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Rio Tinto releases second quarter production results

16 July 2019

Rio Tinto chief executive J-S Jacques said "We saw a challenging operational performance across our portfolio in the first half, while also investing in future growth at Richards Bay Minerals and Resolution. Whilst we experienced operational and weather issues at our iron ore operations in Australia, pricing and market demand has remained robust. We remain focused on safely improving and optimising the performance and productivity of our assets in order to drive future cash flow. This, combined with our value over volume strategy and the disciplined allocation of capital, will continue to deliver superior returns to our shareholders in the short, medium and long term."

		Q2 2019	vs Q2 2018	vs Q1 2019	H1 2019	vs H1 2018
Pilbara iron ore shipments (100% basis)	Mt	**85.4**	-3%	+24%	**154.6**	-8%
Pilbara iron ore production (100% basis)	Mt	**79.7**	-7%	+5%	**155.7**	-8%
Bauxite	kt	**13,407**	+1%	+5%	**26,171**	+1%
Aluminium	kt	**803**	0%	+1%	**1,599**	0%
Mined copper	kt	**137.1**	-13%	-5%	**281.0**	-5%
Titanium dioxide slag	kt	**303**	+31%	+2%	**599**	+14%
IOC iron ore pellets and concentrate	Mt	**2.5**	+191%	+2%	**5.0**	+55%

Operational update

- Pilbara iron ore shipments of 85.4 million tonnes (100% basis) in the second quarter were 3% lower than the second quarter of 2018. Shipments were impacted in April due to recovery works following Tropical Cyclone Veronica.
- 2019 guidance for Pilbara shipments was revised on 19 June 2019 to between 320 and 330 million tonnes, 100% basis (previously between 333 and 343 million tonnes) due to mine operational challenges. Unit cost guidance has been revised to $14 - $15 per tonne (previously $13 - $14 per tonne).
- Lower iron ore production was the primary driver of a 2% reduction in copper equivalent production in the first half compared to the corresponding period of 2018.
- Bauxite production of 13.4 million tonnes in the second quarter was 1% higher than the same period of 2018.
- Aluminium production of 0.8 million tonnes was in line with the second quarter of 2018.
- Mined copper production of 137 thousand tonnes was 13% lower than the second quarter of 2018, with lower production from Escondida and Kennecott reflective of lower grades.
- Titanium dioxide slag production of 303 thousand tonnes was 31% higher than the second quarter of 2018, reflecting improved operational performance following operational challenges faced in the corresponding period of 2018.
- Second quarter production at Iron Ore Company of Canada was significantly higher than the corresponding quarter of 2018, which was impacted by a labour strike. However, guidance for Rio Tinto's share of iron ore pellets and concentrate production is revised to between 10.7 and 11.3 million tonnes (previously 11.3 to 12.3 million tonnes), due to adverse weather conditions in the first quarter and a flooding incident in June.
- Rio Tinto today released a separate announcement providing an update on the Oyu Tolgoi underground project.

- On 8 April 2019, Rio Tinto announced the approval of the construction of the Zulti South project at Richards Bay Minerals (RBM) in South Africa for $463 million (Rio Tinto share $343 million).
- On 15 April 2019, Rio Tinto announced it had committed $302 million ($166 million Rio Tinto share) of additional expenditure to advance its Resolution Copper project in Arizona.

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 2018 is excluded from Rio Tinto share of production data.

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IRON ORE

Rio Tinto share of production (million tonnes)

	Q2 2019	vs Q2 2018	vs Q1 2019	H1 2019	vs H1 2018
Pilbara Blend Lump	**19.8**	-9%	-1%	**39.8**	-7%
Pilbara Blend Fines	**28.5**	-9%	-1%	**57.2**	-6%
Robe Valley Lump	**1.2**	-16%	+89%	**1.8**	-39%
Robe Valley Fines	**2.1**	-19%	+72%	**3.4**	-41%
Yandicoogina Fines (HIY)	**14.0**	-2%	+4%	**27.4**	-3%
Total Pilbara production	**65.6**	-8%	+2%	**129.7**	-8%
Total Pilbara production (100% basis)	**79.7**	-7%	+5%	**155.7**	-8%
Total Pilbara shipments (a) (100% basis)	**85.4**	-3%	+24%	**154.6**	-8%

(a) Pilbara Blend sales include 2.4 million tonnes of alternate products in Q2 2019 and 3.9 million tonnes in H1 2019

Pilbara operations

Pilbara operations produced 155.7 million tonnes (Rio Tinto share 129.7 million tonnes) in the first half of 2019, 8% lower than the same period in 2018.

As highlighted in our first quarter Operations Review, significant disruptions were caused by Tropical Cyclone Veronica, and a fire at Cape Lambert A. The impacts of Cyclone Veronica continued into the second quarter, with repairs to the Cape Lambert A port facilities impacting Robe Valley and Yandicoogina shipments and operations. All repairs are now complete.

As announced on 19 June 2019, mine operational challenges are being experienced, particularly at our Greater Brockman hub. This has seen shortfalls in planned material movement and impacted mine sequencing both in the Greater Brockman hub and in the broader system. Waste material movement will be increased over 2019 and 2020 to improve mine performance and pit sequencing. Cost guidance (below) has been revised to include these additional mining activities.

First half sales of 154.6 million tonnes (Rio Tinto share 129.6 million tonnes) were 8% lower than the first half of last year due to lower mine production and damage to the port facilities caused by the cyclone.

Approximately 16% of sales in the first half of 2019 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. We continue to prioritise meeting our long-term customer commitments.

Approximately 33% of sales in the first half were made free on board (FOB), with the remainder sold including freight.

Achieved average pricing in the first half of 2019 was $78.5 per wet metric tonne on an FOB basis (2018 first half: $57.9 per wet metric tonne) which equates to $85.3 per dry metric tonne. Pilbara Blend sales included an additional 2.4 million tonnes of alternate products in the second quarter, bringing the total alternate product sales in the first half of 2019 to 3.9 million tonnes.

Pilbara projects

The Koodaideri iron ore mine is progressing to plan with engineering, procurement and construction activities on schedule, including the ramp-up of the mine bulk earthworks and commencement of rail bulk earthworks. First ore from Koodaideri is expected in late 2021, consistent with previous guidance.

