

Rio Tinto releases third quarter production results

16 October 2020

Rio Tinto Chief Executive J-S Jacques said "We have delivered a good operational performance across most of our assets catching up on planned maintenance activity, particularly in iron ore, and continuing to adapt to new operating conditions as we learn to live with COVID-19. We have maintained our capex guidance and our 2020 production guidance across our key products.

"We are focused on regaining the trust of the Puutu Kunti Kurrama and Pinikura people (PKKP) with a focus on remedy. On Tuesday 13 October we wrote a letter to Traditional Owners in the Pilbara detailing that we will review all heritage disturbance in consultation with them; and shared our intention to modernise our agreements which includes modifying clauses to ensure respect, transparency and mutual benefit.

"Rio Tinto has shown great resilience through challenging conditions and will continue to prioritise the health and safety of our employees, contractors and communities. The quality of our assets, coupled with our strong focus on capital discipline and value over volume approach, mean we can continue to invest in our business, support our communities, pay taxes and royalties to host governments and continue to generate superior returns to shareholders in the short, medium and long term."

Production*		Q3 2020	vs Q3 2019	vs Q2 2020	9 MTHS 2020	vs 9 MTHS 2019
Pilbara iron ore shipments (100% basis)	Mt	82.1	-5%	-5%	241.7	0%
Pilbara iron ore production (100% basis)	Mt	86.4	-1%	+4%	247.4	+2%
Bauxite	Mt	14.5	+5%	-1%	42.8	+7%
Aluminium	kt	797	+1%	+2%	2,365	-1%
Mined Copper	kt	129.6	-18%	-2%	395.4	-10%
Titanium dioxide slag	kt	293	-9%	+12%	848	-8%
IOC iron ore pellets and concentrate	Mt	2.3	-21%	-15%	7.7	-4%

*Rio Tinto share unless otherwise stated

Q3 Operational update

- Our All Injury Frequency Rate (AIFR) of 0.35 has improved through 2020 versus 2019 (0.42). We have successfully adapted our assets and offices to the new operating conditions associated with COVID-19 and we continue to closely manage this risk to protect our people and communities.
- Pilbara operations are returning to more normal operating conditions with rosters back to pre-COVID-19 settings although controls to protect our employees, contractors and communities remain in place. Total material moved was a record for the quarter with Pilbara iron ore production of 86.4 million tonnes (100% basis), 1% lower than the third quarter of 2019. A recovery in planned maintenance activity in the port led to 5% lower shipments.
- Bauxite production of 14.5 million tonnes, 5% higher than the third quarter of 2019, with increased year on year production across all sites, including record quarterly production at the non-managed CBG joint venture in Guinea.
- Aluminium production of 0.8 million tonnes in the third quarter was 1% higher than the third quarter of 2019 with stable operations across our smelter portfolio.
- Third quarter mined copper was 18% lower than the same period of 2019 due to lower grade at Kennecott as a result of pit sequencing to accommodate the extended smelter shutdown. Refined copper was 57% lower, primarily due to delays in restarting the Kennecott smelter.
- On 19 August, we [announced](#) an update to our refined copper guidance following delays to the restart of the smelter at Kennecott due to unexpected issues following planned maintenance. The safe start-up of the smelter has commenced and consistent with the announcement, we expect that it will be fully operational during October. 2020 guidance for refined copper remains at 135 to 175 thousand tonnes.
- On 28 August, we [noted](#) Turquoise Hill Resources' (TRQ) publication of its '2020 Oyu Tolgoi Technical Report' (2020 OTTR) in relation to the Oyu Tolgoi (OT) project in Mongolia. All estimates are subject to potential changes once the definitive estimate is complete, which is still expected later in 2020. Preliminary indications from the definitive estimate process are that first sustainable production is trending towards the earlier months of the October 2022 to June 2023 range. The estimated development capital cost remains within the range of \$6.6 to \$7.1 billion, and has now been updated to include known impacts of the COVID-19 pandemic. Further information can be found in the *Investments, growth and development projects* section below.

- On 10 September, we [announced](#) we had entered a Memorandum of Understanding (MOU) with TRQ, that provides a pathway to progress the financing for completion of the Oyu Tolgoi Underground Project in Mongolia and address TRQ's funding position.
- Titanium dioxide slag production of 293 thousand tonnes was 9% lower than the third quarter of 2019 due to COVID-19 restrictions in Quebec and South Africa and lower market demand.
- Production of pellets and concentrate at Iron Ore Company of Canada (IOC) was 21% lower than the same period of 2019 due to an annual maintenance shutdown deferred from June to September as a result of COVID-19 travel restrictions. A weather related power failure and mechanical issues also impacted production in the third quarter.

Cultural heritage

We have taken a number of actions to strengthen cultural heritage governance and controls, and commenced the longer term process of regaining the trust of Traditional Owners.

On 13 October we wrote a letter to Traditional Owners in the Pilbara detailing that we will review all heritage disturbance in consultation with them; and shared our intention to modernise our agreements which includes modifying clauses to ensure respect, transparency and mutual benefit. Specifically, our high level principles include:

- Reassessing all activities which have the potential to impact heritage sites, with an immediate focus on those sites that could be impacted over the next 18 to 24 months.
- Not enforcing any clauses that restrict Traditional Owners from raising concerns about cultural heritage matters with anyone, or any clauses that restrict Traditional Owners from applying for statutory protection of any cultural heritage sites.
- Introducing mechanisms into our agreements to respond better to new information that may emerge about cultural heritage sites, including those affected by section 18 approvals. We will seek to agree an appropriate mechanism in our revised agreements so that there is a clear path for resolution of any differences of view that may emerge.
- Improving transparency of any revised agreement and more impactful realisation of economic and social benefits.

Other actions include:

- We continue active engagement with the PKKP and have agreed a meeting between the Rio Tinto board and the PKKP before the end of the year.
- We have instituted an enhanced level of governance over the impact on sites of heritage significance. All approvals to disturb sites directly or indirectly are being made on a risk-managed basis at Rio Tinto Iron Ore Chief Executive level; referrals of decisions as appropriate will be directed to the recently established Heritage Sub-Committee of the Rio Tinto Executive Committee, and if necessary, to the Board.
- We have established the Communities and Social Performance Area of Expertise, which is aligned with the existing Health, Safety, Environment (HSE) function, reporting to Mark Davies, Group Executive Safety, Technical and Projects and a member of the Executive Committee.
- We have appointed a Chief Advisor – Indigenous Affairs who has a direct reporting line to the Chief Executive.
- We have made a firm commitment to increase employment opportunities for Australian Indigenous Peoples in our business, and a \$50 million investment to advance Indigenous leadership in our Australian business.
- We continue to contribute to the reform of the Aboriginal Heritage Act 1972 (WA). We support an appeal right in the Western Australian government's section 18 review process to give a greater voice to Traditional Owners in the decision-making in relation to mining on their land.

Documents related to Juukan Gorge and additional information on our approach to communities and heritage can be found on our [website](#):

- On 4 August, we [published](#) our submission to the Parliamentary Inquiry on Juukan Gorge.
- On 24 August, we [published](#) a Board review of cultural heritage management, detailing what elements of our systems, decision-making processes and governance failed to work, along with recommendations for change.
- On 4 September, we [provided](#) additional information related to questions taken on notice following our appearance at the Joint Standing Committee on Northern Australia.

