bauxite shipments ('000 tonnes)		13,444	13,602	14,201	13,031	**13,876**	54,278
Share of third party bauxite shipments ('000 tonnes)		9,024	9,493	10,091	8,988	**10,135**	37,596

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

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
BORATES							
Rio Tinto Borates - borates	100 %						
US							
Borates ('000 tonnes) (a)		122	126	123	117	**123**	488

(a) Production is expressed as B_2O_3 content.

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
COPPER & GOLD							
Escondida	30 %						
Chile							
Sulphide ore to concentrator ('000 tonnes)		32,654	31,903	33,528	35,787	**30,235**	133,872
Average copper grade (%)		0.78	0.78	0.73	0.71	**0.81**	0.75
Mill production (metals in concentrates):							
Contained copper ('000 tonnes)		207.8	202.8	201.2	203.6	**191.5**	815.5
Contained gold ('000 ounces)		38.0	38.9	42.0	42.9	**36.3**	161.7
Contained silver ('000 ounces)		1,318	1,234	1,291	1,462	**1,270**	5,305
Recoverable copper in ore stacked for leaching ('000 tonnes) (a)		32.5	28.7	26.7	28.4	**35.9**	116.3
Refined production from leach plants:							
Copper cathode production ('000 tonnes)		46.6	51.1	49.0	48.4	**48.1**	195.3

(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 March 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
COPPER & GOLD (continued)							
Rio Tinto Kennecott							
Bingham Canyon mine	100 %						
Utah, US							
Ore treated ('000 tonnes)		10,054	7,918	9,995	9,809	**10,130**	37,776
Average ore grade:							
Copper (%)		0.38	0.48	0.47	0.55	**0.51**	0.47
Gold (g/t)		0.21	0.21	0.22	0.21	**0.19**	0.21
Silver (g/t)		2.30	2.64	2.80	2.55	**2.36**	2.57
Molybdenum (%)		0.058	0.021	0.017	0.020	**0.021**	0.029
Copper concentrates produced ('000 tonnes)		140	141	180	187	**176**	648
Average concentrate grade (% Cu)		23.7	23.9	23.7	26.3	**26.8**	24.5
Production of metals in copper concentrates:							
Copper ('000 tonnes) (a)		33.2	33.7	42.8	49.7	**47.1**	159.4
Gold ('000 ounces)		36.2	30.5	38.1	34.7	**37.8**	139.5
Silver ('000 ounces)		524	476	639	589	**561**	2,228
Molybdenum concentrates produced ('000 tonnes):		9.4	2.2	1.0	2.2	**2.1**	14.8
Molybdenum in concentrates ('000 tonnes)		5.0	1.1	0.4	1.1	**1.1**	7.6
Kennecott smelter & refinery	100 %						
Copper concentrates smelted ('000 tonnes)		240	103	165	157	**213**	665
Copper anodes produced ('000 tonnes) (b)		50.5	23.5	35.7	32.9	**45.8**	142.5
Production of refined metal:							
Copper ('000 tonnes) (c)		45.2	36.9	35.7	25.5	**40.2**	143.3
Gold ('000 ounces) (d)		56.8	43.6	44.5	31.5	**32.2**	176.4
Silver ('000 ounces) (d)		812	609	733	516	**577**	2,671

(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 1.3 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 March 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
COPPER & GOLD (continued)							
Turquoise Hill Resources							
Oyu Tolgoi mine (a)	34 %						
Mongolia							
Ore Treated ('000 tonnes)		9,813	9,401	9,336	10,573	**9,581**	39,124
Average mill head grades:							
Copper (%)		0.56	0.47	0.53	0.46	**0.40**	0.50
Gold (g/t)		0.68	0.50	0.63	0.38	**0.32**	0.54
Silver (g/t)		1.29	1.19	1.29	1.27	**1.25**	1.26
Copper concentrates produced ('000 tonnes)		201.9	173.2	191.9	182.7	**144.3**	749.6
Average concentrate grade (% Cu)		22.5	21.2	21.9	21.3	**21.0**	21.7
Production of metals in concentrates:							
Copper in concentrates ('000 tonnes)		45.4	36.7	41.9	38.9	**30.3**	163.0
Gold in concentrates ('000 ounces)		145.7	113.1	130.8	78.6	**59.2**	468.1
Silver in concentrates ('000 ounces)		255	235	249	239	**211**	977
Sales of metals in concentrates:							
Copper in concentrates ('000 tonnes)		39.0	19.6	46.4	34.4	**29.9**	139.4
Gold in concentrates ('000 ounces)		110.9	72.6	149.1	102.2	**57.4**	434.7
Silver in concentrates ('000 ounces)		207	106	278	192	**179**	783

(a) Rio Tinto owns a 33.52% indirect interest in Oyu Tolgoi through its 50.79% interest in Turquoise Hill Resources.