The Robe River Joint Venture sustaining production projects (West Angelas C&D and Mesa B, C and H at Robe Valley) are progressing through the necessary environmental and heritage approval process. Mesa H environmental approvals have experienced some delays, with contingency plans being assessed in case required. Consistent with previous guidance, first ore from these projects is anticipated in 2021.

2019 guidance

As announced on 19 June 2019, Rio Tinto's Pilbara shipments in 2019 are expected to be between 320 and 330 million tonnes, 100% basis (previously between 333 and 343 million tonnes). Guidance will remain subject to weather. Major rail maintenance is scheduled to occur in October, and is reflected in the existing guidance.

Rio Tinto's Pilbara unit cost guidance in 2019 has been revised to $14 - $15 per tonne (previously $13 - $14 per tonne), which incorporates costs for the additional waste movement in the mines in the second half, and the overall reduction in shipments.

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ALUMINIUM

Rio Tinto share of production ('000 tonnes)

	Q2 2019	vs Q2 2018	vs Q1 2019	H1 2019	vs H1 2018
Rio Tinto Aluminium					
Bauxite	**13,407**	+1%	+5%	**26,171**	+1%
Bauxite third party shipments	**9,477**	+8%	+7%	**18,318**	+8%
Alumina	**1,878**	-6%	-6%	**3,886**	-3%
Aluminium	**803**	0%	+1%	**1,599**	0%

Bauxite
Second quarter bauxite production of 13.4 million tonnes was 1% higher than the same period of 2018. Production at managed operations increased by 2%, with the ramp-up of Amrun progressing despite weather related impacts in the first quarter. This was partly offset by lower production from the non-managed Porto Trombetas (MRN) JV in Brazil. The expansion project at CBG, a non-managed JV in Guinea, experienced a slower than expected ramp-up, but is now delivering at target run-rates.

9.5 million tonnes of bauxite were shipped to third parties in the second quarter, 8% higher than the same period of 2018.

Alumina
Alumina production in the second quarter of 2019 was 6% lower than the same period in 2018 due primarily to major maintenance activities at non-managed QAL and the lower bauxite supply from MRN impacting production at Vaudreuil.

Aluminium
Aluminium production of 0.8 million tonnes in the second quarter was in line with the corresponding period of 2018. Excluding the non-managed Becancour operation, where a lock-out constrained operations, aluminium production in the first half was 1% higher than the corresponding period in 2018, reflecting continued productivity improvement.

On 2 July 2019, management and unions at the Becancour smelter agreed a new labour arrangement which will lead to restart of production at the end of July, with full ramp-up expected by mid-2020.

Average realised aluminium prices in the first half of 2019 were $2,174 per tonne (H1 2018: $2,547 per tonne). This includes premiums for value-added products (VAP), which represented 54% of primary metal sold in the first half of 2018 (H1 2018: 58%) and generated attractive product premiums averaging $242 per tonne of VAP sold (H1 2018: $222 per tonne) on top of the physical market premiums. The mid-west premium duty paid increased from $396 per tonne in the first half of 2018 to $420 per tonne in the first half of 2019. A 10% tariff on aluminium imports into the United States under Section 232, which was effective for Canadian imports, was paid until the tariffs were removed on 19 May 2019.

There was some respite from cost inflation in Aluminium compared with 2018 for certain raw materials, in particular for caustic soda and petroleum coke albeit with a lag effect due to the pricing mechanism. However, this was partly offset by inflationary pressures on other costs.

Kemano
At the Kemano hydro-power facility at Kitimat, British Columbia, the tunnel boring machine has achieved a total of 828 metres excavated as at 30 June 2019. Current progress is slightly behind schedule, but cost forecasts remain on budget.

2019 guidance
2019 guidance is unchanged. Rio Tinto's expected share of bauxite production in 2019 is between 56 and 59 million tonnes. Aluminium production guidance is between 3.2 and 3.4 million tonnes and alumina production guidance is 8.1 to 8.4 million tonnes.

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COPPER & DIAMONDS

Rio Tinto share of production ('000 tonnes)

	Q2 2019	vs Q2 2018	vs Q1 2019	H1 2019	vs H1 2018
Mined copper					
Rio Tinto Kennecott	**41.1**	-20%	-22%	**93.7**	+8%
Escondida	**82.9**	-10%	+9%	**158.9**	-13%
Oyu Tolgoi	**13.1**	-1%	-15%	**28.5**	+9%
Refined copper					
Rio Tinto Kennecott	**63.3**	+55%	+114%	**92.8**	+22%
Escondida	**19.0**	-9%	+2%	**37.7**	-10%
Diamonds ('000 carats)					
Argyle	**3,292**	-5%	+18%	**6,079**	-13%
Diavik	**1,188**	+3%	+18%	**2,198**	-1%

Rio Tinto Kennecott
Second quarter mined copper production was 20% lower than the same period of 2018. Lower grades experienced as mining activity moved into lower levels of the pit were partially offset by increased mined ore.

Refined copper production was 55% higher than the second quarter of 2018, reflecting strong smelter performance and improved mining rates. Production was significantly higher than the prior quarter, when the anode furnace was shut for planned maintenance.

Rio Tinto Kennecott continues to toll and purchase third party concentrate to optimise smelter utilisation, with 31.8 thousand tonnes of concentrate received for processing in the second quarter of 2019, compared with 31.3 thousand tonnes in the second quarter of 2018. Purchased and tolled copper concentrate are excluded from reported production figures.

Grades were higher in the second quarter for molybdenum, with concentrate production more than two and a half times higher than the same quarter in 2018.

Escondida
Mined copper production at Escondida in the second quarter of 2019 was 10% lower than the same period of 2018 mainly due to lower copper grades feeding the concentrators.

Oyu Tolgoi
Mined copper production from the open pit in the second quarter of 2019 was 1% lower than the same period in 2018 and 15% lower than the prior quarter as ore sources move to lower grade areas of the pit, as planned.

Oyu Tolgoi Underground Project
On 16 July 2019, Rio Tinto released a separate announcement providing an update on the Oyu Tolgoi underground project.