On 11 September, we [announced](#) changes to our Executive Committee following a period of extensive stakeholder engagement by the Board. By mutual agreement, J-S Jacques will step down from his role as an executive director and Chief Executive, Chris Salisbury will step down as Chief Executive, Iron Ore and Simone Niven will step down as Group Executive, Corporate Relations.

Our markets

Global economic activity in the third quarter was generally strong, helping to sustain optimism for a widespread recovery in 2021. However, recent high-frequency data suggests that the rate of recovery in growth is slowing in most economies, with pent-up demand dissipating, and the rise of renewed lockdowns threatening recovery.

- Commodity demand in China has been supported by commodity-intensive stimulus measures.
- Chinese iron ore demand is at record levels against a backdrop of recovering seaborne supply that was disrupted earlier in the year. However, with the major producers expected to deliver strong volumes in the fourth quarter, iron ore inventories are expected to grow modestly as China's steel consumption eases from record highs and scrap consumption increases. Japan, South Korea, Taiwan and Europe continue to show signs of recovery: however, ex-China steel production remains down significantly year on year.
- The automotive sector is continuing to see recovery, supporting some demand for Value-Added aluminium products (VAP), but remains below pre-COVID-19 levels globally.
- Copper prices reached a two year high with strong Chinese consumption supporting cathode imports. COVID-19 related supply disruptions remain ~4% of annual copper supply, in addition to normal industry supply disruptions.

Product stewardship

- Our Kennecott operation in the US was the first producer globally to be awarded the 'Copper Mark' and Oyu Tolgoi in Mongolia subsequently qualified. The Copper Mark is the industry's new independently assessed responsible production programme.
- We have partnered with Anheuser-Busch InBev (AB InBev), the world's largest brewer, to deliver a new standard of sustainable aluminium cans. Initially focused in North America, the partnership will see AB InBev use our low-carbon aluminium made with renewable hydropower, along with recycled content, to produce a more sustainable beer can.
- At our Boron operation in California, a demonstration plant producing lithium carbonate from a waste stream was commissioned. Optimisation of the plant will continue ahead of potential expansion of the project to support commercial production.

COVID-19

COVID-19 continues to present additional challenges which are being proactively managed by our dedicated Business Resilience Teams, as our workforce embeds the changes in the way we operate and learns to co-exist with the virus. We have maintained strict protocols globally and we closely monitor the situation, including the potential threat of a second wave. COVID-19 also continues to pose a risk to the communities who host our operations and we are working closely with them to manage these risks.

- We continue to support global community COVID-19 preparedness and recovery initiatives including: donation of personal protective equipment (PPE) to local health authorities and social services, providing alternative housing support to vulnerable members of the community, upgrading infrastructure to enable dedicated treatment centres and funding other local response initiatives.
- While rosters in our Australian iron ore operations have returned to normal, airport and site screening continues with more than 177,000 COVID-19 checks conducted year to date.
- Flexible work arrangements have been made available to employees and their families in areas where schools and day care centres are closed and mitigations have been put in place to protect our vulnerable employee base.
- At Oyu Tolgoi, we worked with the Governments of Mongolia and Australia to manage more than 40 returning expatriates in quarantine for over 35 days. The second flight landed in early October with further charters planned.
- We are also actively managing the risks to seafarers from restrictions on crew changeovers due to COVID-19 measures in place in various countries. We are working with industry and regulators to ensure a practical response, with a focus on crew welfare.

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

Production guidance

Rio Tinto share, unless otherwise stated	2019 Actuals	2020 Sept YTD	2020
Pilbara iron ore (shipments, 100% basis) (Mt)	327	242	324 to 334
Bauxite (Mt)	55	43	55 to 58
Alumina (Mt)	7.7	6.0	7.8 to 8.2
Aluminium (Mt)	3.2	2.4	3.1 to 3.3
Mined copper (kt)	577	395	475 to 520
Refined copper (kt)	260	99	135 to 175
Diamonds (M carats)	17	12	12 to 14
Titanium dioxide slag (Mt)	1.2	0.8	~1.2
IOC iron ore pellets and concentrate (Mt)	10.5	7.7	10.5 to 12.0
Boric oxide equivalent (Mt)	0.5	0.4	~0.5

- Production guidance remains unchanged from the Second Quarter Operations Review, with the exception of refined copper, which was updated on 19 August, and titanium dioxide slag, which is now expected to be around 1.2 million tonnes (previously the low end of 1.2 to 1.4 million tonnes).
- Future potential operational and mine development impacts from the reform of the Aboriginal Heritage Act 1972 (WA) and changes to our Heritage approach remain unknown at this point in time. We are consulting with Traditional Owners and are working through scenarios with a broad range of options available given the flexibility in our Pilbara network.
- 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.

Operating costs

- Pilbara iron ore 2020 unit cost guidance is unchanged at \$14 to \$15 per tonne, including unplanned one-off COVID-19 costs of \$0.50 per tonne with cost continuing in the second half relating to controls such as cleaning and screening. The guidance is based on an Australian dollar exchange rate of \$0.67.
- Copper C1 unit cost guidance in 2020 remains unchanged at 120-135 US cents/lb.

Investments, growth and development projects

- Project teams have proactively managed COVID-19 related challenges, and overall project delivery is satisfactory. Uncertainty exists around local situations, border access, movement of people and goods, and our ability to engage with Traditional Owners and local communities. However, based on current expectations, capital expenditure guidance is unchanged at around \$6 billion in 2020 and around \$7 billion in 2021 and 2022.
- Our focus continues to be on the completion of original planned sustaining expenditure in the fourth quarter to enhance the resilience of our asset base.
- Exploration and evaluation operating expense in the third quarter was \$170 million, 4% lower than the third quarter of 2019, and 25% higher than the second quarter of 2020, as activities progressed in some regions following the easing of COVID-19 restrictions.

Pilbara replacement projects

- Supply chain issues continue to be managed and construction continues to progress despite necessary social distancing and travel restrictions. Projects have now transitioned back to original roster patterns as restrictions have eased in Western Australia. Despite these impacts to project productivity, delivery of first ore remains on schedule.
- Construction on the Gudai-Darri¹ (formerly known as Koodaideri) project continues with production ramp-up still expected to occur in early 2022. The airstrip runway sealing is now complete and has received its first flight. Rail formation works are on target and track-laying will commence in the fourth quarter of 2020.
- 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.
- Construction is progressing at Western Turner Syncline Phase 2, with planning underway for the next integration shut at Tom Price. Earthworks and concrete works are progressing well with the project completing the first two primary crusher vault wall concrete pours and first ore from the crusher is still expected in 2021.

