

20 April 2021

Rio Tinto releases first quarter production results

Rio Tinto Chief Executive Jakob Stausholm, said: "We achieved an overall solid operating performance in the first quarter. We have maintained guidance ranges in all our products, with site teams successfully managing the effects of significant rainfall, in particular at our Australian iron ore assets.

"It has been a period of deep reflection for the company, and I have personally spent a significant amount of time listening, learning and taking actions, in particular to better manage Traditional Owner partnerships and cultural heritage. I have appointed a new leadership team and the transition is progressing well. We have set out clear priorities to develop a stronger Rio Tinto. Our focus is to become the best operator, strive for impeccable ESG credentials, excel in development and secure a strong social licence. This ambition will enable us to continue to deliver superior returns to shareholders, invest in sustaining and growing our portfolio, and make a broader contribution to society."

Production*		Q1 2021	vs Q1 2020	vs Q4 2020
Pilbara iron ore shipments (100% basis)	Mt	77.8	+7%	-12%
Pilbara iron ore production (100% basis)	Mt	76.4	-2%	-11%
Bauxite	Mt	13.6	-2%	+2%
Aluminium	kt	803	+3%	-1%
Mined copper	kt	120.5	-9%	-9%
Titanium dioxide slag	kt	279	-5%	+3%
IOC iron ore pellets and concentrate	Mt	2.3	-8%	-14%

*Rio Tinto share unless otherwise stated

Q1 Operational update

- Health, safety and well-being remains our top priority. Our all injury frequency rate (AIFR) of 0.35 improved versus the first quarter of 2020 (0.40). However, we recognise there is no room for complacency and continue to focus on providing strong support for our employees, contractors and host communities, while maintaining critical COVID-19 controls.
- Pilbara iron ore shipments of 77.8 million tonnes (100% basis) were 7% higher than the first quarter of 2020. Production of 76.4 million tonnes (100% basis) was 2% lower, driven by above average wet weather in the mines through February and fixed plant reliability. Labour resource availability and weather challenges disrupted maintenance. Tropical Cyclone Seroja impacted mine and port operations in April. Full year iron ore guidance remains unchanged.
- Bauxite production of 13.6 million tonnes was 2% lower than the first quarter of 2020 due to wet weather in Eastern Australia. The port at the Amrun mine closed for 14 days due to large swells and cyclones. Full year bauxite guidance remains unchanged.
- Aluminium production of 0.8 million tonnes was 3% higher than the first quarter of 2020, with the Becancour smelter, Quebec operating at full capacity and Kitimat, British Columbia nearing the end of its pot relining cycle.
- Mined copper production of 120.5 thousand tonnes was 9% lower than 2020, with lower recoveries and throughput at Escondida and Kennecott partly offset by the anticipated higher grade from the Oyu Tolgoi open pit. Kennecott saw a marginal increase in head grade as it begins the transition into higher grades from the south wall ore, with grades expected to gradually increase through 2021. Oyu Tolgoi shipments have been affected by Chinese border restrictions due to increased cases of COVID-19 in Mongolia. We continue to work closely with authorities and our customers to manage the risk of supply chain disruptions.
- Titanium dioxide slag production of 279 thousand tonnes was 5% lower than 2020 due to a planned furnace rebuild at the Rio Tinto Fer et Titane (RTFT) metallurgical complex in Quebec resulting in operation of 8 out of 9 furnaces.
- Production of pellets and concentrate at Iron Ore Company of Canada (IOC) was 8% lower than 2020 due to the impacts of weather, loading unit availability on mine feed and reduced concentrator mill availability. There was a fire at one of the two reclaimers at the port on 31 March. Full year production guidance remains unchanged.

- On 8 April, we [released Taxes Paid: Our Economic Contribution 2020](#), showing that we made a total direct economic contribution of \$47 billion in the countries and communities where we operate, including \$8.4 billion of taxes and royalties.
- As part of our Climate Strategy, in the first quarter of this year, we entered into two partnerships to progress our work to decarbonise our value chain. Together with Paul Wurth S.A. and SHS-Stahl-Holding-Saar GmbH & Co., we are exploring the viability of transforming iron ore pellets into low-carbon hot briquetted iron, a low-carbon steel feedstock, using green hydrogen generated from hydro-electricity in Canada. At our Boron site in California, we are exploring the deployment of Heliogen's breakthrough solar technology which will use heat from the sun to generate and store carbon-free energy to power the mine's industrial processes. Further details in the *Climate change and our value chain* section below.

Production guidance

Rio Tinto share, unless otherwise stated	2020 Actuals	Q1 2021 Actuals	2021 Unchanged
Pilbara iron ore (shipments, 100% basis) (Mt)	331	77.8	325 to 340
Bauxite (Mt)	56	13.6	56 to 59
Alumina (Mt)	8.0	2.0	7.8 to 8.2
Aluminium (Mt)	3.2	0.8	3.1 to 3.3
Mined copper (kt)	528	120.5	500 to 550
Refined copper (kt)	155	59.2	210 to 250
Diamonds (M carats) ¹	3.7	1.0	3.0 to 3.8
Titanium dioxide slag (Mt)	1.1	0.3	~1.1 to 1.3
IOC iron ore pellets and concentrate (Mt)	10.4	2.3	10.5 to 12.0
Boric oxide equivalent (Mt)	0.5	0.1	~0.5

¹Diamonds 2021 guidance and actuals are for Diavik only for comparability, following Argyle closure in 2020. Unadjusted Diamonds production for 2020 was 14.7 million carats, including both Diavik and Argyle operations.

- We will continue to monitor and adjust production levels and product mix to meet customer requirements in line with our value over volume strategy, government-imposed restrictions related to COVID-19 and any other potential COVID-19 related disruptions.
- Iron ore shipments and bauxite production guidance remain subject to weather and market conditions. Iron ore guidance remains subject to risks associated with tying in approximately 90 million tonnes of replacement mine capacity at existing hubs in Robe Valley, West Angelas and Western Turner Syncline Phase 2 as well as the start-up of Gudai-Darri.
- The future impact on our Pilbara iron ore operations, mine developments and heritage approach from the reform of the Aboriginal Heritage Act 1972 (WA) remains unknown. We will maintain a high level of engagement with Traditional Owners regarding current and proposed plans for mining activities. We continue to work through scenarios in an iterative manner as cultural assessments and mine designs progress, with a broad range of options subject to heritage and environmental approvals, given the flexibility in our Pilbara network.

Operating costs

- Pilbara iron ore 2021 unit cost guidance of \$16.7-\$17.7 per tonne remains unchanged. Operating cost guidance is based on A\$:US\$ exchange rate of 0.77.
- Copper C1 unit cost guidance in 2021 is unchanged at 60-75 US cents/lb.

