

An abstract graphic on the left side of the page. It features a blue circular area with white topographic contour lines. A thick, multi-colored curved band, resembling a ribbon or a stylized globe's edge, wraps around the top and bottom of the blue area. The band is composed of several overlapping segments in shades of pink, purple, blue, green, and orange. The text '2018 Strategic report' is positioned to the right of the blue area, partially overlapping the green and orange segments of the band.

2018 Strategic report

The background is a solid magenta color with a complex pattern of white, wavy, topographic-style contour lines. Scattered throughout the background are faint, white line-art sketches of various technical and scientific elements: a battery with '+' and '-' terminals on the left; a map of Australia on the right; a gear-like structure on the bottom left; and two wind turbines at the bottom center.

**As pioneers
in mining
and metals,
we produce
materials
essential
to human
progress**

Our strategy is to create superior value for shareholders by meeting our customers' needs, maximising cash from our world-class assets and allocating capital with discipline.

2018

\$11.8 billion

in cash from operations

\$5.4 billion

of capital expenditure

\$8.6 billion

in cash from divestments

\$4.1 billion

reduction in net debt

\$13.5 billion

of cash returns declared to shareholders

\$42.8 billion

direct economic contribution



2018 milestones

March

Our business in Australia is certified by the White Ribbon Campaign for our work to eradicate domestic violence

[Read more on page 55](#)

April

We become the world's first company to have our aluminium certified responsible by the Aluminium Stewardship Initiative (ASI)

[Read more on page 39](#)

May

We launch Elysis, our joint venture with Alcoa, supported by Apple and the governments of Canada and Quebec, to further develop aluminium smelting technology with no direct greenhouse gas emissions

[Read more on page 62](#)

July

Our AutoHaul™ driverless train makes its first full run, carrying 28,000 tonnes of iron ore over 280 kilometres from mine to port in Western Australia, remotely monitored from our operations centre in Perth

[Read more on page 75](#)

August/September

We complete the sales of the last of our coal assets in Australia and subsequently announce an additional \$3.2 billion share buy-back programme

[Read more on page 47](#)

October

We announce the creation of our Rio Tinto 4.0 Pioneer Lab concept, to be based in Brisbane, Australia

[Read more on page 19](#)

November

Nespresso chooses our ASI-certified responsible aluminium for their coffee pods

[Read more on page 39](#)

December

We complete the sale of our interest in the Grasberg mine in Indonesia for \$3.5 billion

[Read more on page 44](#)

Contents

Strategic report

Our business

2018 at a glance	4
Chairman's statement	6
Chief executive's statement	8
Market context:	
Our business in a transforming world	10
Strategic realities	12
Business model and strategy:	
The way we work	14
Our strategy in action	18

Our year

Key performance indicators	20
Chief financial officer's statement	24
Financial review	26
Portfolio management	32

Business reviews

Iron Ore	34
Aluminium	38
Copper & Diamonds	42
Energy & Minerals	46
Growth & Innovation	50
Commercial	51

Sustainable development 52

Risk report

Risk management	64
Principal risks and uncertainties	67
Five-year review	73

Supplementary information

Independent Limited Assurance Report i


Summary Remuneration Report:

Annual statement by the Remuneration Committee chairman	iii
Single total figure remuneration	v
Single total figure remuneration for non-executive directors	vi

Summary shareholder information vii

Navigating through Rio Tinto's Annual and Strategic report

The UK's regulatory reporting requirement requires companies to produce a strategic report. The intention is to provide investors with the option of receiving a document which is more concise than the full annual report, and which is strategic in its focus.

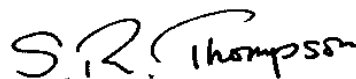
The first 73 pages of Rio Tinto's 2018 Annual report constitute its 2018 Strategic report. References to page numbers beyond 73 are references to pages in the full 2018 Annual report – as indicated by the following icon .

Copies of Rio Tinto's shareholder documents – the 2018 Annual report and 2018 Strategic report, along with the 2019 Notices of annual general meeting – are available to view on the Group's website at riotinto.com/ar2018 and riotinto.com/agm2019. Shareholders may obtain a hard copy of these documents free of charge by contacting Rio Tinto's registrars, whose details are set out at the back of this document.

Please visit Rio Tinto's website to learn more about the Group's performance in 2018.

Directors' approval statement

This Strategic report is delivered in accordance with a resolution of the board, and has been signed on behalf of the board by:



Simon Thompson
Chairman
27 February 2019

The Group's 2018 Strategic report complies with Australian and UK reporting requirements.

The auditors' report on the Group's 2018 annual accounts was unqualified. Within that report, the auditors' statements under section 496 Companies Act 2006, confirming that the Strategic report and Directors' report are consistent with the accounts, was also unqualified.

A copy of the auditors' report on the Group's 2018 Annual report is contained on pages 255 to 263 of that document.

Reporting currency: We report in US dollars unless otherwise stated. Where specified, A\$ refers to Australian dollars and C\$ refers to Canadian dollars.

Stories of our strategy in action



In the Dampier Archipelago in Western Australia, we are privileged to work alongside the densest concentration of rock engravings anywhere in the world.

This art is of huge significance to both the local Traditional custodians and all Australians. I'm lucky to have been given the opportunity to spend time recording rock art in this magnificent outdoor gallery with Traditional custodians. And I'm proud to work for a company that values cultural heritage and has passionate people committed to our business, the rock art and our community partners."

Victoria Anderson
Rio Tinto cultural heritage adviser

More than

32,000

rock art motifs recorded as part of two Conservation Agreement projects in Western Australia



We do a lot for our community here at Oyu Tolgoi. So I like to think that our mine helps our country as much as the metal helps the world."

Erdenechimeg Damdinpurev
Superintendent Training, Oyu Tolgoi

Partnering with Mongolia: Oyu Tolgoi

Our underground project will see the Oyu Tolgoi mine become the world's third largest source of copper, the metal used in critical infrastructure, from water pipes to wind turbines.

Alongside a workforce that is approximately 93% Mongolian, we also aim to contribute to the community, society and economy: more than half of our procurement spend goes to Mongolian suppliers, and to date, we have invested \$82 million to help build vocational training centres in five towns and cities. And, through our partnership in the Sustainable Cashmere Project, we are helping to protect and enhance the livelihoods of Mongolian herders.

We have invested

\$82 million

to help build vocational training centres in Mongolia



Exploration for mineral deposits is neither a matter of chance nor pure science, and to find a new mineral in such a large quantity, as we have in the Jadar Valley, is remarkable. It is a great discovery that suggests there must be more jadarite on this planet."

Nenad Grubin
Senior manager, Resource Studies
One of the original team who discovered the Jadar deposit

Discovering a new mineral in Serbia

In 2004, we discovered a new mineral containing both borates and lithium in Serbia's Jadar Valley, which we called jadarite. After more than a decade of research and development, we have started the prefeasibility study of our potential jadarite mine and processing facility. The study will help us to understand the scale and quality of the mineral and develop new technology to extract and process it.

Alongside our environmental and social impact assessment, the study is allowing us to explore different ways to potentially develop the project – from logistics to economics, and environment to impact on local communities.

Jadar: ranked as

one of the largest

lithium deposits in the world

You can see more examples of our strategy in action within the business model and strategy section, and in the business reviews.

Our strategy in action
See pages 18-19.

Business review pages
See pages 34-51.



“

When I work at Amrun, it feels like home. I am surrounded by friends, some new and some old. I've grown new skills, and now I will continue to work at Amrun through operations. I am proud of what I've been able to achieve.”

Helen Karyuka
Rio Tinto employee and Wik-Waya Traditional Owner

Contributing to Queensland: Amrun comes online

Our flagship bauxite development in Queensland, Australia made its first shipment in December 2018, six weeks ahead of schedule.

This was a milestone for the award-winning project, which was built with advanced technology and a commitment to the Western Cape York community and strong partnership with the local Wik-Waya Traditional Owners.

Amrun's economic impact has been felt across Australia; we have made more than A\$2.1 billion in purchases from more than 1,200 Australian suppliers – over 800 from the state of Queensland. Western Cape York businesses alone have supplied more than A\$240 million worth of goods and services. By the end of 2019, the mine is expected to produce up to 22.8 million tons of bauxite per year.

>A\$2.1billion
spent with >1,200 Australian suppliers

“

This is by far the most exciting project I've ever worked on from the perspective of innovation and world-first technology. It is the highlight of my career.”

Lido Costa
Principal engineer, AutoHaul™

The world's largest robot delivers iron ore

AutoHaul™, our first driverless heavy-haul, long-distance trains, successfully delivered iron ore from our inland mines in the Pilbara, Western Australia, to our port at Cape Lambert.

Since its first loaded run in July, we have safely and steadily increased the number of autonomous trips across our iron ore operations in Western Australia. AutoHaul™ have travelled more than 1.6 million kilometres in 2018.

AutoHaul™ improves safety by reducing risk at level crossings and through its automated responses to speed restrictions and alarms. It also eliminates the need to transport drivers to and from trains mid-journey saving almost 1.5 million kilometres of road travel each year. It also improves cycle times by using information about the train and rail network topography to calculate and deliver a safe, consistent driving strategy.

Our autonomous trains
travelled more than

1.6 million
kilometres in 2018

2018 at a glance

“

Our business comprises a portfolio of world-class assets that generate strong cash flows through the cycle.”

\$11.8bn

net cash generated from operating activities
(2017: \$13.9bn)

2.4mt

reduction in greenhouse gas emissions
(2017: 1.4mt)

\$18.1bn

underlying EBITDA* with a 42% margin
(2017: \$18.6bn)

0.44

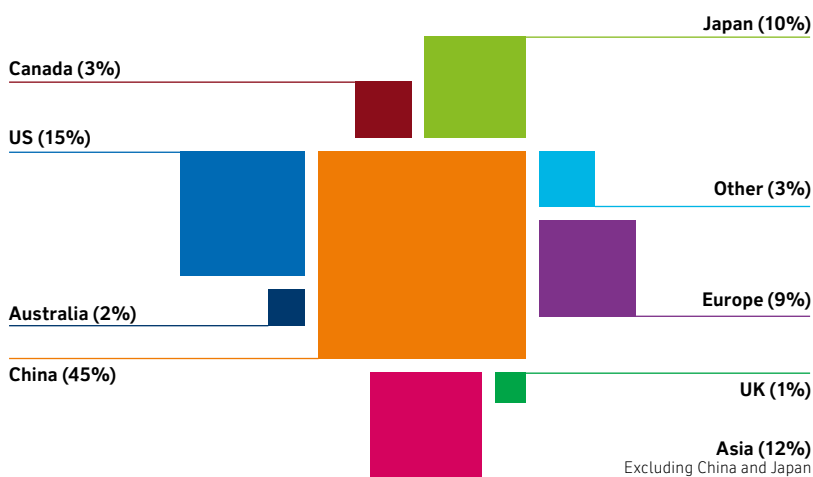
all injury frequency rate (AIFR)
(2017: 0.42)

33.4%

total shareholder return (% over five years)
(2017: 5.8%)

Consolidated sales revenue by destination

Our key assets are located in close proximity to countries experiencing economic growth and urbanisation.



Iron Ore

Iron ore is the primary component of steel. In the Pilbara region of Western Australia, we own a world-class, integrated portfolio of iron ore assets; we are one of the leading contributors to the seaborne market. Our quality product suite, including our flagship Pilbara Blend™, is well positioned to benefit from continued demand across China, Japan and other markets.

\$18.5bn

gross revenue*
(2017: \$18.3bn)

\$11.3bn

underlying EBITDA*
(2017: \$11.5bn)

337.8mt

produced
(2017: 329.8mt)

Managed operations

16

mines

1,700km

integrated rail network

4

ports

4

power plants

Main customer markets

China, Japan, South Korea, Taiwan and other Asian countries

Major projects

Koodaideri, Robe Valley and West Angelas sustaining projects

Iron Ore production numbers are on a 100% basis.

Non-GAAP measures

In addition to IFRS measures, management uses non-GAAP measures internally to assess performance. Full reconciliations are provided in the notes to the financial statements. These measures are highlighted with the symbol: •

Al

Aluminium

Aluminium is one of the world's fastest growing major metals. Lightweight and recyclable, it is found in everything from jet engines to electric vehicles to smart phones. Our vertically integrated aluminium portfolio spans from high-quality bauxite mines to alumina refineries to smelters which, in Canada, are powered entirely by clean, renewable energy and located in the first decile of the cost curve.

\$12.2bn

gross revenue•
(2017: \$11.0bn)

\$3.1bn

underlying EBITDA•
(2017: \$3.4bn)

50.4mt

bauxite produced
(2017: 50.8mt)

3,458kt

aluminium produced
(2017: 3,551kt)

Managed and non-managed operations**5**

mines

4

refineries

14

smelters

12

power plants

Main customer market

Global

Major project

Amrun

Cu

Copper & Diamonds

Copper plays a key role in electrification and power generation, including in renewable energy and electric vehicles. Our operations span the globe, from Mongolia to the US, and occupy various stages of the mining lifecycle. Our two diamond mines in Australia and Canada make us one of the largest producers, and our white and coloured diamonds are some of the world's most sought-after gems.

\$6.5bn

gross revenue•
(2017: \$4.8bn)

\$2.8bn

underlying EBITDA•
(2017: \$1.9bn)

634kt

mined copper produced
(2017: 478kt)

Managed and non-managed operations**5**

mines

1

smelter

3

power plants

Main customer market

Global

Major projects

Oyu Tolgoi underground, Resolution, and Diavik Diamond Mine A21 pipe

Ti, B, Fe

Energy & Minerals

The global Energy & Minerals portfolio produces materials essential to thousands of everyday products across manufacturing and agriculture. It includes titanium dioxide, borates, high-grade iron ore pellets and concentrate, as well as uranium and salt.

\$5.7bn

gross revenue•
(2017: \$7.8bn)

\$2.2bn

underlying EBITDA•
(2017: \$2.8bn)

1,116kt

titanium dioxide slag produced
(2017: 1,315kt)

8,952kt

iron ore pellets and concentrates produced
(2017: 11,166kt)

Managed and non-managed operations**11**

mines and processing operations

4

power plants

Main customer market

Global

Major projects

Zulti South and Jadar

Aluminium, Copper & Diamonds and Energy & Minerals show Rio Tinto's percentage share of production.

Chairman's statement

Our business in 2018

Rio Tinto has a clear purpose: as pioneers in metals and mining, we produce materials essential for human progress. And by doing so efficiently and effectively, we aim to deliver superior returns to our shareholders while safeguarding the environment and meeting our obligations to wider society.

Performance

During 2018, we delivered underlying earnings of \$8.8 billion (2017: \$8.6 billion). Despite some volatility, commodity prices remained broadly supportive during the year, but growth in our end-markets was relatively subdued and inflationary pressures increased in some of our product groups. A continuing focus on mine-to-market productivity and value over volume was therefore essential to defend the Group's EBITDA margin of 42%, compared with 44% in 2017.

Portfolio

We continue to invest in value-creative growth. The Amrun bauxite project in Queensland, Australia was completed ahead of schedule and below budget. In November, we approved the development of the \$2.6 billion Koodaideri iron ore project in the Pilbara. The world-class Oyu Tolgoi copper project in Mongolia has progressed, albeit with challenges which further impact the forecasted ramp-up to sustainable production at this complex underground project.

We also continued to reshape our portfolio. We sold the Hail Creek and Kestrel mines and the Valeria and Winchester South coal development projects for combined sale proceeds of \$4.15 billion, pre tax. We also completed the sale of our investment in Grasberg for total proceeds of \$3.5 billion and disposed of our aluminium smelter at Dunkerque for headline proceeds of \$500 million.

Shareholder returns

The combination of strong cash flow from operations and the proceeds from asset disposals enabled us to further strengthen our balance sheet, with net debt \$4.1 billion lower than 2017. We also announced record cash returns to shareholders of \$13.5 billion. This comprises a full-year dividend of \$5.3 billion (307 cents per share), the \$1.0 billion share buy-back we announced last August from operational cash flow and \$7.2 billion of supplementary cash returns from post-tax divestment proceeds, including a \$4.0 billion special dividend and \$3.2 billion of share buy-backs.

Social and economic contribution

Rio Tinto continues to make a significant economic and social contribution in the countries where it operates. During 2018, we paid \$3.6 billion in corporate taxes, and made a total economic contribution, including payments to employees and suppliers, of \$42.8 billion. As part of our commitment to building robust, long-term partnerships, we have enhanced transparency and disclosure in a number of areas of importance to our stakeholders, including human rights, membership of industry associations and beneficial ownership.

Sustainability

During 2018, the board revised and updated the Group's sustainability strategy. Climate change represents perhaps the greatest long-term threat to our business and we are determined to be part of the solution, not part of the problem. Our aluminium and copper product groups, in particular, have a vital role to play in supplying essential materials for the transition to a low-carbon economy.