Oyu Tolgoi underground project

- Work on the project has continued to progress despite COVID-19 controls and ongoing international travel restrictions.
- Care and maintenance activities continue at shafts 3 and 4; some commissioning activities have advanced in preparation for shaft sinking, including rope installation on shaft 4. Further progress will require the remobilisation of international shaft sinking specialists and preparation is underway to mobilise some of these contractors before the end of 2020.
- Overall, underground lateral development has now reached 45,858 equivalent metres, or around 90% of the required development to support firing of the first drawbell.
- All surface infrastructure required for sustainable production is complete and the team is focused on progressing the critical underground Material Handling System 1 (MHS1) to the stage needed ahead of the first drawbell firing. The balance of project infrastructure to be delivered post completion of MHS1 is not needed for sustainable production, however, it is needed to support the production ramp-up profile.

- Preliminary indications from the definitive estimate process are that first sustainable production is trending towards the earlier months of the October 2022 to June 2023 range. The estimated development capital cost remains within the range of \$6.6 to \$7.1 billion. This assessment has now been updated to include known cost and schedule impacts from COVID-19 and assumes an easing of travel restrictions and COVID-19 related controls from the time of reporting. This remains subject to ongoing review as part of finalising the definitive estimate of cost and schedule for Panel 0, expected in the fourth quarter of 2020².
- On 3 July, we announced the completion of an updated feasibility study (OTFS20) prepared in accordance with Mongolian regulations and standards. Registration of supporting documents required before formal acceptance of the OTFS20 has been delayed. In accordance with the 2009 Investment Agreement and Mongolian regulation, the Government of Mongolia is required to approve the OTFS20. The OTFS20 also forms the basis for the uplift in the overall project cost that will require approval from all shareholders prior to the under-cut decision (decision to initiate caving) in 2021.
- Oyu Tolgoi has been working to progress power negotiations with the Government of Mongolia as required under the terms of the Power Source Framework Agreement Amendment signed in June 2020;
 - An extension of power import arrangements with China's Inner Mongolian Western Grid is required by 1 March 2021 in order to ensure sufficient certainty on future supply of power once the under-cut decision is taken.
 - A Power Purchase Agreement (PPA) for the construction of a State Owned Power Plant at Tavan Tolgoi that will be funded by the Government of Mongolia is required to be agreed by 31 March 2021.
 - Following the agreement to purchase some power from the Mongolian national grid, on 3 September 2020, Oyu Tolgoi LLC and the Government of Mongolia executed a PPA to supply power to the Oyu Tolgoi camps.
- On 14 October 2020, a putative class action was filed in the United States District Court for the Southern District of New York against Rio Tinto, Turquoise Hill Resources Ltd. ("Turquoise Hill") and certain of their respective officers and directors arising out of the operation and development of the Oyu Tolgoi copper-gold mine in Southern Mongolia. The complaint, which purports to be brought on behalf of certain purchasers of Turquoise Hill securities, asserts violations of the Securities Exchange Act of 1934 and seeks unspecified damages. Rio Tinto believes that the complaint is without merit.

Other key projects and exploration and evaluation

- Phase one of the south wall pushback project at Kennecott remains on track, with access to higher grades expected from 2021.
- The Zulti South project in South Africa remains on full suspension.
- At the Kemano hydropower tunnel project in British Columbia, Canada, tunnel boring works re-started in September with completion now expected in 2022.
- At the Resolution project in Arizona, US, we continue to manage the impacts of the COVID-19 pandemic, including engagement with local communities. Deepening of the existing shaft 9 reached approximately 2 kilometres of the 2.1 kilometres as at the end of September, with shaft sinking expected to be completed in the first quarter of 2021. Work is also continuing on the underground characterisation study to increase ore-body knowledge.
- At the Winu project in Western Australia, drilling and fieldwork activities continue. Engagement with Traditional Owners has resumed following easing of COVID-19 travel restrictions in Western Australia. This engagement is likely to take longer than originally forecast, and hence may have an impact on first targeted production of 2023.
- Work continues on the technical optimisation of the Simandou project³, and preparatory activity related to an update of the project's 2012 Social and Environmental Impact Assessment (SEIA) is also under way. Engagement continues with the Government of Guinea about potential mechanisms for collaboration on infrastructure development.
- The Jadar lithium-borate project in Serbia has progressed to feasibility study with focus on the mine design, land acquisitions and stakeholder engagement and is due to be completed by the end of 2021.

¹ Spelling change from Koodaideri at the request of the Banjima Native Title Aboriginal Corporation.

² The level of accuracy of these estimates is preliminary in nature and subject to a range of variables, in line with previous guidance. The confidence level of these estimates is at a level associated with a Pre-Feasibility Study, and further work is required between now and year end 2020 to refine the mine design and study them to a level of confidence and accuracy associated with Feasibility Study quality estimates.

³ Operating under the Simfer joint venture where the Government of Guinea holds 15% and Simfer Jersey holds 85%. Simfer Jersey is owned by Chalco Iron Ore Holdings (CIOH) (47%), Rio Tinto (53%). CIOH is owned by: Chinalco (75%), Baosteel Resources (20%), China Civil Engineering Construction Corporation (CCECC) (2.5%) and China Harbour Engineering Company (CHEC) (2.5%). This structure has been in place since 2017.

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. To allow production numbers to be compared on a like-for-like basis, production from asset divestments completed in 2019 is excluded from Rio Tinto share of production data.

IRON ORE

Rio Tinto share of production (Million tonnes)	Q3 2020	vs Q3 2019	vs Q2 2020	9 MTHS 2020	vs 9 MTHS 2019
Pilbara Blend and SP10 Lump ¹	18.3	-13%	-4%	55.7	-8%
Pilbara Blend and SP10 Fines ¹	33.6	+6%	+9%	92.2	+4%
Robe Valley Lump	1.4	-15%	+5%	4.2	+20%
Robe Valley Fines	2.5	-19%	-17%	7.9	+22%
Yandicoogina Fines (HIY)	15.7	+7%	+6%	44.6	+6%
Total Pilbara production	71.4	-1%	+4%	204.5	+1%
Total Pilbara production (100% basis)	86.4	-1%	+4%	247.4	+2%

Rio Tinto share of shipments (Million tonnes)	Q3 2020	vs Q3 2019	vs Q2 2020	9 MTHS 2020	vs 9 MTHS 2019
Pilbara Blend Lump	15.5	-3%	-7%	46.6	-6%
Pilbara Blend Fines	31.7	+6%	-4%	91.4	+3%
Robe Valley Lump	1.1	-14%	-1%	3.4	+21%
Robe Valley Fines	2.7	-19%	-9%	8.4	+16%
Yandicoogina Fines (HIY)	14.2	-1%	-9%	42.7	+2%
SP10 Lump ¹	0.8	-69%	-19%	2.8	-14%
SP10 Fines ¹	1.5	-63%	-7%	4.2	-43%
Total Pilbara shipments ²	67.6	-6%	-6%	199.5	-1%
Total Pilbara shipments (100% basis) ²	82.1	-5%	-5%	241.7	0%
Total Pilbara Shipments (consolidated basis) ^{2, 3}	69.5	-6%	-6%	205.2	-1%

¹ SP10 includes other lower grade products.

² Shipments includes material shipped from the Pilbara to our portside trading facility in China which may not be sold onwards by the group in the same period.