EBITDA Sensitivities: previously published for 2020, next update on 28 July 2021

	Average price/rate for 2020	(\$m) impact on full year 2020 underlying EBITDA of 10% price/rate change
Copper	281c/lb	370
Aluminium	\$1,702/t	577
Gold	\$1,770/oz	62
Pilbara iron ore (FOB)*	\$98.9/dmt	2,318
A\$	0.69US\$	617
C\$	0.75US\$	201
Oil (Brent)	\$42/bbl	85

*FOB based on monthly freight-adjusted 62% iron fines CFR

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

Investments, growth and development projects

- We have proactively managed COVID-19 challenges as well as some wet weather impacts in Australia, and overall project delivery is satisfactory. Uncertainty continues to exist around local situations, border access, availability and movement of people and goods. Capital expenditure remains unchanged at around \$7.5 billion each year from 2021 to 2023.
- Exploration and evaluation operating expense in the first quarter of 2021 was \$157 million, \$13 million higher than the first quarter of 2020, with continued progress in Australia, and ramp-up of activities in Europe and Central Asia following easing of COVID-19 restrictions.

Pilbara replacement projects

- Gudai-Darri progress continues with production ramp-up on track for early 2022.
- First ore from the Robe River Joint Venture sustaining production projects (West Angelas C, D and Mesa B, C and H at Robe Valley) is still expected in 2021, consistent with previous guidance.
- Construction continues to progress at Western Turner Syncline Phase 2, with the project maintaining first ore in 2021.

Oyu Tolgoi underground project

Technical progress

- Work on the underground Material Handling System 1 advanced in line with the definitive estimate¹ outlined in December, with sustainable production expected in October 2022 and development capital of \$6.75 billion. Progress on shafts 3 and 4, and other planned works, have however been significantly affected by COVID-19. We will provide an update on panels 1 and 2 ramp-up, which shafts 3 and 4 support, when the work to understand any potential impact is complete.
- In addition to ongoing flight restrictions and government imposed lockdowns - including an "all-out readiness state" declared by the Mongolian State Emergency Commission in November 2020 and again in April 2021 - Oyu Tolgoi imposed a site-wide quarantine period and all underground construction was temporarily halted for two weeks in March following the detection of two positive cases of COVID-19 on site. The impact of these additional restrictions is ongoing and still to be determined.
- Underground access has resumed, but work on shafts 3 and 4 will remain shut-down throughout April, and pending easing of restrictions. Site resourcing has been limited due to COVID-19 constraints, with travel restrictions, quarantine and fatigue management likely to continue through May. In addition, international border controls will continue to limit the availability of skilled shaft sinking resources resulting in delays to the progress of shafts 3 and 4.
- Site-wide COVID-19 testing is in place and preparations for a vaccination programme are progressing.

Other updates

- On 9 April, we [announced](#) we had entered into a binding Heads of Agreement with Turquoise Hill Resources (TRQ) for an updated funding plan for the completion of the Oyu Tolgoi underground project. The funding plan addresses the estimated remaining funding requirement of approximately \$2.3 billion, building on and replacing the arrangements established in the Memorandum of Understanding that Rio Tinto and TRQ previously entered into on 9 September 2020. Rio Tinto and TRQ have agreed to jointly obtain an order dismissing the current arbitration on a without prejudice basis, including an order vacating the interim measures order.
- The Mongolian Tax Authority required payment from Oyu Tolgoi for the full amount of the 2018 assessment (2013-2015 years) and 2020 assessment (2016-2018 years) - a total of approximately \$356m in respect of all of the disputed items. In line with Mongolian legislation, Oyu Tolgoi has paid these amounts in full. However, Oyu Tolgoi continues to dispute them through arbitration.

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, site activities were significantly reduced from December 2020 due to a COVID-19 outbreak in the region. The majority of construction work has resumed from March 2021, but the COVID-19 situation in British Columbia continues to impact the return to a full restart.
- At the Resolution project in Arizona, we are reviewing the impact of the US Department of Agriculture's announcement directing the US Forest Service to withdraw the Notice of Availability and rescind the Final Environmental Impact Statement (EIS) and draft Record of Decision. We are committed to ongoing stakeholder engagement in our effort to seek consent to progress the project consistent with the International Council on Mining and Metals (ICMM) Statement on Indigenous Peoples and Mining.
- At the Winu project in Western Australia, drilling and fieldwork activities continue. First ore is expected in 2024, subject to regulatory approvals, Traditional Owner and other consents and COVID-19 restrictions. We continue to further develop our ground holdings in the Paterson region with an expanded 2021 exploration programme planned for the Citadel project, where we now hold a 65% interest.
- At the Simandou iron ore project in Guinea, preliminary results from the first phase of the technical optimisation of the infrastructure components are now being received from Chinese design institutes. Activity at the mine is ramping up, with a focus on identifying opportunities to optimise costs and construction schedule. Social and Environmental Impact Assessment (SEIA) implementation continues.
- The feasibility study at the Jadar lithium-borate project in Serbia is progressing to plan. An investment decision is scheduled for later this year, subject to permitting and other approvals, and granting of an exploitation license.

1 The level of accuracy of the remaining capital and schedule within the definitive estimate is at a better level than feasibility study. The 2020 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 will arise. Since the definitive estimate, Mongolia has 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 additional restrictions, which are beyond those experienced in September 2020, is ongoing and still to be determined.

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.

Sustainability highlights

We continue to advance our sustainability agenda. In February, we enhanced our disclosures via a suite of materials that accompanied our [2020 Annual Report](#) including: [Climate Change report](#), [Scope 1, 2 and 3 emissions calculation methodology](#), [Industry Association Disclosure](#), and [Sustainability Fact Book](#).

A key change to our Remuneration Policy in 2021 has been the introduction of environmental, social, governance (ESG) measures into the Short Term Incentive Plans (STIP). These targets (page 173 of our [Annual Report](#)) - which now make up 15% of total STIP - are related to our climate change initiatives towards the achievement of our 2030 targets and scope 3 goals, diversity and inclusion and governance of our cultural heritage. Our 2021 ESG incentives approach is set out on page 145 of our Annual Report.

Communities & Social Performance (CSP)

To help strengthen our relationship with host communities around the world, including Traditional Owners in Australia, we are taking a number of actions globally as highlighted in our CSP Seminar focused on cultural heritage - materials can be found [here](#).

Key highlights from the quarter are outlined below, with further information available on our [website](#).

Cultural heritage

In the Pilbara, we have now reviewed more than 1,300 sites, with 54 million dry tonnes of iron ore removed from Reserves. Our iron ore reserves totalled 3 billion tonnes at the end of 2020 across the Pilbara. We are further integrating heritage considerations into mine planning and development studies and embedding the lessons learned in Western Australia to relevant operations globally.

We continue to actively support the long overdue reform of the Aboriginal Heritage Act 1972 (WA), making clear our support for a right of appeal by Traditional Owners in relation to approvals to impact cultural heritage sites on their country. We are also engaging with the Chamber of Minerals and Energy in Western Australia, the Minerals Council of Australia and the ICMM, sharing the lessons that we have learned from Juukan Gorge.