We have published our first report under the Task Force on Climate-related Financial Disclosures (TCFD) recommendations. Following the sale of our coal assets, Rio Tinto is unique among the major diversified miners in having no fossil fuel production. At the end of the year, more than 70% of the electricity used across our business came from renewable sources, and climate change considerations are fully integrated into our operational and strategic decision-making.

We have developed greenhouse gas (GHG) abatement curves and assessed the climate change resilience of all our major operating assets and core infrastructure. We are committed to substantially decarbonising our business by 2050, in accordance with our endorsement of the Paris Agreement. However, while many GHG-abatement projects lie within our control, others depend upon governments around the world developing a regulatory framework for the taxation and pricing of carbon that will create the certainty businesses need to invest in new technology and reduce their carbon footprint. We will develop new medium-term targets for GHG reduction before our current targets expire in 2020. But, longer term, the challenge of climate change will only be addressed through active engagement and collective action by business, civil society, consumers and especially governments.

The board and stakeholder engagement

2018 was a year of change for the board. Jan du Plessis retired in March, after successfully leading the company as chairman for nearly nine years. Paul Tellier also retired in May and Chris Lynch retired as chief financial officer in September. Our thanks go to all three for their outstanding service to the Group. Jakob Stausholm replaced Chris as chief financial officer, and we were pleased to welcome Moya Greene and Simon McKeon as non-executive directors. Jakob brings extensive experience of finance, natural resources and capital-intensive, cyclical industries. Moya and Simon bring valuable business expertise and a deep knowledge of Canada and Australia, respectively – the two countries that host our largest operations.

During the year, board members participated in two environmental, social and governance (ESG) investor seminars, in London and Sydney, as well as two civil society roundtables in Melbourne and Washington. We have already responded to a number of suggestions made at these meetings. The Sustainability Committee and other board members also visited Energy Resources of Australia, in the Northern Territory, to review closure planning and environmental rehabilitation with the management team and to meet Traditional Owners.



We aim to deliver superior returns to our shareholders while safeguarding the environment and meeting our obligations to wider society.”

In November, we held our first ‘Employee AGM’ in Brisbane, where board members discussed our purpose, strategy, culture and values, and answered questions on a wide range of topics. We plan to continue our active programme of stakeholder engagement in 2019.

Culture and values

Rio Tinto’s core values are safety, teamwork, respect, integrity and excellence. That safety must always be our top priority was reinforced by the tragic deaths of three colleagues during 2018. Despite these set backs, we remain absolutely committed to making zero fatalities a reality.

In 2016, the Group self-reported its concerns about a payment made to a consultant in 2011 in relation to the Simandou project in Guinea. Investigations are ongoing, and we continue to co-operate fully with the authorities. In addition, both the Australian Securities and Investments Commission (ASIC) and the US Securities and Exchange Commission (SEC) are pursuing claims against the Group and its former chief executive officer and chief financial officer in relation to the impairment of our Mozambique coal project reflected in Rio Tinto’s 2012 financial statements. We believe that these cases are unwarranted and intend to defend them vigorously. The board continues to give these investigations and litigation careful attention, and we are determined to restore Rio Tinto’s reputation for integrity and strong governance.

People

During my first year as chairman, I have visited Rio Tinto operations in Australia, Canada and the US. My lasting impression of these visits is the professionalism, commitment and pride of the Rio Tinto people whom I have met. On behalf of the board, I would like to thank and congratulate J-S, the executive team, and all of our colleagues around the world for a year of significant progress and achievement.

Outlook

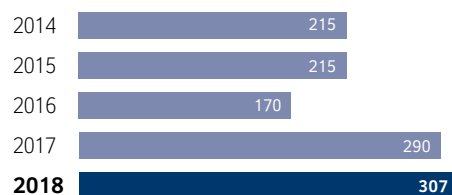
As we enter 2019, we face considerable geopolitical uncertainties, particularly in relation to trade, and can expect a year of volatile commodity prices. But with some of the best people in the industry, world-class assets, and the balance sheet strength to invest throughout the cycle, we are in a strong position to continue to create long-term, sustainable value for our shareholders and for society.

Simon Thompson
Chairman

27 February 2019

Full-year ordinary dividend

Five-year progress (US cents per share)



Final dividend

(US cents per share)

180

(2017: 180 US cents per share)

Special dividend

(US cents per share)

243

Flexible shareholder returns policy

As announced in 2016, our flexible shareholder returns policy balances three factors:

- Maintaining a strong balance sheet
- Investing for future growth
- Directly rewarding shareholders

We expect total cash returns to shareholders to be in the range of 40%-60% of underlying earnings through the cycle. For our shareholder returns policy, see page 31.

Cash returns declared to shareholders

(\$ billion)

13.5

(2017: \$9.7 billion)

Chief executive's statement

Our business in 2018

2018 highlights

\$13.5bn

of cash returns declared to shareholders

\$18.1bn

underlying EBITDA

42%

EBITDA margin

\$11.8bn

operating cash flow

19%

return on capital employed (ROCE)

\$8.8bn

underlying earnings

\$4.1bn

reduction in net debt

Around the world, geopolitical uncertainty and its economic and social implications are challenging long-held traditions. Our industry is also evolving, as changes in technology add to both the opportunity and challenge before us. At Rio Tinto, our absolute focus on safety, performance, portfolio, partners and people is why I am confident we will continue to meet challenges, leverage opportunities – and pioneer human progress.

This year, we start by remembering Francis Lalancette, Muzi Patrick Nhlenyama and Daniel Patterson – our colleagues who went to work but did not return home. Like all of us at Rio Tinto, I am deeply saddened by their tragic deaths and the irreplaceable loss to their families, friends and colleagues. We must do better on safety. Nothing is more important and I can assure you we are fully focused on this across our entire business.

We also remember the tragedy in Brumadinho, in Brazil, in early 2019. Our thoughts remain with the many who lost their lives or are still missing, and their families and communities. Our industry must do better.

At Rio Tinto, we have had a global tailings standard since 2015, and three levels of governance: asset-level, which includes reviewing facility design and operational controls; assurance of compliance with the standard through business conformance audits and technical reviews; and a programme of independent external audits. We continually assess ways to further strengthen these processes – work that will receive additional focus in 2019.

Performance

2018 marked another solid year for our company: we declared \$13.5 billion of cash returns to shareholders – the highest in Rio Tinto history. We also delivered on a number of our strategic priorities – strengthening our portfolio, advancing our growth options and divesting assets for value, while maintaining balance sheet strength and building critical capabilities.

In a relatively stable pricing environment, we delivered \$40.5 billion in consolidated sales revenue, \$18.1 billion of underlying EBITDA, and an EBITDA margin of 42%. This year, we made a significant investment in capabilities and technology to unlock future productivity, which we expect to ramp-up and deliver an incremental \$0.6 billion in free cash flow in 2019. We remain on track to deliver \$1.5 billion a year in additional free cash flow from productivity improvements from 2021.

Operating cash flow for the year was \$11.8 billion, and we ended the year once again with a strong balance sheet, reducing net debt by \$4.1 billion and ending the year with net cash of \$0.3 billion. With expected outflows in 2019, including a \$4.0 billion special dividend to our shareholders, our net debt is expected to rise in the first half of the year.

These results are in part due to our company's solid operational performance, in particular at our copper assets, which delivered a 33% year-on-year increase in mined production. Iron ore shipments and production also rose, while bauxite and aluminium were slightly lower. We are also making our business safer and more efficient. In 2018, for the first time, our driverless trains – up to 2.4 kilometres in length – delivered iron ore from our mines in the Pilbara, to our port in Cape Lambert, in Western Australia. With the programme fully implemented by the end of 2018, we have now completed more than 1.6 million kilometres in driverless mode.

Portfolio

We continued to significantly reshape our portfolio in 2018, with the sale of our interests in the Hail Creek and Kestrel coal mines and the Valeria and Winchester South coal development projects in Australia, marking the end of our coking coal activities. We divested other assets, including our stake in the Grasberg copper mine in Indonesia and the Dunkerque aluminium smelter in France. We also took steps to divest our interests in the Rössing Uranium business in Namibia. We are returning \$7.2 billion to shareholders from the proceeds of sales completed in 2018.

Indeed, over the past three years, we have significantly reshaped our portfolio, realising \$12 billion in sales proceeds, pre-tax. However, this has not come at the expense of growth: with a smaller but higher-quality asset base, we grew production by just under 3% year-on-year on a copper-equivalent basis. Many of these disposals have also changed our exposure to environmental, social and governance risks, differentiating our portfolio from those of our industry peers.

We also invested in high-quality growth. In December 2018, we shipped our first tonnes of bauxite from our Amrun mine in Queensland, Australia – six weeks ahead of schedule.



We declared the highest cash returns to shareholders in Rio Tinto history, delivered a reshaped and improved portfolio, further strengthened our balance sheet and invested in high-quality growth.”

In November, we announced the development of the \$2.6 billion Koodaideri iron ore project – our most technologically advanced mine – in the Pilbara, Western Australia. The world-class underground copper project at Oyu Tolgoi, in Mongolia, also progressed, including the signing of the Power Source Framework Agreement. The detailed engineering design work and overall construction is mostly on track, but more detailed geotechnical information and difficult ground conditions have required a review of the mine design. This, combined with fit-out and commissioning challenges with the main production shaft, is ultimately expected to result in a further revised ramp-up schedule to sustainable first production (beyond the nine-month delay indicated in October 2018). Detailed design work is underway to estimate the impact these issues will have on cost and schedule.

Partners

Our focus on partnership continued and intensified in 2018, with the launch of a collaboration to further develop greenhouse-gas-emissions-free aluminium smelting technology: our Elysis joint venture with Alcoa is supported by Apple and the governments of Canada and Quebec. We also announced that we would provide Aluminium Stewardship Initiative (ASI)-certified responsible aluminium to Nespresso – Rio Tinto is the first company to have its metal certified by the ASI.

We continued to strengthen our partnership with China, and our Chinese customers. In June, we ran the first of five learning programmes in Perth, Australia, with China's State-Owned Assets Supervisions and Administration Commission (SASAC), which supervises and manages state-owned assets.

In Western Australia, where automation may have a disruptive impact on our communities, we launched a partnership with the government of Western Australia and South Metropolitan TAFE (Technical and Further Education) to develop the first nationally recognised courses in automation. This partnership aims to train and certify people in new skills, making them easily transferable – so that people can follow opportunity wherever they find it.

And in Canada, the home of our aluminium business, we strengthened our partnership with the provincial government and renewed the Quebec Agreement, a framework for further investment in our aluminium business in the province.

We know we can be part of the solution on sustainability issues, which today are becoming more complex and intensifying the challenge before us. In 2018, we developed an integrated approach to sustainability, linked to the United Nations' Sustainable Development Goals, which we introduced to investors and civil society groups in the latter half of the year.

Rio Tinto has been recognised as a leader in transparent tax reporting. We were the first in the industry to disclose our payments to governments, and we have been reporting on our taxes and royalties paid, and our economic contribution, in increasing detail since 2010. Our 2018 Taxes paid report, which details this contribution, will be published in April 2019. Also in 2019, we released our first report in line with the recommendations of the Task Force on Climate-related Financial Disclosures. This articulates our climate-related risks and opportunities, including those related to a 2°C climate change scenario.

People

As I travelled around the world this year, visiting our assets and offices, what energised me most was our people – their ideas, their enthusiasm for our business and the commitment they have to making Rio Tinto a safer, more productive and more responsible company. Our success this year is due to their hard work and dedication, and I thank them for all they do, every day – at every asset, and in every office.

In 2018, we focused on building our technical and leadership capabilities to equip our people and our company for continued success. A new programme – RioExcel – lets technical specialists build a career as experts in their respective fields, from geology to process engineering to asset management. We also established three centres of excellence – underground mining, surface mining and processing – that bring together the company's foremost technical experts to partner with our assets, mitigate risk and deliver value.

Our aspiration is to continue to pioneer our industry, with a culture that welcomes and nurtures new ideas and higher performance. Cultures that do this are also, by definition, inclusive and diverse. We are working to bring more women into our business. In 2018, 36% of our graduate intake were women; we aim to make this 50%. We also have a target to improve the proportion of women in senior management by 2% every year.

A look ahead

As we look to the future, we see markets remaining volatile, with some risk of a trade war and a deceleration in economic activity. At Rio Tinto, we will continue our strong focus on value over volume, growth and mine-to-market productivity. Partnership and sustainability must remain important priorities. We will continue to make every effort to keep our people safe, healthy, and equipped to meet the challenges of the coming years.

With a world-class portfolio, a strong balance sheet and people who I am convinced are some of the best in the business, we are well positioned to withstand these challenges – and to create new opportunities. We will continue to drive productivity and aim to deliver superior value as we produce the materials essential to human progress.

J-S Jacques
Chief executive
27 February 2019

Our business in a transforming world

“

Data is set to be our most valuable asset. Cars and trains will drive themselves, equipment will be printed, not made, and machines will accelerate human cognition.”

Global megatrends

Megacities are the source of

66%

of global economic activity

Global interconnections

Over the past three decades, the freer movement of capital, goods, services and people has unlocked significant global wealth, lifting millions out of poverty and improving the lives of millions more. Rio Tinto has played an important role in this transformation.

Globalisation has reduced inequalities between countries, but it has also contributed to increased disparities within some societies. A protectionist and populist backlash has been steadily building since the global financial crisis, in particular across developed and liberal economies.

Combined with the rise of China, this is creating a new set of challenges for the institutions that have supported the global order since World War II. This is resulting in a less stable geopolitical landscape and a stronger reliance on bilateral relationships in an increasingly polarised world.

These dynamics do not necessarily imply a reversal of global interconnections, but rather a shift in their nature. While traditional flows of goods, services and capital have stagnated over the past decade, cross-border data flows have grown exponentially, supporting the sharing of information and ideas. This has led to the emergence of new global digital communities, as well as stronger networks between the world's megacities, which by some estimates are the source of 66% of global economic activity and 85% of innovation.

With our global footprint and customer base, and the fact that most of our products are sold cross-border, the continued evolution of global interconnections presents both risks and opportunities for Rio Tinto.

Disruptive technologies

The ever-increasing pace of technological advancement is reshaping most sectors of the global economy and competitive landscapes within it, including mining. For example, as the volume of data collected continues its exponential growth, and the cost to store it falls to nearly zero, ever more intelligent algorithms can access richer data pools to add insight to complex problems – including at Rio Tinto. Our first intelligent mine – Koodaideri, in Western Australia – will use extensive digital modelling to make operations safer and more efficient.

The world of energy is also in transition: the cost of solar power and lithium-ion batteries has fallen by 80% over the past decade, with further savings expected. The global fuel mix has remained stable over the past 50 years, with oil, gas and coal contributing about 80% of total energy needs. Today, competitive storage technology, together with further electrification in the global economy, including transportation, is set to lead the transition to a low-carbon energy system.

Disruptive technologies will also shape the future of work. Automation and artificial intelligence will displace workers at a faster pace in some activities. New roles will undoubtedly be created and future human-machine collaborations should create new opportunities. Nevertheless, the scope for social disruption is significant and the transition needs to be managed carefully.

These dynamics will likely affect Rio Tinto in two ways. First, automation and new technologies will directly impact our workforce and local communities with a mix of challenges and opportunities. And second, we should see a stronger global emphasis on the materials that will underpin the transition to a low-carbon economy.

1.6m

autonomous kilometres travelled by Rio Tinto's AutoHaul™

Global demographic shifts

One in ten people is expected to be over age 65 by 2025 (from one in 12 today); in high-income countries, this number is expected to be one in five. Over the next decade, we expect this ageing population to increasingly outnumber working populations in the developed world and China; countries in sub-Saharan Africa and the Middle East will continue to see strong population growth. This will have implications for the location of global manufacturing centres and the pace of economic development in these regions.

These diverging demographic trends will also continue to support cross-border migration. The number of international migrants has grown by about 50% since 2000, although at just over 3% this remains a small portion of the global population. Estimates indicate migrants have made significantly stronger contributions to global GDP than if they had remained in their home countries. However, migrants are often seen by host communities as competing for jobs and financial resources; a negative perception of migration has contributed to the backlash against globalisation.

As living standards in emerging markets improve around the world, people will have rising expectations of fairness and sustainable economic development. Water and air quality issues have become particularly important, especially in urban areas, influencing government policymaking. Companies like ours are also expected to play a greater role in addressing global social and environmental issues, and to do so transparently.

As living standards in emerging markets improve around the world, people will have rising expectations of fairness and sustainable economic development.

Industrialisation and urbanisation

The industrialisation and urbanisation of China has been a key force shaping the mining sector and Rio Tinto over the past two decades. While this will remain important in coming years, it is diversifying towards India, South East Asia and Africa.

