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Cautionary statements

Mineral resources, reserves and production targets

Overview

Safety

Sustainable development

A world leader in mining

Where we operate

More than 85% of assets in OECD

Revenue by destination and commodity

Strategy will deliver value through the cycle

Disciplined capital allocation

Tailings storage facilities

Three levels of assurance

H1 2019 highlights

A strong first half

Strong financial results

Commodity price drivers in H1 19

Strong EBITDA driven by price

Productivity programme

Capital expenditure

Strong balance sheet

Delivering superior returns

Growth pipeline

Strong base for future profitability and growth

2019 production guidance

Other guidance

Market outlook

Stable Chinese indicators

Robust iron ore and steel fundamentals

China supply-side reform and tightening environmental policy have driven structural change

China's supply-side reforms are here to stay and will continue to be driven by tightening environmental policy

Longer term fundamentals remain positive for aluminium and copper

Impact of China policy changes on aluminium capacity

Iron Ore

Iron ore H1 19 highlights

Iron ore EBITDA bridge

Improving Iron Ore system performance

Value over volume strategy

World-class assets, fully integrated and agile network

Highly valued product suite, sustained by significant resources

Delivering quality through system blending

Pilbara blend is the world’s most recognised brand of iron ore

Yandicoogina, Robe Valley products are placed with customers who value them most

Productivity options

Further opportunity exists to optimise mines

Optimising rail capacity and improving flexibility

AutoHaul® completed in 2018

Aluminium

Aluminium H1 19 highlights

Aluminium EBITDA bridge

Strategy for outperformance through the cycle

We will maintain our low-cost position

Unrivalled assets in the Saguenay, Quebec

Productivity options

Smelters creeping at 1% per annum, double industry average

Enhancing margins through VAP

Amrun ramping up in 2019

Modelling Aluminium EBITDA

Modelling Aluminium costs, including legacy contracts

Copper & Diamonds

C&D H1 19 highlights

C&D EBITDA bridge

Sector-leading attributes

Strategy to deliver further value

Productivity options

Kennecott – a stronger contributor to cash

Oyu Tolgoi – the leading Tier 1 copper project

Critical infrastructure at OT

Schedule and cost ranges at OT

Schedule and cost ranges at OT

Non-managed 30% interest in Escondida

Future optionality for the Copper business

Delivering medium-term growth and progressing long-term options

Developing our people and our partnerships

Energy & Minerals

E&M H1 19 highlights

E&M EBITDA bridge
Maximising value from the Energy and Minerals portfolio

A lean, scalable operating model running cash-focused businesses

Borates

Iron Ore Company of Canada

Iron & Titanium

Maximising ore value through product portfolio

**Growth & Innovation**

G&I enabling value generation across asset lifecycle

Our focus builds on leadership in data, technology and automation

Delivering additional free cash flow each year from 2021

Number of discoveries by quality

Winu

Extensive and successful exploration programme

**Corporate Information**

Shareholder returns policy and capital commitment

Credit rating

Debt maturity profile

Modelling EBITDA

Accounting treatment of principal operations

Accounting treatment of principal operations

Principal corporate activity 2010 - 2012

Principal corporate activity 2013 to 2017

Principal corporate activity 2018 to 2019

Ongoing major capital projects

Ongoing major capital projects

Geographical analysis of shareholders

Executive Committee

Rio Tinto Board

Rio Tinto Board
Cautionary statements

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For example, future ore reserves will be based in part on market prices that may vary significantly from current levels. These may materially affect the timing and feasibility of particular developments. Other factors include the ability to produce and transport products profitably, demand for our products, changes to the assumptions regarding the recoverable value of our tangible and intangible assets, the effect of foreign currency exchange rates on market prices and operating costs, and activities by governmental authorities, such as changes in taxation or regulation, and political uncertainty.
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Mineral Resources and Ore Reserves

The Mineral Resource estimate for Resolution which appears on slide 72 was reported in Rio Tinto’s 2018 Annual Report released to the market on 27 February 2019. This resource estimate is reported on a 100% basis. The Competent Person responsible for that previous reporting was C Hehnke (AusIMM).

The Reserve grade for Oyu Tolgoi Underground – Hugo Dummett North and Hugo Dummett North Extension, which appears on slide 67 was reported in the 2018 Rio Tinto Annual Report on 27 February 2019. The Competent Person responsible for that previous reporting was J Dudley (AusIMM).

The Mineral Resource and Ore Reserve estimates which appear on slide 40 are reported on a 100% basis. Mineral Resources are reported as additional to Ore Reserves. These Mineral Resource and Ore Reserve estimates, together with the ownership percentages for each joint venture were set out in the Mineral Resource and Ore Reserve statements in the 2013 to 2018 Rio Tinto annual reports to shareholders released to the market on 14 March 2014, 6 March 2015, 3 March 2016, 2 March 2017, 2 March 2018, and 27 February 2019 respectively. The Competent Persons responsible for reporting of those Mineral Resources and Ore Reserves were B Sommerville (Resources 2013-2018), P Savory (Resources 2013-2018) and A Bertram (2017-2018), L Fouche (Reserves 2013-2014), A Do (Reserves 2015), C Tabb (Reserve 2013 - 2017) and R Verma (Reserves 2017-2018).

Rio Tinto is not aware of any new information or data that materially affects the above Mineral Resource and Ore Reserve estimates as reported in the 2018 Annual Report. All material assumptions on which the estimates in the 2018 Annual Report were based continue to apply and have not materially changed. The form and context in which those findings are presented have not been materially modified. Mineral Resources are reported exclusive of Ore Reserves. Ore Reserves are reported as product tonnes. Mineral Resources are reported on an in situ basis.
Overview
Safety is our highest priority

Safety Performance

Health and Safety

Improved AIFR of 0.41 in H1 2019

Rollout of new safety maturity model while reinforcing strong focus on CRM* with 710,000 verifications in H1 2019

Continued focus on mental health and wellbeing through the application of a standardised framework across the Group

Major hazard risk management work assessed tailings & water storage risks – released publicly in June 2019

Reduction in process safety incidents from 2018

* Critical Risk Management
Sustainable development in action

Running a safe, responsible and profitable business

0.41
AIFR in H1 2019

Collaborating to enable long term economic benefits

Taxes paid report released

‘Contracts with governments’ disclosure

Pioneering materials for human progress

4
Additional aluminium assets undergoing ASI certification

Zero
Coal production in H1 2019

$0.3bn
Additional investment in Resolution Copper in Arizona

New water and climate targets underway

65% ↓
Reduction in carbon footprint at Kennecott through closing coal plant and renewable energy certificates

134
Data released for 134 tailings facilities

2nd
Corporate Human Rights benchmark

1st
Collaboration on Australia’s first automation qualifications

Elysis
New R&D facility to develop carbon free aluminium
Rio Tinto – a world leader in mining

Aluminium
- Industry-leading bauxite position
- Alumina refineries provide competitive security of supply for our smelters
- Sector-leading primary aluminium metal EBITDA margins, driven by low-carbon, low-cost power

Copper & Diamonds
- Significant producer of copper from our assets in the USA, Mongolia and Chile
- Diverse diamonds business
- Maximises our technical underground mining expertise

Energy & Minerals
- Leading supplier of titanium dioxide feedstocks, zircon and borates
- Supplier of uranium
- Iron Ore Company of Canada produces concentrates and pellets

Iron Ore
- World-class Pilbara operations in Western Australia
- Supplies our premium Pilbara Blend lump and fines products
- Industry-leading margins supported by automation, innovation and technology
More than 85% of non-current assets in OECD

2018 non current assets (other than excluded items* and non controlling interest) by region

Australia/NZ 50%
Canada 23%
US 8%
South America 5%
Africa 6%
Mongolia 6%
Other 2%

2018 total assets = $56 billion

* Non current assets excluded from the analysis were: Deferred tax assets, Other financial assets (including loans to equity accounted units), Quasi equity loans to equity accounted units, tax recoverable and trade and other receivables.
Strength in diversity

Revenue – by destination

- China: 50%
- North America: 18%
- Japan: 11%
- Other Asia: 10%
- Europe: 8%
- Other: 4%

Revenue – by commodity

- Iron ore: 59%
- Aluminium: 24%
- Gold: 7%
- Minerals: 5%
- Other: 4%
- Diamonds: 1%

Consolidated sales revenue in H1 2019 was **US$20.7 billion**
Strategy will deliver value through the cycle

**Superior cash generation**

- World-class assets
  - Portfolio
- Operating and Commercial excellence
  - Performance
- Capabilities
  - People & Partners

**Disciplined capital allocation**

- Balance sheet strength
- Superior shareholder returns
- Compelling growth

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Disciplined capital allocation

1 Essential sustaining capex

2 Ordinary dividends

3 Iterative cycle of

Further cash returns to shareholders
Compelling growth
Debt management
Tailings storage facilities

With active or inactive tailings storage facilities, including 3 non-managed operational sites and 4 legacy sites,

Active or inactive, with an additional 36 facilities closed or under rehabilitation

**32 operations**

**100 facilities**

**Construction type:**

<table>
<thead>
<tr>
<th>Upstream</th>
<th>Centreline</th>
<th>Downstream</th>
<th>Other*</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 facilities</td>
<td>14 facilities</td>
<td>24 facilities</td>
<td>41 facilities</td>
</tr>
<tr>
<td>19 active</td>
<td>10 active</td>
<td>16 active</td>
<td>36 active</td>
</tr>
<tr>
<td>2 inactive</td>
<td>4 inactive</td>
<td>8 inactive</td>
<td>5 inactive</td>
</tr>
<tr>
<td>17 closed</td>
<td>3 closed</td>
<td>5 closed</td>
<td>11 closed</td>
</tr>
</tbody>
</table>

*Other includes Single embankment, No embankment – excavated storage facility, No embankment – dry stack, Lake discharge.
Active includes tailings storage facilities under construction.

www.riotinto.com/tailings

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Three levels of assurance for managing tailings and water storage

1st level

- **Group Standard and Procedure (D5 – Tailings & Water Storage)**
  - Site processes
    - Effective design, inspection and monitoring

2nd level

- **Surface Mining Centre of Excellence**
  - Technical risk reviews

3rd level

- **Audit**
  - Audit of control effectiveness
    - Group Internal Audit working with external auditors
      Assures systems for risk management, internal control and governance are effective
  - Group review
    - Assurance to the Rio Tinto Standard
      Business conformance audits and HSEC reviews
      Review by subject matter experts external to the asset
  - Operations management
    - Effective facility design (Engineer of Record / Design Engineer)
      Comprehensive operational controls
      Independent external review undertaken at least every two years

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H1 2019 highlights
## A strong first half
Delivering superior cash flows and cash returns