Provisional pricing
At 30 June 2019, the Group had an estimated 287 million pounds of copper sales that were provisionally priced at 275 cents per pound. The final price of these sales will be determined during the second half of 2019. This compares with 240 million pounds of open shipments at 31 December 2018, provisionally priced at 277 cents per pound.

Resolution Copper
On 15 April 2019, Rio Tinto announced it had committed $302 million ($166 million Rio Tinto share) of additional expenditure to advance its Resolution Copper project in Arizona. The investment will fund

additional drilling, ore-body studies, infrastructure improvements and permitting activities as Rio Tinto looks to progress the project to the final stage of the project's permitting phase.

Diamonds
At Argyle, carat production in the second quarter of 2019 was 5% lower than the same period in 2018 due to lower recovered grade, partially offset by stronger mining rates.

At Diavik, carats recovered in the second quarter were 3% higher than the second quarter of 2018 due to slightly higher grades and ore processing throughput.

2019 guidance
2019 guidance is unchanged. Rio Tinto's share of mined copper production for 2019 is expected to be between 550 and 600 thousand tonnes, subject to grade availability. Refined copper production is expected to be between 220 and 250 thousand tonnes.

Diamond production guidance for 2019 is between 15 and 17 million carats.

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ENERGY & MINERALS

Rio Tinto share of production

	Q2 2019	vs Q2 2018	vs Q1 2019	H1 2019	vs H1 2018
Iron ore pellets and concentrate (million tonnes)					
IOC	**2.5**	+191%	+2%	**5.0**	+55%
Minerals ('000 tonnes)					
Borates – B_2O_3 content	**138**	+4%	+20%	**253**	-1%
Titanium dioxide slag	**303**	+31%	+2%	**599**	+14%
Uranium ('000 lbs)					
Energy Resources of Australia	**620**	+3%	-22%	**1,413**	+11%
Rössing	**1,142**	+23%	+43%	**1,944**	+9%

Iron Ore Company of Canada (IOC)
Second quarter production available for sale at IOC was significantly higher than the corresponding period of 2018, which was impacted by a labour strike, and 2% higher than the prior quarter. Although 55% higher than the corresponding period of 2018, first half production was impacted by adverse weather in the first quarter and a flooding incident in June.

Borates
Second quarter borates production was 4% higher than the second quarter of 2018, and production will continue to be aligned to customer demand.

Iron and Titanium
Titanium dioxide feedstock production in the second quarter was 31% higher than the same period of 2018, reflecting improved operational performance following challenges faced in the corresponding period of 2018.

Eight of nine furnaces at Rio Tinto Fer et Titane (RTFT) are currently in operation, with three of four furnaces currently in operation at Richards Bay Minerals (RBM). Reconstruction of the currently idled fourth furnace at RBM commenced in July, with the furnace expected to be in operation by the end of 2019. A decision to re-start the remaining idled furnace at RTFT will be based on maximising value over volume.

On 8 April 2019, Rio Tinto announced the approval of the construction of the Zulti South project at RBM in South Africa for $463 million (Rio Tinto share $343 million). First production is scheduled for late-2021.

Uranium
Energy Resources of Australia continues to process existing stockpiles. Second quarter production was 3% higher than the same period of 2018, with higher grade and recoveries partly offset by lower plant throughput.

Second quarter production at Rössing Uranium was 23% higher than the same quarter of 2018, reflecting higher grades and recoveries.

On 26 November 2018, Rio Tinto announced it had entered into a binding agreement with China National Uranium Corporation for the sale of its entire 68.62% stake in Rössing Uranium. Approval has now been received from the Namibian Competition Commission and final completion occurred in July.

2019 guidance
At IOC, guidance for Rio Tinto's expected share of 2019 iron ore pellets and concentrate production is revised to between 10.7 and 11.3 million tonnes (previously 11.3 to 12.3 million tonnes), due to the adverse weather conditions in the first quarter and the flooding incident in June.

Titanium dioxide slag production guidance is unchanged between 1.2 and 1.4 million tonnes, and boric oxide equivalent production guidance remains at 0.5 million tonnes.

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EXPLORATION AND EVALUATION

Pre-tax and pre-divestment expenditure on exploration and evaluation charged to the profit and loss account in the first half of 2019 was $287 million, compared with $232 million in the first half of 2018, with increased spend on central exploration and at Resolution Copper. Approximately 51% of this expenditure was incurred by central exploration, 38% by Copper & Diamonds, 7% by Energy & Minerals and the remainder by Iron Ore and Aluminium.

There were no significant divestments of central exploration properties in the second quarter of 2019.

Exploration highlights

Rio Tinto has a strong portfolio of projects with activity in 18 countries across eight commodities. The bulk of the exploration expenditure in this quarter was focused on copper targets in Australia, Canada, Chile, Kazakhstan, Mongolia, Namibia, Papua New Guinea, Peru, Serbia, United States, Zambia and diamond projects in Canada. Mine-lease exploration continued at a number of Rio Tinto managed businesses including Pilbara Iron in Australia, Oyu Tolgoi in Mongolia, Weipa in Australia, Diavik in Canada, as well as Bingham, Resolution and Boron in the US.

At the Winu project in Western Australia, results continue to indicate relatively wide intersections of vein style copper mineralisation associated with gold and silver beneath relatively shallow cover which ranges from 50 to 100 metres. The mineralisation remains open at depth and to the east, north, and south. Reverse circulation (RC) and diamond drilling is continuing, with RC drilling primarily focused upon defining the extent and tenor of the supergene zone, and diamond drilling continuing to test the extents of the deposit. Drilling is ongoing with eight diamond rigs and three RC rigs drilling at Winu.