These regions have a large infrastructure gap, which will require a significant increase in investment to support growth. Infrastructure projects tend to be funded by the private sector but also offer opportunities for governments to exert influence at home and abroad. Initiatives such as China's Belt and Road Initiative are adding a strategic geopolitical dimension to the infrastructure gap.

Mobility is another aspect of urbanisation undergoing significant change. Ride-sharing apps have already disrupted transportation in and around cities. In the longer term, the combination of shared mobility with autonomous driving may revolutionise urban transport, affecting the size of the global vehicle fleet, as well as roads, parking, power systems and urban air quality.

Other kinds of new technology and an increasing focus on the circular economy, with its emphasis on minimising waste, will also drive resource efficiencies in the industrial sector. For example, 3D printing, as well as new carbon or composite materials, may decrease demand for traditional minerals and metals, as could rising recycling rates.

Each of these trends could have a profound influence on the future demand for our products. China's Belt and Road Initiative will also affect supply, as mining projects come online, particularly in Africa and Latin America.

“
If we are to thrive in this new world, we need a fundamentally different vision.”

Strategic realities



Six themes, arising from global megatrends, that shape the strategic landscape of our industry.”

Productivity breakthrough

Productivity declined during the Chinese economic boom (2003-13), when both demand and prices for mined materials were high. However, today's relatively low commodity price environment, combined with disruptive technologies, has created market fundamentals in which productivity is back in focus. Digital enablers – automation, intelligent mining, artificial intelligence – will be a key feature of this next step-change in productivity.

As competition for world-class assets increases, the effective use of technology will be a differentiating factor among competitors for those assets. This will push the industry to treat data as a valuable asset and will shift traditional supplier relationships towards more dynamic and richer partner ecosystems.

Our mine-to-market agenda, which includes all aspects of productivity, is driving this step change, as is our investment in advanced technologies like AutoHaul™ and our intelligent mine, Koodaideri.

We are on track to deliver **\$1.5bn** in additional free cash flow from productivity improvements each year from 2021

China “New Era”

China represents more than 55% of industry demand. Chinese companies are among our key customers and important joint-venture partners, suppliers and competitors.

China will be a driving force of the industry for years to come, but with the New Era – President Xi Jinping's mid- to long-term strategy for the country – the nature of its growth and ambition is changing. We see a stronger focus on industrial and technological leadership, more stringent environmental policies and greater global aspirations, including those defined through the Belt and Road Initiative.

Certain elements will have an immediate impact on our industry: the restructuring of state-owned enterprises, Chinese customers' shift towards higher-quality products (such as our premium iron ore product, Pilbara Blend™), the emergence of Chinese companies as key suppliers and as stronger overseas competition.

We have adapted and strengthened our relationship with China. In 2018, we signed a joint-venture agreement with Minmetals and are deepening our relationship with the State-Owned Assets Supervision and Administration Commission (SASAC), which supervises and manages Chinese state-owned assets. We also strengthened our partnership with Tsinghua University: a Joint Research Centre that brings together experts from China and other countries to study, generate and share ideas and best practices on sustainable development.

Resilience premium

While the global economy has been steadily expanding since mid 2016, certain tension points may create geopolitical pressures, protectionism, battles over technology leadership and, in places, elevated debt levels.

Mining is a cyclical industry, typically experiencing larger swings in demand compared with underlying changes in GDP. The ability to succeed throughout the commodity cycle – resilience – is therefore critical to the way we run our business. Two key drivers ensure our own resilience: balance sheet strength and a portfolio of world-class assets.

The mining sector as a whole has now significantly reduced debt levels. Deployment of capital towards smart growth is again being considered. Disciplined capital allocation remains a strategic priority for Rio Tinto, and the sanctioning of expenditure for new growth projects is always weighed against the return of capital to shareholders.

With regard to the strength of our balance sheet, we reduced our debt ahead of the sector in the last cycle, resulting in a less volatile share price performance compared with our peers between mid 2014 and late 2017. This year, we reduced net debt by \$4.1 billion.

Our world-class assets are positioned in the lower part of the industry cost curve. They are therefore better able to provide attractive and less volatile margins throughout the cycle, as costs increase and/or prices decrease. We continually evaluate each of our assets against the attractiveness of each commodity's industry structure as well their competitive positions, including expandability and partner-to-operate risks. Over the past three years, we have significantly reshaped our portfolio, realising \$12 billion in sales proceeds, pre-tax.

Supply gaps

While commodity demand has outpaced GDP growth on average since 2000, we expect future global GDP growth to be less commodity-intensive. We expect South and South East Asian economic development to contribute to continued growth in commodity demand, and for this to be partly offset by China's maturing economy and increased use of scrap.

For individual commodities, including those we produce, this translates to more limited supply gaps.

- The global iron ore industry is shifting from volume growth to a focus on quality. This has positive implications for our higher-grade products.
- Capital-intensive aluminium production sees Chinese producers currently at an advantage to supply the market with lower-cost options. However, environmental policy pressures may create opportunities for our more sustainable metal, as our Canadian aluminium assets are all powered by clean, renewable hydropower.
- Gaps in the supply of copper and other commodities (nickel, lithium and cobalt needed for energy storage) may be harder to fill, since growth projects may be more difficult to bring into production and more competitive to secure.

Business to people

Mining companies work with a complex and interconnected range of stakeholders, from national governments to global NGOs to local community groups, all of which can have shifting, and at times conflicting, expectations. Our own expectations can also at times conflict with those of our stakeholders. For example, there is a natural tension between mining companies' need for stable, predictable legal, fiscal and regulatory frameworks and host governments' desire to maximise revenue from their non-renewable resources. In some jurisdictions, this can result in significant risks to the business.

Our approach is defined through our partner-to-operate strategy, which focuses on collaborating to enable wider benefits where we operate, and is designed for what is called the Business to people era.

This new era demands clear, transparent and honest communication. With the rise of social media in particular, everyone has a global platform, and is empowered to use it. At companies like ours, employees' need for a sense of purpose, generational shifts, and the impact of digitalisation and automation all create challenges and opportunities. Producing materials essential to human progress – and doing this responsibly – helps us to meet these evolving expectations.

Climate change

Climate change presents a significant challenge for the world, and for Rio Tinto. Initiatives such as the Task Force on Climate-related Financial Disclosures (TCFD) encourage more transparency on climate-related risks and opportunities aligned with objectives of the Paris Agreement, such as our resilience to a 2°C warming scenario.

We believe that climate change has the potential to shape our sector and business profoundly over the medium and in particular, long term. Our TCFD report is available on our website at riotinto.com/TCFD2018.

Our response begins with understanding our carbon footprint and options for managing it. Our products have a role to play in the move to a low-carbon economy, and today, we are the only major mining company that does not produce coal. Our higher-quality iron ore is more carbon-efficient, and has to travel a relatively short distance to market. Aluminium is increasingly in demand for its lightweight properties and recyclability, and our assets in Canada are powered by clean, renewable hydropower. And copper is a key part of electrification, including, for example, in electric vehicles.

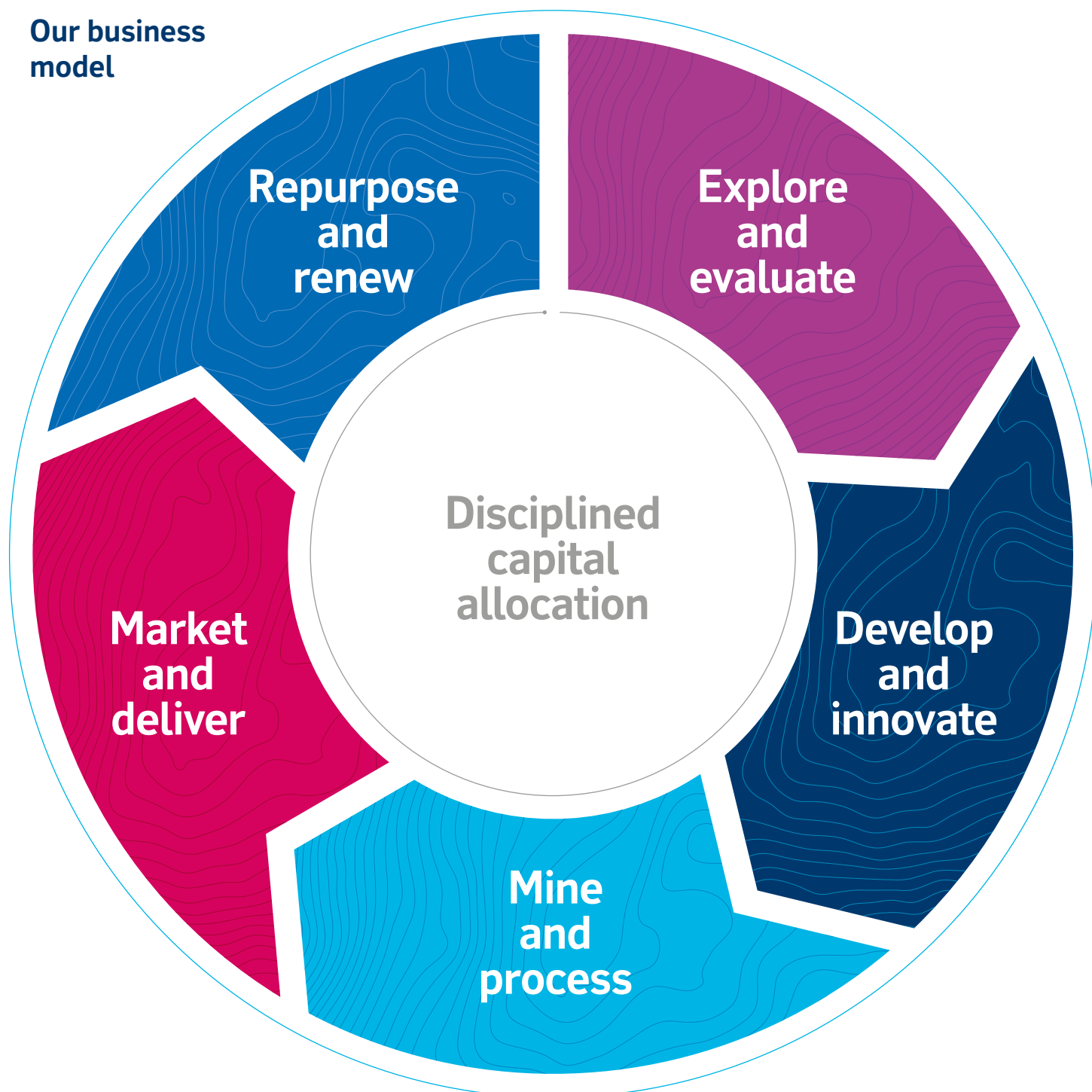
We have published our **first TCFD report**
riotinto.com/TCFD2018

The way we work

“

Implicit in our purpose is the expectation that our activities should also support human progress.”

Our business model



We aim to run our business in ways that are safer, smarter and more sustainable.

Explore and evaluate

We use some of the most advanced exploration technologies in the world to find potential new sources of minerals and metals. And we consider new products and operations with an understanding of customers' and communities' needs. We are also mindful of the future: our environmental impact, as well as the diversity and balance of our portfolio.

Develop and innovate

We assess each potential operation with a focus on risk, potential returns, and long-term sustainability and value. Once we have approved an investment, we design and build each operation. We aim to develop every potential site to achieve optimal, long-term productivity while minimising risks. Our growing network of partners – governments, communities, customers and suppliers – is helping expand our thinking, capabilities and ability to deliver mutual benefit.

Mine and process

A safe site is a productive site, and advanced technologies are playing a more important role in how we achieve both. We also share best practices across our assets to create safe, environmentally responsible working practices and a high-performing culture that targets production at lower costs.

At the same time, our operations aim to benefit local economies by contributing jobs, taxes and royalties, contracts with local businesses and social and community investment. By understanding and respecting our business partners, employees, communities, and the environment, we can create sustainable value for all our stakeholders.

Market and deliver

Our minerals and metals are used in a vast array of everyday products – from cars to coffee pods to smart phones. Our Commercial team ensure that we manage our products in line with market and customer needs. And our network of rail, ports and ships means that we can control end-to-end logistics to deliver our products safely, efficiently and reliably.

Repurpose and renew

We aim to design and run our assets to create a positive legacy once our mining activity concludes. Applying this approach could entail rehabilitating the land for a nature reserve, for example, or repurposing it for light industrial use. Each of our sites has rehabilitation plans that we review each year. We see this long-term approach – planning and operating with the future in mind – as integral to running a safe, responsible and profitable business.

Disciplined capital allocation

Our business is underpinned by a disciplined approach to capital allocation; we strive to use every dollar prudently. Today, our balance sheet is a key strength, providing a platform for strong shareholder returns, as well as enabling us to invest throughout the commodity cycle.

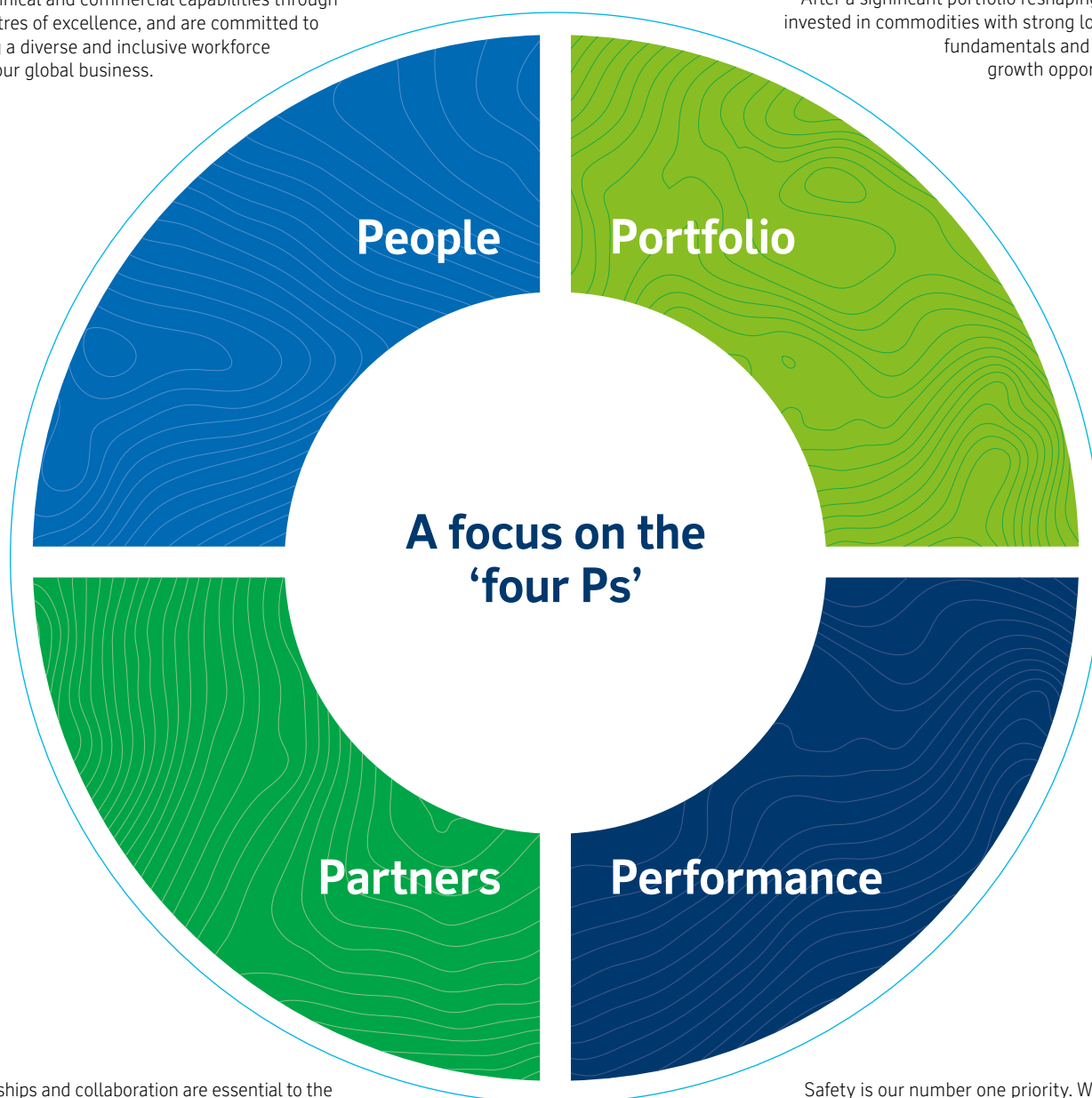
The way we work continued

Our strategy

Our strategy is to create superior value for shareholders by meeting our customers' needs, maximising cash from our world-class assets and allocating capital with discipline.

Attracting, developing and retaining the best people is crucial to our success. We continue to strengthen our technical and commercial capabilities through our centres of excellence, and are committed to building a diverse and inclusive workforce across our global business.