### Financial performance

| $10.3bn | Underlying EBITDA |
| $4.7bn | Free cash flow* |

### Balance sheet

| $4.9bn | Net debt at June 30 |
| $4.7bn | Underlying EBITDA margin |
| $2.5bn | Interim dividend |
| $1.0bn | Special dividend |
| $1.2bn | Development capital investment |

### Value creation

| 23% | Return on capital employed*** |

---

* Excludes capital gains tax paid on divestments of $0.9 billion  
** Pro forma net debt of $5.6 billion includes remaining share buy-back to be paid by Feb-2020  
*** Return on Capital Employed (ROCE) is defined as annualised underlying earnings excluding net interest divided by average capital employed (operating assets before net debt)
## Strong financial results

<table>
<thead>
<tr>
<th>($bn)</th>
<th>H1 2019</th>
<th>H1 2018</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross revenue</td>
<td>21.8</td>
<td>21.2</td>
<td>+ 3%</td>
</tr>
<tr>
<td>Underlying EBITDA</td>
<td>10.3</td>
<td>9.2</td>
<td>+ 11%</td>
</tr>
<tr>
<td>Cash flow from operations*</td>
<td>7.2</td>
<td>5.2</td>
<td>+ 39%</td>
</tr>
<tr>
<td>Free cash flow*</td>
<td>4.7</td>
<td>2.9</td>
<td>+ 64%</td>
</tr>
<tr>
<td>Underlying earnings</td>
<td>4.9</td>
<td>4.4</td>
<td>+ 12%</td>
</tr>
<tr>
<td>Net earnings</td>
<td>4.1</td>
<td>4.4</td>
<td>- 6%</td>
</tr>
<tr>
<td>Dividends and share buy-backs announced</td>
<td>3.5</td>
<td>3.2</td>
<td>+ 9%</td>
</tr>
<tr>
<td>Pro-forma net debt</td>
<td>5.6</td>
<td>9.3</td>
<td>- 40%</td>
</tr>
</tbody>
</table>

* Excludes capital gains tax paid on divestments of $0.9 billion
Strong iron ore prices partly offset by challenging aluminium and copper market conditions

**Iron Ore** (36% increase YoY)

- $/t
- Jan 18, Apr 18, Jul 18, Oct 18, Jan 19, Apr 19, Jul 19
- 62% price
- HY average

**Aluminium** (17% decrease YoY)

- $/t
- Jan 18, Apr 18, Jul 18, Oct 18, Jan 19, Apr 19, Jul 19
- Price
- HY average
- MW Premium (RHS)

**Copper** (11% decrease YoY)

- $/c/lb
- Jan 18, Apr 18, Jul 18, Oct 18, Jan 19, Apr 19, Jul 19
- Price
- HY average

Global steel production growth of 4.4% in H1 2019 (YoY)

Disrupted seaborne supply throughout H1 2019 (down ~6%)

Iron ore stocks at port reduced by ~20% in H1 2019

Global demand growth dipped to ~1% in H1 2019 (YoY)

Increased supply from lifting of sanctions

Significant proportion of producers currently unprofitable

Macro headwinds and trade concerns impacting sentiment

Underlying demand unchanged compared to H1 2018

Supply disruptions of ~3% in H1 2019

* Dry metric tonne, FOB basis | ** Average LME price
Sources: Rio Tinto, Mysteel, World Steel Association, Bloomberg, Baltic Exchange
### Underlying EBITDA

<table>
<thead>
<tr>
<th></th>
<th>$ billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 2018 underlying EBITDA</td>
<td>8.6</td>
</tr>
<tr>
<td>Price</td>
<td>1.9</td>
</tr>
<tr>
<td>Exchange rates</td>
<td>0.4</td>
</tr>
<tr>
<td>CPI &amp; energy</td>
<td>(0.2)</td>
</tr>
<tr>
<td>Flexed H1 2018 underlying EBITDA</td>
<td>10.7</td>
</tr>
<tr>
<td>Incremental volume margin</td>
<td>(0.2)</td>
</tr>
<tr>
<td>Unit cash costs</td>
<td>(0.5)</td>
</tr>
<tr>
<td>One-offs and other</td>
<td>0.3</td>
</tr>
<tr>
<td>H1 2019 underlying EBITDA</td>
<td>10.3</td>
</tr>
</tbody>
</table>

**Strong EBITDA driven by price**

Other costs include movements in Central costs and Exploration & Evaluation costs. All variances exclude coal.

Total impact from iron ore weather disruptions of $0.6 billion.
Productivity programme challenged by Iron Ore disruptions

Post-tax mine-to-market (M2M) productivity programme
$ billion (free cash flow)

M2M free cash flow target of $1-1.5 billion run-rate from 2021, dependent on:
– Increase in Iron Ore volume (subject to market conditions)
– Raw material prices in Aluminium reverting to levels at the beginning of the programme

* Based on consensus prices and exchange rates
Disciplined investment of capital

Capital expenditure profile
$ billion

- H1 2019 capex of $2.4 billion
  - Sustaining capex of $1.2 billion
  - Development capex of $1.2 billion

Pilbara replacement capital includes Koodaideri and Robe River

Development capital delivers 2% CAGR (2019 – 2023)

Potential for timing of spend to be pushed from 2019 to 2020
A strong balance sheet

Increase in reported net debt reflects operating cash flows of $7.2 billion, net of:

- Payment of dividends of $6.8 billion
- Share buy-back of $1.0 billion
- Capex of $2.4 billion
- Tax on divestments of $0.9 billion
- IFRS 16 (change to lease accounting) impact of $1.2 billion

Committed cash outflows for H2 2019 include:

- $0.7 billion in buy-backs by February 2020 previously announced in November 2018

* Excludes capital gains tax paid on divestments of $0.9 billion
** Pro forma net debt adjusts for the remainder of previously announced buy-backs from operations, lags in shareholder returns from disposal proceeds, Australian tax lag and disposal-related tax lag, and the impact of IFRS lease accounting change for the prior periods. The lease accounting change is reflected in the June 2019 reported net debt.
Delivering superior returns

2019 cash returns paid to shareholders*
$ billion

Interim 2019 returns to shareholders of $3.5 billion announced
- Interim dividend of $2.5 billion or 151 US cents per share to be paid in September 2019
- Special dividend of $1.0 billion or 61 US cents per share to be paid in September 2019
- Represents 70% of underlying earnings
- Total interim returns of $3.5 billion, 9% higher than H1 2018

* Rio Tinto plc share buy-back (SBB) announced on 12 November 2018 of $1.1 billion relating to remaining coking coal divestment proceeds to be completed by February 2020
Our growth pipeline

2% Cu equivalent growth to 2023

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oyu Tolgoi Underground</td>
<td>World-class copper resource under development with options to optimise development plan</td>
</tr>
<tr>
<td>Kennecott South Wall Pushback</td>
<td>Mine development to deliver higher Cu grades and reduced variability from late-2020</td>
</tr>
<tr>
<td>Iron Ore replacement mines</td>
<td>High quality replacement projects at Koodaideri, Robe Valley and West Angelas, with additional optionality at Koodaideri Phase 2</td>
</tr>
<tr>
<td>Zulti South Mineral Sands</td>
<td>$0.5bn* approved in April to sustain capacity and extend the life of Richards Bay Minerals</td>
</tr>
<tr>
<td>Resolution Copper (unapproved)</td>
<td>Additional $0.3bn* approved in April to progress permitting Shaft #9 deepening underway</td>
</tr>
<tr>
<td>Jadar (unapproved)</td>
<td>Lithium-borates deposit in Serbia Project progressing through PFS</td>
</tr>
</tbody>
</table>

* 100% basis
Strong base for future growth and profitability

Safety is our #1 priority

Consistent financial discipline

$12bn
Paid* to shareholders in 2019, cash generative assets and strong balance sheet

Attractive growth opportunities

2% CuEq
Annual growth rate to 2023 from broad pipeline of growth opportunities

Operating efficiency

$1-1.5bn
Additional free cash flow per year from 2021 delivered through our productivity programme

World-class portfolio

23% ROCE
Through a simplified portfolio of long life, low cost assets

21st century mining company

Zero
Coal or oil production plus a leading position in technology and automation

* Includes $7.8 billion paid in H1 2019, interim and special dividend to be paid in September, and remaining share buy-back to be completed by Feb-2020
2019 production guidance

- **Iron Ore**: Pilbara shipments guidance between 320-330Mt (100% basis)

- **Aluminium**: 56-59Mt bauxite, 8.1-8.4Mt alumina, 3.2-3.4Mt aluminium

- **Copper & Diamonds**: 550-600kt mined copper, 220-250kt refined copper, 15-17Mcts diamonds

- **Energy & Minerals**: 10.7-11.3Mt iron ore pellets and concentrate, 1.2-1.4Mt TiO₂ slag, 0.5Mt boric acid equivalent
Other guidance

- Mine-to-market productivity programme to deliver an additional free cash flow run-rate of $1.0-$1.5 billion from 2021. In 2019 we expect the run-rate to be around $0.5 billion.

- Capital expenditure of around $6.0 billion in 2019 and around $6.5 billion in each of 2020 and 2021. Each year includes approximately $2.5 billion of sustaining capex. Development capital expected to deliver 2% CAGR (2019-2023).

- Effective tax rate on underlying earnings of approximately 30% in 2019.

- Pilbara unit cash costs of $14-15 per wet metric tonne (excluding freight) in 2019. This incorporates costs for the additional waste movement in the mines ($0.25 per tonne) in H2 and the overall reduction in shipments.

- C1 unit costs at Rio Tinto Kennecott, Oyu Tolgoi and Escondida to average 110-120 US cents per pound in 2019.
Market outlook
Global economic growth
– Global growth tracking at 2015/16 cyclical lows
– Trade tension weighing on global industrial growth
– Major economy central banks becoming more accommodative

China’s industrial activity mixed
– Property and infrastructure providing a cushion for other parts of the economy that are slowing
– Uncertainty over trade tensions impacting manufacturing sector
Robust iron ore and steel fundamentals

>1Btpa steel production in China

Seaborne supply disrupted in H1 2019

Obstacles to Chinese domestic supply response
China supply-side reform and tightening environmental policy have driven structural change

**Supply side reform**
- Policies focused on restoring profitability and reducing debt
- Unprecedented steel and aluminium capacity reductions
- Limiting future capacity growth

**Environmental policies**
- Environmental protection marked as a top three domestic policy priority
- Additional ultra-low emissions standards to apply to industry by 2025

**Driving structural change**
- Improved productivity and profitability of Chinese steel industry
- Strong demand for high quality, driving structural iron ore premiums
- Improved fundamentals for global aluminium industry
China’s supply-side reforms are here to stay and will continue to be driven by tightening environmental policy.