A summary of activity for the quarter is as follows:

Product Groups	Studies stage	Advanced exploration projects	Greenfield/ Brownfield programmes
Aluminium	Cape York, Australia	Amargosa, Brazil Sanxai, Laos	Cape York, Australia
Copper & Diamonds	Copper/molybdenum: Resolution, US	Copper: Winu, Australia, La Granja, Peru Nickel: Tamarack, US Diamonds: FalCon, Canada	Copper Greenfield: Australia, Chile, China, Kazakhstan, Mongolia, Namibia, Papua New Guinea, Peru, Serbia, US, Zambia Copper Brownfield: Bingham, Resolution, US Oyu Tolgoi, Mongolia Nickel Greenfield: Canada, Finland, Uganda Diamonds Greenfield: Canada Diamonds Brownfield: Diavik, Canada
Energy & Minerals	Lithium borates: Jadar, Serbia Potash: KP405, Canada Heavy mineral sands: Mutamba, Mozambique	Uranium: Roughrider, Canada	Heavy mineral sands: Tanzania Industrial Minerals: Serbia
Iron Ore	Pilbara, Australia	Pilbara, Australia	Pilbara, Australia

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Forward-looking statements

This announcement may include "forward-looking statements" within the meaning of the US 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 production forecast or guidance, financial position, business strategy, plans and objectives of management for future operations (including development plans and objectives relating to Rio Tinto's products and reserve and resource positions), are forward-looking statements. The words "intend", "aim", "project", "anticipate", "estimate", "plan", "believes", "expects", "may", "should", "will", "target", "set to", "assumes" or similar expressions, commonly identify such forward looking statements.

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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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Rio Tinto production summary

Rio Tinto share of production

		Quarter			Half Year		% Change		
		2018 Q2	2019 Q1	**2019 Q2**	**2018 H1**	**2019 H1**	Q2 19 vs Q2 18	Q2 19 vs Q1 19	H1 19 vs H1 18
Principal Commodities									
Alumina	('000 t)	1,999	2,008	**1,878**	3,988	**3,886**	-6%	-6%	-3%
Aluminium	('000 t)	805	796	**803**	1,600	**1,599**	0%	1%	0%
Bauxite	('000 t)	13,279	12,763	**13,407**	25,931	**26,171**	1%	5%	1%
Borates	('000 t)	132	115	**138**	256	**253**	4%	20%	-1%
Copper - mined	('000 t)	156.8	143.9	**137.1**	296.1	**281.0**	-13%	-5%	-5%
Copper - refined	('000 t)	61.7	48.3	**82.3**	117.9	**130.6**	33%	70%	11%
Diamonds	('000 cts)	4,626	3,796	**4,481**	9,241	**8,277**	-3%	18%	-10%
Iron Ore	('000 t)	72,336	66,581	**68,141**	143,773	**134,723**	-6%	2%	-6%
Titanium dioxide slag	('000 t)	232	296	**303**	525	**599**	31%	2%	14%
Uranium	('000 lbs)	1,531	1,595	**1,762**	3,046	**3,357**	15%	11%	10%
Other Metals & Minerals									
Gold - mined	('000 oz)	82.8	115.4	**111.6**	152.2	**227.0**	35%	-3%	49%
Gold - refined	('000 oz)	48.4	41.7	**52.9**	89.2	**94.6**	9%	27%	6%
Molybdenum	('000 t)	0.7	1.9	**2.6**	2.2	**4.4**	258%	37%	104%
Salt	('000 t)	1,662	1,310	**1,269**	3,176	**2,579**	-24%	-3%	-19%
Silver - mined	('000 oz)	1,448	1,481	**1,403**	2,686	**2,883**	-3%	-5%	7%
Silver - refined	('000 oz)	461	617	**734**	1,328	**1,351**	59%	19%	2%

Throughout this report, figures in italics indicate adjustments made since the figure was previously quoted on the equivalent page. 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.

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Rio Tinto share of production

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
ALUMINA								
Production ('000 tonnes)								
Jonquière (Vaudreuil)	100%	365	363	354	373	**336**	727	**709**
Jonquière (Vaudreuil) specialty Alumina plant	100%	32	31	29	25	**31**	64	**57**
Queensland Alumina	80%	752	748	742	711	**668**	1,469	**1,378**
São Luis (Alumar)	10%	87	85	92	86	**86**	174	**172**
Yarwun	100%	763	744	803	813	**757**	1,556	**1,570**
Rio Tinto total alumina production		1,999	1,972	2,020	2,008	**1,878**	3,988	**3,886**
ALUMINIUM								
Production ('000 tonnes)								
Australia - Bell Bay	100%	47	48	48	45	**47**	94	**92**
Australia - Boyne Island	59%	74	75	74	73	**75**	146	**147**
Australia - Tomago	52%	76	78	77	74	**76**	151	**150**
Canada - six wholly owned	100%	402	407	408	400	**400**	800	**800**
Canada - Alouette (Sept-Îles)	40%	58	59	58	58	**60**	116	**118**
Canada - Bécancour	25%	9	8	8	4	**4**	19	**8**
Iceland - ISAL (Reykjavik)	100%	53	53	54	52	**52**	105	**105**
New Zealand - Tiwai Point	79%	67	68	70	71	**69**	133	**140**
Oman - Sohar	20%	19	20	20	19	**19**	37	**39**
Rio Tinto total aluminium production		805	814	817	796	**803**	1,600	**1,599**
BAUXITE								
Production ('000 tonnes) (a)								
Gove	100%	3,274	2,893	3,250	3,004	**2,957**	6,398	**5,960**
Porto Trombetas	12%	393	342	489	285	**287**	745	**572**
Sangaredi	(b)	1,657	1,261	1,204	1,558	**1,630**	3,403	**3,189**
Weipa	100%	7,955	8,204	6,847	7,917	**8,533**	15,386	**16,450**
Rio Tinto total bauxite production		13,279	12,700	11,790	12,763	**13,407**	25,931	**26,171**

(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.

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Rio Tinto share of production

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
BORATES								
Production ('000 tonnes B_2O_3 content)								
Rio Tinto Borates - borates	100%	132	137	118	115	**138**	256	**253**
COPPER								
Mine production ('000 tonnes) (a)								
Bingham Canyon	100%	51.2	59.1	58.3	52.5	**41.1**	86.6	**93.7**
Escondida	30%	92.4	87.4	79.7	76.0	**82.9**	183.3	**158.9**
Oyu Tolgoi (b)	34%	13.2	13.2	13.9	15.4	**13.1**	26.2	**28.5**
Rio Tinto total mine production		156.8	159.7	151.9	143.9	**137.1**	296.1	**281.0**
Refined production ('000 tonnes)								
Escondida	30%	21.0	16.6	21.6	18.7	**19.0**	41.9	**37.7**
Rio Tinto Kennecott	100%	40.7	54.2	64.6	29.6	**63.3**	76.0	**92.8**
Rio Tinto total refined production		61.7	70.8	86.1	48.3	**82.3**	117.9	**130.6**

(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.