Our communities expertise

We are currently expanding our CSP Area of Expertise. This will enhance our technical capacity and strengthen our standards, assurance and reporting processes.

In the first quarter, we launched internal development initiatives to increase awareness and training on community and heritage issues, and in the first half we will launch the first modules of the CSP Foundations training programme conducted by the University of Queensland's Centre for Social Responsibility in Mining. This programme will upskill our teams on the Rio Tinto Communities Standard requirements. In the second half of the year, 'Agreement Making' and 'Cultural Heritage' programmes will be delivered to provide a deeper understanding of current good practice.

With our \$50 million investment to advance professional and leadership employment opportunities and accelerate the career development of Indigenous Australians in our business, we have been able to double the number of Indigenous managers in our business and increase university student applications in Australia by ~60% versus last year. We are encouraged by the number of Indigenous candidates coming forward to be a part of this important journey.

Indigenous Advisory Group

We have committed to establishing an Indigenous Advisory Group (IAG) to help us to better manage policies and positions that are important to Indigenous Australia and our business. The IAG will provide context for our Indigenous strategy in Australia along with coaching, mentoring and advice to senior leadership including the Board.

Other key community initiatives in the quarter

In February we [announced](#) we had awarded contracts valued at over \$385 million to local Western Australian and Pilbara Aboriginal businesses to support the latest development of the Greater Tom Price Operations. Construction of the Western Turner Syncline Phase 2 expansion commenced in early 2020 and to date, more than 85% of spending has been awarded to Western Australian and Pilbara Aboriginal businesses. We currently employ more than 50% of workers living in Tom Price and this latest development will support a workforce of over 1,000 people at peak construction. We also [announced](#) a contribution of \$15 million (A\$20 million) to the Western Australian government to help fund a new hospital at Tom Price in the Pilbara. Our contribution to replace the current 54-year old Tom Price District hospital forms part of the company's ongoing commitment to the region.

Climate change and our value chain

Rio Tinto is committed to being part of the transition to a low-carbon future. The commodities we produce are essential to this transition and cannot be substituted in many important applications. In the first quarter, we announced new scope 3 goals and two partnerships. We also developed innovative solutions to reduce waste, found new ways to meet demand for emerging commodities like lithium, and enhanced the transparency of our products, as outlined below.

As a supporter of the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, we also announced that we will work towards disclosures consistent with the evolving CA100+ benchmark and intend to put our annual TCFD-aligned reporting to an advisory vote at our 2022 annual general meetings.

Decarbonisation initiatives

- On 16 February, we [announced](#) a partnership with Paul Wurth S.A. and SHS-Stahl-Holding-Saar GmbH & Co. KGaA (SHS) to explore the viability of transforming iron ore pellets into low-carbon hot briquetted iron, a low-carbon steel feedstock, using green hydrogen generated from hydro-electricity in Canada. The feasibility study is expected to be complete in late 2021, with an investment decision on a hydrogen based direct reduction plant at industrial scale expected to follow.
- On 24 March, we [announced](#) a partnership with energy technology company, Heliogen to explore the deployment of breakthrough solar technology at our borates mine in Boron, California. The technology will use heat from the sun to generate and store carbon-free energy - via steam generation combined with the heat storage in rock salts - for the industrial processes. Operations are planned to commence in 2022, subject to permits and approvals. The installation at Boron will be used to evaluate the potential deployment at other Rio Tinto operations.
- On 1 April, we [announced](#) we had joined Japan's Green Value Chain Platform Network (GVC Network), a collaboration established by the Japanese Ministry of the Environment to lead transparent decarbonisation efforts in the country. GVC Network member companies work to set science-based targets for emissions reduction that are economically feasible and effective for the achievement of their Scope 1, 2 and 3 targets.

Product stewardship initiatives

- On 3 February, we [announced](#) the launch of START™ - the first sustainability label for aluminium using blockchain technology. START is now available for aluminium purchased from our managed operations, with 27 customers signed up to use the technology. Additionally, we have again become the world's first company to be re-certified against the Performance Standard by the Aluminium Stewardship Initiative (ASI). Our Canadian operations were the first in the world to be ASI-certified in 2018.
- On 8 March, we [announced](#) construction of a new plant that will recover tellurium, a critical mineral used in solar panels, from copper refining at our integrated Kennecott operations in Utah. We are investing \$2.9 million in the plant, which will have a capacity of approximately 20 tonnes of tellurium per year. We expect to commence production in the fourth quarter of 2021.
- On 10 March, we [announced](#) our first commercial sale of high-performance aluminium-scandium alloy from our North American operations to Amaero, a leader in metal additive manufacturing. We will continue to deliver alloy billets made of responsibly produced, low-carbon aluminium from our hydro-powered Canadian smelters and high-purity scandium oxide from Rio Tinto Fer et Titane (RTFT) metallurgical complex in Sorel-Tracy, Quebec.
- On 7 April, we [announced](#) the successful production of battery-grade lithium carbonate at our demonstration plant at Boron, California. This is the next step in scaling up a breakthrough lithium production scale plant with an initial capacity of at least 5,000 tonnes per year, to recover the critical mineral and extract additional value out of waste piles. Additionally, in the quarter we launched two new products aimed at the agricultural sector to meet growing demand for boron and zinc, both important crop micronutrients in the fertiliser sector.

Our markets

We expect robust global economic growth in the near term, fuelled by strong fiscal spending and monetary policy and expanding vaccine deployment as the year progresses. We remain watchful of risks, in particular inflationary pressures and associated adjustments to interest rates by monetary authorities.

- China's industrial economy continues with strong momentum. Last year's stimulus programmes gave rise to a sustainable recovery in property and infrastructure construction. Policy focus is now shifting from supply (investment) to demand (consumption) – growth is therefore expected to pivot towards consumption of goods and services.
- Growth in the United States has improved due to the rapid progress of vaccinations and government policy support. Stimulus packages combined with a re-emerging consumer are expected to support strong growth in the near term. The prospect of an infrastructure bill enhances the outlook further but may bring inflationary pressures.
- Europe's economic recovery remains subdued due to lock-downs and a slower roll-out of vaccination programmes. However, growth is expected to improve progressively with the roll out of the *Recovery Fund* (€750bn over 5 years) which should support investment in infrastructure, transport, energy and construction.
- Steel prices in China finished the quarter at decade highs as construction activity and steel demand in the first quarter exceeded both 2020 and 2019. Strong steel demand and margins, at their highest since 2018, have lifted demand for higher quality (i.e. Pilbara Blend fines) and direct charge (i.e. Pilbara Blend lump) iron ore products. China's renewed focus on reducing steelmaking emissions will likely restrain steel exports in 2021, supporting margins globally.
- The aluminium price has rallied following a recovery in global demand and investor inflows. Logistical constraints combined with some inventories being tightly held has resulted in tighter physical markets.
- Copper prices in the first quarter are up over 50% versus the same time last year, having reached a nine-year high in the quarter. The rally came on the back of strong demand in China, recovering demand elsewhere and ongoing disruptions to mine and scrap supply, all amplified by strong investor interest.