Southern and Coastal regions destination for replacement steel capacity – well located for seaborne iron ore …

... and replacement capacity will be larger and cleaner blast furnaces.

![Graph showing the distribution of blast furnace sizes in China](image)

- **Capacities (Mt)**: 15Mt < Provincial BF capacity < 30Mt, Provincial BF capacity < 15Mt
- **Share of small BF capacity (<1200Mt³) >50%**

Source: China Metallurgical Industry Planning and Research Institute (MPI), Rio Tinto
Longer-term fundamentals remain positive for aluminium and copper

Firm primary aluminium demand outlook

Challenging short-term market conditions

Positive longer-term fundamentals
  – Demand growth driven by expected recovery in automotive sector and ongoing lightweighting of vehicles

Global stocks of aluminium continue to fall

Financial shorts contributing to copper weakness

Despite low mine disruptions YTD, mine supply expected to fall by ~1% in 2019
  – Mine disruptions ~3% YTD; lower than 5% historically

Copper fundamentals positive, market relatively in-balance over next five years

Sources: Rio Tinto, US CFTC, Wood Mackenzie
Impact of China policy changes on aluminium capacity

Supply-side reform aluminium capacity cuts by province in 2017/18

- Xinjiang 0.8 Mtpa
- Inner Mongolia 0.4 Mtpa
- Shandong 2.5 Mtpa
- Others 0.1 Mtpa

3.8 Mtpa of illegal capacity removed in 2017 and 2018
   - ~9% of total Chinese aluminium capacity
   - Potential for some restarts

0.8 Mtpa of capacity cuts from environmental winter policy in 2017 and 2018 and 0.5 Mtpa in 2018 and 2019

ROW smelters expected to ramp up activities and restart idled capacity as a result of the two policies
   - Rio Tinto well placed with low-carbon brownfield expansion potential

Source: Baiinfo, Aladdiny, Rio Tinto Market Analysis
Iron Ore
world-class returns underpinned by robust price environment

Operating metrics

<table>
<thead>
<tr>
<th></th>
<th>H1 2019</th>
<th>H1 2018 comparison</th>
<th>2019 guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average realised price*</td>
<td>$85.3 / t</td>
<td>+ 35%</td>
<td></td>
</tr>
<tr>
<td>Shipments (100% basis)</td>
<td>154.6mt</td>
<td>- 8%</td>
<td>320-330Mt</td>
</tr>
<tr>
<td>Operating cost / t**</td>
<td>$14.6 / t</td>
<td>+ 9%</td>
<td>$14-15 / t</td>
</tr>
</tbody>
</table>

Financial metrics ($bn)

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>11.0</td>
<td>+ 21%</td>
<td></td>
</tr>
<tr>
<td>EBITDA</td>
<td>7.5</td>
<td>+ 34%</td>
<td></td>
</tr>
<tr>
<td>Margin (FOB)</td>
<td>72%</td>
<td>+ 5pp</td>
<td></td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>5.3</td>
<td>+ 24%</td>
<td></td>
</tr>
<tr>
<td>Sustaining capex</td>
<td>0.5</td>
<td>+ 51%</td>
<td>~1.0</td>
</tr>
<tr>
<td>Replacement and growth capex</td>
<td>0.2</td>
<td>+ 7%</td>
<td></td>
</tr>
<tr>
<td>ROCE</td>
<td>63%</td>
<td>+ 23pp</td>
<td></td>
</tr>
</tbody>
</table>

Higher pricing driving increase in EBITDA and margin

14Mt shortfall due to Tropical Cyclone Veronica and fire at Cape Lambert A

Operating cost guidance includes:
- Lower shipments impact of $1.2 / t in H1 2019
- Additional costs associated with waste movement in 2019 of ~$0.25 / t

Koodaideri Phase 1 and Robe JV Sustaining development projects continue to progress

* Dry metric tonne, FOB basis | ** Unit costs are based on operating costs included in EBITDA and exclude royalties (state and third party), sustaining capital, tax and interest. AUD:USD FX assumption of 0.72 | Note: numbers reflect Pilbara operations, excluding Dampier Salt
Iron Ore
higher prices partly offset by disruptions

Underlying EBITDA H1 2019 vs H1 2018
$ million

- Pilbara operations produced 155.7 million tonnes (Rio Tinto share 129.7 million tonnes), 8% lower than 2018 first half. Significant disruptions were caused by Tropical Cyclone Veronica, and a fire at our Cape Lambert A port in the first quarter. The impacts of the cyclone continued into the second quarter, with repairs to the Cape Lambert A port facilities impacting Robe Valley and Yandicoogina shipments and operations.
- Our Pilbara operations delivered an underlying Free On Board (FOB) EBITDA margin of 72%, compared with 67% in 2018 first half.
- 2019 first half Pilbara unit cash costs were $14.6 per tonne (2018 first half: $13.4 per tonne). The fire and weather-related events reduced first half shipments by 14 million tonnes (100% basis), increasing unit costs by around $1.2 per tonne.
- Gross sales revenue for our Pilbara operations included freight revenue of $0.6 billion (2018 first half: $0.8 billion).
- We priced approximately 77% of our sales with reference to the current month average index; 16% with reference to the prior quarter’s average index lagged by one month; 5% with reference to the current quarter average; and 2% on the spot market.
- Approximately 33% of our sales were made on an FOB basis with the remainder sold including freight.
Improving Iron Ore system performance

**Protecting the Pilbara Blend**
Mine sequencing challenges and deficit in overburden removal

Additional waste movement programme
- 2019 material movement increase
- Expected cost of ~$80 million in 2019

**Focus on rail capacity continues**
Rail maintenance and upgrade to continue into 2020
- Major rail shut in October 2019
- Comprehensive multi-year capital programme

AutoHaul™ fully implemented with all trains on mainline in autonomous mode
Our value over volume strategy maximises free cash flow

Foundations
- Exclusive fully integrated system
- Highly valued product suite and significant resources
- Quality people and partners driving innovation

Value over Volume Strategy
- Revenue
  - Price impact of incremental tonnes
  - Protecting quality
  - Delivering right tonnes to customers who value them
- Capex
  - Sustaining
  - Replacement
  - Growth
- Operating cost
  - Unit cost
  - Productivity
  - Innovation and Technology

Maximises free cash flow through the cycle
World-class assets, fully integrated and agile network

- 16 Mines
- 1,700 Rail (km)
- 4 Port terminals
- 4 Power stations
- >370 Haul trucks
- 95 Autonomous haul trucks
- 55 Production drills
- 11 Autonomous drills
- >200 Locomotives
- > 100 Global customers
Highly valued product suite, sustained by significant resources

Pilbara resources, reserves\(^1\) and production

Large mineral resources support system optionality

Ore reserves maintained in line with depletion

Maintaining evaluation drilling and resource development programmes

---

\(^1\) Refer to the statements supporting these resource and reserve estimates set out on Slide 2
Delivering quality through system blending
Pilbara Blend is the world’s most recognised brand of iron ore

We remove variability for our customers through our blending process

Pilbara Blend Fines

Pricing
Reference product for the 62% indices
Most traded physical iron ore product

Strengths
Valued for its liquidity, reliability

Market position
Base load sinter blend in China

Pilbara Blend Lump

Pricing
Aligned to 62% fines index plus lump premium

Strengths
Avoids the costs of sintering which will increase with emissions legislation

Market position
Most widely available lump product
In demand across most markets and emerging South East Asia

Pilbara Blend Fines is main reference product for the 62% indices

Share of PBF volume in reported 62% Fe transactions

Source: Rio Tinto, Platts
Yandicoogina, Robe Valley products are placed with customers who value them most

**Yandicoogina Fines**
- **Pricing**: Priced very closely to the 62% index
- **Strengths**: 58% Fe but calcines to high Fe Sinter, Low in phosphorus and alumina
- **Market position**: Base load in blends in East Asia and Southern China

**Robe Valley Fines**
- **Pricing**: Priced against 62% index based on negotiated relativities
- **Strengths**: Coarse sizing aids sinter granulation, Low phosphorus
- **Market position**: Coastal China mills and producers of niche steel in North China, Suitable for steel mills whose basic oxygen furnace (BOF) is the bottleneck

**Robe Valley Lump**
- **Pricing**: Priced against 62% index based on negotiated relativities
- **Strengths**: Low phosphorus
- **Market position**: Producers of niche steel in Japan and Coastal China, Suitable for steel mills whose BOF is the bottleneck

**Total tonnes of Yandicoogina Fines, Robe Valley Fines and Robe Valley lump**
- **Market**: 39% China, 41% Japan, 20% Other markets
- **Contract**: 98% Long Term Contracts, 2% Spot

Source: Rio Tinto
Productivity options to continue to deliver cash benefits

<table>
<thead>
<tr>
<th>Best Practice</th>
<th>Partnering with Suppliers</th>
<th>Data &amp; Technology</th>
<th>Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective equipment utilisation and maintenance optimisation</td>
<td>Mine planning optimisation</td>
<td>Payload optimisation</td>
<td>Explosives charging improvements</td>
</tr>
<tr>
<td>Yard improvements and scheduling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dumping improvements</td>
<td>Next generation train control</td>
<td>Track maintenance strategy</td>
<td></td>
</tr>
<tr>
<td>Track maintenance</td>
<td></td>
<td>Brake car elimination</td>
<td></td>
</tr>
<tr>
<td>Consist reliability</td>
<td></td>
<td>AutoHaul®</td>
<td></td>
</tr>
<tr>
<td>Roll by rail detection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations Centre optimisation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inter-machine control loops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automated inspections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Productivity monitoring apps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ore sensitive dumper settings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debottlenecking opportunities</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Iron Ore to deliver additional free cash flow of ~$0.5 billion per year from 2021.
Further opportunity exists to optimise mines

**Mines**
- Equipment Reliability
  (Mean time between failure, availability)
- Equipment Productivity
  (Effective utilisation, payload, truck speed)
- Technology and automation
  (AHS, ADS, MAS)

**Plant**
- Asset Reliability
  (Scheduled loss, unscheduled loss)
- Asset Productivity
  (Effective utilisation, rates, yield)
- Technology and automation
  (Process control loops)

**Train Load Out**
- Tonnes per car
  (Dynamic tuning for mass and volume)
- Train load time
  (Reclaimer efficiency, stockpile management, control system improvements)
- Technology and automation
  (Automated train loading, expert control systems)
Optimising rail capacity and improving flexibility

**Train Load Out**
- **Tonnes per car**
  - Dynamic tuning for mass and volume
- **Train load time**
  - Reclaimer efficiency, stockpile management, control system improvements
- **Technology and automation**
  - Automated train loading, expert control systems