DIAMONDS								
Production ('000 carats)								
Argyle	100%	3,476	3,830	3,211	2,786	**3,292**	7,027	**6,079**
Diavik	60%	1,150	1,066	1,078	1,010	**1,188**	2,214	**2,198**
Rio Tinto total diamond production		4,626	4,896	4,290	3,796	**4,481**	9,241	**8,277**
GOLD								
Mine production ('000 ounces) (a)								
Bingham Canyon	100%	45.6	56.6	57.1	53.0	**65.1**	83.0	**118.0**
Escondida	30%	20.5	19.1	22.1	22.2	**22.4**	38.5	**44.6**
Oyu Tolgoi (b)	34%	16.8	25.8	39.1	40.2	**24.1**	30.8	**64.3**
Rio Tinto total mine production		82.8	101.4	118.4	115.4	**111.6**	152.2	**227.0**
Refined production ('000 ounces)								
Rio Tinto Kennecott	100%	48.4	50.3	58.6	41.7	**52.9**	89.2	**94.6**

(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.

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Rio Tinto share of production

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
IRON ORE								
Production ('000 tonnes) (a)								
Hamersley mines	(b)	56,034	54,583	56,364	51,218	**50,087**	109,665	**101,304**
Hamersley - Channar	60%	1,227	604	1,337	931	**1,451**	2,363	**2,382**
Hope Downs	50%	5,783	5,713	5,845	5,957	**6,051**	11,126	**12,007**
Iron Ore Company of Canada	59%	871	2,880	2,836	2,481	**2,532**	3,236	**5,012**
Robe River - Pannawonica (Mesas J and A)	53%	4,048	4,208	4,004	1,870	**3,329**	8,720	**5,200**
Robe River - West Angelas	53%	4,373	4,021	4,631	4,125	**4,692**	8,663	**8,817**
Rio Tinto iron ore production ('000 tonnes)		72,336	72,010	75,018	66,581	**68,141**	143,773	**134,723**
Breakdown of Production:								
Pilbara Blend Lump		21,901	20,554	21,674	19,978	**19,842**	42,615	**39,821**
Pilbara Blend Fines		31,239	29,921	31,652	28,779	**28,463**	61,009	**57,242**
Robe Valley Lump		1,431	1,470	1,409	635	**1,201**	3,017	**1,836**
Robe Valley Fines		2,617	2,738	2,595	1,235	**2,128**	5,703	**3,363**
Yandicoogina Fines (HIY)		14,277	14,446	14,852	13,473	**13,975**	28,193	**27,448**
Pilbara iron ore production ('000 tonnes)		71,465	69,129	72,182	64,101	**65,610**	140,537	**129,711**
IOC Concentrate		572	1,131	1,433	890	**1,193**	1,370	**2,083**
IOC Pellets		299	1,750	1,403	1,590	**1,339**	1,865	**2,929**
IOC iron ore production ('000 tonnes)		871	2,880	2,836	2,481	**2,532**	3,236	**5,012**
Breakdown of Sales:								
Pilbara Blend Lump		19,424	17,967	18,439	15,772	**18,644**	37,485	**34,416**
Pilbara Blend Fines		35,158	31,432	35,205	28,406	**33,912**	65,904	**62,318**
Robe Valley Lump		1,264	1,174	1,219	457	**1,037**	2,487	**1,494**
Robe Valley Fines		3,255	2,839	2,996	1,308	**2,577**	6,250	**3,885**
Yandicoogina Fines (HIY)		14,388	14,583	14,831	12,294	**15,212**	27,966	**27,505**
Pilbara iron ore sales ('000 tonnes) (c)		73,489	67,995	72,690	58,236	**71,382**	140,093	**129,618**
IOC Concentrate		62	1,521	1,558	516	**1,315**	808	**1,830**
IOC Pellets		202	1,659	1,516	1,576	**1,423**	1,776	**2,999**
IOC Iron ore sales ('000 tonnes)		263	3,180	3,073	2,092	**2,738**	2,584	**4,830**
Rio Tinto iron ore sales ('000 tonnes)		73,752	71,175	75,763	60,328	**74,119**	142,677	**134,448**

(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, 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) Pilbara Blend sales include 2.4 million tonnes of alternate products in Q2 2019 and 3.9 million tonnes in H1 2019

Rio Tinto share of production

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
MOLYBDENUM								
Mine production ('000 tonnes) (a)								
Bingham Canyon	100%	0.7	1.4	2.2	1.9	**2.6**	2.2	**4.4**

(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%	1,662	1,481	1,496	1,310	**1,269**	3,176	**2,579**

SILVER								
Mine production ('000 ounces) (a)								
Bingham Canyon	100%	615	708	736	741	**700**	1,076	**1,442**
Escondida	30%	758	599	771	657	**622**	1,460	**1,279**
Oyu Tolgoi (b)	34%	75	77	80	83	**80**	149	**163**
Rio Tinto total mine production		1,448	1,384	1,586	1,481	**1,403**	2,686	**2,883**
Refined production ('000 ounces)								
Rio Tinto Kennecott	100%	461	730	807	617	**734**	1,328	**1,351**

(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%	232	297	294	296	**303**	525	**599**

(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 U_3O_8) (a)								
Energy Resources of Australia	68%	603	820	924	793	**620**	1,270	**1,413**
Rössing (b)	69%	928	994	979	802	**1,142**	1,776	**1,944**
Rio Tinto total uranium production		1,531	1,814	1,904	1,595	**1,762**	3,046	**3,357**

(a) ERA and Rössing production reported are drummed U_3O_8.
(b) On 26 November 2018, Rio Tinto signed a binding agreement to sell its 68.62% interest in the Rossing mine in Namibia to China National Uranium Corporation Limited.