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
DIAMONDS							
Diavik Diamonds (a)	100 %						
Northwest Territories, Canada							
Ore processed ('000 tonnes)		632	669	643	596	**496**	2,540
Diamonds recovered ('000 carats)		1,678	1,418	1,390	1,356	**991**	5,843

(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 March 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
IRON ORE							
Rio Tinto Iron Ore							
Western Australia							
Pilbara Operations							
Saleable iron ore production ('000 tonnes)							
Hamersley mines	(a)	*49,313*	*50,333*	*55,634*	*55,049*	***47,678***	*210,329*
Hope Downs	50 %	11,232	11,920	13,000	13,133	**11,660**	49,284
Robe River - Pannawonica (Mesas J and A)	53 %	6,616	5,830	7,021	6,031	**5,234**	25,497
Robe River - West Angelas	53 %	9,246	7,806	7,652	9,909	**7,130**	34,613
Total production ('000 tonnes)		76,406	75,889	83,306	84,122	**71,703**	319,724
Breakdown of total production:							
Pilbara Blend and SP10 Lump (b)		21,901	21,946	23,617	24,998	**20,827**	92,463
Pilbara Blend and SP10 Fines (b)		34,356	34,743	37,046	38,681	**31,094**	144,826
Robe Valley Lump		2,467	2,300	2,686	2,173	**1,982**	9,626
Robe Valley Fines		4,149	3,530	4,335	3,857	**3,252**	15,871
Yandicoogina Fines (HIY)		13,534	13,369	15,623	14,412	**14,548**	56,938
Breakdown of total shipments:							
Pilbara Blend Lump		15,740	15,631	16,710	16,616	**13,626**	64,697
Pilbara Blend Fines		35,777	34,607	36,199	31,620	**27,915**	138,203
Robe Valley Lump		1,934	1,762	1,814	2,001	**1,273**	7,512
Robe Valley Fines		4,532	4,131	4,843	4,221	**3,266**	17,727
Yandicoogina Fines (HIY)		14,222	13,640	14,906	14,121	**14,487**	56,889
SP10 Lump (b)		2,664	3,748	4,826	4,841	**3,397**	16,078
SP10 Fines (b)		2,923	2,817	4,063	10,684	**7,497**	20,487
Total shipments ('000 tonnes) (c)		77,791	76,336	83,360	84,104	**71,462**	321,592

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
Iron Ore Company of Canada	59 %						
Newfoundland & Labrador and Quebec in Canada							
Saleable iron ore production:							
Concentrates ('000 tonnes)		1,484	1,965	1,411	1,718	**1,638**	6,578
Pellets ('000 tonnes)		2,510	2,669	2,273	2,535	**2,456**	9,986
IOC Total production ('000 tonnes)		3,993	4,634	3,684	4,254	**4,094**	16,564
Shipments:							
Concentrates ('000 tonnes)		1,735	1,785	1,795	1,684	**1,022**	7,000
Pellets ('000 tonnes)		2,515	2,220	2,340	2,914	**2,405**	9,988
IOC Total Shipments ('000 tonnes) (c)		4,250	4,005	4,136	4,598	**3,427**	16,989
Global Iron Ore Totals							
Iron Ore Production ('000 tonnes)		80,400	80,523	86,990	88,375	**75,797**	336,288
Iron Ore Shipments ('000 tonnes)		82,041	80,341	87,496	88,702	**74,889**	338,581
Iron Ore Sales ('000 tonnes) (d)		80,291	81,097	86,542	85,256	**79,194**	333,185

(a) Includes 100% of production from Paraburdoo, Mt Tom Price, Western Turner Syncline, Marandoo, Yandicoogina, Brockman, Nammuldi, Silvergrass, Channar 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. Historic data remains unchanged.
(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 March 2022. The data represents production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2021	Q2 2021	Q3 2021	Q4 2021	**Q1 2022**	Full Year 2021
SALT							
Dampier Salt	68 %						
Western Australia							
Salt production ('000 tonnes)		2,064	2,132	2,206	2,152	**2,333**	8,555
TITANIUM DIOXIDE SLAG							
Rio Tinto Iron & Titanium	100 %						
Canada and South Africa							
(Rio Tinto share) (a)							
Titanium dioxide slag ('000 tonnes)		279	298	209	228	**273**	1,014

(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.

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