**Mainline**
- **Mainline network operating strategy**
  - Network operation, common tactics, reduced delays and stoppages
- **Rail track maintenance**
  - Optimum speed, productivity and reliability
- **Autohaul®**
  - Optimised speed, advanced signalling, reducing variability

**Yard and Port (Dumper)**
- **Yard operations**
  - Optimised scheduling, mobility solution, RFID for rolling stock management
- **Train maintenance**
  - Automated condition monitoring, further automation in workshops
- **Reduced dump cycle times**
  - Control system machine learning and analytics, interface management
AutoHaul® completed in 2018

World’s first fully-autonomous, heavy-haul rail network completed and deployed in December 2018

>3 million kilometres completed in autonomous mode since deployment

~6% Speed improvement in autonomous mode

Regulator approval received in May 2018

Full implementation of autonomous programme in December 2018
Aluminium
Aluminium
profitability impacted by challenging price and cost environment

<table>
<thead>
<tr>
<th>Operating metrics</th>
<th>H1 2019</th>
<th>H1 2018 comparison</th>
<th>2019 guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average aluminium price*</td>
<td>$2,174 / t</td>
<td>- 15%</td>
<td></td>
</tr>
<tr>
<td>Average alumina price**</td>
<td>$375 / t</td>
<td>- 17%</td>
<td></td>
</tr>
<tr>
<td>Production – bauxite</td>
<td>26.2Mt</td>
<td>+ 1%</td>
<td>56-59Mt</td>
</tr>
<tr>
<td>Production – alumina</td>
<td>3.9Mt</td>
<td>- 3%</td>
<td>8.1-8.4Mt</td>
</tr>
<tr>
<td>Production – aluminium</td>
<td>1.6Mt</td>
<td>0%</td>
<td>3.2-3.4Mt</td>
</tr>
<tr>
<td>Canadian smelters – hot metal cash costs****</td>
<td>$1,406 / t</td>
<td>- 5%</td>
<td>Refer to p42</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial metrics ($bn)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>5.1</td>
<td>- 17%</td>
<td></td>
</tr>
<tr>
<td>EBITDA</td>
<td>1.1</td>
<td>- 38%</td>
<td></td>
</tr>
<tr>
<td>Margin (integrated operations)</td>
<td>27%</td>
<td>- 8pp</td>
<td></td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>1.0</td>
<td>- 8%</td>
<td></td>
</tr>
<tr>
<td>Sustaining capex</td>
<td>0.4</td>
<td>+ 8%</td>
<td></td>
</tr>
<tr>
<td>Replacement and growth capex</td>
<td>0.3</td>
<td>- 44%</td>
<td></td>
</tr>
<tr>
<td>ROCE</td>
<td>4%</td>
<td>- 7pp</td>
<td></td>
</tr>
</tbody>
</table>

Lower prices impacted EBITDA by $0.8 billion, notably primary metal
– Partly offset by volumes, mix and costs
Alumina legacy contracts impacted EBITDA by $0.15 billion, from peak in H2 2019
1% primary metal productivity creep***
Q1 bauxite production impacted by weather, but Amrun ramp-up progressing

* Realised price, including VAP and mid-west premium | ** Platts Alumina PAX FOB Australia | *** Excluding Dunkerque and Becancour smelters
**** Operating costs defined as hot metal cash costs for the Canadian smelters (alumina at market price)
Aluminium
lower prices partly offset by improved volumes and costs

Underlying EBITDA H1 2019 vs H1 2018
$ million

<table>
<thead>
<tr>
<th>Component</th>
<th>H1 2018</th>
<th>Price</th>
<th>Exchange rates</th>
<th>Energy</th>
<th>Inflation</th>
<th>Flexed H1 2018 underlying EBITDA</th>
<th>Volumes &amp; Mix</th>
<th>Cash cost reductions</th>
<th>Other</th>
<th>H1 2019 underlying EBITDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 2018 underlying EBITDA</td>
<td>1,831</td>
<td>(816)</td>
<td>142</td>
<td>(3)</td>
<td>(55)</td>
<td>1,099</td>
<td>59</td>
<td>47</td>
<td>(78)</td>
<td>1,127</td>
</tr>
</tbody>
</table>

- Underlying EBITDA of $1.1 billion declined by 38% compared with 2018 first half. A weaker pricing environment, in particular for primary metal, was the primary driver for the decline, reducing our underlying EBITDA by $0.8 billion compared with 2018 first half. This was partly offset by volume, mix and cost gains delivered through productivity improvements.
- Despite the pressures, we maintained our position as a leading business in the sector, with an EBITDA margin from integrated operations of 27%.
- The average realised price per tonne averaged $2,174 in H1 2019 (H1 2018: $2,547).
- The cash LME price averaged $1,826 per tonne, 17% lower than 2018 first half, and the mid-West premium rose 6% to $420 per tonne.
- VAP represented 54% of the primary metal we sold (2018 first half: 58%) and generated attractive product premiums averaging $242 per tonne of VAP sold (2018 first half: $222 per tonne) aligned with our value over volume strategy.
- Although broadly balanced in alumina, approximately 2.2 million tonnes of our legacy alumina sales contracts are exposed to a fixed linkage to the LME price.
## Strategy for outperformance through the cycle

<table>
<thead>
<tr>
<th>Competitive advantage</th>
<th>Bauxite</th>
<th>Aluminium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry-leading bauxite position</td>
<td>Low first-quartile cost</td>
<td></td>
</tr>
<tr>
<td>Size, quality, proximity to markets</td>
<td>Low-carbon, low-cost power</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategic focus</th>
<th>Market-paced growth</th>
<th>Strong cash flow generation</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Key enablers</th>
<th>Competitive alumina supply to our smelters</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Strategic goal</th>
<th>Leading performance through the cycle</th>
</tr>
</thead>
</table>
We will maintain our low-cost position

Commodity Index (base 2016 Jan)

Aluminium cost curve (2019 $/t)

Raw materials & energy lifting weighted average production costs by 12% in real terms vs. 2013

Cost pressures expected to ease in 2019

Rio Tinto well placed
– Balanced alumina
– Self-generated hydro power
– 90% own anode production
– 55% own calcination capacity for Canadian assets
– Advantaged bauxite position: proximity to China, supply reliability, high alumina, expandable resource

Source: CRU and internal analysis. Aluminium costs include hot metal and cold metal costs net of market and product premiums. Commodity price increases calculated between 1 January 2017 and December 2018
Unrivalled assets in
the Saguenay, Quebec

* Capacity per pages 286 and 287 of 2018 Annual Report
Productivity options to continue to deliver cash benefits

<table>
<thead>
<tr>
<th>Best Practice</th>
<th>Partnering with Suppliers</th>
<th>Data &amp; Technology</th>
<th>Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creep</td>
<td>Rail debottlenecking &amp; payload optimisation</td>
<td>Mine planning optimisation</td>
<td>Shipping optimisation</td>
</tr>
<tr>
<td>Bauxite grade optimisation</td>
<td></td>
<td>Equipment utilisation</td>
<td>Predictive analytics &amp; optimisation in real-time</td>
</tr>
<tr>
<td>Creep &amp; asset utilisation</td>
<td></td>
<td>Bauxite mix optimisation</td>
<td>Flocculation &amp; additives technology</td>
</tr>
<tr>
<td>Sweetening</td>
<td></td>
<td>Fixed cost compression</td>
<td>Predictive analytics &amp; optimisation in real time</td>
</tr>
<tr>
<td>Fixed cost compression</td>
<td></td>
<td>Advanced process control</td>
<td>Advanced process control</td>
</tr>
<tr>
<td>Creep</td>
<td></td>
<td>Automated anode change</td>
<td>Autonomous metal / anode transport</td>
</tr>
<tr>
<td>Fixed cost compression</td>
<td></td>
<td>Casthouse utilisation</td>
<td>Aluminium Operations Centre - predictive analytics &amp; optimisation in real-time</td>
</tr>
</tbody>
</table>

Aluminium to deliver additional free cash flow of ~$0.5 billion per year from 2021
Smelters creeping at 1% per annum, double industry average

Amperage creeping history

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2018 F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grande Baie</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laterriere</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+12%       +11%  +11%

Long history of cutting-edge smelter productivity
- Industry-leading technology, expertise and innovation
- Creep innovation the engine of technology productivity

Low capital intensity, high-return investments
- Productivity growth on installed asset base

Canadian Brownfield growth options
- Alma, AP60... value over volume
Enhancing margins through VAP

Value added product (VAP) enhances margins

- VAP 54% of portfolio, targeting >63%  
- Additional revenue $242 per tonne in H1 2019  
- VAP margin over remelt improvement of $0.4bn by 2022

Further scope to grow margins through commercial excellence

- Customer partnerships: North American automotive light-weighting  
- Market differentiation  
  - RenewAl™ low CO₂ aluminium  
  - Proximity and reliability  
  - Technology and product development
Amrun ramping up in 2019

Tier 1 investment with low market risks
- 23 Mt total capacity: replaces East Weipa (13 Mt), captures China market growth (10 Mt)
- First quartile cost curve position, low technical risks

First shipment in Q4 2018 with full ramp-up in 2019

Range of expansion options that can be developed in line with market demand
Modelling Aluminium EBITDA

<table>
<thead>
<tr>
<th>EBITDA sensitivity</th>
<th>H1 2018 average price/rate</th>
<th>Impact on FY 2018 underlying EBITDA of 10% price/rate change $m</th>
<th>Estimated impact for full year 2018 vs 2017 $m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium</td>
<td>$2,209/t</td>
<td>887</td>
<td></td>
</tr>
<tr>
<td>Caustic soda (FOB)</td>
<td>$587/t</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Petroleum coke (FOB)</td>
<td>$440/t</td>
<td>32</td>
<td>~$400m ( $229m at H1 18)</td>
</tr>
<tr>
<td>Green coke (FOB)</td>
<td>$152/t</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Pitch (FOB)</td>
<td>$801/t</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>$104/t</td>
<td>19</td>
<td>~$100m ( $50m at H1 18)</td>
</tr>
<tr>
<td>A$</td>
<td>77USc</td>
<td>236</td>
<td></td>
</tr>
<tr>
<td>C$</td>
<td>78USc</td>
<td>119</td>
<td></td>
</tr>
</tbody>
</table>

H1 raw material prices are purchase prices. Due to contractual and inventory time lags, a change in the value of a raw material index will not lead to an EBITDA impact before 3 to 6 months, depending on the raw material and on the specific contractual arrangements.