³ While Rio Tinto has a 53% net beneficial interest in Robe River Iron Associates, it recognises 65% of the assets, liabilities, sales revenues and expenses in its accounts (as 30% is held through a 60% owned subsidiary and 35% is held through a 100% owned subsidiary). The consolidated basis sales reported here include Robe River Iron Associates on a 65% basis to enable comparison with revenue reported in the financial statements.

Pilbara operations

Pilbara operations produced 86.4 million tonnes (Rio Tinto share 71.4 million tonnes) in the third quarter of 2020, 1% lower than the same period of 2019, and 4% higher than the previous quarter. Our mines also achieved record total material moved in the third quarter: 6.4% higher than the previous record from the third quarter of 2019. A solid operational performance, considering an increase in planned maintenance activity deferred from the first half related to COVID-19 restrictions.

Third quarter shipments of 82.1 million tonnes (Rio Tinto share 67.6 million tonnes) were 5% lower than the third quarter of 2019 with significant planned maintenance activity affecting the port during the period.

Planned maintenance activities deferred from the first half are expected to continue through the fourth quarter. Impacts from this activity have been taken into account for cost and shipment guidance.

Approximately 14% of shipments in the first nine months of 2020 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.

In September, we celebrated a significant milestone with our long-standing partners, China Baowu Steel Group. Through the Bao-HI Ranges iron ore joint venture, we have shipped more than 200 million tonnes of iron ore from the Pilbara in Western Australia to mills in China. Outside of its commercial partnership, the Bao-HI Ranges joint venture has delivered other benefits including training opportunities for China Baowu employees and, last year, Rio Tinto, China Baowu and Tsinghua University signed a Memorandum of Understanding to develop and implement new methods to reduce carbon emissions and improve environmental performance across the steel value chain. The 200 million tonnes event followed a broader milestone as we shipped our three billionth tonne of iron ore to China in September (six billionth tonne in total), 47 years after our first delivery from the Pilbara.

China Portside Trading

We continue to ramp up our port sales in China, with 3.6 million tonnes of sales 2020 year to date including 1.2 million tonnes in the third quarter. In September we signed a memorandum of understanding with Dalian Port Company Limited to establish our first iron ore blending operation in a bonded area. This partnership allows us to offer a blended product to customers across Asia, using Dalian Port as a transshipment hub. Our portside operation handles product from our operations in the Pilbara and in Canada - Iron Ore Company of Canada - as well as third party product, and provides blending and screening capabilities.

ALUMINIUM

Rio Tinto share of production ('000 tonnes)	Q3 2020	vs Q3 2019	vs Q2 2020	9 MTHS 2020	vs 9 MTHS 2019
Bauxite	14,459	+5%	-1%	42,832	+7%
Bauxite third party shipments	10,064	-3%	-6%	30,254	+5%
Alumina	1,954	+7%	-2%	5,954	+4%
Aluminium	797	+1%	+2%	2,365	-1%

Bauxite

Third quarter bauxite production was 5% higher than the same period of 2019 with increased production across all sites for both the quarter and year to date, including record quarterly production at the non-managed CBG joint venture in Guinea where the ramp-up of the expansion continues to progress. Production was slightly lower than the second quarter due to planned maintenance activities delayed from the first half.

We shipped 10.1 million tonnes of bauxite to third parties in the third quarter, 3% lower than the same period of 2019. This reflected phasing of shipments prioritised to align with customer needs in the prior quarter, with a higher proportion of internal shipments to the Pacific refineries in the third quarter.

Alumina

Alumina production in the third quarter of 2020 was 7% higher than the same period of 2019 with strong production at both our Pacific refineries, considering a planned major shutdown at Yarwun during the quarter.

Aluminium

Our aluminium business continues to demonstrate operational stability and performance across the supply chain, despite the continued impact of COVID-19. Production of 0.8 million tonnes in the third quarter was 1% higher than the third quarter of 2019. The Becancour smelter in Quebec, Canada is operating close to full capacity and good progress has been made on the pot relining at the Kitimat smelter in British Columbia, Canada.

In response to improved market conditions, we have increased the proportion of primary metal being produced as VAP to 45% of primary metal sold in the third quarter of 2020 (third quarter of 2019: 52%, first half 2020: 40%).

The ISAL smelter in Iceland continued to operate at 85% of capacity, and the Tiwai Point smelter in New Zealand (NZAS) operated at around 90% of capacity, with the fourth pot-line remaining curtailed since 3 April 2020.

We continue to actively work on enhancing the competitiveness of our smelters, including discussing energy pricing with stakeholders, to ensure the sustainability of our smelters in Australia and Iceland. Discussions continue with the New Zealand Government and Meridian Energy on next steps relating to the wind-down of operations and eventual closure of the Tiwai Point Aluminium Smelter, announced in July 2020.

Work on the strategic review of the ISAL smelter in Iceland announced in February 2020 is ongoing. In July 2020, we submitted a complaint to the Icelandic Competition Authority (ICA), alleging abuse of market dominance by energy supplier Landsvirkjun. This case is ongoing, pending a hearing with the ICA.

Discussions are continuing on a labour agreement at the ISAL smelter, with preparations in place for potential industrial action.

COPPER AND DIAMONDS

Rio Tinto share of production ('000 tonnes)	Q3 2020	vs Q3 2019	vs Q2 2020	9 MTHS 2020	vs 9 MTHS 2019
Mined copper					
Kennecott	34.7	-40%	-5%	106.2	-30%
Escondida	82.8	-9%	-1%	253.0	+2%
Oyu Tolgoi	12.2	+28%	-1%	36.2	-5%
Refined copper					
Kennecott	10.4	-74%	+44%	44.0	-67%
Escondida	14.4	-14%	-27%	54.9	+1%

Rio Tinto share of production ('000 carats)	Q3 2020	vs Q3 2019	vs Q2 2020	9 MTHS 2020	vs 9 MTHS 2019
Argyle	3,203	-10%	-2%	9,052	-6%
Diavik	1,001	+1%	+4%	2,821	-12%

Kennecott

Mined copper production was 40% lower than the same quarter of 2019, due to a 51% reduction in grade as a result of sequencing to optimise molybdenum ore production during the extended smelter shutdown. Grades will continue to be lower through 2020 before increasing in 2021, with the transition in east to south wall mining.

Refined copper was 74% lower than the same quarter in 2019 due to delays in restarting the smelter following planned major maintenance in May to June 2020. We are in the process of safely restarting the smelter and expect that it will be fully operational during October. Plans are underway to sell some copper concentrate in the fourth quarter to partly mitigate the impact of the delayed re-start of the smelter.

Molybdenum concentrate production was 141% higher than the same quarter of 2019, due to a 36% increase in head grade as a result of mine sequencing, and a 39% increase in recovery, following productivity improvements to the circuit.

Escondida

Escondida continued to operate with a reduced workforce in the third quarter as a result of the comprehensive preventative measures incorporated in response to COVID-19. Mined copper production was 9% lower than the same quarter of 2019 due to 44% lower material stacked into the leaching pads, offset by higher concentrator throughput. Refined copper was also impacted by lower material stacked into the leach pads.

Oyu Tolgoi

Mined copper production from the open pit was 28% higher than the same quarter of 2019 and steady quarter on quarter reflective of the move to higher grade areas of the open pit in 2020, primarily due to accelerated mine development and production phasing. Access to higher copper and gold grades is expected to continue for the remainder of 2020, which was originally planned for the first half of 2021.