COVID-19

Our absolute priority remains to provide significant levels of support and care for our employees, contractors, and host communities, as we continue to prioritise controls including health questionnaires and temperature screening. We have kept all our operations running throughout the pandemic with rapid implementation of health and hygiene controls from the outset, working in close collaboration with governments. Although the vaccine rollout brings some optimism, we have experienced a resurgence of the virus in some regions where we operate including Mongolia, the Americas, South Africa and Europe. We are supporting government vaccination campaigns, including the deployment of vaccination clinics in some regions.

- At Oyu Tolgoi, we continue to work closely with the Government of Mongolia and health authorities, and apply the strictest measures, including quarantine and testing for all employees before access to site, as the Mongolia State Emergency Commission has declared an all-out readiness state in April. A site-wide lockdown was enforced in March for two weeks due to two positive COVID-19 cases. During this period, the entire workforce was tested (~10,000 negative PCR tests). This event required quick mobilisation to set up the camp for self-isolation controls. Preparations for a vaccination programme are progressing.
- In Canada, we are supporting government vaccination efforts in the Saguenay-Lac-Saint-Jean region, at our Diavik operation in the Northwest Territories and at our operation in Kitimat, British Columbia.
- In the US, at our Boron site in California, we have provided access to daily testing to all site personnel, while strict controls remain in place to mitigate transmission risk and protect our employees. We are also supporting government efforts on vaccination implementation in Kern county and for local communities to ensure that our employees can easily access vaccination if they choose to do so. At our Kennecott operations in Utah and Resolution Copper project in Arizona, vaccination plans are progressing well in line with the government rollout.
- With the outbreaks in the eastern states of Australia, we are closely monitoring State border closures and applying site access controls and travel management protocols. At our iron ore and salt assets in the Pilbara, Western Australia, our frontline port and health workers have been made eligible to receive the vaccination should they choose to do so. The remainder of the workforce will be offered the vaccination in line with the Western Australian Government rollout.
- We are actively managing the risks to seafarers from restrictions on crew changeovers due to COVID-19 measures in place across various countries. We continue to work with the industry, our shipowner partners, and regulators to facilitate crew changes and protect crew welfare.

Full details of initiatives taken to date can be found on our [website](#).

IRON ORE

Rio Tinto share of production (Million tonnes)	Q1 2021	vs Q1 2020	vs Q4 2020
Pilbara Blend and SP10 Lump ¹	18.1	-2%	-17%
Pilbara Blend and SP10 Fines ¹	28.2	+2%	-9%
Robe Valley Lump	1.3	-11%	-4%
Robe Valley Fines	2.2	-9%	-16%
Yandicoogina Fines (HIY)	13.5	-4%	-5%
Total Pilbara production	63.3	-1%	-11%
Total Pilbara production (100% basis)	76.4	-2%	-11%

Rio Tinto share of shipments (Million tonnes)	Q1 2021	vs Q1 2020	vs Q4 2020
Pilbara Blend Lump	12.8	-11%	-21%
Pilbara Blend Fines	28.6	+7%	-19%
Robe Valley Lump	1.0	-9%	-18%
Robe Valley Fines	2.4	-11%	-22%
Yandicoogina Fines (HIY)	14.2	+10%	-6%
SP10 Lump ¹	2.7	+165%	+157%
SP10 Fines ¹	2.9	+168%	+65%
Total Pilbara shipments ²	64.6	+8%	-12%
Total Pilbara shipments (100% basis) ²	77.8	+7%	-12%
Total Pilbara Shipments (consolidated basis) ^{2, 3}	66.4	+8%	-12%

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 produced 76.4 million tonnes (Rio Tinto share 63.3 million tonnes) in the first quarter, 2% lower than 2020 due to fixed plant reliability and above average wet weather in the mines. In the first quarter, labour resource availability and weather challenges disrupted maintenance in the mine processing facilities which will be prioritised for the rest of the year.

Full year iron ore shipments guidance remains unchanged. It remains subject to risks associated with tying in approximately 90 million tonnes of replacement mine capacity at existing hubs in Robe Valley, West Angelas and Western Turner Syncline Phase 2 as well as the start-up of Gudai-Darri.

First quarter shipments of 77.8 million tonnes (Rio Tinto share 64.6 million tonnes) were 7% higher than 2020, due to solid operating performance and sufficient inventory available in the quarter. We shipped 5.6 million tonnes of SP10 during the first quarter.

Approximately 13% 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 29% of sales in the first quarter were made on a free on board (FOB) basis, with the remainder sold including freight.

On 19 February, we [announced](#) a new commercial freight shipping service connecting Western Australia's Pilbara region to Singapore. We expect the service to reduce the lead-time for goods by six to ten days compared with freight via Fremantle, and potentially provide opportunities for local Pilbara businesses. Additionally, the new service is expected to provide an annual saving of around three million litres of diesel fuel by reducing road travel from Perth by more than 3.8 million kilometres.

China Portside Trading

We continue to ramp up our port sales in China, with 1.8 million tonnes of sales in the first quarter. Since the commencement of our portside business we have supplied more than 60 new steel mill customers, and we are present at 12 ports in China. Our portside operation handles product from our operations in the Pilbara and in Canada as well as third party product, and provides blending and screening capabilities.

ALUMINIUM

Rio Tinto share of production ('000 tonnes)	Q1 2021	vs Q1 2020	vs Q4 2020
Bauxite	13,566	-2%	+2%
Bauxite third party shipments	9,024	-5%	-1%
Alumina	2,034	+1%	-2%
Aluminium	803	+3%	-1%

Bauxite

First quarter bauxite production of 13.6 million tonnes was 2% higher than the fourth quarter of 2020 following a train failure at the Andoom mine at Weipa last year, however, slightly lower than the same period of 2020 as a result of wet weather on the East coast of Australia impacting our Weipa operations. The port at the Amrun mine closed for 14 days due to large swells and cyclones in the first quarter.

We shipped 9.0 million tonnes of bauxite to third parties in the first quarter, 5% lower than the same period of 2020 due to the major weather events causing shipment delays.

Alumina

Alumina production in the first quarter of 2.0 million tonnes was 1% higher than the corresponding period of 2020, as a result of stable operations at both our Pacific refineries.

Aluminium

First quarter aluminium production of 0.8 million tonnes was 3% higher than the same period of 2020 with the Becancour smelter, Quebec operating at full capacity and Kitimat, British Columbia nearing the end of its pot relining cycle. Good production stability and operational performance was achieved across the remaining smelter portfolio.