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

**Canadian** smelting unit cash** cost sensitivity**

($/t) Impact a $100/t change in each of the input costs below will have on our H1 2019 Canadian smelting unit cash cost of $1,406/t

<table>
<thead>
<tr>
<th>Input Cost</th>
<th>Impact ($/t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumina (FOB)</td>
<td>191</td>
</tr>
<tr>
<td>Green petroleum coke (FOB)</td>
<td>34</td>
</tr>
<tr>
<td>Calcined petroleum coke (FOB)</td>
<td>30</td>
</tr>
<tr>
<td>Coal tar pitch (FOB)</td>
<td>7</td>
</tr>
</tbody>
</table>

**Legacy alumina contracts**

- Supply of ~2.2Mtpa, LME-linked, with bulk of volume with ending dates between 2023 and 2030 (~30% rolled off post-2023).
- $460m negative impact in 2018, based on average prices of $2,110/t for LME and $474/t for Alumina over the year.
- ~$100m negative EBITDA impact for every 10% increase in Alumina index price, ~$60M negative impact for 10% decrease in Aluminium LME index. The opposite impact applies if index pricing moves in the other direction.

---

* Canadian smelters include all fully-owned smelters in Canada (Alma, AP60, Arvida, Grande-Baie, Kitimat, and Laterrière), as well as Rio Tinto’s share of the Becancour and Alouette smelters

** The smelting unit cash costs refer to all costs which have been incurred before casting, excluding depreciation but including corporate allocations and with alumina at market price, to produce one metric tonne of primary aluminium.
Copper & Diamonds
Copper & Diamonds
stable performance against strong prior year

<table>
<thead>
<tr>
<th>Operating metrics</th>
<th>H1 2019</th>
<th>H1 2018 comparison</th>
<th>2019 guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper price</td>
<td>280 c/lb</td>
<td>- 11%</td>
<td></td>
</tr>
<tr>
<td>Production – mined copper</td>
<td>281kt</td>
<td>- 5%</td>
<td>550-600kt</td>
</tr>
<tr>
<td>Production – refined copper</td>
<td>131kt</td>
<td>+ 11%</td>
<td>220-250kt</td>
</tr>
<tr>
<td>Production – diamonds</td>
<td>8.3Mct</td>
<td>- 10%</td>
<td>15-17Mct</td>
</tr>
<tr>
<td>Unit cost*</td>
<td>89 c/lb</td>
<td>- 28%</td>
<td>110-120 c/lb</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial metrics ($bn)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>3.0</td>
<td>- 2%</td>
<td></td>
</tr>
<tr>
<td>EBITDA</td>
<td>1.2</td>
<td>- 11%</td>
<td></td>
</tr>
<tr>
<td>Margin (operations)</td>
<td>46%</td>
<td>- 2pp</td>
<td></td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>0.8</td>
<td>- 8%</td>
<td></td>
</tr>
<tr>
<td>Sustaining capex</td>
<td>0.2</td>
<td>+ 33%</td>
<td></td>
</tr>
<tr>
<td>Replacement and growth capex</td>
<td>0.7</td>
<td>+ 1%</td>
<td></td>
</tr>
<tr>
<td>ROCE</td>
<td>6%</td>
<td>- 2pp</td>
<td></td>
</tr>
</tbody>
</table>

EBITDA and margin impacted by lower LME price

Further productivity improvements at Kennecott

OT underground project redesign continues

Argyle expected closure by end-2020

$0.3 billion additional funding approved to progress Resolution

Drilling continues at the Winu exploration project

* Unit costs for Kennecott, OT and Escondida utilise the C1 unit cost calculation where Rio Tinto has chosen Adjusted Operating Costs as the appropriate cost definition. C1 costs are direct costs incurred in mining and processing, plus site G&A, freight and realisation and selling costs. Any by-product revenue is credited against costs at this stage.
Copper & Diamonds
solid operational performance offset by lower prices

### Underlying EBITDA H1 2019 vs H1 2018

<table>
<thead>
<tr>
<th>Component</th>
<th>H1 2018 Underlying EBITDA</th>
<th>H1 2019 Underlying EBITDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>1,360</td>
<td>1,106</td>
</tr>
<tr>
<td>Exchange rates</td>
<td>(237)</td>
<td>(24)</td>
</tr>
<tr>
<td>Energy</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Inflation</td>
<td>147</td>
<td>33</td>
</tr>
<tr>
<td>Volumes</td>
<td>1,106</td>
<td>1,213</td>
</tr>
<tr>
<td>Cash cost reductions</td>
<td>147</td>
<td>33</td>
</tr>
<tr>
<td>Exploration &amp; evaluation</td>
<td>(21)</td>
<td>(52)</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>1,213</td>
</tr>
</tbody>
</table>

- Notwithstanding the combined negative impact of $258 million in price declines and increased evaluation expenditure, underlying EBITDA of $1.2 billion was $147 million or 11% lower than 2018 first half. The lower price impacts were offset by increased sales volumes of copper and lower costs linked to productivity improvements at our managed operations.
- We generated $0.8 billion in cash from our operating activities, an 8% decrease on 2018 first half. This included $315 million of dividends from Escondida, compared with $405 million received in 2018 first half.
- Free cash flow of $(90) million, reflected a 6% increase in net capital expenditure to $855 million, mainly relating to activities at the Oyu Tolgoi underground project.
- Average copper prices decreased 11% to 280 US cents per pound, and the average gold price declined 1% to $1,307 per ounce compared with 2018 first half. These price declines, together with weaker diamond pricing and provisional pricing movements, resulted in a $237 million decrease in underlying EBITDA.
## Sector-leading attributes

<table>
<thead>
<tr>
<th>Attractive industry fundamentals</th>
<th>Robust long-term demand</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constrained supply</td>
</tr>
<tr>
<td></td>
<td>Deficit expected towards end of decade</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Large, high-quality resources</th>
<th>Long-life, low-cost, expandable assets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Interests in Tier 1 copper mines</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Leading mine to market productivity</th>
<th>Productivity &amp; processing optimisation at Kennecott</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OT process control innovations and blasting optimisation</td>
</tr>
<tr>
<td></td>
<td>Broad customer base for underground volumes at Oyu Tolgoi</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Multiple, strong growth options</th>
<th>Medium-term growth potential from Oyu Tolgoi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Longer-dated optionality at Resolution</td>
</tr>
<tr>
<td></td>
<td>Exploration pipeline, including Winu</td>
</tr>
</tbody>
</table>
Strategy to deliver further value

Maximise value from existing operations

Deliver medium-term growth and progress long-term options

Unlock additional value through productivity initiatives

Develop our people & partnerships
### Productivity options to continue to deliver cash benefits

<table>
<thead>
<tr>
<th>Mining</th>
<th>Partnering with Suppliers</th>
<th>Data &amp; Technology</th>
<th>Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective equipment utilisation and maintenance optimisation (MTBF)</td>
<td>Payload optimisation</td>
<td>Light-weighting of truck beds</td>
<td>Integrated operations</td>
</tr>
<tr>
<td>Shorter haul times</td>
<td>Increase mining rates in South wall pushback</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved feed characterisation</td>
<td>Increase concentrator throughput</td>
<td>Maintenance tactics and centralisation of maintenance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ore grade distribution</td>
<td>Increase metal recovery from East Wall</td>
<td>Tolling of concentrate for value</td>
<td></td>
</tr>
<tr>
<td>Planning and schedule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Copper & Diamonds to deliver additional free cash flow of ~$0.15 billion per year from 2021
Kennecott – a stronger contributor to cash

Asset optimisation
- Maximise smelter and refinery productivity by blending third-party concentrate

South wall push back underpins over a decade of high-quality cash flow

Returns to higher grades from 2021

Operational excellence to maximise value
- Overall improvement of ~5% in truck productivity equates to ~12 mt additional material moved in 2017
Oyu Tolgoi - the leading Tier 1 copper project

Highest quality, major copper development globally

Average underground copper grade of 1.66% Cu and 0.35g/t Au

$5.3 billion approved capex, first quartile opex

Productivity improvement in both project development & operations

---

1 Refer to the statements supporting these reserve grades and production targets set out on slide 2 of this presentation.
2 Preliminary estimates for development capital are $6.5 billion to $7.2 billion, subject to the outcomes of the Definitive Estimate.
Critical infrastructure progresses at Oyu Tolgoi

1. Above ground infrastructure
   - Mine dry and control centre
   - Central heating plant
   - Overland conveyor to stockpile
   - 5,500 person camp
   - Shaft 5 ventilation fans
   - Mine air heaters
   - Batch plant 4 & quarry

2. Shafts & below ground hard infrastructure
   - Shaft 5 sinking to 1.2km
   - Shaft 2 sinking to 1.3km
   - Shaft 2 Jaw Crusher
   - Ore bin 11 & transfer station
   - Excavation of the Primary Crusher 1 chamber
   - Critical underground facilities

3. Mine development
   - 24,470 eqm of vertical, lateral and mass excavation development (on & off footprint)
Schedule and cost ranges are driven by four key factors

1. Mid access drives
2. Footprint development productivity
3. Location of ore handling infrastructure
4. Panel boundary transitions

Note: Diagrams are simplified from the underlying technical drawings for presentation purposes.
Schedule and cost ranges for OT are driven by four key factors

1. Mid access drives
2. Footprint development productivity
3. Location of ore handling infrastructure
4. Panel boundary transitions

One of the best undeveloped copper resources in the world

Assessing a number of mine design options given more challenging rock conditions

- Definitive estimate expected in H2 2020
- Delay to first sustainable production of 16 to 30 months
- Revised budget $6.5 - $7.2 billion

Significant progress on critical infrastructure, complete or nearing completion and not impacted by any mine design change

Shaft 2 on track for commissioning in October 2019

Note: Diagrams are simplified from the underlying technical drawings for presentation purposes.
Non-managed 30% interest in Escondida

Escondida

Strong cash flows underpin dividends of $315 million in H1 2019

No additional significant capex required for near future

Los Colorados extension delivers incremental mill capacity of 100ktpd

Desalination plant fully commissioned and operating well

1 Per BHP 2017 Annual Report | 2 Metal strip may be adjusted for various events over time
Future optionality for the Copper business

**Resolution (55% share)**

- Indicated and inferred mineral resource of 1,787Mt @ 1.53% Cu$^1$
- Continuing to advance permitting process. Predictable timetable and pathway for positive Record of Decision
- Strengthening our licence to operate
- Complete permitting by 2020, pre-feasibility study by 2021

**Exploration**

- Continued focus on copper exploration, primarily the Americas
- ~60% Rio Tinto exploration spend is focused on copper
- 16 copper exploration projects ongoing
- La Granja regional exploration

$^1$ Refer to the statements supporting these resource grades set out on slide 2 of this presentation
Delivering medium-term growth and progressing long-term options