Diamonds

At Argyle, carat production was 10% lower than the same period of 2019 as a result of a reduction in recovered grade. Preparation continues for the safe cessation of operations before the end of 2020, followed by closure activities to commence in 2021.

At Diavik, carats recovered in the third quarter of 2020 were 1% higher than the third quarter of 2019, due to higher ore availability and higher processed tonnes.

ENERGY AND MINERALS

Rio Tinto share of production (million tonnes)	Q3 2020	vs Q3 2019	vs Q2 2020	9 MTHS 2020	vs 9 MTHS 2019
Iron ore pellets and concentrate					
IOC	2.3	-21%	-15%	7.7	-4%

Rio Tinto share of production ('000 tonnes)	Q3 2020	vs Q3 2019	vs Q2 2020	9 MTHS 2020	vs 9 MTHS 2019
Minerals					
Borates - B ₂ O ₃ content	123	-11%	-6%	381	-3%
Titanium dioxide slag	293	-9%	+12%	848	-8%

Rio Tinto share of production ('000 lbs)	Q3 2020	vs Q3 2019	vs Q2 2020	9 MTHS 2020	vs 9 MTHS 2019
Uranium					
Energy Resources of Australia	735	+26%	+2%	2,128	+7%

Iron Ore Company of Canada (IOC)

Iron ore pellets and concentrate production were 21% lower than the third quarter of 2019 due to an annual planned maintenance shutdown deferred from June to September as a result of COVID-19 travel restrictions. A weather related power failure and mechanical issues also impacted production in the third quarter.

We have continued the optimisation of IOC product mix to match market demand, returning to higher pellet production, following signs of recovery in demand from Europe. IOC is now operating five out of six lines in its pellet plant, with plans to bring back the sixth line before the end of 2020.

Borates

Borates production was 11% below the corresponding period of 2019. Refinery operating rates continued to be below capacity during the quarter. We adjust refinery operating rates to match market demand for borates products. Market demand is being adversely impacted by COVID-19 in a number of end-use segments.

At our Boron operation in California, a demonstration plant producing lithium carbonate from a waste stream was commissioned. Optimisation of the plant will continue ahead of potential expansion of the project to support commercial production.

Iron and Titanium

Titanium dioxide production was 9% lower than same period of 2019, as a result of weaker market conditions which impacted production at Rio Tinto Fer et Titane (RTFT), partly offset by operational challenges experienced at Richards Bay Minerals (RBM) in 2019. Production was 12% higher than the prior quarter with RBM production stabilising in the third quarter after COVID-19 operational restrictions eased.

Uranium

ERA's Ranger operation continued to process existing stockpiles uninterrupted during the third quarter. Our share of production was 26% higher than the third quarter of 2019, primarily due to our change in shareholding following completion of ERA's entitlement offer in February 2020 (our shareholding of ERA increased from 68.39 to 86.33 per cent). ERA is preparing for the safe cessation of operations by January 2021, in line with ERA's statutory obligations.

EXPLORATION AND EVALUATION

Pre-tax and pre-divestment expenditure on exploration and evaluation charged to the profit and loss account for the first nine months of 2020 was \$450 million, compared with \$464 million in the first nine months of 2019. Approximately 42% of this expenditure was incurred by central exploration, 42% by Copper & Diamonds, 9% by Energy & Minerals and 7% by Iron Ore.

There were no significant divestments of central exploration properties in the third quarter of 2020.

Exploration highlights

Rio Tinto has a strong portfolio of projects with activity in 16 countries across eight commodities in early exploration and studies stages. Due to COVID-19, there have been significant impacts on exploration activities in some jurisdictions. All projects have followed government requirements and guidelines while focusing on protecting the well-being and health of local indigenous communities. The bulk of the exploration expenditure in the third quarter focused on copper in Australia, Brazil, Canada, Chile, Kazakhstan, Mongolia, Peru, 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 Winu, studies are ongoing and drilling has focused on resource definition and brownfield exploration. At Falcon, processing of diamond samples collected in 2020 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	La Granja, Peru Nickel: Tamarack, US (3rd party operated) Pribrezhnyi, Kazakhstan	Copper Greenfield: Australia, Chile, China, Kazakhstan, Nicaragua*, Peru, Serbia, US, Zambia, Brazil, Canada, Colombia*, Finland, Kosovo (3rd party operated) Nickel Greenfield: Canada, Finland
Diamonds	Falcon, Canada		Diamonds Greenfield: Canada Diamonds Brownfield: Diavik
Minerals	Lithium borates: Jadar, Serbia Potash: KP405, 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 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			9 Months		% change		
		2019 Q3	2020 Q2	2020 Q3	2019 9 MTHS	2020 9 MTHS	Q3 20 vs Q3 19	Q3 20 vs Q2 20	9 MTHS 20 vs 9 MTHS 19
Principal commodities									
Alumina	('000 t)	1,826	1,990	1,954	5,713	5,954	+7%	-2%	+4%
Aluminium	('000 t)	789	785	797	2,388	2,365	+1%	+2%	-1%
Bauxite	('000 t)	13,796	14,560	14,459	39,967	42,832	+5%	-1%	+7%
Borates	('000 t)	138	132	123	391	381	-11%	-6%	-3%
Copper - mined	('000 t)	157.9	132.8	129.6	438.7	395.4	-18%	-2%	-10%
Copper - refined	('000 t)	57.1	26.9	24.8	187.7	98.9	-57%	-8%	-47%
Diamonds	('000 cts)	4,551	4,235	4,204	12,828	11,873	-8%	-1%	-7%
Iron Ore	('000 t)	75,117	71,689	73,707	209,839	212,183	-2%	+3%	+1%
Titanium dioxide slag	('000 t)	321	262	293	920	848	-9%	+12%	-8%
Uranium	('000 lbs)	585	718	735	1,998	2,128	+26%	+2%	+7%
Other Metals & Minerals									
Gold - mined	('000 oz)	87.8	63.6	68.7	314.8	193.9	-22%	+8%	-38%
Gold - refined	('000 oz)	60.8	30.1	3.7	155.4	78.6	-94%	-88%	-49%
Molybdenum	('000 t)	2.1	3.9	5.1	6.6	14.1	+141%	+33%	+114%
Salt	('000 t)	1,392	1,425	1,279	3,972	3,748	-8%	-10%	-6%
Silver - mined	('000 oz)	1,320	1,077	1,133	4,203	3,237	-14%	+5%	-23%
Silver - refined	('000 oz)	664	382	70	2,014	914	-89%	-82%	-55%