We are seeing improved demand in automotive, packaging and more recently construction and electronics. Value-added product volumes have returned to pre-COVID-19 levels at 51% of primary metal sold (2019 full year: 51%).

On 15 February, we [announced](#) an agreement had been reached on an amended power contract that will allow the ISAL smelter in Iceland to continue operating with an improved competitive position.

COPPER

Rio Tinto share of production ('000 tonnes)	Q1 2021	vs Q1 2020	vs Q4 2020
Mined copper			
Kennecott	33.2	-5%	-2%
Escondida	72.1	-16%	-15%
Oyu Tolgoi	15.2	+29%	+9%
Refined copper			
Kennecott	45.2	+71%	+11%
Escondida	14.0	-33%	-8%

Kennecott

Mined copper production was 5% lower than the same quarter of 2020, with lower recoveries at Kennecott as a result of ore type variation, and slightly lower ore milled due to power constraints following cold weather events in February. This was partially offset by a marginal increase in head grade as Kennecott begins the transition into higher grades from the south wall ore, with grades expected to gradually increase through 2021.

Refined copper production was 71% higher than the same quarter of 2020 driven by strong smelter performance with higher throughput. Production in the same period of 2020 was negatively impacted by the earthquake in March.

Escondida

Mined copper production was 16% lower than the same quarter of 2020, mainly due to 43% lower material stacked into the leach pads and 6% lower feed grade. This was as a result of preventive measures in response to the resurgence of COVID-19 in the region, which has impacted workforce availability. Refined copper production was 33% lower than the corresponding period in 2020 due to lower material stacked.

Oyu Tolgoi

Mined copper production from the open pit was 29% higher than the same quarter of 2020 with the anticipated move to higher grade from the open pit, leading to higher head grade and copper recovery. In the first quarter, pit phasing delivered higher gold production (+457%) compared to the same period in 2020. Access to higher copper and gold grades is expected to continue throughout 2021.

First quarter shipments have been affected by Chinese border restrictions due to increased cases of COVID-19. We declared force majeure on shipments from 30 March and continue to work closely with authorities and our customers to manage the risk of supply chain disruptions. We partially resumed cross-border concentrate shipments into China on 15 April however, the situation is very fluid with the COVID-19 resurgence in Mongolia.

MINERALS

Rio Tinto share of production (million tonnes)	Q1 2021	vs Q1 2020	vs Q4 2020
Iron ore pellets and concentrate			
IOC	2.3	-8%	-14%

Rio Tinto share of production ('000 tonnes)	Q1 2021	vs Q1 2020	vs Q4 2020
Minerals			
Borates - B ₂ O ₃ content	122	-3%	+23%
Titanium dioxide slag	279	-5%	+3%

Rio Tinto share of production ('000 carats)	Q1 2021	vs Q1 2020	vs Q4 2020
Diavik	1,007	+18%	+11%

Iron Ore Company of Canada (IOC)

Iron ore pellets and concentrate production was 8% lower than the same period of 2020 due to impacts of weather and loading unit availability on mine feed and reduced concentrator mill availability.

On 31 March, a fire broke out at one of the two reclaimers at our Sept-Îles port facilities, which was quickly brought under control with no injuries. At the time of the fire, the other reclaimer was undergoing repairs following an equipment failure, resulting in a temporary cessation of ship loading and declaration of force majeure. The production guidance range remains unchanged.

Borates

Borates production in the first quarter was 23% higher than the fourth quarter in 2020 due to improved market demand however, slightly lower than the same period of 2020. Shipments were affected by congestion across the supply chain and we continue to work with customers and logistics suppliers to minimise these disruptions to borates supply.

Iron and Titanium

Titanium dioxide production was 5% lower than same quarter of 2020 due to a planned furnace rebuild at the Rio Tinto Fer et Titane (RTFT) metallurgical complex in Quebec resulting in the operation of 8 out of 9 furnaces. An accelerated demand recovery in TiO₂ pigment has been observed.

Diamonds

At Diavik, carats recovered in the first quarter were 18% higher than the first quarter of 2020, due to plant productivity improvements and higher ore availability from the surface mine coupled with higher recovered grade.

EXPLORATION AND EVALUATION

Pre-tax and pre-divestment expenditure on exploration and evaluation charged to the profit and loss account in the first quarter of 2021 was \$157 million, compared with \$144 million in the first quarter of 2020. Approximately 44% of this expenditure was incurred by central exploration, 34% by Copper, 19% by Minerals and 3% by Iron Ore.

There were no significant divestments of central exploration properties in the first quarter of 2021.

Exploration highlights

Rio Tinto has a strong portfolio of projects with activity in 18 countries across eight 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, Canada, Chile, Kazakhstan, Serbia, United States and Zambia, and diamonds projects in Canada. Mine-lease exploration continued at Rio Tinto managed businesses including Pilbara Iron in Australia and Diavik in Canada.

At the Falcon diamonds project in Saskatchewan, Canada, inspection, valuation and interpretation of the recovered diamonds is ongoing.

A summary of activity for the quarter is as follows:

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

*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 2020	% change	
	2020 Q1	2020 Q4	2021 Q1		Q1 21 vs Q1 20	Q1 21 vs Q4 20
Principal commodities						
Alumina	('000 t)	2,010	2,085	2,034	8,039	+1% -2%
Aluminium	('000 t)	783	815	803	3,180	+3% -1%
Bauxite	('000 t)	13,813	13,299	13,566	56,131	-2% +2%
Borates	('000 t)	126	100	122	480	-3% +23%
Copper - mined	('000 t)	133.0	132.5	120.5	527.9	-9% -9%
Copper - refined	('000 t)	47.2	56.1	59.2	155.0	+25% +5%
Diamonds	('000 cts)	857	910	1,007	3,731	+18% +11%
Iron Ore	('000 t)	66,787	73,749	65,681	285,932	-2% -11%
Titanium dioxide slag	('000 t)	293	272	279	1,120	-5% +3%
Other Metals & Minerals						
Gold - mined	('000 oz)	62	89	96	283	+57% +8%
Gold - refined	('000 oz)	44.8	38.9	56.8	117.5	+27% +46%
Molybdenum	('000 t)	5.1	6.4	5.0	20.4	-1% -21%
Uranium	('000 lbs)	676	742	65	2,870	-90% -91%
Salt	('000 t)	1,044	1,113	1,411	4,861	+35% +27%
Silver - mined	('000 oz)	1,027	1,120	1,005	4,357	-2% -10%
Silver - refined	('000 oz)	462	449	812	1,363	+76% +81%