Our portfolio of low-cost, long-life assets delivers attractive returns throughout the cycle. After a significant portfolio reshaping, we are invested in commodities with strong long-term fundamentals and material growth opportunities.



Partnerships and collaboration are essential to the long-term success of our business. We work closely with technology partners, local suppliers, governments, community groups, industry leaders and NGOs at all stages of the mining lifecycle, from exploration to rehabilitation and closure. We believe this gives us a competitive edge and also allows us to work more thoughtfully and responsibly, and to deliver real benefits to all our stakeholders.

Safety is our number one priority. We look to generate value from mine to market and also to prioritise value over volume in our investment decisions. We work to maximise value in other ways – for example, by developing new markets for our materials and by focusing on operating excellence to improve efficiency.

The way we work

We deliver both our purpose and our strategy through *The way we work*.

Our values

Safety

Caring for human life and wellbeing above everything else

This means: we make the safety and wellbeing of our employees, contractors and communities our number one priority. Always. Safely looking after the environment is an essential part of our care for future generations.

Teamwork

Collaborating for success

This means: we work together with colleagues, partners and communities globally to deliver the products our customers need. We learn from each other to improve our performance and achieve success.

Respect

Fostering inclusion and embracing diversity

This means: we recognise and respect diverse cultures, communities and points of view. We treat each other with fairness and dignity to make the most of everyone's contributions.

Integrity

Having the courage and commitment to do the right thing

This means: we do the right thing, even when this is challenging. We take ownership of what we do and say. And we are honest and clear with each other, and with everyone we work with. This helps us to build trust.

Excellence

Being the best we can be for superior performance

This means: we challenge ourselves and others to create lasting value and achieve high performance. We adopt a pioneering mindset and aim to do better every day.

Our strategy in action

This year, we brought our strategy to life in many ways, across all our businesses.

Portfolio

Reshaping our portfolio

This year, we divested several assets. The sales of our interests in the Hail Creek and Kestrel coal mines and the Valeria and Winchester South coal development projects in Australia realised \$4.15 billion in pre-tax proceeds and helped to position us for the transition to a low-carbon economy. In November, we announced the sale of our interest in Rössing Uranium in Namibia. And in December, we completed the sale of our investment in the Grasberg copper mine in Indonesia for total proceeds of \$3.5 billion. We also completed the sale of our aluminium smelter in Dunkerque, France for headline proceeds of \$500 million.

\$4.15bn

in pre-tax proceeds from the sale of our coal assets

Investing in our business

In March, we delivered the first ore from the new fourth pipe at our Diavik diamond mine in Canada, following an investment of \$350 million.

In November, we approved the development of the \$2.6 billion Koodaideri iron ore project in the Pilbara. Koodaideri will be our first intelligent mine, with fully integrated autonomous drills, trucks and rail networks, underlining our industry-leading position.

And in December, we made our first shipment from the Amrun bauxite mine in Queensland Australia, six weeks ahead of schedule.

Performance

Focusing on safety

We track safety performance to identify patterns to help prevent incidents – for example, by being extra vigilant at particular times of the day when we know incidents are more likely. This year, our data analysis team began looking beyond traditional safety metrics – bringing factors like weather and workers' accommodation into the picture – to identify leading indicators of injuries, incidents and fatalities. We are factoring our learnings into revised safety practices in key parts of our business.

Data as an asset

Every day our automated drills, trucks, shovels, conveyors, trains and ships produce huge amounts of valuable data. We track more than 4,000 vehicles across our 60 global operations, 24 hours a day. Each of our haul trucks has more than 45 electronic tags sending data every few seconds, giving us more than 30 million geopositions every single day. Our Mine Automation System, in place at 98% of our operations, uses artificial intelligence and machine learning to turn this data into real-time operational insights.

Data from our autonomous drills makes our orebody modelling more accurate. Data from trucks allows us to optimise their speed and reduce queuing – small improvements in efficiency that produce a significant gain in productivity.

4,000

vehicles tracked
24 hours a day

Partners

Sourcing locally in Australia

Real partnership means creating mutual and sustainable benefit, and we are doing this in a variety of ways. One example is Kulbardi, a Perth-based Indigenous business that provides workplace supplies for our Western Australia offices. Another is Pindari, an Indigenous-owned labour-hire company supplying workers for our Pilbara mines – approximately 30% of the Pindari workforce is Indigenous. And this year, the first Indigenous-owned and operated mine in Australia, Gulkula, began producing bauxite in Australia's Northern Territory. We buy from Gulkula and sell its bauxite both in Australia and internationally. To help people in the area build careers in mining, we have also invested A\$2.4 million in the Gulkula Mine Training Centre, which provides industry-related training.

\$82m

invested in vocational training centres in Mongolia

Made in Mongolia

Oyu Tolgoi is making a significant contribution to the national and local economies in Mongolia. Alongside a workforce that is approximately 93% Mongolian, we are partnering with local businesses: more than half of our procurement spend goes to Mongolian suppliers.

We also invest in local education: to date, \$82 million has helped build vocational training centres in five Mongolian towns and cities, supporting the training of vocational teachers and university scholarships for young Mongolians. We have also found innovative ways to support local communities. Through our partnership in the Sustainable Cashmere Project, we are helping to re-engineer the supply chain of high-quality cashmere to protect and enhance the livelihoods of Mongolian herders.

People

Supporting employees in need

The safety and wellbeing of our people is our top priority. In 2017, we took steps to eradicate domestic violence with a package of initiatives to protect and support employees. In 2018, in Australia, this led to Rio Tinto being the first mining company to receive White Ribbon accreditation and recognition at the annual Australian Women in Resources National Awards. We have extended the programme to Canada and the US, where employees in need can take up to ten days of paid extra leave, work flexible hours, and receive financial aid and emergency accommodation. In 2019, we will be equipping leaders and HR teams to address family and domestic violence issues, while rolling out similar programmes in other parts of the world.

White Ribbon

accreditation achieved in Australia

Not business as usual

Embracing technology and thinking differently, with new perspectives, is crucial to our continued success. The Rio Tinto 4.0 Pioneer Lab, in Brisbane, will help us to tackle some of our biggest challenges and opportunities. This year, we announced that six of our best and brightest people will come from all over the world to work together on breaking new frontiers – from the circular economy to synthetic materials.

The value we create

We want to manage and grow Rio Tinto in ways that are safe, smart and benefit the world around us. So we set clear standards – both for ourselves and for the value we aim to deliver to our shareholders and stakeholders.

Shareholders

We are committed to delivering superior returns – and aim to pay 40%-60% of our underlying earnings in total cash returns.

\$13.5bn
cash returns declared
to shareholders

Communities

We create jobs for local communities and pay billions in taxes and royalties. We also contribute to local economic and social development, the impact of which is often felt even after our operations have ended.

\$192m
invested in communities

Customers

We aim to better address customer needs and adjust our operations to meet market demands. As customer expectations evolve, we are also seeking to position more of our products as responsibly sourced and sustainably produced.

>2,000
customers served

Suppliers

We look for the right balance of global, national and local capability, working with partners to drive innovation and create local supply chains wherever we can.

>\$12.3bn
paid to suppliers

Employees

We are committed to the safety, rights and wellbeing of our 47,500 employees. Our aspiration is to create a culture that nurtures new ideas and higher performance.

22.6%
of senior management
are women

The environment

We are finding new ways to work more sustainably as a business to meet the challenges of a low-carbon future.

↓ 43%
GHG emissions since 2008

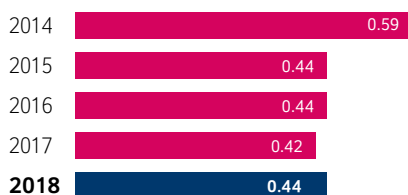
Key performance indicators

We delivered strong results, declaring \$13.5 billion in cash returns to shareholders on the back of \$18 billion of underlying EBITDA. However, we must do better on safety.

We have made significant progress reshaping our portfolio, creating a more focused business. But this focus did not come at the expense of growth: we grew output by just under 3% year on year on a copper-equivalent basis and continued to invest in high-quality growth. Our world-class portfolio and strong balance sheet position us well to succeed throughout the cycle, and create superior value for our shareholders.

SAFETY

All injury frequency rate (AIFR)^R
per 200,000 hours worked



Definition

The number of injuries per 200,000 hours worked by employees and contractors at operations that we manage. AIFR includes medical treatment cases, restricted work-day and lost-day injuries.

Performance

Over the past five years, our AIFR has improved by 32% but it has deteriorated by 5% since last year. More importantly, though, we did not meet our goal of zero fatalities. In 2018, three colleagues lost their lives: one at our Paraburdoo Mine in the Pilbara, Australia; a contractor at our Sorel-Tracy plant in Quebec, Canada; and a security contractor at Richards Bay Minerals in South Africa.

Relevance to strategy

People: safety is our number one priority, one of our core values and an essential component to everything we do. Our goal is zero fatalities. We are committed to reinforcing our safety culture, and key to this is improving leadership and simplifying our tools and systems.

Partners: we are seeking to learn from others and are strengthening our partnering for safety through the CEO Safety Award and other contractor safety initiatives. This is described further in the sustainable development section (page 52).

Associated risks

- Health, safety, environment and communities (HSE&C) risks, as our operations are inherently hazardous.
- Operations, projects and people risks, including management of major hazard and safety control frameworks.

Link to executive remuneration

Included in the short term incentive plan (see page 108 ^{AR}).

Forward plan

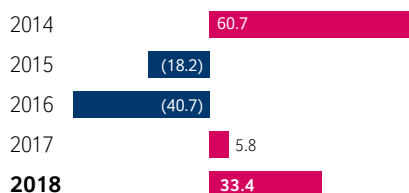
- We will:
- Continue to implement our critical-risk management programme.
 - Strengthen our safety leadership and coaching programmes.
 - Work more closely with contractors and joint-venture partners to improve our safety record.
 - Continue to implement our major hazard standards, including process safety, water and tailings, with strong assurance processes.
 - Simplify critical safety tools.

^R Linked to remuneration – see the Remuneration report on pages 101-136 ^{AR}.

^R Linked to remuneration – see the Remuneration report on pages 101-136 ^{AR}.

FINANCE

Total shareholder return^R (TSR)^{1,2} % over five years



Definition

Combination of share price appreciation (using annual average share prices) and dividends paid and reinvested to show the total return to the shareholder over the preceding five years.

- 1 The chart above reflects TSR for the five-year period shown. In last year's Annual report, the equivalent charts reflected annual TSR values.
- 2 The TSR calculation for each period is based on the change in the calendar year average share prices for Rio Tinto plc and Rio Tinto Limited over the preceding five years. This is consistent with the methodology used for calculating the vesting outcomes for Performance Share Awards (PSA). The data presented in this chart accounts for the dual corporate structure of Rio Tinto.

Performance

As per last year, TSR performance over the five-year period was driven principally by movements in commodity prices and changes in the global macro environment. The share prices of Rio Tinto plc and Rio Tinto Limited remained relatively flat in 2018. Rio Tinto outperformed the EMIX Global Mining Index over the five-year period, but significantly underperformed the MSCI World Index.

Relevance to strategy

Our strategy aims to maximise shareholder returns through the commodity cycle, and TSR is a direct measure of that.

Associated risks

- Market risks, such as variability in commodity prices and exchange rates.
- Stakeholder risks, including the actions of joint-venture partners, third parties and governments.

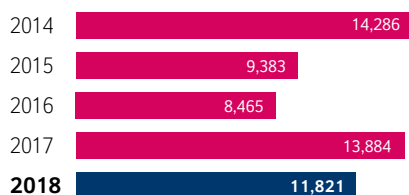
Link to executive remuneration

Reflected in long term incentive plans, measured equally against the EMIX Global Mining Index and the MSCI World Index (see page 109 ^{AR}).

Forward plan

We will continue to focus on generating the free cash flow from our operations that allows us to return cash to shareholders (short-term returns) while investing in the business (long-term returns).

Net cash generated from operating activities³ \$ millions



Definition

Cash generated by our operations after tax and interest, including dividends received from equity accounted units and dividends paid to non-controlling interests in subsidiaries.

Performance

Net cash generated from operating activities of \$11.8 billion was 15% lower this year, primarily due to higher tax payments related to 2017 profits and adverse working capital movements.

Relevance to strategy

This KPI measures our ability to convert underlying earnings into cash.

Associated risks

- Market risks, such as variability in commodity prices and exchange rates.
- Operations, projects and people risks, including improvements in productivity.
- Stakeholder risks, including the actions of joint-venture partners, third parties and governments.

Link to executive remuneration

Included in the short term incentive plan; in the longer term, the measure influences TSR which is included in long term incentive plans (see pages 108 and 109 ^{AR}).

Forward plan

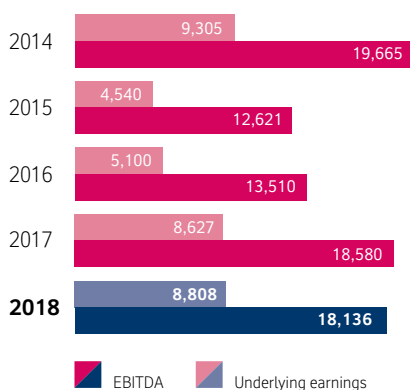
We aim to generate additional free cash flow from our five-year productivity programme (2017 to 2021). We expect the programme to deliver at least an additional \$1.5 billion of incremental cash flow from 2021, and in each year thereafter.

3 Accounting information is extracted from the financial statements.

Key performance indicators continued

Underlying earnings^R and underlying EBITDA¹

\$ millions



Definition

Underlying earnings represent net earnings attributable to the owners of Rio Tinto, adjusted to exclude items which do not reflect the underlying performance of the Group's operations. These items are explained in note 2 of the financial statements.

Underlying EBITDA represents profit before tax, net finance items, depreciation and amortisation. It excludes the EBITDA impact of the items mentioned above.

Performance

Underlying earnings of \$8.8 billion were \$0.2 billion higher than in 2017. Underlying EBITDA of \$18.1 billion was \$0.4 billion lower than 2017. The 2% decrease in underlying EBITDA resulted from higher volumes of iron ore and copper and higher prices for aluminium and copper being offset by lower iron ore prices, the coal divestments, and a rise in energy and raw material costs.

Relevance to strategy

These financial KPIs measure how well we are managing costs, increasing productivity and generating the most revenue from each of our assets.

Associated risks

- Market risks, such as variability in commodity prices and exchange rates.
- Operations, projects and people risks, including improvements in productivity.
- Stakeholder risks, including the actions of joint-venture partners, third parties and governments.

Link to executive remuneration

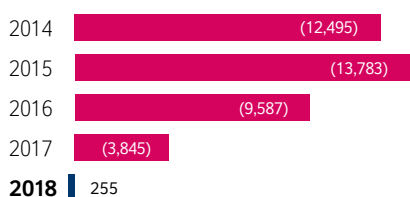
Reflected in the short term incentive plan; in the longer term, both measures influence TSR, which is the primary measure for long term incentive plans (see page 109 ^{AR}).

Forward plan

Our strategy aims to maximise shareholder returns through the commodity cycle. These will come principally from our productivity programme and investments for growth.

Net cash/(net debt)¹

\$ millions



Definition

Net borrowings after adjusting for cash and cash equivalents, other liquid investments and derivatives related to net debt (see note 24 of the financial statements).

Performance

Net debt decreased by \$4.1 billion from \$3.8 billion to net cash of \$0.3 billion, as net cash generated from operating activities and disposal proceeds exceeded capital expenditure and cash returns to shareholders.

Relevance to strategy

This measures how we are managing our balance sheet and capital structure. A strong balance sheet is essential for giving us flexibility to take advantage of opportunities as they arise, and for returning cash to shareholders.

Link to executive remuneration

Net debt is, in part, an outcome of free cash flow, which itself is reflected in the short term incentive plan. In the longer term, net debt influences TSR which is reflected in long term incentive plans (see page 109 ^{AR}).

Forward plan

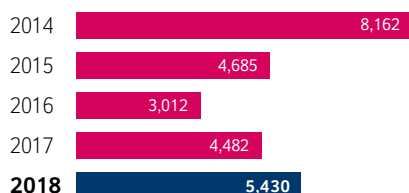
We believe that a strong balance sheet is a major competitive advantage and essential in a cyclical business. We will therefore continue to manage net debt carefully.

¹ Accounting information is extracted from the financial statements.

^R Linked to remuneration – see the Remuneration report on pages 101-136 ^{AR}.

Capital expenditure¹

\$ millions



Definition

Comprises sustaining and development expenditure on property, plant and equipment, and on intangible assets.

Performance

Total capital expenditure of \$5.4 billion in 2018 included \$2.5 billion of sustaining capital expenditure and \$2.9 billion of development capital expenditure. Major capital projects included the development of the Oyu Tolgoi underground copper mine in Mongolia, the completion of our Amrun bauxite project in Australia and the full implementation of our AutoHaul™ automated train system in Australia.