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	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
ALUMINA								
Production ('000 tonnes)								
Jonquière (Vaudreuil)	100 %	360	345	373	340	347	1,069	1,060
Jonquière (Vaudreuil) specialty Alumina plant	100 %	28	24	24	25	22	85	70
Queensland Alumina	80 %	669	716	713	711	763	2,047	2,186
São Luis (Alumar)	10 %	99	97	94	95	98	271	286
Yarwun	100 %	671	850	806	820	725	2,241	2,351
Rio Tinto total alumina production		1,826	2,032	2,010	1,990	1,954	5,713	5,954
ALUMINIUM								
Production ('000 tonnes)								
Australia - Bell Bay	100 %	48	48	47	49	48	141	144
Australia - Boyne Island	59 %	75	74	75	75	76	222	226
Australia - Tomago	52 %	77	76	75	76	77	227	228
Canada - six wholly owned	100 %	399	383	375	370	375	1,198	1,119
Canada - Alouette (Sept-Îles)	40 %	61	62	61	62	63	179	186
Canada - Bécancour	25 %	4	7	18	26	26	12	70
Iceland - ISAL (Reykjavik)	100 %	36	43	45	44	46	141	135
New Zealand - Tiwai Point	79 %	70	69	67	65	66	210	198
Oman - Sohar	20 %	20	20	20	20	20	58	59
Rio Tinto total aluminium production		789	783	783	785	797	2,388	2,365
BAUXITE								
Production ('000 tonnes) (a)								
Gove	100 %	2,968	3,273	2,876	3,186	3,147	8,929	9,209
Porto Trombetas	12 %	385	371	338	270	396	956	1,003
Sangaredi	(b)	1,749	1,227	1,879	1,742	1,920	4,938	5,541
Weipa	100 %	8,695	10,267	8,720	9,362	8,997	25,144	27,079
Rio Tinto total bauxite production		13,796	15,137	13,813	14,560	14,459	39,967	42,832

(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	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
BORATES								
Production ('000 tonnes B₂O₃ content)								
Rio Tinto Borates - borates	100 %	138	128	126	132	123	391	381
COPPER								
Mine production ('000 tonnes) (a)								
Bingham Canyon	100 %	57.8	35.4	35.0	36.5	34.7	151.4	106.2
Escondida	30 %	90.5	92.3	86.2	84.0	82.8	249.2	253.0
Oyu Tolgoi (b)	34 %	9.5	11.0	11.8	12.2	12.2	38.0	36.2
Rio Tinto total mine production		157.9	138.7	133.0	132.8	129.6	438.7	395.4
Refined production ('000 tonnes)								
Escondida	30 %	16.8	20.5	20.9	19.7	14.4	54.5	54.9
Rio Tinto Kennecott	100 %	40.3	51.4	26.4	7.2	10.4	133.2	44.0
Rio Tinto total refined production		57.1	71.9	47.2	26.9	24.8	187.7	98.9

(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.

DIAMONDS								
Production ('000 carats)								
Argyle	100 %	3,558	3,363	2,578	3,271	3,203	9,636	9,052
Diavik	60 %	994	840	857	963	1,001	3,191	2,821
Rio Tinto total diamond production		4,551	4,203	3,434	4,235	4,204	12,828	11,873

GOLD								
Mine production ('000 ounces) (a)								
Bingham Canyon	100 %	64.6	52.0	41.9	40.2	43.7	182.6	125.8
Escondida	30 %	14.6	14.8	10.8	13.0	12.7	59.3	36.5
Oyu Tolgoi (b)	34 %	8.6	8.2	8.8	10.4	12.3	72.9	31.5
Rio Tinto total mine production		87.8	75.0	61.5	63.6	68.7	314.8	193.9
Refined production ('000 ounces)								
Rio Tinto Kennecott	100 %	60.8	63.3	44.8	30.1	3.7	155.4	78.6

(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.

(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	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
IRON ORE								
Production ('000 tonnes) (a)								
Hamersley mines	(b)	55,567	52,521	49,327	53,187	54,852	156,871	157,366
Hamersley - Channar	60 %	947	1,452	1,160	1,334	1,710	3,330	4,204
Hope Downs	50 %	6,077	6,047	5,667	5,659	6,625	18,085	17,951
Iron Ore Company of Canada	59 %	2,960	2,564	2,560	2,762	2,340	7,972	7,663
Robe River - Pannawonica (Mesas J and A)	53 %	4,725	4,360	3,880	4,307	3,882	9,924	12,068
Robe River - West Angelas	53 %	4,840	4,409	4,193	4,440	4,298	13,657	12,932
Rio Tinto iron ore production ('000 tonnes)		75,117	71,352	66,787	71,689	73,707	209,839	212,183
Breakdown of Production:								
Pilbara Blend and SP10 Lump (c)		21,015	19,930	18,504	18,970	18,253	60,836	55,727
Pilbara Blend and SP10 Fines (c)		31,713	30,304	27,734	30,866	33,570	88,955	92,170
Robe Valley Lump		1,650	1,574	1,472	1,326	1,399	3,486	4,197
Robe Valley Fines		3,075	2,786	2,407	2,981	2,483	6,438	7,871
Yandicoogina Fines (HIY)		14,704	14,194	14,110	14,784	15,662	42,151	44,556
Pilbara iron ore production ('000 tonnes)		72,156	68,788	64,227	68,927	71,366	201,867	204,521
IOC Concentrate		1,400	1,146	923	1,523	1,038	3,483	3,484
IOC Pellets		1,560	1,418	1,637	1,240	1,302	4,489	4,179
IOC iron ore production ('000 tonnes)		2,960	2,564	2,560	2,762	2,340	7,972	7,663
Breakdown of Shipments:								
Pilbara Blend Lump		15,948	16,176	14,385	16,700	15,514	49,729	46,599
Pilbara Blend Fines		30,032	31,182	26,692	33,036	31,710	89,061	91,438
Robe Valley Lump		1,290	1,246	1,132	1,118	1,112	2,784	3,362
Robe Valley Fines		3,349	3,259	2,688	2,999	2,724	7,234	8,411
Yandicoogina Fines (HIY)		14,286	15,260	12,913	15,578	14,203	41,791	42,694
SP10 Lump (c)		2,685	2,072	1,006	1,014	822	3,319	2,842
SP10 Fines (c)		4,057	2,081	1,089	1,603	1,488	7,346	4,180
Pilbara iron ore shipments ('000 tonnes) (d)		71,646	71,277	59,903	72,048	67,574	201,264	199,525
Pilbara iron ore shipments - consolidated basis ('000 tonnes) (d) (f)		73,787	73,401	61,729	73,976	69,496	206,558	205,201
IOC Concentrate		1,425	1,223	1,006	1,410	1,355	3,256	3,771
IOC Pellets		1,229	1,413	1,769	1,320	1,378	4,228	4,468
IOC Iron ore shipments ('000 tonnes) (d)		2,654	2,636	2,775	2,731	2,733	7,484	8,239
Rio Tinto iron ore shipments ('000 tonnes) (d)		74,300	73,913	62,678	74,779	70,307	208,748	207,764
Rio Tinto iron ore sales ('000 tonnes) (e)		74,300	72,334	62,433	74,808	69,993	207,168	207,234

(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) 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) 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	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
MOLYBDENUM								
Mine production ('000 tonnes) (a)								
Bingham Canyon	100 %	2.1	4.7	5.1	3.9	5.1	6.6	14.1

(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 %	1,392	1,450	1,044	1,425	1,279	3,972	3,748

SILVER								
Mine production ('000 ounces) (a)								
Bingham Canyon	100 %	768	605	538	526	586	2,210	1,650
Escondida	30 %	488	539	417	480	474	1,767	1,371
Oyu Tolgoi (b)	34 %	64	64	72	71	73	227	216
Rio Tinto total mine production		1,320	1,209	1,027	1,077	1,133	4,203	3,237
Refined production ('000 ounces)								
Rio Tinto Kennecott	100 %	664	839	462	382	70	2,014	914

(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 %	321	286	293	262	293	920	848

(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 %	585	642	676	718	735	1,998	2,128

(a) ERA production data are drummed U₃O₈.