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 June 2019.

Rio Tinto's interest in the Kestrel, Hail Creek, Dunkerque and Grasberg operations were sold in 2018. No data for these operations are included in the Share of production table.

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Rio Tinto operational data

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
ALUMINA								
Smelter Grade Alumina - Aluminium Group								
Alumina production ('000 tonnes)								
Australia								
Queensland Alumina Refinery - Queensland	80.0%	940	935	927	888	**834**	1,836	**1,723**
Yarwun refinery - Queensland	100.0%	763	744	803	813	**757**	1,556	**1,570**
Brazil								
São Luis (Alumar) refinery	10.0%	869	851	918	859	**864**	1,740	**1,723**
Canada								
Jonquière (Vaudreuil) refinery - Quebec (a)	100.0%	365	363	354	373	**336**	727	**709**

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

Specialty Alumina - Aluminium Group								
Specialty alumina production ('000 tonnes)								
Canada								
Jonquière (Vaudreuil) plant – Quebec	100.0%	32	31	29	25	**31**	64	**57**

Rio Tinto percentage interest shown above is at 30 June 2019. The data represent full production and sales on a 100% basis unless otherwise stated.

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Rio Tinto operational data

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
ALUMINIUM								
Primary Aluminium								
Primary aluminium production ('000 tonnes)								
Australia								
Bell Bay smelter - Tasmania	100.0%	47	48	48	45	**47**	94	**92**
Boyne Island smelter - Queensland	59.4%	124	126	125	122	**126**	246	**248**
Tomago smelter - New South Wales	51.6%	148	151	149	144	**147**	293	**292**
Canada								
Alma smelter - Quebec	100.0%	116	117	118	115	**118**	231	**233**
Alouette (Sept-Îles) smelter - Quebec	40.0%	146	148	146	144	**150**	290	**294**
Arvida smelter - Quebec	100.0%	43	43	44	43	**44**	86	**86**
Arvida AP60 smelter - Quebec	100.0%	13	13	13	14	**15**	26	**29**
Bécancour smelter - Quebec	25.1%	35	32	30	17	**16**	74	**33**
Grande-Baie smelter - Quebec	100.0%	58	59	59	58	**58**	115	**116**
Kitimat smelter - British Columbia	100.0%	109	110	109	106	**102**	217	**208**
Laterrière smelter - Quebec	100.0%	64	65	65	64	**64**	127	**128**
France								
Dunkerque smelter (a)	0%	52	66	57	-	**-**	104	**-**
Iceland								
ISAL (Reykjavik) smelter	100.0%	53	53	54	52	**52**	105	**105**
New Zealand								
Tiwai Point smelter	79.4%	84	85	88	89	**87**	167	**176**
Oman								
Sohar smelter	20.0%	97	98	99	97	**97**	183	**194**

(a) On 14 December 2018, Rio Tinto completed the sale of its 100% interest in the Dunkerque smelter. Production is reported up to the date of completion.

Rio Tinto percentage interest shown above is at 30 June 2019. The data represent full production and sales on a 100% basis unless otherwise stated.

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Rio Tinto operational data

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
BAUXITE								
Bauxite production ('000 tonnes)								
Australia								
Gove mine - Northern Territory	100.0%	3,274	2,893	3,250	3,004	**2,957**	6,398	**5,960**
Weipa mine - Queensland	100.0%	7,955	8,204	6,847	7,917	**8,533**	15,386	**16,450**
Brazil								
Porto Trombetas (MRN) mine	12.0%	3,273	2,848	4,073	2,372	**2,393**	6,212	**4,765**
Guinea								
Sangaredi mine (a)	23.0%	3,683	2,803	2,675	3,463	**3,623**	7,561	**7,087**
Rio Tinto share of bauxite shipments								
Share of total bauxite shipments ('000 tonnes)		12,936	12,427	11,622	12,725	**13,122**	25,487	**25,847**
Share of third party bauxite shipments ('000 tonnes)		8,738	8,441	7,387	8,842	**9,477**	16,986	**18,318**

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

Rio Tinto percentage interest shown above is at 30 June 2019. The data represent full production and sales on a 100% basis unless otherwise stated.

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Rio Tinto operational data

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
BORATES								
Rio Tinto Borates - borates	100.0%							
US								
Borates ('000 tonnes) (a)		132	137	118	115	**138**	256	**253**
(a) Production is expressed as B_2O_3 content.								
COAL								
Rio Tinto Coal Australia								
Hail Creek Coal mine (a)	0.0%							
Queensland								
Hard coking coal ('000 tonnes)		1,380	396	-	-	-	2,304	-
Thermal coal ('000 tonnes)		1,018	449	-	-	-	2,311	-
Kestrel Coal mine (b)	0.0%							
Queensland								
Hard coking coal ('000 tonnes)		1,303	484	-	-	-	1,733	-
Thermal coal ('000 tonnes)		220	35	-	-	-	293	-
Total hard coking coal production ('000 tonnes)		2,683	880	-	-	-	4,037	-
Total thermal coal production ('000 tonnes)		1,238	485	-	-	-	2,605	-
Total coal production ('000 tonnes)		3,921	1,365	-	-	-	6,642	-
Total coal sales ('000 tonnes)		3,717	1,725	-	-	-	6,767	-
Rio Tinto Coal Australia share (c)								
Share of hard coking coal sales ('000 tonnes)		2,228	650	-	-	-	3,596	-
Share of thermal coal sales ('000 tonnes) (d)		791	754	-	-	-	1,910	-

(a) On 1 August 2018, Rio Tinto completed the sale of its 82% interest in the Hail Creek mine. Production is reported up to the date of completion.
(b) On 1 August 2018, Rio Tinto completed the sale of its 80% interest in the Kestrel mine. Production is reported up to the date of completion.
(c) Kestrel and Hail Creek produce hard coking coal and thermal coal through their mining operations. Both mines may blend coal types at ports.
(d) Sales relate only to coal mined by the operations and exclude traded coal.

Rio Tinto percentage interest shown above is at 30 June 2019. The data represent full production and sales on a 100% basis unless otherwise stated.