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 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
ALUMINA							
Production ('000 tonnes)							
Jonquière (Vaudreuil)	100 %	373	340	347	364	352	1,424
Jonquière (Vaudreuil) specialty Alumina plant	100 %	24	25	22	24	22	94
Queensland Alumina	80 %	713	711	763	774	743	2,961
São Luis (Alumar)	10 %	94	95	98	99	95	385
Yarwun	100 %	806	820	725	823	822	3,175
Rio Tinto total alumina production		2,010	1,990	1,954	2,085	2,034	8,039
ALUMINIUM							
Production ('000 tonnes)							
Australia - Bell Bay	100 %	47	49	48	48	46	192
Australia - Boyne Island	59 %	75	75	76	77	74	303
Australia - Tomago	52 %	75	76	77	77	75	305
Canada - six wholly owned	100 %	375	370	375	387	385	1,506
Canada - Alouette (Sept-Îles)	40 %	61	62	63	63	62	249
Canada - Bécancour	25 %	18	26	26	29	28	98
Iceland - ISAL (Reykjavik)	100 %	45	44	46	48	49	183
New Zealand - Tiwai Point	79 %	67	65	66	67	65	265
Oman - Sohar	20 %	20	20	20	20	20	79
Rio Tinto total aluminium production		783	785	797	815	803	3,180
BAUXITE							
Production ('000 tonnes) (a)							
Gove	100 %	2,876	3,186	3,147	3,090	2,879	12,299
Porto Trombetas	12 %	338	270	396	392	254	1,395
Sangaredi	(b)	1,879	1,742	1,920	1,887	1,887	7,428
Weipa	100 %	8,720	9,362	8,997	7,929	8,545	35,009
Rio Tinto total bauxite production		13,813	14,560	14,459	13,299	13,566	56,131

(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 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
BORATES							
Production ('000 tonnes B₂O₃ content)							
Rio Tinto Borates - borates	100 %	126	132	123	100	122	480
COPPER							
Mine production ('000 tonnes) (a)							
Bingham Canyon	100 %	35.0	36.5	34.7	33.8	33.2	140.0
Escondida	30 %	86.2	84.0	82.8	84.8	72.1	337.8
Oyu Tolgoi (b)	34 %	11.8	12.2	12.2	14.0	15.2	50.2
Rio Tinto total mine production		133.0	132.8	129.6	132.5	120.5	527.9
Refined production ('000 tonnes)							
Escondida	30 %	20.9	19.7	14.4	15.2	14.0	70.2
Rio Tinto Kennecott	100 %	26.4	7.2	10.4	40.9	45.2	84.8
Rio Tinto total refined production		47.2	26.9	24.8	56.1	59.2	155.0

(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.

DIAMONDS

Production ('000 carats)							
Diavik	60 %	857	963	1,001	910	1,007	3,731

GOLD

Mine production ('000 ounces) (a)							
Bingham Canyon	100 %	41.9	40.2	43.7	45.3	36.2	171.2
Escondida	30 %	10.8	13.0	12.7	14.3	11.4	50.9
Oyu Tolgoi (b)	34 %	8.8	10.4	12.3	29.4	48.8	61.0
Rio Tinto total mine production		61.5	63.6	68.7	89.1	96.4	283.0
Refined production ('000 ounces)							
Rio Tinto Kennecott	100 %	44.8	30.1	3.7	38.9	56.8	117.5

(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 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
IRON ORE							
Production ('000 tonnes) (a)							
Hamersley mines	(b)	49,327	53,187	54,852	53,316	47,063	210,682
Hamersley - Channar (c)	100 %	1,160	1,334	1,710	1,935	2,250	6,139
Hope Downs	50 %	5,667	5,659	6,625	6,571	5,616	24,522
Iron Ore Company of Canada	59 %	2,560	2,762	2,340	2,740	2,345	10,402
Robe River - Pannawonica (Mesas J and A)	53 %	3,880	4,307	3,882	3,988	3,506	16,056
Robe River - West Angelas	53 %	4,193	4,440	4,298	5,199	4,900	18,131
Rio Tinto iron ore production ('000 tonnes)		66,787	71,689	73,707	73,749	65,681	285,932
Breakdown of Production:							
Pilbara Blend and SP10 Lump (d)		18,504	18,970	18,253	21,666	18,050	77,393
Pilbara Blend and SP10 Fines (d)		27,734	30,866	33,570	31,122	28,245	123,292
Robe Valley Lump		1,472	1,326	1,399	1,364	1,307	5,561
Robe Valley Fines		2,407	2,981	2,483	2,624	2,199	10,496
Yandicoogina Fines (HIY)		14,110	14,784	15,662	14,233	13,534	58,789
Pilbara iron ore production ('000 tonnes)		64,227	68,927	71,366	71,009	63,336	275,530
IOC Concentrate		923	1,523	1,038	1,297	871	4,781
IOC Pellets		1,637	1,240	1,302	1,443	1,474	5,622
IOC iron ore production ('000 tonnes)		2,560	2,762	2,340	2,740	2,345	10,402
Breakdown of Shipments:							
Pilbara Blend Lump		14,385	16,700	15,514	16,280	12,842	62,878
Pilbara Blend Fines		26,692	33,036	31,710	35,140	28,565	126,578
Robe Valley Lump		1,132	1,118	1,112	1,246	1,025	4,608
Robe Valley Fines		2,688	2,999	2,724	3,062	2,402	11,473
Yandicoogina Fines (HIY)		12,913	15,578	14,203	15,055	14,222	57,749
SP10 Lump (d)		1,006	1,014	822	1,037	2,664	3,879
SP10 Fines (d)		1,089	1,603	1,488	1,771	2,923	5,951
Pilbara iron ore shipments ('000 tonnes) (e)		59,903	72,048	67,574	73,590	64,642	273,115
Pilbara iron ore shipments - consolidated basis ('000 tonnes) (e) (g)							
IOC Concentrate		1,006	1,410	1,355	1,157	1,019	4,928
IOC Pellets		1,769	1,320	1,378	1,539	1,477	6,006
IOC Iron ore shipments ('000 tonnes) (e)		2,775	2,731	2,733	2,696	2,496	10,934
Rio Tinto iron ore shipments ('000 tonnes) (e)		62,678	74,779	70,307	76,286	67,137	284,050
Rio Tinto iron ore sales ('000 tonnes) (f)		62,433	74,808	69,993	75,765	65,415	282,998

(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 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.

(c) 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. Production is reported at 100% from this date onward. Historic data is unchanged.

(d) SP10 include other lower grade products.

(e) Shipments includes material shipped to our portside trading facility in China which may not be sold onwards in the same period.

(f) Represents the difference between amounts shipped to portside trading and onward sales from portside trading, and third party volumes sold.

(g) 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 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
MOLYBDENUM							
Mine production ('000 tonnes) (a)							
Bingham Canyon	100 %	5.1	3.9	5.1	6.4	5.0	20.4

(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.