On 25 February 2020, Rio Tinto's ownership interest in ERA increased from 68.39% to 86.33%, following completion of its offer to ensure ERA has the funds it needs to meet its current rehabilitation obligations. Production is reported including this change from 1 March 2020.

Rio Tinto's interest in the Rössing operations were sold in 2019. 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 30 September 2020.

Rio Tinto operational data

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
ALUMINA								
Smelter Grade Alumina - Aluminium Group								
Alumina production ('000 tonnes)								
<i>Australia</i>								
Queensland Alumina Refinery - Queensland	80.0 %	836	895	891	889	953	2,559	2,733
Yarwun refinery - Queensland	100.0 %	671	850	806	820	725	2,241	2,351
<i>Brazil</i>								
São Luis (Alumar) refinery	10.0 %	989	966	936	945	976	2,713	2,858
<i>Canada</i>								
Jonquière (Vaudreuil) refinery - Quebec (a)	100.0 %	360	345	373	340	347	1,069	1,060
(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)								
<i>Canada</i>								
Jonquière (Vaudreuil) plant – Quebec	100.0 %	28	24	24	25	22	85	70

Rio Tinto percentage interest shown above is at 30 September 2020. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
ALUMINIUM								
Primary Aluminium								
Primary aluminium production ('000 tonnes)								
<i>Australia</i>								
Bell Bay smelter - Tasmania	100.0 %	48	48	47	49	48	141	144
Boyne Island smelter - Queensland	59.4 %	125	125	126	126	128	374	380
Tomago smelter - New South Wales	51.6 %	149	148	145	148	150	440	442
<i>Canada</i>								
Alma smelter - Quebec	100.0 %	119	119	118	118	118	352	354
Alouette (Sept-Îles) smelter - Quebec	40.0 %	153	155	153	155	156	447	464
Arvida smelter - Quebec	100.0 %	45	44	44	42	41	131	128
Arvida AP60 smelter - Quebec	100.0 %	15	15	15	15	15	44	44
Bécancour smelter - Quebec	25.1 %	16	28	72	102	104	49	278
Grande-Baie smelter - Quebec	100.0 %	59	59	58	55	55	174	168
Kitimat smelter - British Columbia	100.0 %	96	81	76	78	84	304	238
Laterrière smelter - Quebec	100.0 %	65	65	64	62	62	193	187
<i>Iceland</i>								
ISAL (Reykjavik) smelter	100.0 %	36	43	45	44	46	141	135
<i>New Zealand</i>								
Tiwai Point smelter	79.4 %	88	87	84	82	84	264	249
<i>Oman</i>								
Sohar smelter	20.0 %	98	98	99	99	100	292	297

Rio Tinto percentage interest shown above is at 30 September 2020. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
BAUXITE								
Bauxite production ('000 tonnes)								
<i>Australia</i>								
Gove mine - Northern Territory	100.0 %	2,968	3,273	2,876	3,186	3,147	8,929	9,209
Weipa mine - Queensland	100.0 %	8,695	10,267	8,720	9,362	8,997	25,144	27,079
<i>Brazil</i>								
Porto Trombetas (MRN) mine	12.0 %	3,205	3,090	2,814	2,251	3,296	7,970	8,361
<i>Guinea</i>								
Sangaredi mine (a)	23.0 %	3,887	2,727	4,175	3,871	4,267	10,973	12,313
Rio Tinto share of bauxite shipments								
Share of total bauxite shipments ('000 tonnes)		13,912	14,849	13,567	14,668	14,117	39,758	42,352
Share of third party bauxite shipments ('000 tonnes)		10,361	10,968	9,469	10,721	10,064	28,680	30,254

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

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
BORATES								
Rio Tinto Borates - borates	100.0 %							
<i>US</i>								
Borates ('000 tonnes) (a)		138	128	126	132	123	391	381

(a) Production is expressed as B₂O₃ content.

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
COPPER & GOLD								
Escondida	30.0 %							
<i>Chile</i>								
Sulphide ore to concentrator ('000 tonnes)		33,956	33,659	33,440	34,755	34,733	98,502	102,928
Average copper grade (%)		0.86	0.87	0.82	0.81	0.85	0.85	0.83
Mill production (metals in concentrates):								
Contained copper ('000 tonnes)		245.0	246.1	230.0	236.8	243.9	692.8	710.7
Contained gold ('000 ounces)		48.8	49.2	36.0	43.4	42.3	197.5	121.7
Contained silver ('000 ounces)		1,626	1,798	1,390	1,599	1,580	5,889	4,569
Recoverable copper in ore stacked for leaching ('000 tonnes) (a)		56.8	61.7	57.2	43.3	32.1	138.0	132.6
Refined production from leach plants:								
Copper cathode production ('000 tonnes)		55.9	68.4	69.6	65.5	47.9	181.8	183.1

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

Rio Tinto percentage interest shown above is at 30 September 2020. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
COPPER & GOLD (continued)								
Rio Tinto Kennecott								
Bingham Canyon mine	100.0 %							
<i>Utah, US</i>								
Ore treated ('000 tonnes)		10,084	11,141	10,315	10,083	12,860	30,892	33,258
Average ore grade:								
Copper (%)		0.64	0.36	0.37	0.41	0.32	0.55	0.36
Gold (g/t)		0.30	0.23	0.22	0.23	0.21	0.29	0.22
Silver (g/t)		2.74	2.09	2.16	2.14	2.00	2.78	2.09
Molybdenum (%)		0.039	0.061	0.058	0.056	0.053	0.037	0.055
Copper concentrates produced ('000 tonnes)		207	156	148	135	140	575	423
Average concentrate grade (% Cu)		27.8	22.6	23.7	26.6	24.7	26.3	25.0
Production of metals in copper concentrates:								
Copper ('000 tonnes) (a)		57.8	35.4	35.0	36.5	34.7	151.4	106.2
Gold ('000 ounces)		64.6	52.0	41.9	40.2	43.7	182.6	125.8
Silver ('000 ounces)		768	605	538	526	586	2,210	1,650
Molybdenum concentrates produced ('000 tonnes):		4.3	9.4	10.4	7.8	10.3	13.0	28.5
Molybdenum in concentrates ('000 tonnes)		2.1	4.7	5.1	3.9	5.1	6.6	14.1
Kennecott smelter & refinery								
	100.0 %							
Copper concentrates smelted ('000 tonnes)		160	216	161	51	1	571	214
Copper anodes produced ('000 tonnes) (b)		39.3	53.7	24.0	(2.1)	20.2	132.9	42.0
Production of refined metal:								
Copper ('000 tonnes)		40.3	51.4	26.4	7.2	10.4	133.2	44.0
Gold ('000 ounces) (c)		60.8	63.3	44.8	30.1	3.7	155.4	78.6
Silver ('000 ounces) (c)		664	839	462	382	70	2,014	914