Relevance to strategy

We need to invest in existing assets to make them as productive as possible, and in new assets to grow the business. We are disciplined and rigorous in our approach, investing capital only in projects that we believe will deliver returns that are well above our cost of capital.

Associated risks

- Financial risks, including the impact of external events and internal discipline on the Group's liquidity, which is required to fund capital expenditure.
- Strategic risks, including our ability to develop new projects successfully.
- Operational risks, particularly in respect of sustaining capital expenditure.

Link to executive remuneration

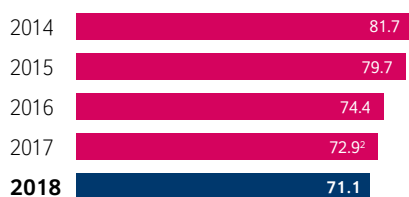
Sustaining capital expenditure is a component of the free cash flow financial performance measure included in the short term incentive plan. In the longer term, this KPI influences TSR which is included in long term incentive plans (see page 109 ^{AR}).

Forward plan

We expect capital expenditure to be around \$6 billion in 2019 and \$6.5 billion in each of 2020 and 2021. We will continue to be consistent and disciplined in our approach to capital allocation. See pages 32 and 33 for more detail.

ENVIRONMENT

Greenhouse gas (GHG) emissions intensity indexed relative to 2008 (2008 being equivalent to 100)



Definition

Measures the change in total GHG emissions per unit of commodity production relative to the base year 2008. Emissions include direct emissions, plus emissions from imports of electricity and steam, minus electricity and steam exports and net carbon credits purchased from or sold to recognised sources.

Performance

We have reduced GHG emissions intensity by 2.5% compared with 2017, and by 28.9% since 2008. This is largely a result of asset sales and improvements at several of our aluminium and alumina operations. We are on track to meet our target of a 24% reduction in total GHG emissions intensity between 2008 and 2020.

Relevance to strategy

We are positioning ourselves to have a strong portfolio for a low-carbon future. We have sold our remaining Australian coal assets, and we source 71% of our electricity from renewable energy sources. We are also focusing on reducing our Scope 1 and 2 emissions.

Associated risks

- Strategic risks, including those related to acquisitions, divestments and capital project delivery.
- Operational risks, including failure to manage portfolio energy requirements.

Forward plan

We are committed to reducing the energy intensity of our operations and the carbon intensity of our energy, including through the development and implementation of innovative technologies. Our GHG performance is an important indicator of this commitment and our ability to manage exposure to future climate policy and legislative costs. We will:

- Continue to report on progress against our GHG emissions intensity target.
- Continue to improve our understanding, management and disclosure of the resilience of our business to climate change risks, assuming a scenario in which temperatures rise by 2°C.
- Introduce a new GHG reduction target upon expiry of the existing target in 2020.

¹ Accounting information is extracted from the financial statements.

² Number restated from that originally published to ensure comparability over time.

Chief financial officer's statement



We continue to allocate capital with discipline. Our strong balance sheet and operating cash flow allow us to invest in the business and deliver sector-leading cash returns to shareholders."

Underlying EBITDA

\$18.1bn

2% decrease

Operating cash flow

\$11.8bn

15% decrease

Net cash

\$0.3bn

\$4.1bn reduction in net debt

Strong and consistent EBITDA

In a fairly volatile geopolitical environment, we increased our revenues to \$40.5 billion while our underlying EBITDA remained relatively steady at \$18.1 billion, with a margin of 42%. Average pricing, volumes and exchange rates were all positives, adding around \$1.4 billion in aggregate to EBITDA. Higher sales volumes were mainly from iron ore, copper and gold. Shipments from the Pilbara rose 2% following improved rail capacity from AutoHaul™. And we delivered a strong year in copper on all fronts. However, these increases were offset by rising input costs, in particular energy and raw materials. These cost increases were mainly felt by our aluminium business, which was impacted to the tune of \$0.5 billion. However, we did see some softening in raw material inflation in the second half. Other costs included \$0.3 billion of restructuring, \$0.1 billion higher than 2017, and a \$0.1 billion increase in corporate costs, including pensions and insurance.

Productivity accelerating in 2019

We remain committed to generating \$1.5 billion of additional free cash flow each year from 2021 from our mine-to-market productivity programme. 2018 was a challenging year due to the rising input costs. In 2019, we expect to deliver \$0.6 billion from the programme, which will bring our run-rate by the end of 2019 to \$1.0 billion of additional free cash flow each year.

Increasing our investment in the business and returning cash to shareholders

Having a strong balance sheet is key and we ended 2018 with net cash of \$0.3 billion, following the completion of the Grasberg disposal in December. Our balance sheet provides us with the platform to continue to invest in attractive growth opportunities and sustain our track record of delivering strong cash returns to shareholders.

Over the past three years we have steadily increased our capital expenditure to \$5.4 billion in 2018, as we continue to invest through the cycle. In 2018, we completed the Amrun bauxite project in Queensland and fully implemented the AutoHaul™ autonomous trains system in the Pilbara. Our most significant growth project is the Oyu Tolgoi copper/gold underground mine in Mongolia where we are investing around \$1.0 billion a year. And from 2019, we will ramp-up investment in replacing our iron ore production in the Pilbara, following board approval for the Koodaideri and Robe River sustaining mines.

At the same time, we are continuing to deliver sector-leading cash returns to our shareholders. In total, we have announced \$13.5 billion of returns in respect of 2018. This includes the final dividend of 180 US cents per share bringing the total ordinary dividend to 307 US cents, or \$5.3 billion, which, together with the \$1.0 billion share buy-back we announced in August, represents 72% of underlying earnings. We also announced supplementary returns of \$7.2 billion from the divestments we made in 2018, including a \$3.2 billion share buy-back and a special dividend of \$4.0 billion from our most recently completed Grasberg and Aluminium Dunkerque disposals.

Our view on the 2018 global economy

Global economic growth in 2018 was around 3%. Strong economic growth in the US, estimated at 2.9%, was driven by domestic tax cuts implemented in January 2018. The US unemployment rate fell to a 49-year low of 3.7% in September, but strong growth and rising core inflation resulted in four benchmark rate increases over the year. The imposition of section 232 tariffs on steel and aluminium in March, and section 301 tariffs on China in April, weighed on global commodity prices, though macro effects were limited. Worries over slowing growth and trade tensions caused a sharp downward correction in US equity markets in the fourth quarter, erasing earlier gains.

In China, growth was 6.8% in the first two quarters, as a second quarter pick-up in industrial production and strong trade data helped to offset weakening housing sales and falling infrastructure investment. The effects of a deleveraging campaign squeezed the economy more visibly in the third quarter, resulting in government measures to encourage infrastructure investment and support the private sector. Growth continued to decelerate in the fourth quarter as property sales remained soft and industrial value-added production and trade growth weakened.

The European and Japanese economies slowed more than expected due to weak global demand and negative shocks to business investment. Investment was hurt by softer manufacturing growth, tapering of quantitative easing across Europe and natural disasters in Japan.

A weakening global manufacturing cycle and softer Chinese commodity demand hurt growth in many emerging markets. Increased capital outflows, driven by monetary tightening in the US and rising risk aversion, also reduced domestic investment.

Outlook

Over the next couple of years, global growth is likely to weaken as monetary policy normalises and US fiscal stimulus fades, increasing risks to the business environment. The outlook for China depends to some extent on the resolution of the tariff negotiations with the US, but is likely to be weaker on softer property sales and deferred

investment. Signs that downside risks could be minimised would include a successful resolution to US-China trade negotiations, early stabilisation of the global manufacturing cycle and a slower pace of interest rate increases by the Federal Reserve.

Stimulus in China and a modest relaxation of deleveraging could provide some support for domestic demand in the second half of the year. Measures to increase infrastructure construction will also be important and could provide some support for commodity demand.

We believe the biggest risks in 2019 include any escalation of the US trade conflict with China, a sharp downward correction in global equities as monetary policy tightens, and a more severe than expected deceleration of Chinese growth.

Volatility around these risks, combined with weakening fundamentals, would make for a challenging business environment. However, our strong balance sheet and world-class portfolio place us in a sound position. We will be able to continue to improve our business, invest through the cycle and deliver returns to shareholders.



Jakob Stausholm
Chief financial officer

27 February 2019

Financial review

Non-GAAP measures

In addition to IFRS measures, management uses non-GAAP measures internally to assess performance. Full reconciliations are provided in the notes to the financial statements. These measures are highlighted with the symbol: *

At year end	2018	2017	Change
Net cash generated from operating activities (\$ millions)	11,821	13,884	-15%
Capital expenditure ¹ (\$ millions)	5,430	4,482	+21%
Free cash flow ² (\$ millions)*	6,977	9,540	-27%
Underlying EBITDA ³ (\$ millions)*	18,136	18,580	-2%
Underlying earnings ³ (\$ millions)*	8,808	8,627	+2%
Net earnings (\$ millions)	13,638	8,762	+56%
Underlying earnings ³ per share (US cents)*	512.3	482.8	+6%
Basic earnings per share (US cents)	793.2	490.4	+62%
Ordinary dividend per share (US cents)	307.0	290.0	+6%
Net cash/(debt) ⁴ (\$ millions)*	255	(3,845)	
Net gearing ratio ⁵ *	-1%	7%	

See footnotes on page 27.

Stability in revenues and EBITDA

- \$40.5 billion of consolidated sales revenue, \$0.5 billion higher than 2017. Increased volumes of iron ore and copper, and higher prices for aluminium and copper, offset the impact of lower iron ore prices and our coal divestments.
- Underlying EBITDA³ of \$18.1 billion was 2% lower than 2017, with higher revenues outweighed by a rise in energy and raw material costs.
- Effective tax rate on underlying earnings³ was 29%, one percentage point higher than in 2017.
- Net earnings of \$13.6 billion, 56% higher than 2017, reflected \$4.6 billion of gains on disposals of businesses. See table on page 30.

Strong cash flow from operations and asset sales

	2018 \$m	2017 \$m ⁷
Net cash generated from operating activities	11,821	13,884
Capital expenditure ¹	(5,430)	(4,482)
Sales of property, plant and equipment	586	138
Free cash flow²	6,977	9,540
Disposals	7,733	2,675
Dividends paid to equity shareholders	(5,356)	(4,250)
Share buy-back	(5,386)	(2,083)
Other	132	(140)
Reduction in net debt	4,100	5,742

See footnotes on page 27.

Cash inflows of \$8.6 billion, pre-tax, from divestments in 2018

	Pre-tax proceeds received in 2018 \$bn	Completion date
Hail Creek coal mine and Valeria coal development project, both in Queensland, Australia, sold to Glencore	1.7	1 August
Kestrel underground coal mine, Queensland, Australia, sold to EMR Capital and PT Adaro Energy Tbk	2.3	1 August
Wharf and land in Kitimat, British Columbia, sold to LNG Canada	0.6	12 November
Aluminium Dunkerque, France sold to Liberty House ¹	0.4	14 December
Interest in Grasberg mine sold to Inalum (PT Indonesia Asahan Aluminium (Persero)) ²	3.4	21 December
Other	0.2	
Total (pre-tax)	8.6	

1 Net of completion adjustments.

2 Before a \$0.1 billion attributable share of copper and gold revenues, net of Rio Tinto's capital contribution for the year.

We expect to pay around \$0.9 billion in tax on the above transactions in the first half of 2019.

Increased investment in growth projects and development

- The world-class Oyu Tolgoi underground copper mine development in Mongolia has progressed in 2018, including the signing of the Power Source Framework Agreement. There are challenges which further impact the forecasted ramp-up to sustainable production at this complex project. See page 45.
- \$1.9 billion Amrun bauxite project in Queensland shipped first tonnes six weeks ahead of schedule in December 2018. Amrun will increase our export capacity by around 10 Mt/a.

- \$940 million AutoHaul™ project: by the end of 2018 we had fully deployed our Pilbara autonomous trains, the world's first autonomous heavy-haul rail system. This is expected to improve productivity and overall system throughput, by providing more flexibility and reducing bottlenecks.
- \$2.6 billion Koodaideri replacement iron ore mine approved, including processing plant and 166-kilometre rail line. Koodaideri will have a 43 Mt annual capacity, underpinning production of our Pilbara Blend™, with first tonnes in late 2021 and significant potential for future expansion with a study underway.
- \$488 million spend on exploration and evaluation, a 10% rise, mostly driven by increased activity at the Resolution copper project in Arizona and higher greenfield expenditure to underpin future growth projects.
- Encouraging copper mineralisation discovered in the Pilbara, Western Australia: 26 diamond holes drilled for 10 kilometres and we have commenced phase 2 drilling to ascertain scale.⁶

Underlying EBITDA, underlying earnings by product group

	2018 \$m	2017 \$m	Change \$m	Change %
Underlying EBITDA				
Iron Ore	11,325	11,520	(195)	-2%
Aluminium	3,095	3,423	(328)	-10%
Copper & Diamonds	2,776	1,904	872	+46%
Energy & Minerals	2,193	2,803	(610)	-22%
Other operations	(70)	(116)	46	+40%
Product group total	19,319	19,534	(215)	-1%
Other items	(952)	(736)	(216)	-29%
Exploration and evaluation	(231)	(218)	(13)	-6%
Total	18,136	18,580	(444)	-2%
Underlying earnings				
Iron Ore	6,514	6,692	(178)	-3%
Aluminium	1,347	1,583	(236)	-15%
Copper & Diamonds	1,054	263	791	+301%
Energy & Minerals	1,012	1,242	(230)	-19%
Other operations	(102)	(138)	36	+26%
Product group total	9,825	9,642	183	+2%
Other items	(690)	(483)	(207)	-43%
Exploration and evaluation	(193)	(178)	(15)	-8%
Net interest	(134)	(354)	220	+62%
Total	8,808	8,627	181	+2%

Underlying EBITDA is a key financial indicator which management uses internally to assess performance. It excludes the same items that are excluded in arriving at underlying earnings. See page 249^{4b} for further detail and a reconciliation to profit on ordinary activities before finance items and tax.

We report central office costs, central Growth & Innovation costs and other central items in Other items. The \$216 million (pre-tax) increase primarily relates to a \$95 million rise in restructuring, project and other one-off costs and a \$60 million increase in central pension and insurance costs. It also reflects an increase in our information system and technology spend and continued investment in capability to support our mine-to-market⁷ productivity programme.

1 Capital expenditure is presented gross, before taking into account any cash received from disposals of property, plant and equipment (PP&E).

The following financial performance indicators – which are non-GAAP measures – are those management uses internally to assess performance. They are therefore considered relevant to readers of this document. They are presented here to give more clarity around the underlying business performance of the Group's operations.

2 Free cash flow is defined as net cash generated from operating activities less purchases of PP&E plus sales of PP&E.

3 Net and underlying earnings relate to profit attributable to the owners of Rio Tinto. Underlying EBITDA and earnings are defined on page 251^{4b}. Underlying earnings is reconciled to net earnings on page 30.

4 Net cash/debt is defined and reconciled to the balance sheet on page 185^{4b}.

5 Net gearing ratio is defined as net debt divided by the sum of net debt and total equity at the end of each period.

6 See the Notice to the ASX dated 27 February 2019 (*Rio Tinto Exploration Update - copper-gold mineralisation discovered in the Paterson Province in the far east Pilbara region of Western Australia*) 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.

7 Mine-to-market productivity improvements refer to the additional free cash flow generated from post-tax operating cash cost improvements and post-tax volume gains from productivity programmes.

Financial review continued

“Strong and consistent EBITDA with modestly higher prices, and improved volumes offset by higher energy prices and raw materials costs.”

Commentary on financial results

To provide additional insight into the performance of our business, we report underlying EBITDA and underlying earnings. The principal factors explaining the movements in underlying EBITDA are set out in this table.

	\$m
2017 underlying EBITDA	18,580
Prices	277
Exchange rates	286
Volumes and mix	863
General inflation	(301)
Energy	(436)
Operating cash cost movements	(750)
Higher exploration and evaluation spend	(43)
One-off items	(23)
Non-cash costs/other	(317)
2018 underlying EBITDA	18,136

Prices generally stable

Commodity price movements in 2018 increased underlying EBITDA by \$277 million compared with 2017. We have included a table of prices and exchange rates on page 298 ^{AR}.

The FOB (free on board) Platts index for 62% iron Pilbara fines was 4% lower on average compared with 2017.

Average prices for copper and aluminium were up 6% and 7% respectively, compared with 2017. We also benefitted from higher market premiums for aluminium, in particular the mid-west premium in the US which averaged \$419 per tonne in 2018 – a 111% rise on 2017's \$199 per tonne.