SALT							
Production ('000 tonnes)							
Dampier Salt	68 %	1,044	1,425	1,279	1,113	1,411	4,861

SILVER							
Mine production ('000 ounces) (a)							
Bingham Canyon	100 %	538	526	586	555	524	2,205
Escondida	30 %	417	480	474	488	395	1,859
Oyu Tolgoi (b)	34 %	72	71	73	77	85	293
Rio Tinto total mine production		1,027	1,077	1,133	1,120	1,005	4,357
Refined production ('000 ounces)							
Rio Tinto Kennecott	100 %	462	382	70	449	812	1,363

(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.

TITANIUM DIOXIDE SLAG							
Production ('000 tonnes)							
Rio Tinto Iron & Titanium (a)	100 %	293	262	293	272	279	1,120

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

URANIUM							
Production ('000 lbs U₃O₈) (a)							
Energy Resources of Australia	86 %	676	718	735	742	65	2,870

(a) ERA production data are drummed U₃O₈. ERA ceased processing operations on 8 January 2021, as required by the Ranger Authority.

Rio Tinto's Argyle operations were closed in 2020. 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.

The Rio Tinto percentage shown above is at 31 March 2021.

Rio Tinto operational data

	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
ALUMINA							
Smelter Grade Alumina - Aluminium Group							
Alumina production ('000 tonnes)							
<i>Australia</i>							
Queensland Alumina Refinery - Queensland	80.0 %	891	889	953	968	929	3,701
Yarwun refinery - Queensland	100.0 %	806	820	725	823	822	3,175
<i>Brazil</i>							
São Luis (Alumar) refinery	10.0 %	936	945	976	990	953	3,848
<i>Canada</i>							
Jonquière (Vaudreuil) refinery - Quebec (a)	100.0 %	373	340	347	364	352	1,424
Speciality Alumina - Aluminium Group							
Speciality alumina production ('000 tonnes)							
<i>Canada</i>							
Jonquière (Vaudreuil) plant – Quebec	100.0 %	24	25	22	24	22	94

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

Rio Tinto percentage interest shown above is at 31 March 2021. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
ALUMINIUM							
Primary Aluminium							
Primary aluminium production ('000 tonnes)							
<i>Australia</i>							
Bell Bay smelter - Tasmania	100.0 %	47	49	48	48	46	192
Boyne Island smelter - Queensland	59.4 %	126	126	128	129	124	510
Tomago smelter - New South Wales	51.6 %	145	148	150	149	145	592
<i>Canada</i>							
Alma smelter - Quebec	100.0 %	118	118	118	119	117	473
Alouette (Sept-Îles) smelter - Quebec	40.0 %	153	155	156	158	155	623
Arvida smelter - Quebec	100.0 %	44	42	41	41	40	169
Arvida AP60 smelter - Quebec	100.0 %	15	15	15	15	15	60
Bécancour smelter - Quebec	25.1 %	72	102	104	115	112	393
Grande-Baie smelter - Quebec	100.0 %	58	55	55	57	56	225
Kitimat smelter - British Columbia	100.0 %	76	78	84	91	95	329
Laterrière smelter - Quebec	100.0 %	64	62	62	63	62	250
<i>Iceland</i>							
ISAL (Reykjavik) smelter	100.0 %	45	44	46	48	49	183
<i>New Zealand</i>							
Tiwai Point smelter	79.4 %	84	82	84	84	82	333
<i>Oman</i>							
Sohar smelter	20.0 %	99	99	100	100	98	397

Rio Tinto percentage interest shown above is at 31 March 2021. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
BAUXITE							
Bauxite production ('000 tonnes)							
<i>Australia</i>							
Gove mine - Northern Territory	100.0 %	2,876	3,186	3,147	3,090	2,879	12,299
Weipa mine - Queensland	100.0 %	8,720	9,362	8,997	7,929	8,545	35,009
<i>Brazil</i>							
Porto Trombetas (MRN) mine	12.0 %	2,814	2,251	3,296	3,268	2,117	11,629
<i>Guinea</i>							
Sangaredi mine (a)	23.0 %	4,175	3,871	4,267	4,193	4,194	16,506
Rio Tinto share of bauxite shipments							
Share of total bauxite shipments ('000 tonnes)		13,567	14,668	14,117	12,993	13,444	55,345
Share of third party bauxite shipments ('000 tonnes)		9,469	10,721	10,064	9,104	9,024	39,357

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

	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
BORATES							
Rio Tinto Borates - borates	100.0 %						
<i>US</i>							
Borates ('000 tonnes) (a)		126	132	123	100	122	480

(a) Production is expressed as B₂O₃ content.

	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
COPPER & GOLD							
Escondida							
<i>Chile</i>							
Sulphide ore to concentrator ('000 tonnes)	30.0 %	33,440	34,755	34,733	36,303	32,654	139,230
Average copper grade (%)		0.82	0.81	0.85	0.83	0.78	0.83
Mill production (metals in concentrates):							
Contained copper ('000 tonnes)		230.0	236.8	243.9	246.1	207.8	956.8
Contained gold ('000 ounces)		36.0	43.4	42.3	47.8	38.0	169.5
Contained silver ('000 ounces)		1,390	1,599	1,580	1,627	1,318	6,196
Recoverable copper in ore stacked for leaching ('000 tonnes) (a)		57.2	43.3	32.1	36.5	32.5	169.1
Refined production from leach plants:							
Copper cathode production ('000 tonnes)		69.6	65.5	47.9	50.8	46.6	233.9

(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 2021. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
COPPER & GOLD (continued)							
Rio Tinto Kennecott							
Bingham Canyon mine	100.0 %						
<i>Utah, US</i>							
Ore treated ('000 tonnes)		10,315	10,083	12,860	11,418	10,054	44,676
Average ore grade:							
Copper (%)		0.37	0.41	0.32	0.34	0.38	0.36
Gold (g/t)		0.22	0.23	0.21	0.22	0.21	0.22
Silver (g/t)		2.16	2.14	2.00	2.07	2.30	2.08
Molybdenum (%)		0.058	0.056	0.053	0.068	0.058	0.059
Copper concentrates produced ('000 tonnes)		148	135	140	138	140	561
Average concentrate grade (% Cu)		23.7	26.6	24.7	24.2	23.7	24.8
Production of metals in copper concentrates:							
Copper ('000 tonnes) (a)		35.0	36.5	34.7	33.8	33.2	140.0
Gold ('000 ounces)		41.9	40.2	43.7	45.3	36.2	171.2
Silver ('000 ounces)		538	526	586	555	524	2,205
Molybdenum concentrates produced ('000 tonnes):							
Molybdenum in concentrates ('000 tonnes)		5.1	3.9	5.1	6.4	5.0	20.4
Kennecott smelter & refinery							
	100.0 %						
Copper concentrates smelted ('000 tonnes)		161	51	1	234	240	448
Copper anodes produced ('000 tonnes) (b)		24.0	(2.1)	20.2	44.8	50.5	86.9
Production of refined metal:							
Copper ('000 tonnes)		26.4	7.2	10.4	40.9	45.2	84.8
Gold ('000 ounces) (c)		44.8	30.1	3.7	38.9	56.8	117.5
Silver ('000 ounces) (c)		462	382	70	449	812	1,363
(a) Includes a small amount of copper in precipitates.							
(b) New metal excluding recycled material.							
(c) Includes gold and silver in intermediate products.							