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Rio Tinto operational data

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
COPPER & GOLD								
Escondida	30.0%							
Chile								
Sulphide ore to concentrator ('000 tonnes)		31,732	30,513	30,507	32,027	**32,519**	63,936	**64,546**
Average copper grade (%)		0.96	0.94	0.87	0.82	**0.86**	0.96	**0.84**
Mill production (metals in concentrates):								
Contained copper ('000 tonnes)		253.6	241.9	219.9	216.9	**231.7**	506.2	**448.6**
Contained gold ('000 ounces)		68	64	74	74	**75**	128	**149**
Contained silver ('000 ounces)		2,527	1,997	2,570	2,189	**2,074**	4,866	**4,263**
Recoverable copper in ore stacked for leaching ('000 tonnes) (a)		54.4	49.4	45.7	36.5	**44.5**	104.8	**81.0**
Refined production from leach plants:								
Copper cathode production ('000 tonnes)		70.1	55.4	71.9	62.4	**63.5**	139.5	**125.8**

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

Freeport-McMoRan								
Grasberg mine (a)	0.0% (b)							
Papua, Indonesia								
Ore treated ('000 tonnes)		17,101	17,535	14,049	-	-	32,725	-
Average mill head grades:								
Copper (%)		1.06	1.00	0.73	-	-	1.09	-
Gold (g/t)		1.77	1.77	1.08	-	-	1.71	-
Silver (g/t)		5.09	4.49	2.09	-	-	4.89	-
Production of metals in concentrates:								
Copper in concentrates ('000 tonnes)		165.7	158.7	85.4	-	-	325.6	-
Gold in concentrates ('000 ounces)		842	842	402	-	-	1,535	-
Silver in concentrates ('000 ounces)		1,548	1,439	545	-	-	3,061	-
Sales of payable metals in concentrates: (c)								
Copper in concentrates ('000 tonnes)		145.3	170.6	82.7	-	-	302.7	-
Gold in concentrates ('000 ounces)		740	903	399	-	-	1,417	-
Silver in concentrates ('000 ounces)		1,098	1,221	426	-	-	2,282	-

(a) Through a joint venture agreement with Freeport-McMoRan (FCX), Rio Tinto is entitled to 40% of additional material mined as a consequence of expansions and developments of the Grasberg facilities since 1998. The Q4 2018 results show the forecast from FCX's most recent five-year plan. On 21 December 2018, Rio Tinto completed the sale of its entire interest in the Grasberg mine in Indonesia to PT Indonesia Asahan Aluminium (Persero) (Inalum). Production is reported up to the date of completion.
(b) Rio Tinto share of Grasberg production is 40% of the expansion.
(c) Net of smelter deduction

Rio Tinto percentage interest shown above is at 30 June 2019. The data represent full production and sales on a 100% basis unless otherwise stated.

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Rio Tinto operational data

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
COPPER & GOLD (continued)								
Rio Tinto Kennecott								
Bingham Canyon mine	100.0%							
Utah, US								
Ore treated ('000 tonnes)		8,974	11,173	10,853	10,685	**10,123**	18,234	**20,808**
Average ore grade:								
Copper (%)		0.63	0.58	0.59	0.55	**0.46**	0.53	**0.50**
Gold (g/t)		0.26	0.26	0.26	0.25	**0.33**	0.25	**0.29**
Silver (g/t)		2.73	2.62	2.76	2.76	**2.84**	2.49	**2.80**
Molybdenum (%)		0.025	0.030	0.032	0.032	**0.039**	0.025	**0.035**
Copper concentrates produced ('000 tonnes)		194	233	222	207	**161**	365	**368**
Average concentrate grade (% Cu)		26.4	25.3	26.0	25.3	**25.5**	23.7	**25.4**
Production of metals in copper concentrates:								
Copper ('000 tonnes) (a)		51.2	59.1	58.3	52.5	**41.1**	86.6	**93.7**
Gold ('000 ounces)		46	57	57	53	**65**	83	**118**
Silver ('000 ounces)		615	708	736	741	**700**	1,076	**1,442**
Molybdenum concentrates produced ('000 tonnes):		1.5	2.8	4.5	3.8	**5.0**	4.3	**8.7**
Molybdenum in concentrates ('000 tonnes)		0.7	1.4	2.2	1.9	**2.6**	2.2	**4.4**
Kennecott smelter & refinery	100.0%							
Copper concentrates smelted ('000 tonnes)		224	246	262	204	**207**	425	**411**
Copper anodes produced ('000 tonnes) (b)		44.4	58.1	62.4	33.3	**60.3**	86.9	**93.6**
Production of refined metal:								
Copper ('000 tonnes)		40.7	54.2	64.6	29.6	**63.3**	76.0	**92.8**
Gold ('000 ounces) (c)		48.4	50.3	58.6	41.7	**52.9**	89.2	**94.6**
Silver ('000 ounces) (c)		461	730	807	617	**734**	1,328	**1,351**

(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 June 2019. The data represent full production and sales on a 100% basis unless otherwise stated.

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Rio Tinto operational data

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
COPPER & GOLD (continued)								
Turquoise Hill Resources								
Oyu Tolgoi mine (a)	33.5%							
Mongolia								
Ore Treated ('000 tonnes)		10,164	9,652	9,361	9,255	**10,394**	19,725	**19,649**
Average mill head grades:								
Copper (%)		0.48	0.51	0.55	0.57	**0.46**	0.50	**0.51**
Gold (g/t)		0.26	0.38	0.56	0.58	**0.31**	0.25	**0.44**
Silver (g/t)		1.17	1.19	1.22	1.25	**1.20**	1.24	**1.23**
Copper concentrates produced ('000 tonnes)		178.8	179.8	189.0	210.1	**180.6**	356.1	**390.7**
Average concentrate grade (% Cu)		22.0	21.9	21.9	21.8	**21.7**	22.0	**21.8**
Production of metals in concentrates:								
Copper in concentrates ('000 tonnes)		39.4	39.4	41.5	45.8	**39.2**	78.2	**85.0**
Gold in concentrates ('000 ounces)		50.0	77.0	116.7	120.1	**71.8**	91.7	**191.9**
Silver in concentrates ('000 ounces)		225	230	238	247	**239**	446	**486**
Sales of metals in concentrates:								
Copper in concentrates ('000 tonnes)		46.1	36.0	40.2	38.5	**46.6**	80.4	**85.1**
Gold in concentrates ('000 ounces)		51	55	111	98	**116**	82	**213**
Silver in concentrates ('000 ounces)		250	201	216	200	**245**	456	**445**