On 1 March, the US government announced a 10% tariff on US imports of aluminium from Canada, which it implemented on 1 June. We do not expect this to have a significant financial impact on our business in the near term.

Weaker Australian dollar

Compared with 2017, on average the US dollar strengthened by 3% against the Australian dollar, stayed flat against the Canadian dollar and weakened by 1% against the South African rand. Currency movements increased underlying EBITDA by \$286 million relative to 2017.

Rise in our iron ore, copper and gold volumes

Higher sales volumes increased underlying EBITDA by \$863 million compared with 2017, mainly in iron ore and copper/gold. Our Pilbara iron ore shipments rose as we debottlenecked our rail network following full implementation of AutoHaul™ autonomous trains and ramped up production from our new Silvergrass mine. In copper, we benefitted from better operating performance at Escondida including the absence of the labour disruption in 2017, as well as higher copper grades at Rio Tinto Kennecott and higher gold grades at Oyu Tolgoi.

Increase in energy prices

Higher energy prices compared to 2017 reduced our underlying EBITDA by \$436 million. This was mainly due to the average price of oil rising by roughly 31% in 2018 to \$71 per barrel. Our Pacific Aluminium smelters were also affected by higher coal prices and a new power contract.

Continued cost pressures

Our cash operating costs rose by \$750 million compared with 2017. The considerable efficiencies we continue to see from our mine-to-market productivity programme were offset by the increasing costs of raw materials – in particular caustic soda, petroleum coke and tar pitch for Aluminium.

Higher expenditure on exploration and evaluation

We spent \$43 million more on exploration and evaluation compared with last year. This went to our highest-value projects, particularly the Resolution copper project in Arizona.

One-off items

One-off items were \$23 million more than in 2017. At Iron Ore Company of Canada, we suspended operations for two months in 2018 (\$236 million impact) before reaching a new labour agreement. At Iron & Titanium, production was suspended after a fatality at our Sorel-Tracy plant and labour disruptions at Richards Bay Minerals (\$132 million impact). In 2017, our most significant one-off item was the strike action at Escondida, which led to lower volumes and higher unit costs with a \$316 million impact.

Non-cash costs/other

The movements in our non-cash costs and other items lowered EBITDA by \$317 million compared to 2017. We had \$717 million less in underlying EBITDA following the sale of our coal businesses in 2017 and 2018. This was partly offset by the \$278 million gain on sale of the Winchester South and Valeria coal development projects and a \$167 million revaluation of a royalty receivable arising from the disposal of the Mount Pleasant coal project in 2016. Our restructuring costs were \$95 million higher as we continued our reorganisation around four operating and commercial hubs.

Net earnings, underlying earnings and underlying EBITDA

In order to provide additional insight into the performance of its business, Rio Tinto reports underlying EBITDA and underlying earnings. The differences between underlying earnings, underlying EBITDA, and net earnings are set out in this table.

Net earnings

\$13.6bn

the second highest in our history

Net earnings

The principal factors explaining the movements in underlying earnings and net earnings are set out here.

	\$m
2017 net earnings	8,762
Total changes in underlying EBITDA	(444)
Decrease in depreciation and amortisation (pre-tax) in underlying earnings	391
Decrease in interest and finance items (pre-tax) in underlying earnings	385
Increase in tax on underlying earnings	(149)
Increase in underlying earnings attributable to outside interests	(2)
Total changes in underlying earnings	181
Changes in exclusions from underlying earnings:	
Decrease in net impairment charges	377
Increase in gains on consolidation and gains on disposals	1,974
Movement in exchange differences and gains/losses on debt	1,514
Other	830
2018 net earnings	13,638

Depreciation and amortisation, net interest and tax

Our depreciation and amortisation charge was \$391 million lower than in 2017, driven by the sale of the thermal coal assets in 2017 and a lower charge at Oyu Tolgoi due to some assets being fully depreciated.

Interest and finance items (pre-tax) were \$385 million lower than 2017. This was due to a lower level of net debt, lower early redemption costs from bond purchases and an increase in capitalised interest. In 2018, we completed a bond tender, reducing our gross debt by a further \$1.94 billion equivalent. We also incurred \$94 million in early redemption costs from the bond tender, compared with \$256 million in 2017. Since the start of 2016, we have reduced the nominal value of outstanding bonds from approximately \$21 billion to around \$7.8 billion equivalent, with an average weighted interest rate on the outstanding bonds of around 5%.

The 2018 effective corporate income tax rate on underlying earnings, excluding equity accounted units, was 29%, compared with 28% in 2017. The effective tax rate on underlying earnings in Australia in both years was just over 30%. We anticipate an effective tax rate on underlying earnings of approximately 30% in 2019. We expect to make a tax payment of A\$1.8 billion (equivalent to \$1.3 billion) in the first half of 2019, relating to our 2018 profits and profit from the sale of our Queensland coking coal assets.

Items excluded from underlying earnings

Net impairment charges decreased by \$377 million compared with 2017. In 2018, we recognised \$104 million of post-tax charges, mainly relating to the carrying value of the ISAL aluminium smelter in Iceland following

its reclassification to assets held for sale. In 2017, we recognised \$481 million (post-tax) of impairment charges, relating primarily to the carrying values of the Roughrider uranium deposit in Canada, the Rössing Uranium mine in Namibia and the Argyle diamond mine in Australia.

2018 net gains on consolidation and disposal of interests in businesses were \$2.0 billion higher than last year. In 2018, we realised net gains of \$4.0 billion (post-tax) primarily from the sale of our Hail Creek and Kestrel coking coal businesses in Australia, the sale of our interest in Grasberg in Indonesia and the formation of the Elysis joint-venture in Canada. We created this joint-venture in May with Alcoa to develop and commercialise a carbon-free aluminium smelting process and recognised a gain of \$141 million (post-tax) for the fair value uplift on forming the joint-venture. In 2017, we realised net gains on disposal of interests in businesses of \$2.0 billion from the sale of the Coal & Allied thermal coal business in Australia.

Amounts relating to the undeveloped coal properties, Winchester South and Valeria, are included within underlying earnings.

In 2018, we recognised non-cash exchange and derivative gains of \$0.7 billion. This was mainly on US dollar debt in non-US dollar functional currency Group companies, intragroup balances, and on the revaluation of certain derivatives which do not qualify for hedge accounting. These exchange gains were in contrast to our 2017 net exchange and derivative losses of \$0.8 billion, giving rise to a positive year-on-year movement of \$1.5 billion. The exchange gains are largely offset by currency translation losses recognised in equity. The quantum of US dollar debt is largely unaffected. We will repay it from US dollar sales receipts and US dollar divestment proceeds.

Changes in other exclusions of \$0.8 billion include gains on the sale of surplus land at Kitimat in Canada (\$0.6 billion) and the absence of non-cash tax charges recognised in 2017 (\$0.6 billion). This is partially offset by charges recognised to increase closure provisions at ERA and Argyle in Australia (\$0.3 billion).

Profit

Net earnings and underlying earnings refer to amounts attributable to the owners of Rio Tinto. The net profit attributable to the owners of Rio Tinto in 2018 totalled \$13.6 billion (2017: \$8.8 billion). We recorded a profit in 2018 of \$13.9 billion (2017: \$8.9 billion) of which a profit of \$287 million (2017: \$89 million) was attributable to non-controlling interests.

Financial review continued

Net earnings, underlying earnings and underlying EBITDA

The differences between underlying earnings and net earnings are set out in this table (all numbers are after tax and exclude non-controlling interests).

	2018 \$m	2017 \$m
Underlying earnings	8,808	8,627
Items excluded from underlying earnings		
Impairment charges	(104)	(481)
Net gains on consolidation and disposal of interests in businesses	3,996	2,022
Foreign exchange and derivative gains/(losses) on US dollar net debt and intragroup balances and derivatives not qualifying for hedge accounting	704	(810)
Gain on sale of wharf and land in Kitimat, Canada	569	–
Changes in closure estimates (non-operating and fully impaired sites)	(335)	–
Changes in corporate tax rates	–	(439)
Tax charge relating to expected divestments	–	(202)
Other excluded items	–	45
Net earnings	13,638	8,762

The explanation of excluded items is on page 29. On pages 167 to 168 ^{AR} there is a detailed reconciliation from underlying earnings to net earnings, including pre-tax amounts and additional explanatory notes. The differences between underlying EBITDA, EBITDA and net earnings are set out in this table.

	2018 \$m	2017 \$m
Underlying EBITDA	18,136	18,580
Net gains on consolidation and disposal of interests in businesses	4,622	2,344
Gains/(losses) on embedded commodity derivatives not qualifying for hedge accounting (including exchange)	279	(505)
Gain on sale of wharf and land in Kitimat, Canada	602	–
Changes in closure estimates	(376)	–
Other excluded items	–	73
EBITDA	23,263	20,492
Depreciation and amortisation in subsidiaries excluding capitalised depreciation	(3,909)	(4,302)
Impairment charges, net of reversals	(132)	(796)
Depreciation and amortisation in equity accounted units	(650)	(648)
Finance items in subsidiaries	(33)	(1,658)
Taxation in subsidiaries	(4,242)	(3,965)
Taxation and finance items in equity accounted units	(372)	(272)
Less profit attributable to non-controlling interests	(287)	(89)
Net earnings	13,638	8,762

Net debt movements (\$ billion)

Net debt at December 2017	(3.8)
Operating cashflow	11.8
Disposals	7.7
Capital expenditure	(5.4)
Sales of property, plant and equipment	0.6
Dividends and share buy-backs	(10.8)
Other	0.2
Net cash at December 2018	0.3

Cash flow

We generated \$11.8 billion in net cash from our operating activities, 15% lower than in 2017. This reduction was primarily driven by higher tax payments related to our 2017 profits and adverse working capital movements.

We invested \$5.4 billion in capital expenditure, 21% more than in 2017 as our major projects ramped up. These included our Oyu Tolgoi underground copper mine in Mongolia, the completion of our Amrun bauxite project in Queensland and the full implementation of AutoHaul™, the automation of our Pilbara train system.

We generated \$7.0 billion of free cash flow, 27% lower than 2017, in line with our lower operating cash flow and higher capital expenditure. This was partly offset by proceeds from the sale of property, plant and equipment including \$0.5 billion received from the sale of surplus land at Kitimat. In 2018, our mine-to-market productivity programme exit rate was \$0.4 billion which was impacted by \$0.3 billion of raw material cost headwinds. We are on track to be generating \$1.5 billion per year in free cash flow from this programme from 2021.

We paid \$5.4 billion in dividends to our shareholders. We also repurchased \$5.4 billion of our shares: \$2.1 billion of these were bought off-market in Australia and \$3.3 billion on-market in the UK in 2018 as part of our ongoing programme.

Balance sheet

Our net debt (see page 185 ^{AR}) declined by \$4.1 billion, giving rise to net cash of \$0.3 billion. This reflects our 2018 operating cash flows and divestment proceeds, offset by the increase in capital expenditure, payment of the final dividend and the ongoing share buy-back.

Our net gearing ratio (net debt to total capital) decreased to -1% at 31 December 2018 (31 December 2017: 7%).

Total financing liabilities at 31 December 2018 were \$13.0 billion (see page 185 ^{AR}) and the weighted average maturity was around 11 years. At 31 December 2018, approximately 79% of Rio Tinto's total borrowings were at floating interest rates. The maximum amount, within non-current borrowings, maturing in any one calendar year was \$1.7 billion, which matures in 2025. These amounts are subject to revision following the implementation of IFRS 16 on 1 January 2019.

In 2018, we repaid \$2.3 billion of borrowings, mainly through the early redemption of bonds. Cash and cash equivalents plus other short-term cash investments at 31 December 2018 were \$13.3 billion (31 December 2017: \$11.5 billion).

“In 2018, we have declared record cash returns to shareholders of \$13.5bn, comprising \$6.3bn from operations and \$7.2bn from divestments.”

Our shareholder returns policy

At the end of each financial period, the board determines an appropriate total level of ordinary dividend per share, taking into account the results for the financial year, the outlook for our major commodities, the board's view of the long-term growth prospects of the business and the company's objective of maintaining a strong balance sheet. The intention is that the balance between the interim and final dividend be weighted to the final dividend.

The board expects total cash returns to shareholders over the longer term to be in a range of 40%-60% of underlying earnings in aggregate through the cycle.

The board is committed to maintaining an appropriate balance between cash returns to shareholders and investment in the business, with the intention of maximising shareholder value.

Acknowledging the cyclical nature of the industry, in periods of strong earnings and cash generation, it is the board's intention to supplement the ordinary dividends with additional returns to shareholders.

	\$bn	US cents per share
Ordinary dividend		
Interim paid in September 2018	2.2	127.00
Final to be paid in April 2019	3.1	180.00
2018 full-year dividend	5.3	307.00
Additional returns		
Share buy-back announced in August 2018, completed by 27 February 2019	1.0	
Combined total is 72% of 2018 underlying earnings	6.3	
Supplementary share buy-back, returns of post-tax divestment proceeds		
Off-market buy-back in Rio Tinto Limited, completed in November 2018	2.1	
On-market buy-back in Rio Tinto plc from 28 February 2019 to be completed no later than 28 February 2020	1.1	
Special dividend of 243 US cents per share	4.0	
Total supplementary returns	7.2	
Total cash returns to shareholders declared for 2018	13.5	

We determine dividends in US dollars. We declare and pay Rio Tinto plc dividends in pounds sterling and Rio Tinto Limited dividends in Australian dollars. The 2018 final dividend and the special dividend were converted at exchange rates applicable on 26 February 2019 (the latest practicable date prior to the declaration of the dividend). ADR holders receive dividends in US dollars.

Ordinary dividend per share	2018	2017
Rio Tinto Group		
Interim (US cents)	127.00	110.00
Final (US cents)	180.00	180.00
Full-year dividend (US cents)	307.00	290.00
Rio Tinto plc		
Interim (UK pence)	96.82	83.13
Final (UK pence)	135.96	129.43
Full-year dividend (UK pence)	232.78	212.56
Rio Tinto Limited		
Interim (Australian cents)	170.84	137.72
Final (Australian cents)	250.89	228.53
Full-year dividend (Australian cents)	421.73	366.25

Special dividend per share	2018
Rio Tinto Group	
US cents per share	243.00
Rio Tinto plc	
UK pence per share	183.55
Rio Tinto Limited	
Australian cents per share	338.70

Both the 2018 final dividend and the special dividend to be paid to our Rio Tinto Limited shareholders will be fully franked. The board expects Rio Tinto Limited to be in a position to pay fully franked dividends for the foreseeable future.

We will pay the 2018 final dividend and the special dividend on 18 April 2019 to holders of ordinary shares and ADRs on the register at the close of business on 8 March 2019. The ex-dividend date for both the 2018 final dividend and the special dividend for Rio Tinto Limited, Rio Tinto plc and Rio Tinto plc ADR shareholders is 7 March 2019.

Rio Tinto plc shareholders may choose to receive their dividend in Australian dollars, and Rio Tinto Limited shareholders may choose to receive theirs in pounds sterling. Currency conversions will be based on the pound sterling and Australian dollar exchange rates five business days before the dividend payment date. Rio Tinto plc and Rio Tinto Limited shareholders must register their currency elections by 28 March 2019.

We will operate our Dividend Reinvestment Plans for both the 2018 final dividend and the special dividend – see our website (riotinto.com) for details. Rio Tinto plc and Rio Tinto Limited shareholders' election notice for the Dividend Reinvestment Plans must be received by 28 March 2019. Purchases under the Dividend Reinvestment Plan are made on, or as soon as practicable after, the dividend payment date and at prevailing market prices. There is no discount available.

Portfolio management

We have a programme of high-quality projects across a broad range of commodities.

In 2018, we funded our capital expenditure from operating activities. We expect to continue funding our capital programme from internal sources, except for the Oyu Tolgoi underground development, which is project-financed.