<table>
<thead>
<tr>
<th></th>
<th>Supply surplus</th>
<th>Supply deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017</td>
<td>2018</td>
</tr>
<tr>
<td><strong>Kennecott</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>South push back underpins margin &amp; volume increase</td>
<td></td>
</tr>
<tr>
<td><strong>Oyu Tolgoi</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HNL1 development to first production</td>
<td>Ramp-up copper production</td>
</tr>
<tr>
<td><strong>Escondida</strong></td>
<td></td>
<td>~1.2 Mtpa average production capacity</td>
</tr>
<tr>
<td></td>
<td>LCE &amp; EWS¹</td>
<td></td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Project permitting &amp; continued studies</td>
<td></td>
</tr>
<tr>
<td><strong>Exploration</strong></td>
<td>Sustained &amp; committed programme with an emphasis on Australia and the Americas</td>
<td></td>
</tr>
</tbody>
</table>

Developing our people and our partnerships

Working with our partners to improve safety

Strengthening indigenous relationships

Consulting with communities

Building long-term sustainable relationships at Oyu Tolgoi

- 94% local employment

- Best in class for water efficiency – 86% of water recycled

- 69% of total procurement spend is national suppliers and 75% of total spend is in-country
Energy & Minerals*
strong recovery from 2018 disruptions

<table>
<thead>
<tr>
<th>Operating metrics</th>
<th>H1 2019</th>
<th>H1 2018 comparison</th>
<th>2019 guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOC pellets price</td>
<td>$141 / t</td>
<td>+ 24%</td>
<td></td>
</tr>
<tr>
<td>TiO$_2$ slag price**</td>
<td>$692 / t</td>
<td>+ 10%</td>
<td></td>
</tr>
<tr>
<td>Production – IOC</td>
<td>5.0Mt</td>
<td>+ 55%</td>
<td>10.7-11.3Mt</td>
</tr>
<tr>
<td>Production – TiO$_2$</td>
<td>0.6Mt</td>
<td>+ 14%</td>
<td>1.2-1.4Mt</td>
</tr>
<tr>
<td>Production – Borates</td>
<td>0.25Mt</td>
<td>- 1%</td>
<td>0.5Mt</td>
</tr>
</tbody>
</table>

Financial metrics ($bn)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>2.5</td>
<td>+ 33%</td>
</tr>
<tr>
<td>EBITDA</td>
<td>1.0</td>
<td>+ 113%</td>
</tr>
<tr>
<td>Margin (operations)</td>
<td>40%</td>
<td>+ 15pp</td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>0.7</td>
<td>+ 245%</td>
</tr>
<tr>
<td>Sustaining capex</td>
<td>0.1</td>
<td>+ 4%</td>
</tr>
<tr>
<td>Replacement and growth capex</td>
<td>0.0</td>
<td>unchanged</td>
</tr>
<tr>
<td>ROCE</td>
<td>15%</td>
<td>+10pp</td>
</tr>
</tbody>
</table>

Strong pricing and operational recovery driving 113% increase in EBITDA

Improved performance at RTIT
- 2 furnaces rebuilt at RTFT, with a third in progress
- 1 furnace under rebuild at RBM

IOC benefitting from strong demand for premium products
- Average pellet price in H1 2019 of $141 / tonne
- EBITDA margin of 49%
- Production fully recovered from 2018 strike, but impacted by weather in Q1 2019 and flooding incident in June

$0.5 billion Zulti South project approved in April 2019

* H1 2018 comparison excludes coal operations which were disposed in 2018  |  ** Excluding Upgraded Slag (UGS)
Energy & Minerals
strong operational recovery from 2018 disruptions

Underlying EBITDA H1 2019 vs H1 2018
$ million

- Underlying EBITDA of $1.0 billion was 5% lower than 2018 first half, but 113% higher excluding the 2018 first half contribution from the coking coal assets divested in 2018
- A higher price environment, in particular for iron ore pellets and concentrate, titanium dioxide feedstocks and metallics, boosted EBITDA by $169 million
- We benefited from an 87% increase in sales volumes at Iron Ore Company of Canada compared with 2018 first half when we suspended operations due to a two-month strike. We also saw an improvement in operational performance at our titanium dioxide operations following the disruptions in 2018 first half
- We generated net cash of $0.7 billion from our operating activities and $0.5 billion of free cash flow, reflecting the stronger pricing environment and the improved operational performance
- On 26 November 2018, we announced that we had entered into a binding agreement with China National Uranium Corporation Limited for the sale of our entire 68.62% stake in Rössing Uranium. Approval has now been received from the Namibian Competition Commission and final completion occurred in July 2019
Maximising value from the Energy & Minerals portfolio

- Safety is our first priority

- A lean, scalable operating model, running cash-focused businesses

- Value over volume operating philosophy supported by a global customer and market-oriented approach

- Ongoing cost and productivity improvements continuing to deliver cash flow

- Energy & Minerals is the incubator for new commodities
A lean, scalable operating model running cash-focused businesses

<table>
<thead>
<tr>
<th></th>
<th>Borates</th>
<th>IOC</th>
<th>TiO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic focus</strong></td>
<td>Integrated mine-to-market business model</td>
<td>Cost and productivity improvements</td>
<td>Value over volume operating philosophy</td>
</tr>
<tr>
<td><strong>Key customer segments</strong></td>
<td>Multiple end products including construction, agriculture &amp; consumer products</td>
<td>Premium quality pellets and concentrates to steel producers</td>
<td>Pigment producers, ceramics and titanium industry</td>
</tr>
<tr>
<td><strong>Competitive advantages</strong></td>
<td>Commercial excellence driven by market insight</td>
<td>Large ore reserve Installed capital base Premium quality pellets</td>
<td>Wide range of TiO₂ feedstock options Significant co-product contributions</td>
</tr>
<tr>
<td><strong>H1 2019 margins</strong></td>
<td>32% EBITDA margin</td>
<td>49% EBITDA margin</td>
<td>34% EBITDA margin</td>
</tr>
</tbody>
</table>

The Energy & Minerals Product Group also includes Rio Tinto Uranium.
Borates

Global borates production
'000 tonnes B₂O₃

Market estimates for borates

- 2.09 Million tonnes B₂O₃ of borates sold in 2018
- 38% RTB’s share of sales in 5-mol
- 32% RTB’s share of sales in boric acid
- 3% Anticipated annual demand growth over the next five years, led by insulation manufacturing and agricultural, biocidal, fire retardancy and glass applications

Speciality chemical business with a Tier 1 orebody (Boron) and refining facilities in the US and Europe.

Global marketer with integrated mine-to-market capabilities and a broad suite of refined borate products aligned with addressing customer needs under three commercial pillars:

- Agriculture and the use of refined boron as an essential micronutrient;
- Energy efficiency;
- Urbanisation

Regional and end-use segmentation and contracting positions support commercial performance and production decisions

On-going cost and productivity improvements:

- Increasing processing plant productivity,
- Improving supply chain efficiency,
- Ensuring mining pit shell & sequence optimised
Iron Ore Company of Canada

Iron ore pellets/concentrate production
Million tonnes, Rio Tinto share

Cost and productivity improvements facilitating business transformation:
- Increasing haul truck utilisation by improving shift changes;
- Increasing average payload for haul trucks.

Full mining and processing operations oversight now in place:
- 24/7 “Monitor & Advise” production and product quality oversight;
- Additional cost and productivity potential with move to “Monitor & Command”.

Development of new Wabush 3 open pit
Iron & Titanium

TiO₂ feedstock demand and supply
‘000 TiO₂ units

Source: TZMI

Strong market fundamentals in TiO₂ remain with positive sentiment in the pigment market and limited signs of inventory build up throughout the supply chain.

Early signs of chloride growth in China remain positive with new chloride pigment plants under construction.

Re-start of latent capacity will be considered as demand grows - value over volume central to RTIT’s strategy.

Continuing to progress the Zulti South feasibility study.

* 2019 guidance 1.2 to 1.4mt
* Excluding rutile and external ilmenite sales
Maximising ore value through product portfolio

Iron & Titanium production breakdown
2018, percentage of product tonnes

Multiple co-product streams deliver maximum value from ore-bodies.

Wide range of TiO₂ feedstock options for:
- Multiple chloride and sulphate slags;
- Upgraded slag (UGS);
- Rutile;
- Chloride ilmenite.

Zircon and metallics make significant contributions, as well as leading positions in:
- High purity ductile iron;
- Iron and steel powders;
- Specialist steel billets.

We are well-placed to supply demand growth.

Iron & Titanium revenue breakdown
2018, percentage of revenue

Data presented on 100% ownership basis, FOB
Growth & Innovation
Growth & Innovation enabling value generation across asset lifecycle

Technical Excellence
geosciences, mining, processing, infrastructure, asset management, integrated operations

Information Systems & Technology
enterprise services, platforms, digital workplace
Our focus builds on leadership in data, technology & automation
Delivering $1.0-1.5bn additional free cash flow each year from 2021

Productivity levers

Best practice
Partnering with our suppliers
Data & technology
Automation

$1.0-1.5bn productivity opportunity in 2021

Iron Ore
Aluminium
Energy & Minerals
Copper & Diamonds

Our focus across the value chain

Commercial excellence and customer focus

Optimised mine planning and scheduling
Mining efficiency
Processing recovery
Optimised infrastructure
Optimised capacity

* includes step up in Pilbara rail throughput
Number of discoveries by quality
Mineral discoveries in the world: all commodities 1975-2016

**Significant* mineral discoveries (excluding bulk commodities)**

### Note:
- **Tier 1 deposits** are “Company making” mines. They are large, long life and low cost. ie >20 Years, >200 ktpa Cu or >250 koz pa Au, and Bottom Quartile costs. Have an NPV of >$1000m, and Expected Value of ~$2000m in 2013 $
- **Tier 2 deposits** are “Significant” deposits - but are not quite as large or long life or as profitable as Tier 1 deposits. They have an NPV of $200-1000m and EV of ~$500m in 2013 $
- **Tier 3 deposits** are small / marginal deposits While they can be profitable they often only get developed at the top of the business cycle. At best they don’t meet more than one of the Tier 1 or 2 criteria. NPV of $0 to $200m, EV of ~$100m in 2013 $
- **Unclassified deposits** are small deposits that are less than “Major” in size and/or of minimal value. EV of (say) ~$10m

### Caution:
Incomplete data in recent years
Winu drilling continues at pace

Results from 42 new drill holes at Winu

Results continue to indicate relatively wide intersections of mineralisation

Drilling with 8 diamond rigs and 3 RC rigs:
- RC rigs focused on supergene
- Diamond rigs focused on testing depth extent

Strike length of mineralisation approximately 2.1km

Mineralisation remains open at depth and to the east, north and south

Located in Western Australia, 100% owned

* For full details, see the Notice to ASX dated 1 August 2019 (“Rio Tinto Exploration Update – Winu project”) and accompanying information provided in accordance with the Table 1 checklist in The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition). These materials are also available on riotinto.com. Rio Tinto confirms that it is not aware of any new information that materially affects the information included in the market announcement and that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.
Extensive and successful exploration programme