(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 30 September 2020. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
COPPER & GOLD (continued)								
Turquoise Hill Resources								
Oyu Tolgoi mine (a)	33.5 %							
<i>Mongolia</i>								
Ore Treated ('000 tonnes)		10,040	11,088	10,889	9,645	10,072	29,689	30,606
Average mill head grades:								
Copper (%)		0.37	0.42	0.42	0.47	0.45	0.46	0.45
Gold (g/t)		0.14	0.15	0.15	0.19	0.21	0.34	0.18
Silver (g/t)		1.03	1.06	1.14	1.22	1.22	1.16	1.19
Copper concentrates produced ('000 tonnes)		131.3	152.6	164.5	169.9	168.5	522.1	502.9
Average concentrate grade (% Cu)		21.7	21.6	21.4	21.5	21.5	21.7	21.5
Production of metals in concentrates:								
Copper in concentrates ('000 tonnes)		28.4	32.9	35.2	36.5	36.3	113.4	108.0
Gold in concentrates ('000 ounces)		25.6	24.3	26.2	31.1	36.7	217.5	94.0
Silver in concentrates ('000 ounces)		191	190	214	212	219	677	645
Sales of metals in concentrates:								
Copper in concentrates ('000 tonnes)		32.5	32.3	25.8	39.7	34.4	117.6	99.9
Gold in concentrates ('000 ounces)		35.4	24.7	19.7	30.8	33.6	248.9	84.1
Silver in concentrates ('000 ounces)		207	244	146	220	201	652	566

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

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
DIAMONDS								
Argyle Diamonds	100.0 %							
<i>Western Australia</i>								
AK1 ore processed ('000 tonnes)		1,716	1,977	1,322	1,571	1,802	4,390	4,695
AK1 diamonds produced ('000 carats)		3,558	3,363	2,578	3,271	3,203	9,636	9,052
Diavik Diamonds	60.0 %							
<i>Northwest Territories, Canada</i>								
Ore processed ('000 tonnes)		628	516	571	626	679	1,919	1,876
Diamonds recovered ('000 carats)		1,656	1,400	1,428	1,606	1,668	5,319	4,701

Rio Tinto percentage interest shown above is at 30 September 2020. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
IRON ORE								
Rio Tinto Iron Ore								
<i>Western Australia</i>								
Pilbara Operations								
Saleable iron ore production ('000 tonnes)								
Hamersley mines	(a)	55,567	52,521	49,327	53,187	54,852	156,871	157,366
Hamersley - Channar	60.0 %	1,579	2,420	1,934	2,223	2,849	5,549	7,006
Hope Downs	50.0 %	12,155	12,095	11,334	11,318	13,250	36,169	35,903
Robe River - Pannawonica (Mesas J and A)	53.0 %	8,914	8,225	7,320	8,126	7,324	18,725	22,770
Robe River - West Angelas	53.0 %	9,133	8,318	7,912	8,378	8,110	25,768	24,399
Total production ('000 tonnes)		87,347	83,579	77,827	83,232	86,385	243,083	247,444
Breakdown of total production:								
Pilbara Blend and SP10 Lump (b)		25,434	24,326	22,592	23,222	22,674	73,793	68,487
Pilbara Blend and SP10 Fines (b)		38,296	36,833	33,806	37,100	40,725	108,413	111,631
Robe Valley Lump		3,113	2,969	2,778	2,502	2,639	6,578	7,918
Robe Valley Fines		5,802	5,256	4,542	5,625	4,685	12,148	14,852
Yandicoogina Fines (HIY)		14,704	14,194	14,110	14,784	15,662	42,151	44,556
Breakdown of total shipments:								
Pilbara Blend Lump		19,329	19,680	17,506	20,339	19,118	59,950	56,962
Pilbara Blend Fines		36,947	39,186	33,197	40,379	39,230	109,321	112,806
Robe Valley Lump		2,433	2,350	2,135	2,110	2,098	5,253	6,343
Robe Valley Fines		6,318	6,149	5,071	5,659	5,140	13,648	15,870
Yandicoogina Fines (HIY)		14,286	15,260	12,913	15,578	14,203	41,791	42,694
SP10 Lump (b)		2,685	2,072	1,006	1,014	822	3,319	2,842
SP10 Fines (b)		4,057	2,081	1,089	1,603	1,488	7,346	4,180
Total shipments ('000 tonnes) (c)		86,055	86,779	72,916	86,681	82,099	240,628	241,697
	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
Iron Ore Company of Canada 58.7 %								
<i>Newfoundland & Labrador and Quebec in Canada</i>								
Saleable iron ore production:								
Concentrates ('000 tonnes)		2,384	1,951	1,572	2,593	1,768	5,932	5,933
Pellets ('000 tonnes)		2,657	2,415	2,788	2,112	2,217	7,646	7,116
IOC Total production ('000 tonnes)		5,041	4,366	4,360	4,704	3,985	13,577	13,049
Shipments:								
Concentrates ('000 tonnes)		2,427	2,083	1,713	2,402	2,307	5,544	6,422
Pellets ('000 tonnes)		2,093	2,406	3,013	2,248	2,347	7,201	7,608
IOC Total Shipments ('000 tonnes) (c)		4,520	4,490	4,726	4,650	4,654	12,745	14,030
Global Iron Ore Totals								
Iron Ore Production ('000 tonnes)		92,389	87,945	82,187	87,936	90,370	256,660	260,493
Iron Ore Shipments ('000 tonnes)		90,576	91,269	77,642	91,332	86,753	253,373	255,727
Iron Ore Sales ('000 tonnes) (d)		90,576	89,690	77,397	91,361	86,398	251,794	255,156

(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) SP10 include 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 30 September 2020. The data represent full production and sales on a 100% basis unless otherwise stated.

Rio Tinto operational data

	Rio Tinto interest	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	9 MTHS 2019	9 MTHS 2020
SALT								
Dampier Salt	68.4 %							
<i>Western Australia</i>								
Salt production ('000 tonnes)		2,036	2,121	1,527	2,085	1,871	5,810	5,483
TITANIUM DIOXIDE SLAG								
Rio Tinto Iron & Titanium	100.0 %							
<i>Canada and South Africa</i>								
(Rio Tinto share) (a)								
Titanium dioxide slag ('000 tonnes)		321	286	293	262	293	920	848
URANIUM								
Energy Resources of Australia Ltd								
Ranger mine (a)	86.3 %							
<i>Northern Territory, Australia</i>								
U ₃ O ₈ Production ('000 lbs)		855	939	928	831	851	2,921	2,611

(a) ERA production data are drummed U₃O₈.

On 25 February 2020, Rio Tinto's ownership interest in ERA increased from 68.39% to 86.33%, following completion of its offer to ensure ERA has the funds it needs to meet its current rehabilitation obligations. Production is reported including this change from 1 March 2020.

Rio Tinto percentage interest shown above is at 30 June 2020. The data represent full production and sales on a 100% basis unless otherwise stated.