Capital projects

Projects (Rio Tinto 100% owned unless otherwise stated)	Total approved capital cost (100% unless otherwise stated)	Status/Milestones
Completed in 2018		
Development of A21 pipe at the Diavik Diamond Mine in Canada (Rio Tinto 60%).	\$0.2bn (RT share)	First ore was delivered in March, with the pipe officially opened in August. The pit reached full production by the end of the year.
Development of the Amrun bauxite mine on the Cape York Peninsula in north Queensland, Australia, with a capacity of 22.8 million tonnes a year, replacing production from East Weipa.	\$1.9bn	First shipment took place in December, six weeks ahead of schedule. We expect to reach full production during 2019 which will increase annual bauxite export capacity by around 10 million tonnes.
Project funding for Grasberg, Indonesia, for 2018.	\$0.1bn (RT share)	We completed the sale of our interest in Grasberg in December.
Investment in AutoHaul™, the automation of the Pilbara iron ore train system in Western Australia.	\$0.9bn	In December, we successfully deployed AutoHaul™, following completion of the first autonomous haulage run in July 2018. The programme will now focus on optimising autonomous operations and rail debottlenecking.
Ongoing and approved		
Iron ore		
Investment in West Angelas and the Robe Valley in the Pilbara region of Western Australia to sustain production capacity.	\$0.8bn (RT share)	Approved in October 2018, the investments will enable us to sustain production of our Pilbara Blend™ and Robe Valley products. Construction is planned to begin in 2019 and first ore is expected in 2021.
Investment in Koodaideri, a new production hub in the Pilbara region of Western Australia, to sustain existing production in our iron ore system.	\$2.6bn	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. We will start construction in 2019 and expect first production in late 2021. Once complete, the mine will have an annual capacity of 43 million tonnes.
Aluminium		
Investment in the Compagnie des Bauxites de Guinée (CBG) bauxite mine to expand capacity from 14.5 to 18.5 million tonnes a year.	\$0.3bn (RT share)	Approved in 2016. We produced first ore in the fourth quarter of 2018.
Investment in a second tunnel at the 1,000MW Kemano hydropower facility at Kitimat, British Columbia, Canada.	\$0.5bn	Approved in 2017. We expect to complete the project by late 2020. It will ensure the long-term reliability of the power supply to the modernised Kitimat smelter.

Capital projects continued

Projects (Rio Tinto 100% owned unless otherwise stated)	Total approved capital cost (100% unless otherwise stated)	Status/Milestones
Copper & Diamonds		
Investment to extend mine life at Rio Tinto Kennecott, US, beyond 2019.	\$0.9bn	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. Further funding for increased levels of waste removal was approved in 2018 in response to further geotechnical information.
Development of the Oyu Tolgoi underground mine in Mongolia (Rio Tinto 34%).	\$5.3bn	The project was approved in May 2016. The detailed engineering design work and overall construction is mostly on track, but more detailed geotechnical information and difficult ground conditions have required a review of the mine design. This, combined with fit-out and commissioning challenges with the main production shaft, is ultimately expected to result in a further revised ramp-up schedule to sustainable first production (beyond the nine month delay indicated in October 2018). Detailed design work is underway to estimate the impact these issues will have on cost and schedule.

“In 2018, we continued to significantly reshape our portfolio, completing \$8.6 billion of divestments.”

Material acquisitions and divestments

Asset	Consideration \$m	Status
Divested in 2018		
Hail Creek	1,550 ^{1,2}	Sold to Glencore
Kestrel	2,250 ¹	Sold to a consortium – EMR Capital and PT Adaro Energy Tbk
Aluminium Dunkerque	500 ¹	Sold to Liberty House
Grasberg	3,500 ^{1,3}	Sold to Inalum (PT Indonesia Asahan Aluminium (Persero))
Divested in 2017		
Coal & Allied Industries Limited	2,690 ¹	Sold to Yancoal Australia Limited
Divested in 2016		
Bengalla Joint Venture	617 ¹	Sold to New Hope Corporation Limited
Lochaber	410 ¹	Sold to SIMEC

¹ Before working capital and completion adjustments.

² Excluding proceeds related to the sale of the Valeria coal development project of \$150 million (before working capital adjustments).

³ Including a payment received of \$107 million in respect of our share of Grasberg's copper and gold revenues, net of our capital contribution for the year.

Over the past three years, we have made no material acquisitions.

Further information on acquisitions and divestments is included in note 37 to the financial statements on page 208 [AR](#).

Iron Ore

“
In Iron Ore, our success is underpinned by an integrated system of mines and infrastructure, a quality product offering, and a focus on creating and growing value for all our stakeholders.”

Chris Salisbury
Chief executive, Iron Ore

16

integrated mines in Western Australia

5

iron ore products

4

port terminals

1,700km

automated rail network, including AutoHaul™, the world's largest robot

13.5%

of residential workforce from Indigenous groups in the Pilbara

10,500

employees

Our integrated iron ore operations in the Pilbara, Western Australia, use cutting-edge technology to mine and transport iron ore to our customers safely, efficiently and in response to market conditions.

Our iron ore operations comprise a world-class, integrated network of 16 iron ore mines, four independent port terminals, a 1,700 kilometre rail network and related infrastructure.

Insights from data help us to explore and extract our iron ore efficiently. Our Operations Centre in Perth uses next-generation technologies, including artificial intelligence, automation and robotics, to run operations in real-time and respond quickly to changes. Our AutoHaul™ train system is the first fully autonomous, long-distance, heavy-haul rail network – the world's largest robot.

Each of these elements works together to deliver high-quality iron ore, including our flagship Pilbara Blend™, to our customers reliably and safely.

Fe

Snapshots from the year...

2018 in numbers

1

fatality
(2017: 0 fatalities)

\$18.5bn

gross sales revenue
(2017: \$18.3bn)

68%

underlying free on board (FOB)
EBITDA margin
(2017: 68%)

\$8.3bn

cash generated from
operating activities
(2017: \$8.5bn)

Koodaideri

Our most advanced mine

In November, our board approved \$2.6 billion in funding for Koodaideri, our first intelligent mine, located in the Pilbara, Western Australia. Koodaideri is a high-quality, long-life, low-cost and expandable iron ore asset. Designed to run automated trucks and drills, Koodaideri is set to be our safest and most efficient operation.

One initiative unique to Koodaideri will be the use of a digital twin of the mine that collects all the data from design, build, commissioning and operation. This will give our people in the field and at our remote operations centre, the ability to access the same information and make decisions, based on real-time data, in seconds instead of hours or days.

When fully operational, Koodaideri will produce up to 43 million tonnes of iron ore a year, in its first phase, contributing to our flagship product, Pilbara Blend™. It will also become a new production hub for our iron ore business, incorporating a processing plant and infrastructure including a 166-kilometre rail line connecting the mine to our existing network.

Koodaideri will also bring jobs and business opportunities to Western Australia, including for Traditional Owners and Indigenous people. The construction phase will create over 2,000 jobs and, when operational, we expect the mine to employ about 600 people.

The construction phase will create more than

2,000 jobs

Our contribution to Western Australia

Helping Western Australia to thrive alongside our company is a commitment we take seriously. One way we are fulfilling this commitment is by making it easier for local businesses to become part of our supply chain through procurement opportunities.

In July, we launched a new partnership with the Regional Chambers of Commerce & Industry Western Australia (RCCIWA) to build capability in businesses in the Pilbara.

Local businesses have access to a portal to find and bid for contracts. In 2018, we awarded over 100 scopes of work through this portal. We also use 30-day payment terms to help small business partners (those with less than \$1 million of expenditure) to manage their cash flow.

We are working with more than 140 Aboriginal businesses in the Pilbara to help build capacity and become Rio Tinto suppliers. In 2018, we spent \$120 million with more than 45 Pilbara Aboriginal businesses.

We have also launched a partnership with the government of Western Australia and post-secondary education institution, South Metropolitan TAFE, to develop the first nationally recognised certificate in automation. This partnership aims to train people in the new skills required to work with automation, and ensure these skills are easily transferable across the industry – allowing people to pursue opportunity wherever they find it.

Australia's

1st

qualification in automation

Iron Ore continued

2018 results ¹	2018	2017	Change
Pilbara production (million tonnes – Rio Tinto share)	281.8	271.3	+4%
Pilbara production (million tonnes – 100%)	337.8	329.8	+2%
Pilbara shipments (million tonnes – Rio Tinto share)	280.8	272.0	+3%
Pilbara shipments (million tonnes – 100%)	338.2	330.1	+2%
Gross sales revenue (\$ millions)	18,485	18,251	+1%
Underlying EBITDA (\$ millions)	11,325	11,520	-2%
Pilbara underlying FOB EBITDA margin ²	68%	68%	
Underlying earnings (\$ millions)	6,514	6,692	-3%
Net cash generated from operating activities (\$ millions)	8,332	8,466	-2%
Capital expenditure (\$ millions)	(1,288)	(1,201)	+7%
Free cash flow (\$ millions)	7,043	7,265	-3%

1 Iron Ore Company of Canada and the Simandou iron ore project in Guinea are reported within Energy & Minerals, reflecting management responsibility.

2 The Pilbara underlying FOB EBITDA margin is defined as Pilbara underlying EBITDA divided by Pilbara revenues, excluding freight revenue.

Underlying EBITDA 2017 vs 2018 (\$ million)

2017 underlying EBITDA	11,520
Price	(479)
Exchange rates	142
Energy	(105)
Inflation	(70)
Flexed 2017 underlying EBITDA	11,008
Volumes and mix	321
Cash costs	(31)
Other	27
2018 underlying EBITDA	11,325

Safety

Tragically, there was a fatality this year at our Paraburdoo mine in Western Australia. We are deeply affected by this loss, and our thoughts remain with the families and many friends, colleagues and communities affected. Following a detailed investigation, we have shared our learnings and implemented a number of measures at Paraburdoo and across our Pilbara operations.

In 2018, while our all-injury frequency rate rose to 0.63, 31% more than 2017, the severity of injuries decreased. We are actively working to reduce injuries and eliminate fatalities, and have introduced a number of safety initiatives with our employees and contractor partners to improve engagement and reduce risk. We continue to focus on critical-risk management. In 2018, we completed over 300,000 verifications on fatality-risk critical controls and introduced a transferable learnings process.

This year, we also focused heavily on reducing exposure to material risks, and we continued to invest in a range of mental health and wellbeing programmes to support our workforce and their families.

Financial performance

We continued to deliver strong results from our world-class iron ore assets. We benefitted from robust demand for our high-quality products, we increased shipments and maintained unit costs. It was a solid year operationally although third-quarter production was affected by a safety pause across all operations following the fatality at the Paraburdoo mine.

Underlying EBITDA of \$11.3 billion in 2018 was 2% lower than 2017, primarily driven by lower prices and higher energy costs. The average FOB Platts index for 62% Pilbara fines dropped by 4%, which lowered our EBITDA by \$0.5 billion relative to 2017. We partly offset this by increasing shipments by 2% to 338 million tonnes.

In 2018, Pilbara unit cash costs were marginally lower at \$13.3 per tonne (2017: \$13.4 per tonne). Higher volumes and the weakening of the Australian dollar offset headwinds including higher diesel prices, rises in labour and maintenance costs, and steeper hauls.

Our Pilbara operations delivered an underlying FOB EBITDA margin of 68% in 2018, consistent with 2017.

In 2018, we priced approximately 68% of our sales with reference to the current month average index; 17% with reference to the prior quarter's average index lagged by one month; 5% with reference to the current quarter average; and 10% on the spot market. Approximately 32% of our sales were made on an FOB basis with the remainder sold including freight.

In 2018, we achieved an average iron ore price of \$57.8 per wet metric tonne on an FOB basis (2017: \$59.6 per wet metric tonne). This equates to \$62.8 per dry metric tonne (2017: \$64.8 per dry metric tonne), which compares with the average FOB Platts index of \$61.2 per dry metric tonne for the 62% iron Pilbara fines product (2017: \$64.1 per dry metric tonne).

Gross sales revenue for our Pilbara operations in 2018 included freight revenue of \$1.69 billion (2017: \$1.46 billion).

Net cash generated from operating activities of \$8.3 billion was 2% lower than 2017, driven by the same trends as underlying EBITDA.

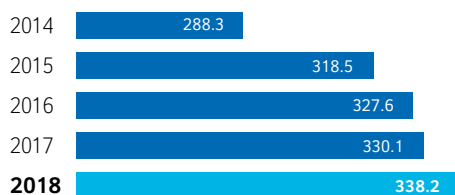
Free cash flow of \$7.0 billion, 3% lower than 2017, reflected higher capital spend. This was largely sustaining capital, including rail improvements, structural integrity works and automation.

Underlying FOB EBITDA margin**68%**

(2017: 68%)

Pilbara shipments

(million tonnes – 100% basis)

**Review of operations**

Our Pilbara mines in Western Australia produced 338 million tonnes in 2018 (with 282 million tonnes as Rio Tinto's share) – 2% higher than 2017. This increase came from expanded mines and productivity improvements across the integrated system.

In December 2018, we successfully deployed AutoHaul™, the world's first automated heavy-haul, long-distance rail network. Since completing the first autonomous haulage run in July 2018, we have steadily increased the number of driverless journeys, with more than 1.6 million kilometres travelled autonomously in 2018. The programme will now focus on optimising autonomous operations.

New projects and growth options

In 2018, the board approved three new investments to sustain our existing production capacity. We are set to invest \$2.6 billion in the Koodaideri mine. This will be the most technologically advanced iron ore mine and, as a new production hub in the Pilbara, will create significant future flexibility in the system. It will incorporate a processing plant and infrastructure, including a 166-kilometre rail line connecting the mine to our existing infrastructure network. We expect construction to start in 2019, with first production in late 2021. Once complete, the initial mine development will have an annual capacity of 43 million tonnes.

We also received board approval for a \$44 million pre-feasibility study into Koodaideri Phase 2. This will explore options for expanding annual capacity from our new production hub to 70 million tonnes and beyond, underpinning production of our Pilbara Blend™.

With our joint-venture partners, Mitsui and Nippon Steel, we will invest \$1.55 billion (Rio Tinto's 53% share \$820 million) to sustain production capacity at the Robe Valley and West Angelas mines. We expect construction on these projects to start in 2019, and production of first ore from 2021.

Markets and outlook

Demand for the high-quality, higher grade iron ores we produce remained strong in 2018. This was driven by Chinese environmental policy and the supply-side reform of the steel sector. With Chinese steel mills continuing to chase productivity, prices for 62% iron ore remained relatively stable, while prices for 58% iron ore traded at a 42% discount (on average) to 62% iron ore in 2018. Around 90% of our Pilbara products are priced with reference to the 62% index.

Global steel markets were resilient in 2018, supported by record Chinese crude steel production of 928 million tonnes. Chinese steel inventories declined, highlighting healthy end-use demand. Steel demand outside China was also robust. India overtook Japan as the world's second-largest steel producer, and Europe's steel demand and production sustained its growth momentum. We have also seen US capacity utilisation recovering on the back of tariffs on steel imports imposed by section 232. With US annual steel imports representing just two-and-a-half weeks of Chinese steel production, we continue to expect the impact of section 232 on China to be minimal.

2018 seaborne iron ore supply was essentially flat compared to 2017. Expansions from the major producers were mostly offset by high-cost, low-quality supply exiting the market, coupled with significant operational disruptions and industrial disputes. China's domestic supply dropped to 240 million tonnes in 2018.

Scrap use increased, with up to 50 million tonnes of new electric arc furnace (EAF) capacity expected in the next five years. Scrap use will remain limited by availability, quality, location and economics, and we expect EAF utilisation rates to stay below 70%.

Greenhouse gas emissions

This year we continued to reduce our greenhouse gas emissions intensity compared with the baseline target set in 2008. Since 2008, greenhouse gas emissions intensity in our Iron Ore operations has reduced by 7.3%.

“
Continued delivery from
a world-class asset.”

Aluminium

“
We lead the industry
in responsible
aluminium, working
with our customers
to meet growing
consumer demand.”

Alf Barrios

Chief executive, Aluminium

5

bauxite mines in Australia,
Brazil and Guinea

4

alumina refineries in
Australia, Brazil and Canada

14

aluminium smelters in
Canada, Australia, New
Zealand, Iceland and Oman

7

hydropower plants in Canada
supplying 100% of the
electricity we use there

2

wholly-owned port and rail
facilities serving our plants
in Canada

3

research & development
centres in Canada, France
and Australia

1st

producer to have metal
certified “responsible” by the
Aluminium Stewardship
Initiative (ASI)

13,500

employees



We are a global leader in aluminium, with large-scale, high-quality bauxite mines and alumina refineries – and, in Canada, technologically advanced, low-cost smelters producing aluminium certified as “responsible”.

Through our integrated portfolio of mines, refineries and smelters, we source bauxite and produce alumina and aluminium. Managing the process from start to finish allows us to bring quality products to our customers efficiently, carefully calibrated to meet their specific and changing needs – from sustainably sourced aluminium to new, lighter alloys for the automotive industry.

Our low-cost Canadian operations are in the first decile of the industry cost-curve and produce aluminium using clean, renewable hydropower. Since its upgrade in 2015, our Kitimat smelter in British Columbia has produced twice as much aluminium with half the emissions. And, across our global aluminium operations, our greenhouse gas footprint is 60% lower than the global industry average.

AL

Snapshots from the year...

2018 in numbers

0.40

AIFR
(2017: 0.44)

\$12.2bn

gross revenue
(2017: \$11.0bn)

32%

underlying EBITDA margin
from integrated operations
(2017: 35%)

\$2.3bn

cash generated from
operating activities
(2017: \$2.6bn)

A first in responsible aluminium

Our customers are paying increasing attention to the sustainability of the aluminium they use. The clean hydropower we use to produce this metal in Canada makes our greenhouse gas footprint significantly lower than the global industry average.