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

DIAMONDS								
Argyle Diamonds	100.0%							
Western Australia								
AK1 ore processed ('000 tonnes)		1,428	1,465	1,292	1,248	**1,427**	2,688	**2,674**
AK1 diamonds produced ('000 carats)		3,476	3,830	3,211	2,786	**3,292**	7,027	**6,079**
Diavik Diamonds	60.0%							
Northwest Territories, Canada								
Ore processed ('000 tonnes)		652	670	651	620	**671**	1,208	**1,291**
Diamonds recovered ('000 carats)		1,916	1,776	1,797	1,683	**1,980**	3,690	**3,663**

Rio Tinto percentage interest shown above is at 30 June 2019. The data represent full production and sales on a 100% basis unless otherwise stated.

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Rio Tinto operational data

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
IRON ORE								
Rio Tinto Iron Ore								
Western Australia								
Pilbara Operations								
Saleable iron ore production ('000 tonnes)								
Hamersley mines	(a)	56,034	54,583	56,364	51,218	**50,087**	109,665	**101,304**
Hamersley - Channar	60.0%	2,045	1,007	2,228	1,552	**2,419**	3,939	**3,971**
Hope Downs	50.0%	11,567	11,426	11,691	11,913	**12,101**	22,252	**24,015**
Robe River - Pannawonica (Mesas J and A)	53.0%	7,637	7,940	7,555	3,529	**6,282**	16,453	**9,811**
Robe River - West Angelas	53.0%	8,252	7,587	8,738	7,783	**8,853**	16,346	**16,635**
Total production ('000 tonnes)		85,534	82,542	86,576	75,995	**79,741**	168,654	**155,736**
Breakdown of total production:								
Pilbara Blend Lump		26,253	24,461	26,084	24,068	**24,291**	51,084	**48,359**
Pilbara Blend Fines		37,368	35,696	38,085	34,924	**35,194**	72,924	**70,118**
Robe Valley Lump		2,699	2,774	2,659	1,198	**2,266**	5,693	**3,465**
Robe Valley Fines		4,937	5,166	4,896	2,331	**4,015**	10,760	**6,346**
Yandicoogina Fines (HIY)		14,277	14,446	14,852	13,473	**13,975**	28,193	**27,448**
Breakdown of total sales:								
Pilbara Blend Lump		22,954	21,644	22,161	18,968	**22,287**	44,410	**41,255**
Pilbara Blend Fines		42,638	38,100	42,497	34,558	**41,105**	79,957	**75,663**
Robe Valley Lump		2,386	2,215	2,301	863	**1,957**	4,693	**2,820**
Robe Valley Fines		6,141	5,356	5,652	2,468	**4,862**	11,793	**7,330**
Yandicoogina Fines (HIY)		14,388	14,583	14,831	12,294	**15,212**	27,966	**27,505**
Total sales ('000 tonnes) (b) (c)		88,506	81,898	87,442	69,150	**85,423**	168,820	**154,573**

(a) Includes 100% of production from Paraburdoo, Mt Tom Price, 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) Pilbara Blend sales include 2.4 million tonnes of alternate products in Q2 2019 and 3.9 million tonnes in H1 2019
(c) Sales represent iron ore exported from Western Australian ports.

Iron Ore Company of Canada	58.7%							
Newfoundland & Labrador and Quebec in Canada								
Saleable iron ore production:								
Concentrates ('000 tonnes)		974	1,926	2,441	1,516	**2,031**	2,334	**3,547**
Pellets ('000 tonnes)		510	2,979	2,389	2,709	**2,280**	3,177	**4,989**
IOC Total production ('000 tonnes)		1,484	4,905	4,830	4,225	**4,311**	5,510	**8,536**
Sales:								
Concentrates ('000 tonnes)		105	2,590	2,653	878	**2,239**	1,376	**3,117**
Pellets ('000 tonnes)		343	2,825	2,581	2,684	**2,424**	3,024	**5,108**
IOC Total Sales ('000 tonnes)		449	5,415	5,234	3,562	**4,663**	4,400	**8,225**
Global Iron Ore Totals								
Iron Ore Production ('000 tonnes)		87,018	87,448	91,406	80,219	**84,052**	174,164	**164,272**
Iron Ore Sales ('000 tonnes)		88,954	87,314	92,676	72,712	**90,085**	173,220	**162,798**

Rio Tinto percentage interest shown above is at 30 June 2019. The data represent full production and sales on a 100% basis unless otherwise stated.

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Rio Tinto operational data

	Rio Tinto interest	Q2 2018	Q3 2018	Q4 2018	Q1 2019	**Q2 2019**	H1 2018	**H1 2019**
SALT								
Dampier Salt	68.4%							
Western Australia								
Salt production ('000 tonnes)		2,431	2,167	2,188	1,917	**1,856**	4,646	**3,773**
TITANIUM DIOXIDE SLAG								
Rio Tinto Iron & Titanium	100.0%							
Canada and South Africa								
(Rio Tinto share) (a)								
Titanium dioxide slag ('000 tonnes)		232	297	294	296	**303**	525	**599**

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

URANIUM								
Energy Resources of Australia Ltd								
Ranger mine (a)	68.4%							
Northern Territory, Australia								
U_3O_8 Production ('000 lbs)		881	1,199	1,351	1,160	**906**	1,856	**2,066**
(a) ERA production data are drummed U_3O_8.								
Rössing Uranium Ltd (a) (b)	68.6%							
Namibia								
U_3O_8 Production ('000 lbs)		1,352	1,449	1,427	1,168	**1,665**	2,589	**2,833**

(a) Rössing production data are drummed U_3O_8.
(b) On 26 November 2018, Rio Tinto signed a binding agreement to sell its 68.62% interest in the Rossing mine in Namibia to China National Uranium Corporation Limited.

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