Rio Tinto percentage interest shown above is at 31 March 2021. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
COPPER & GOLD (continued)							
Turquoise Hill Resources							
Oyu Tolgoi mine (a)	33.5 %						
<i>Mongolia</i>							
Ore Treated ('000 tonnes)		10,889	9,645	10,072	9,594	9,813	40,200
Average mill head grades:							
Copper (%)		0.42	0.47	0.45	0.50	0.56	0.46
Gold (g/t)		0.15	0.19	0.21	0.41	0.68	0.24
Silver (g/t)		1.14	1.22	1.22	1.16	1.29	1.18
Copper concentrates produced ('000 tonnes)		164.5	169.9	168.5	190.2	201.9	693.1
Average concentrate grade (% Cu)		21.4	21.5	21.5	21.9	22.5	21.6
Production of metals in concentrates:							
Copper in concentrates ('000 tonnes)		35.2	36.5	36.3	41.6	45.4	149.6
Gold in concentrates ('000 ounces)		26.2	31.1	36.7	87.8	145.7	181.9
Silver in concentrates ('000 ounces)		214	212	219	231	255	876
Sales of metals in concentrates:							
Copper in concentrates ('000 tonnes)		25.8	39.7	34.4	37.9	39.0	137.8
Gold in concentrates ('000 ounces)		19.7	30.8	33.6	65.8	110.9	150.0
Silver in concentrates ('000 ounces)		146	220	201	194	207	760

(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 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
DIAMONDS							
Argyle Diamonds (a)	100.0 %						
<i>Western Australia</i>							
AK1 ore processed ('000 tonnes)		1,322	1,571	1,802	1,078	—	5,773
AK1 diamonds produced ('000 carats)		2,578	3,271	3,203	1,893	—	10,945
Diavik Diamonds	60.0 %						
<i>Northwest Territories, Canada</i>							
Ore processed ('000 tonnes)		571	626	679	643	632	2,518
Diamonds recovered ('000 carats)		1,428	1,606	1,668	1,517	1,678	6,218

(a) Rio Tinto's Argyle operations were closed in 2020.

Rio Tinto percentage interest shown above is at 31 March 2021. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
IRON ORE							
Rio Tinto Iron Ore							
<i>Western Australia</i>							
Pilbara Operations							
Saleable iron ore production ('000 tonnes)							
Hamersley mines	(a)	49,327	53,187	54,852	53,316	47,063	210,682
Hamersley - Channar (b)	100.0 %	1,934	2,223	2,849	2,169	2,250	9,175
Hope Downs	50.0 %	11,334	11,318	13,250	13,142	11,232	49,045
Robe River - Pannawonica (Mesas J and A)	53.0 %	7,320	8,126	7,324	7,525	6,616	30,295
Robe River - West Angelas	53.0 %	7,912	8,378	8,110	9,809	9,246	34,209
Total production ('000 tonnes)		77,827	83,232	86,385	85,961	76,406	333,405
Breakdown of total production:							
Pilbara Blend and SP10 Lump (c)		22,592	23,222	22,674	25,888	21,901	94,375
Pilbara Blend and SP10 Fines (c)		33,806	37,100	40,725	38,316	34,356	149,947
Robe Valley Lump		2,778	2,502	2,639	2,574	2,467	10,492
Robe Valley Fines		4,542	5,625	4,685	4,951	4,149	19,803
Yandicoogina Fines (HIY)		14,110	14,784	15,662	14,233	13,534	58,789
Breakdown of total shipments:							
Pilbara Blend Lump		17,506	20,339	19,118	20,155	15,740	77,117
Pilbara Blend Fines		33,197	40,379	39,230	42,727	35,777	155,533
Robe Valley Lump		2,135	2,110	2,098	2,351	1,934	8,694
Robe Valley Fines		5,071	5,659	5,140	5,778	4,532	21,648
Yandicoogina Fines (HIY)		12,913	15,578	14,203	15,055	14,222	57,749
SP10 Lump (c)		1,006	1,014	822	1,037	2,664	3,879
SP10 Fines (c)		1,089	1,603	1,488	1,771	2,923	5,951
Total shipments ('000 tonnes) (d)		72,916	86,681	82,099	88,873	77,791	330,570
	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
Iron Ore Company of Canada							
<i>Newfoundland & Labrador and Quebec in Canada</i>							
Saleable iron ore production:							
Concentrates ('000 tonnes)		1,572	2,593	1,768	2,208	1,484	8,141
Pellets ('000 tonnes)		2,788	2,112	2,217	2,457	2,510	9,574
IOC Total production ('000 tonnes)		4,360	4,704	3,985	4,666	3,993	17,715
Shipments:							
Concentrates ('000 tonnes)		1,713	2,402	2,307	1,970	1,735	8,392
Pellets ('000 tonnes)		3,013	2,248	2,347	2,620	2,515	10,229
IOC Total Shipments ('000 tonnes) (d)		4,726	4,650	4,654	4,591	4,250	18,621
Global Iron Ore Totals							
Iron Ore Production ('000 tonnes)		82,187	87,936	90,370	90,627	80,400	351,121
Iron Ore Shipments ('000 tonnes)		77,642	91,332	86,753	93,464	82,041	349,190
Iron Ore Sales ('000 tonnes) (e)		77,397	91,361	86,398	92,942	80,319	348,098

(a) Includes 100% of production from Paraburdoo, Mt Tom Price, Western Turner Syncline, Marandoo, Yandicoogina, Brockman, Nammuldi, Silvergrass 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.

(b) 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 is unchanged.

(c) SP10 include 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) 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 2021. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Full Year 2020
SALT							
Dampier Salt	68.4 %						
<i>Western Australia</i>							
Salt production ('000 tonnes)		1,527	2,085	1,871	1,628	2,064	7,111
TITANIUM DIOXIDE SLAG							
Rio Tinto Iron & Titanium	100.0 %						
<i>Canada and South Africa</i>							
(Rio Tinto share) (a)							
Titanium dioxide slag ('000 tonnes)		293	262	293	272	279	1,120
URANIUM							
Energy Resources of Australia Ltd							
Ranger mine (a)	86.3 %						
<i>Northern Territory, Australia</i>							
U ₃ O ₈ Production ('000 lbs)		928	831	851	860	75	3,471

(a) ERA production data are drummed U₃O₈. ERA ceased processing operations on 8 January 2021, as required by the Ranger Authority.

Rio Tinto percentage interest shown above is at 31 March 2021. The data represent full production and sales on a 100% basis unless otherwise stated.