Exploring across 18 different countries
Expenditure by region, 2013 to 2018

$231 million spent on greenfield exploration in 2018
Expenditure by commodity
Rio Tinto

Corporate Information
Shareholder returns policy and capital commitment

Balanced capital allocation

Maintain an appropriate balance between:
– Investment in compelling growth projects with IRR >15%; and
– Total shareholder cash returns of 40-60% of underlying earnings through the cycle

Supplement ordinary dividends with additional returns in periods of strong earnings and cash generation

Balance between interim and final to be weighted towards the final dividend

Board to determine appropriate ordinary dividend per share, taking into account:
– Results for the financial year
– Outlook for our major commodities
– View on the long-term growth prospects
– Objective of maintaining a strong balance sheet
### Credit rating*

<table>
<thead>
<tr>
<th></th>
<th>Standard &amp; Poor’s</th>
<th>Moody’s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Long-term</strong></td>
<td>A</td>
<td>A2</td>
</tr>
<tr>
<td><strong>Short-term</strong></td>
<td>A-1</td>
<td>P-1</td>
</tr>
<tr>
<td><strong>Outlook</strong></td>
<td>Stable</td>
<td>Stable</td>
</tr>
</tbody>
</table>

* A rating is not a recommendation to buy, sell or hold securities, and may be subject to revision, suspension or withdrawal at any time by the assigning rating agencies.
Debt maturity profile

30 June 2019 debt maturity profile*

$ million

Reported gross debt increased by $1.3 billion to $14.3 billion at 30 June, mainly attributable to the implementation of IFRS 16 leases.

Average outstanding debt maturity of corporate bonds at ~13 years (~10 years for Group debt).

No corporate bond maturities until 2020.

*Numbers based on June 2019 accounting value. The debt maturity profile does not show $1.2 billion of capitalised leases under IFRS 16.
### Modelling EBITDA

#### Underlying EBITDA sensitivity

<table>
<thead>
<tr>
<th></th>
<th>H1 2019 average price / rate</th>
<th>($m) impact on FY 2019 underlying EBITDA of 10% price/rate change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>280c/lb</td>
<td>281</td>
</tr>
<tr>
<td>Aluminium</td>
<td>$1,826/t</td>
<td>462</td>
</tr>
<tr>
<td>Gold</td>
<td>$1,307/oz</td>
<td>61</td>
</tr>
<tr>
<td>Iron ore (62% Fe FOB)</td>
<td>$84.9/dmt</td>
<td>1,862</td>
</tr>
<tr>
<td>A$</td>
<td>0.71US$</td>
<td>550</td>
</tr>
<tr>
<td>C$</td>
<td>0.75US$</td>
<td>345</td>
</tr>
<tr>
<td>Oil (Brent)</td>
<td>$66/bbl</td>
<td>68</td>
</tr>
</tbody>
</table>

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

### Alumina

<table>
<thead>
<tr>
<th>Location</th>
<th>%</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jonquiere</td>
<td>100.0</td>
<td>Full consolidation</td>
</tr>
<tr>
<td>Queensland Alumina</td>
<td>80.0</td>
<td>Proportional consol</td>
</tr>
<tr>
<td>Sao Luis (Alumar)</td>
<td>10.0</td>
<td>Proportional consol</td>
</tr>
<tr>
<td>Yarwun</td>
<td>100.0</td>
<td>Full consolidation</td>
</tr>
</tbody>
</table>

### Aluminium (cont'd)

<table>
<thead>
<tr>
<th>Location</th>
<th>%</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiwai Point (NZAS)</td>
<td>79.4</td>
<td>New Zealand</td>
</tr>
<tr>
<td>Tomago</td>
<td>51.6</td>
<td>Australia</td>
</tr>
</tbody>
</table>

### Bauxite

<table>
<thead>
<tr>
<th>Location</th>
<th>%</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gove</td>
<td>100.0</td>
<td>Australia</td>
</tr>
<tr>
<td>Porto Trombetas (MRN)</td>
<td>12.0</td>
<td>Brazil</td>
</tr>
<tr>
<td>Sangaredi (note 1)</td>
<td>23.0</td>
<td>Guinea</td>
</tr>
<tr>
<td>Weipa</td>
<td>100.0</td>
<td>Australia</td>
</tr>
</tbody>
</table>

### Borates

<table>
<thead>
<tr>
<th>Location</th>
<th>%</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boron</td>
<td>100.0</td>
<td>US</td>
</tr>
</tbody>
</table>

### Copper

<table>
<thead>
<tr>
<th>Location</th>
<th>%</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escondida</td>
<td>30.0</td>
<td>Chile</td>
</tr>
<tr>
<td>Kennecott</td>
<td>100.0</td>
<td>US</td>
</tr>
<tr>
<td>Oyu Tolgoi</td>
<td>33.5</td>
<td>Mongolia</td>
</tr>
<tr>
<td>Turquoise Hill Resources (TRQ)</td>
<td>50.8</td>
<td>Canada</td>
</tr>
</tbody>
</table>

### Bauxite

<table>
<thead>
<tr>
<th>Location</th>
<th>%</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gove</td>
<td>100.0</td>
<td>Australia</td>
</tr>
<tr>
<td>Porto Trombetas (MRN)</td>
<td>12.0</td>
<td>Brazil</td>
</tr>
<tr>
<td>Sangaredi (note 1)</td>
<td>23.0</td>
<td>Guinea</td>
</tr>
<tr>
<td>Weipa</td>
<td>100.0</td>
<td>Australia</td>
</tr>
</tbody>
</table>

### Borates

<table>
<thead>
<tr>
<th>Location</th>
<th>%</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boron</td>
<td>100.0</td>
<td>US</td>
</tr>
</tbody>
</table>

### Copper

<table>
<thead>
<tr>
<th>Location</th>
<th>%</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escondida</td>
<td>30.0</td>
<td>Chile</td>
</tr>
<tr>
<td>Kennecott</td>
<td>100.0</td>
<td>US</td>
</tr>
<tr>
<td>Oyu Tolgoi</td>
<td>33.5</td>
<td>Mongolia</td>
</tr>
<tr>
<td>Turquoise Hill Resources (TRQ)</td>
<td>50.8</td>
<td>Canada</td>
</tr>
</tbody>
</table>
## Accounting treatment of principal operations

<table>
<thead>
<tr>
<th>Diamonds</th>
<th>%</th>
<th>Location</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argyle Diamonds</td>
<td>100.0</td>
<td>Australia</td>
<td>Full consolidation</td>
</tr>
<tr>
<td>Diavik Diamonds</td>
<td>60.0</td>
<td>Canada</td>
<td>Proportional consol</td>
</tr>
</tbody>
</table>

### Iron ore

<table>
<thead>
<tr>
<th>Location</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brockman (2 and 4)</td>
<td>Full consolidation</td>
</tr>
<tr>
<td>Channar JV</td>
<td>Proportional consol</td>
</tr>
<tr>
<td>Eastern Range JV</td>
<td>Proportional consol</td>
</tr>
<tr>
<td>Hope Downs JV (1 and 4)</td>
<td>Proportional consol</td>
</tr>
<tr>
<td>Iron Ore Company of Canada (IOC)</td>
<td>Proportional consol</td>
</tr>
</tbody>
</table>

### Iron ore (cont’d)

<table>
<thead>
<tr>
<th>Location</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Angelas</td>
<td>Proportional consol</td>
</tr>
<tr>
<td>Western Turner Syncline</td>
<td>Full consolidation</td>
</tr>
<tr>
<td>Yandicoogina</td>
<td>Full consolidation</td>
</tr>
</tbody>
</table>

### Salt

<table>
<thead>
<tr>
<th>Location</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dampier Salt</td>
<td>Full consolidation</td>
</tr>
</tbody>
</table>

### TiO₂ feedstocks

<table>
<thead>
<tr>
<th>Location</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTFT mine and smelter</td>
<td>Full consolidation</td>
</tr>
<tr>
<td>QMM mine</td>
<td>Full consolidation</td>
</tr>
</tbody>
</table>

### Uranium

<table>
<thead>
<tr>
<th>Location</th>
<th>Accounting treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richards Bay Minerals</td>
<td>Full consolidation</td>
</tr>
<tr>
<td>Energy Resources of Australia (ERA)</td>
<td>Full consolidation</td>
</tr>
</tbody>
</table>

### Note 1:
Rio Tinto has a 22.95% interest in Sangaredi but benefits from 45% of production, through Halco, which is equity accounted.

### Note 2:
Under the terms of the Eastern Range Joint Venture Agreement, Hamersley Iron manages the operation and is obliged to purchase all production from the JV.

### Note 3:
Rio Tinto recognises 65% of the assets, liabilities, revenues and expenses of Robe River, with a 12% non-controlling interest. The Group therefore has a 53% beneficial interest in the Robe River mines (Mesas J and A and West Angelas).
## Principal corporate activity 2010 to 2012

### 2010

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sale of majority of Alcan Packaging to Amcor</td>
<td>$1,948m</td>
</tr>
<tr>
<td>Sale of Coal &amp; Allied undeveloped properties (Maules Creek and Vickery)</td>
<td>$306m</td>
</tr>
<tr>
<td>– Rio Tinto share</td>
<td></td>
</tr>
<tr>
<td>Sale of Alcan Packaging Food Americas to Bemis Inc</td>
<td>$1,200m</td>
</tr>
<tr>
<td>Increase in stake in Ivanhoe Mines to 40.1%</td>
<td>$1,591m</td>
</tr>
<tr>
<td>Sale of remaining 48% stake in Cloud Peak Energy</td>
<td>$573m</td>
</tr>
</tbody>
</table>

### 2011

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in stake in Ivanhoe Mines to 42.1% and participation in rights offering</td>
<td>$751m</td>
</tr>
<tr>
<td>Increase in stake in Ivanhoe Mines to 46.5%</td>
<td>$502m</td>
</tr>
<tr>
<td>Acquisition of Riversdale Mining Ltd (net of cash acquired)</td>
<td>$3,690m</td>
</tr>
<tr>
<td>Sale of talc business to Imerys – enterprise value</td>
<td>$340m</td>
</tr>
<tr>
<td>Increase in stake in Ivanhoe Mines from 46.5% to 49%</td>
<td>$607m</td>
</tr>
<tr>
<td>Increase in holding in Coal and Allied from 75.7% to 80%</td>
<td>$266m</td>
</tr>
<tr>
<td>Acquisition of Hathor</td>
<td>$536m</td>
</tr>
<tr>
<td>Buy-back of Rio Tinto plc shares (up to 31 December 2011)</td>
<td>$5,500m</td>
</tr>
</tbody>
</table>

### 2012

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase of remaining shares in Hathor</td>
<td>$76m</td>
</tr>
<tr>
<td>Increase in stake in Ivanhoe Mines from 49% to 51%</td>
<td>$308m</td>
</tr>
<tr>
<td>Buy-back of Rio Tinto plc shares (up to 26 March 2012)</td>
<td>$1,500m</td>
</tr>
<tr>
<td>Rio Tinto completes formation of Simandou JV with Chalco</td>
<td>$1,350m</td>
</tr>
<tr>
<td>Increase in stake in Richards Bay Minerals from 37% to 74%</td>
<td>$1,700m</td>
</tr>
</tbody>
</table>

*Note: only selected transactions are shown.*
## Principal corporate activity 2013 to 2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Transactions</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>• Sale of Eagle</td>
<td>$315m</td>
</tr>
<tr>
<td></td>
<td>• Sale of Palabora Mining Corporation</td>
<td>$373m</td>
</tr>
<tr>
<td></td>
<td>• Sale of Northparkes</td>
<td>$820m</td>
</tr>
<tr>
<td></td>
<td>• Sale of Altnalmas Gold (held by Turquoise Hill subsidiary)</td>
<td>$235m</td>
</tr>
<tr>
<td></td>
<td>• Sell-down of interest in Constellium</td>
<td>$670m</td>
</tr>
<tr>
<td>2014</td>
<td>• Sale of Clermont thermal coal mine</td>
<td>$1,015m</td>
</tr>
<tr>
<td>2015</td>
<td>• Buy-back of Rio Tinto Limited shares (off-market)</td>
<td>$425m</td>
</tr>
<tr>
<td></td>
<td>• Buy-back of Rio Tinto Plc shares (ongoing throughout 2015)</td>
<td>$1,575m</td>
</tr>
<tr>
<td>2016</td>
<td>• Sale of Bengalla thermal coal Joint Venture</td>
<td>$617m</td>
</tr>
<tr>
<td></td>
<td>• Sale of Mt Pleasant thermal coal project</td>
<td>$221m</td>
</tr>
<tr>
<td></td>
<td>• Sale of Lochaber aluminium smelter</td>
<td>$410m</td>
</tr>
<tr>
<td>2017</td>
<td>• Sale of Coal &amp; Allied</td>
<td>$2,690m</td>
</tr>
<tr>
<td></td>
<td>• Buy-back of Rio Tinto Limited shares (off-market)</td>
<td>~$575m</td>
</tr>
<tr>
<td></td>
<td>• Buy-back of Rio Tinto plc shares</td>
<td>~$1,500m</td>
</tr>
</tbody>
</table>

*Note: only selected transactions are shown. Based on amounts announced in Rio Tinto media releases: may vary from Cash Flow Statement due to timing, completion adjustments and exchange rates.*
Principal corporate activity 2018 to 2019

2018

• Sale of 82% interest in Hail Creek coking coal mine and 71.2% interest in Valeria coal development project to Glencore $1,700mn
• Sale of 75% interest in Winchester South coal development project to Whitehaven Coal Limited $200m
• Sale of 80% interest in Kestrel coking coal mine to consortium comprising EMR Capital and PT Adaro Energy Tbk $2,250m
• Sale of 100% interest in wharf and land in Kitimat to LNG Canada $576m
• Sale of 100% interest in Dunkerque aluminium smelter in France to Liberty House $500m
• Sale of interest in Grasberg mine to Inalum $3,500m
• Buy-back of Rio Tinto plc shares ~$3,300m
• Buy-back of Rio Tinto Limited shares (off-market) ~$2,100m

2019

• Ongoing buy-back of Rio Tinto plc shares ($0.7bn remaining at 39 June 2019, to be completed no later than 28 Feb 2020) $988m in H1 2019

Note: only selected transactions are shown. Based on amounts announced in Rio Tinto media releases: may vary from Cash Flow Statement due to timing, completion adjustments and exchange rates.
# Ongoing major capital projects

<table>
<thead>
<tr>
<th>All numbers on 100% basis (US$)</th>
<th>Approved capital cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Copper</strong> - Investment to extend mine life at Rio Tinto Kennecott, US beyond 2019</td>
<td>$0.9bn</td>
<td>Funding for the continuation of open pit mining via the push back of the south wall: the project largely consists of simple mine stripping activities.</td>
</tr>
<tr>
<td><strong>Copper</strong> – development of the Oyu Tolgoi underground mine in Mongolia (Rio Tinto share 34%), where average copper grades of 1.66% are more than three times higher than the open pit.</td>
<td>$5.3bn*</td>
<td>The project was approved in May 2016. A number of other mine design options are under consideration which have different cost and schedule implications. These options have been defined to a level of accuracy associated with a Conceptual Study or Order of Magnitude Study. First sustainable production could be achieved between May 2022 and June 2023, including up to 8 months contingency. Preliminary estimates for development capital are $6.5 billion to $7.2 billion. *Subject to the outcomes of the Definitive Estimate.</td>
</tr>
<tr>
<td><strong>Aluminium</strong> – Investment in a second tunnel at the 1000MW Kemano hydropower facility at Kitimat, British Columbia, Canada</td>
<td>$0.5bn</td>
<td>Approved in 2017. Project completion is targeted for late 2020. Current progress is slightly behind schedule, but cost forecasts remain on budget. The project will ensure the long-term reliability of the power supply to the modernised Kitimat smelter.</td>
</tr>
</tbody>
</table>
## Ongoing major capital projects

<table>
<thead>
<tr>
<th>All numbers on 100% basis (US$)</th>
<th>Approved capital cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Iron ore</strong> – Investment in West Angelas and the Robe Valley in the Pilbara region of Western Australia to sustain production capacity. Rio Tinto’s share of capex is $0.8bn</td>
<td>$1.55bn</td>
<td>Approved in October 2018, the investments will enable us to sustain production of our Pilbara Blend™ and Robe Valley products. Mesa H environmental and heritage approvals have experienced some delays, with contingency plans being assessed in case required. Construction commenced in 2019 and first ore is expected in 2021.</td>
</tr>
<tr>
<td><strong>Iron ore</strong> – Investment in Koodaideri, a new production hub in the Pilbara region of Western Australia, to sustain existing production in our iron ore system</td>
<td>$2.6bn</td>
<td>Approved in November 2018, the investment incorporates a processing plant and infrastructure including a 166-kilometre rail line connecting the mine to our existing network. Engineering, procurement and construction activities are on schedule and we expect first production in late 2021. Once complete, the mine will have an annual capacity of 43 million tonnes.</td>
</tr>
<tr>
<td><strong>Mineral sands</strong> - Development of the Zulti South project at Richards Bay Minerals (RBM) in South Africa (Rio Tinto 74%), to sustain current capacity and extend mine life.</td>
<td>$0.5bn</td>
<td>Approved in April 2019, the investment will underpin RBM’s supply of zircon and ilmenite over the life of mine. Construction is scheduled to start in mid-2019, subject to the granting of all necessary permits, with first commercial production expected in late 2021. The investment will be self-funded from RBM’s cash flows, with no additional debt or recourse to Rio Tinto.</td>
</tr>
</tbody>
</table>
Geographical analysis of Rio Tinto shareholders

At 25 June 2019
Rio Tinto Executive Committee

CEO
JS Jacques

CFO
Jakob Stausholm

Aluminium (Montreal)
Alfredo Barrios

Copper & Diamonds (London)
Arnaud Soirat

Energy & Minerals (London)
Bold Baatar

Iron Ore (Perth)
Chris Salisbury

Commercial (Singapore)
Simon Trott

Growth & Innovation (Brisbane)
Steve McIntosh

Health, Safety & Environment (Perth)
Joanne Farrell

Corporate Relations (London)
Simone Niven

Human Resources (London)
Vera Kirikova

Legal & Regulatory Affairs (London)
Philip Richards
## Rio Tinto Board – diverse, operational experience

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Sector experience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chairman</strong></td>
<td>Simon Thompson</td>
<td>Mining – former executive director at Anglo American and investment banking with NM Rothschild and SG Warburg.</td>
</tr>
<tr>
<td><strong>Executive Director</strong></td>
<td>J-S Jacques</td>
<td>CEO since July 2016, appointed CEO Copper &amp; Coal in February 2015 and CEO Copper in January 2013. Joined Rio Tinto in 2011 as president International Operations in the Copper group. Prior to joining Rio Tinto, J-S worked for more than 15 years across Europe, Southeast Asia, India and the United States in a wide range of operational and functional positions in the aluminium, bauxite and steel industries, including group strategy director for Tata Steel Group from 2007 to 2011.</td>
</tr>
<tr>
<td><strong>Executive Director</strong></td>
<td>Jakob Stausholm</td>
<td>CFO from 3 September 2018 as an executive director. He has over 20 years’ experience working in senior finance roles in Europe, Latin America and Asia. He was Group CFO and an executive director of A.P. Moeller – Maersk A/S and Chief Financial, Strategy &amp; Transformation Officer for the Transport &amp; Logistics division from December 2016 until March 2018, having joined the Maersk Group in 2012. From 2008 to 2011 he was Group CFO of the global facility services provider ISS A/S and he was a non-executive director of Statoil ASA from 2009 to 2016 and of Woodside Petroleum from 2006 to 2008. Before that, he spent over 19 years with Royal Dutch Shell in numerous finance positions globally and as Chief Internal Auditor for the group.</td>
</tr>
</tbody>
</table>
# Rio Tinto Board – diverse, operational experience

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Sector experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-executive Directors</td>
<td>Megan Clark</td>
<td>Metals &amp; mining, science, research &amp; technology - chief executive of Australia's national research agency. Chair of the Sustainability committee.</td>
</tr>
<tr>
<td></td>
<td>David Constable</td>
<td>Construction and Engineering – predominantly with Fluor Corporation. Former chief executive officer of Sasol. He is also a non-executive director of Anadarko Petroleum Corporation and ABB Ltd. Joined Board on 10 February 2017.</td>
</tr>
<tr>
<td></td>
<td>Simon Henry</td>
<td>Oil and Gas – former chief financial officer of Royal Dutch Shell. Also a non-executive director of Lloyds Banking Group. Chair of the Audit committee</td>
</tr>
<tr>
<td></td>
<td>Sam Laidlaw</td>
<td>Energy industry background, former CEO of Centrica plc. Non-executive director of HSBC Holdings plc and chairman of Neptune Oil &amp; Gas. Chair of remuneration committee. Senior independent director.</td>
</tr>
<tr>
<td></td>
<td>Michael L'Estrange</td>
<td>International relations – former Secretary to Australian Cabinet and former Secretary of the Department of Foreign Affairs and Trade.</td>
</tr>
</tbody>
</table>