In 2016, we launched RenewAL™, the first certified low-carbon aluminium. And, this year, we became the first company to receive certification from the Aluminium Stewardship Initiative (ASI) as producing “responsible” aluminium in Canada. In November, Nespresso announced that they would be using Rio Tinto’s certified aluminium for their coffee pods.

This certification gives our customers independent assurance that the metal they use to make aeroplane parts, cars, smartphones and other products has been made to standards that promote the protection of biodiversity, respect for Indigenous peoples’ rights, water management and low-carbon emissions. ASI also creates a traceability mechanism – the first of its kind for any industrial metal – so that companies like Nespresso can be sure that the aluminium they buy has been manufactured to meet ASI standards at every stage of the process.

Our greenhouse gas footprint is lower than the global industry average by more than

60%¹

Supporting Australia’s first Indigenous-owned mine

At nearly the northernmost edge of the Northern Territory sits the first mine in Australia to be 100% owned and operated, across the supply chain, by Traditional Owners – the Gumatj, one of the Yolngu clans in the area.

Located at Gulkula, in Northeast Arnhem Land, the mine will provide a range of employment opportunities for Traditional Owners. Among these are new graduates from the Gulkula Mine Training Centre, partly funded with A\$2.4 million from Rio Tinto, that gives on-the-job training and support to the Yolngu people to help them build mining careers in the Northern Territory and beyond.

We have worked closely with Traditional Owners from the start to help make sure the land is maintained and rehabilitated to meet the needs of the local community. We are committed to the success of this mine – both as a customer and a partner.

We buy bauxite from the mine to sell to international customers, and celebrated the mine’s first bauxite shipment this year.

We contributed

A\$2.4m

to help fund the Gulkula Mine Training Centre

¹ Source: International Aluminium Institute.

Aluminium continued

2018 results	2018	2017	Change
Bauxite production (000 tonnes - Rio Tinto share)	50,421	50,796	-1%
Alumina production (000 tonnes - Rio Tinto share)	7,980	8,131	-2%
Aluminium production (000 tonnes - Rio Tinto share)	3,458	3,551	-3%
Gross sales revenue (\$ millions)	12,191	11,005	+11%
Underlying EBITDA (\$ millions)	3,095	3,423	-10%
Underlying EBITDA margin (integrated operations)	32%	35%	
Underlying earnings (\$ millions)	1,347	1,583	-15%
Net cash generated from operating activities (\$ millions)	2,331	2,648	-12%
Capital expenditure – excluding EAUs ¹ (\$ millions) ²	(1,683)	(1,269)	+33%
Free cash flow (\$ millions)	638	1,380	-54%

¹ Equity accounted units

² 2018 capital expenditure excludes proceeds of \$508 million from the sale of surplus land at Kitimat in Canada. These proceeds are not included in Aluminium's free cash flow and the associated gain on disposal is excluded from underlying EBITDA and underlying earnings.

Underlying EBITDA 2017 vs 2018 (\$ million)

2017 underlying EBITDA	3,423
Price	283
Exchange rates	136
Energy	(132)
Inflation	(94)
Flexed 2017 underlying EBITDA	3,616
Volumes and mix	185
Cash costs	(491)
Other	(215)
2018 underlying EBITDA	3,095

Safety

2018 marked a fourth consecutive fatality-free year for Aluminium. Our all-injury frequency rate continued to decline (from 0.44 to 0.40), marking another record. The severity of our injuries also decreased year on year, however we had more lost-time injuries in 2018 than 2017. In 2018, we continued our strong focus on critical risk management, completing over 293,000 verifications on fatality-risk critical controls and improving the level of critical risk management maturity across our sites. We also continued to make process safety improvements, reducing the number of incidents and enhancing the management of critical risks. We are proud that our Power Operations division, based in Quebec, was awarded the Rio Tinto 2018 CEO Safety Award.

Our strong commitment to safety extends to mental health and wellbeing. We provided training and implemented various programmes to support employees and their families.

Financial performance

Our aluminium business was stable from an operational perspective, with higher premiums for our sales in North America offset by the US 10% tariff. The year was characterised by market volatility from tariffs, sanctions and alumina supply disruptions and rises in input prices for key raw materials.

Underlying EBITDA of \$3.1 billion declined by 10% compared with 2017. The stronger pricing environment, in particular for primary metal in the first half of the year, helped to increase revenues. However, this was more than outweighed by the impact of legacy alumina sales contracts, raw material cost inflation and lower aluminium volumes. The lower volumes were primarily due to labour disruptions at the non-managed Becancour smelter in Canada and a power interruption at the Dunkerque smelter in France.

In 2018, we achieved an average realised aluminium price of \$2,470 per tonne (2017:

\$2,231 per tonne). This comprised the LME price, a market premium and a value-added product (VAP) premium. The cash LME price averaged \$2,110 per tonne, 7% higher than 2017. Market premiums increased in all regions. In our key US market, the mid-West premium rose 111% to \$419 per tonne (2017: \$199 per tonne), driven by the 10% US tariff implemented on 1 June which is included in our operating costs. VAP represented 57% of the primary metal we sold (2017: 57%) and generated attractive product premiums averaging \$224 per tonne of VAP sold (2017: \$221 per tonne). Overall, the improvement in prices increased our underlying EBITDA by \$0.3 billion compared with 2017.

Although we are broadly balanced in alumina, we are exposed to approximately 2.2 million tonnes of legacy alumina sales contracts which have a fixed linkage to the LME price. These contracts date back to 2005 or earlier, and the majority expire between 2023 and 2030. The negative impact on EBITDA of these legacy contracts, following significant escalation in the alumina index due to industry supply disruptions, was \$0.46 billion in 2018. This was \$0.3 billion higher than in 2017.

In 2018, there was a significant impact from raw material cost headwinds – most notably caustic soda, petroleum coke and tar pitch. In addition, higher priced energy relating to stronger thermal coal pricing negatively impacted our Pacific Aluminium smelters in Australia. These headwinds resulted in around \$0.5 billion (pre-tax) of cost inflation relative to the 2017 pricing of these inputs.

Despite these pressures, we maintained our position as the leading business in the sector, with an EBITDA margin from integrated operations of 32%.

Net cash from operating activities decreased by 12%, driven by the underlying EBITDA performance. Our overall free cash flow declined by 54%. This was partly due to the reduction in EBITDA and partly to 33% higher capital

Underlying EBITDA margin (integrated operations)

32%

(2017: 35%)

Third-party bauxite shipments (million tonnes – Rio Tinto share)



Aluminium production (thousand tonnes – Rio Tinto share)



“
**Stable
operations
squeezed by
raw material
costs.**”

expenditures relating to the Amrun project, which we delivered ahead of schedule and below budget during the fourth quarter.

Review of operations

Central to our performance has been our continuous drive to gradually increase (creep) the capacity of our assets through productivity. We also continued to realise value from cost improvement and value-added product initiatives.

Bauxite production in 2018 of 50.4 million tonnes was 1% lower than 2017. Strong production at Gove and the Andoom mining area in Weipa in Australia was offset by lower production at two non-managed operations. The CBG mine in Guinea was impacted by planned tie-in works as part of the commissioning of the expansion project, and MRN in Brazil was affected by an outage at Hydro's Alunorte refinery. The planned transition of operations from East Weipa to Amrun also affected production during the fourth quarter.

Our strong production performance enabled us to increase shipments of bauxite to third parties by 2% to 32.8 million tonnes. This reinforces our position as a leading global supplier in the seaborne bauxite trade.

Gross sales revenues for bauxite in 2018 increased 15% to \$2.3 billion – this includes freight revenues of \$371 million (2017: \$266 million).

Alumina production in 2018 was 2% lower than 2017, mainly because of the timing of maintenance shutdowns.

Aluminium production of 3.5 million tonnes was 3% lower than 2017. This was due to the ongoing labour disruptions at the non-managed Becancour smelter in Canada which began on 11 January 2018, as well as a power interruption at Aluminium Dunkerque during the first quarter. Excluding these smelters, we increased our aluminium production by 1%. This shows the continued productivity improvements we have achieved at minimal cost to enhance margins, while maintaining our focus on value over volume.

In 2018, we also continued to realise value through refining our portfolio. Changes included the sale of Aluminium Dunkerque in France to Liberty House for \$0.4 billion, net of completion adjustments, and the sale of a wharf and land in Kitimat, British Columbia to LNG Canada for \$0.6 billion, including \$0.5 billion for the sale of property, plant and equipment, and other income of \$0.1 billion.

New projects and growth options

In December 2018, we made the first shipment of bauxite at our Amrun project on the Cape York Peninsula in north Queensland, six weeks ahead of schedule. The \$1.9 billion investment replaces production from the depleting East Weipa mine and increases our annual bauxite exports by around 10 million tonnes at full capacity. We

expect Amrun to be producing at its capacity of 22.8 million tonnes a year from 2019.

In the fourth quarter of 2018, we produced first ore from the expanded Sangaredi bauxite mine in Guinea. This \$0.7 billion project will increase the annual capacity of Compagnie des Bauxites de Guinée (CBG) to 18.5 million tonnes¹.

At the \$0.5 billion Kemano project in Kitimat, British Columbia, we are constructing a required second tunnel at our wholly-owned hydropower facility which we expect to complete by late 2020. We completed the starter tunnel in December 2018 and began boring the main tunnel in January 2019.

Markets and outlook

We expect the automotive industry to increase demand for primary aluminium, in particular in North America and China, with demand from construction and packaging remaining firm.

In 2018, China continued to show determination to curb overcapacity in smelting and reduce pollution. Their supply-reform policy resulted in 3.8 million tonnes of non-permitted capacity being shut down in 2017 and 2018, circa 9% of Chinese capacity in 2018. We expect this to remain curtailed until demand rises – if the facilities receive permits to restart, this capacity increase is likely to be offset by the retirement of older, state-owned smelters.

The alumina market in 2018 was characterised by significant volatility and escalation in the alumina price index. This was driven by industry supply disruptions relating mainly to the 50% curtailment of Hydro's Alunorte refinery in Brazil and uncertainty related to proposed US Treasury sanctions on various Russian individuals and companies.

Strong growth in seaborne bauxite in 2018 was driven by demand from China. This was met by rising exports from Australia and Guinea, and some Indonesian exports, which accounted for the bulk of the supply increase.

There are significant uncertainties around the direction of the bauxite market primarily due to the recent and substantial growth in bauxite mine capacity in Guinea and uncertainties regarding the impact of supply reforms under way in China.

Greenhouse gas emissions

We have dramatically reduced our carbon footprint over the past decade. Since 2008, our greenhouse gas emissions intensity has improved by 39.6%. Our pioneering RenewAL™ brand continues to attract customers, who place a strong emphasis on sustainably sourcing within their supply chain. The Elysis project, announced in 2018, reinforces Aluminium's position as an industry leader in reducing greenhouse gas emissions.

¹ 100% basis. Rio Tinto's share of capex and production is 45%.

Copper & Diamonds

“
Global demand for copper is increasing, and our business is well-positioned to grow, and help meet it.”

Arnaud Soirat

Chief executive, Copper & Diamonds

3

copper operations in the US, Mongolia and Chile

2

diamond operations in Canada and Australia

16

countries with copper exploration programmes

8,500

employees

2

copper growth projects in the US and Mongolia

1st

mining company to be certified by the Responsible Jewellery Council

250,000

pounds of copper scrap recycled each month at Kennecott Copper Mine in the US, now in its 115th year

Our portfolio of copper and diamond mines share an expertise in underground mining as well as a focus on safety, productivity and sustainability.

Copper

Global demand for copper is set to grow, driven by urbanisation, industrialisation and increasing requirements for renewable energy: copper plays a key role in electrification and power production. For example, a wind turbine capable of generating a megawatt of power – enough to supply several hundred homes – needs more than three tonnes of copper.

Our copper operations around the world are at various stages in the mining lifecycle, from exploration to rehabilitation. We supply customers in China, Japan and the US.

Oyu Tolgoi, our mine in Mongolia, has reserves and resources that make it one of the world's largest known copper and gold deposits. When working to full capacity, it will be the world's third-biggest copper mine.

Diamonds

In diamonds, we are a fully integrated global exploration, mining and sales and marketing business. We are one of the world's largest producers of rough diamonds from our two mines – Argyle in Australia and Diavik in Canada.

We provide a reliable supply of white and coloured diamonds mined to the highest possible ethical and environmental standards. As a founding member of The Responsible Jewellery Council, we support responsible and ethical social and environmental practices throughout the jewellery supply chain. We are also members of the World Diamond Council and the Diamond Producers Association which uphold the reputation of diamond miners as careful custodians of these natural treasures.

Cu

Snapshots from the year...

2018 in numbers

0.46

AIFR
(2017: 0.46¹)

\$6.5bn

gross revenue
(2017: \$4.8bn)

43%

underlying EBITDA margin
(2017: 39%)

\$2.1bn

cash generated
from operating activities
(2017: \$1.7bn)

Ingenuity at work

Deep inside our Bingham Canyon copper mine in Utah, western United States, we use a remote operated vehicle team – including drones and other equipment – to help keep people safe and save the business money. The newest team member is a robot named Mark II, designed and built by our chief drone pilot, Matt Key, using an over-the-counter rock crawler and a 3D printer. Matt's ingenuity meant Mark II cost a mere \$10,000 to build, a fraction of the \$100,000 it could have cost to buy a similar robot.

Mark II squeezes into small spaces and manoeuvres over tough terrain to test oxygen levels and collect soil and water samples.

Sending in a robot to check hazards in advance has obvious safety benefits – and can also save the business time and money. The team is already designing Mark II's little brother, Mark III.

Our robot built for just

10% of the market price

New diamond pipe at Diavik

200 kilometres from the Arctic Circle, under a giant lake, sit some of the world's most beautiful and sought-after diamonds. This is the Diavik Diamond Mine, in Canada's Northwest Territories. Since 2003, Diavik has been producing predominantly gem-quality diamonds destined for high-end jewellery in markets around the world. This includes the 187.7 carat Foxfire diamond, one of the largest gem-quality rough diamonds discovered in North America.

In August, we celebrated the opening of a fourth diamond pipe at Diavik. Known as A21, the new pipe will help to sustain production at Diavik through to 2025. This follows four years of construction and an investment of \$350 million, shared by Rio Tinto (60%) and our joint-venture partner Dominion Diamond Corporation (40%).

Diavik is expected to produce high-quality gems until

2025

¹ Restated to reflect the move of Oyu Tolgoi into Copper & Diamonds

Copper & Diamonds continued

“
**Strong
operational
performance.”**

2018 results	2018	2017	Change
Mined copper production (000 tonnes – Rio Tinto share)	633.5	478.1	+33%
Refined copper production (000 tonnes – Rio Tinto share)	274.8	197.2	+39%
Diamonds production (000 carats – Rio Tinto share)	18,427	21,627	-15%
Gross sales revenue (\$ millions)	6,468	4,842	+34%
Underlying EBITDA (\$ millions)	2,776	1,904	+46%
Underlying EBITDA margin	43%	39%	
Underlying earnings (\$ millions)	1,054	263	+301%
Net cash generated from operating activities (\$ millions) ¹	2,114	1,695	+25%
Capital expenditure – excluding EAUs ² (\$ millions)	(1,848)	(1,374)	+34%
Free cash flow (\$ millions)	266	319	-17%

1 Net cash generated from operating activities excludes the operating cash flows of equity accounted units (Escondida) but includes dividends from the equity accounted units.

2 Equity accounted units.

Underlying EBITDA 2017 vs 2018 (\$ million)

2017 underlying EBITDA	1,904
Price	(25)
Exchange rates	1
Energy	(52)
Inflation	(48)
Flexed 2017 underlying EBITDA	1,780
Volumes and mix	356
Cash costs	26
Exploration and evaluation	(27)
Full recovery from Escondida strike	316
Grasberg production	260
Other	65
2018 underlying EBITDA	2,776

Safety

While we still have much to do, this year has seen an overall improvement in safety in our operations, with four of our five assets improving their safety record. We had a year free of fatalities and permanent disabling injuries at our managed operations, and we met our critical-risk management and process-safety targets. Although the number of injuries increased from 60 in 2017 to 65 in 2018, we have seen a decline in process-safety incidents. Our all-injury frequency rate has remained more or less the same, and we are working hard to improve this by simplifying our safety tools, using problem-solving techniques and engaging with frontline staff. We are also continuing to focus on process safety and managing critical risk, performing almost 250,000 verifications of critical controls over the year. A renewed focus on manual-handling incidents launched last year at all of our operations, has led to improved performance in this area.

Financial performance

2018 was a year of strong operational performance, with Escondida in Chile returning to capacity, productivity improvements at Rio Tinto Kennecott in the US and progress on the Oyu Tolgoi underground project in Mongolia. We rounded the year off by successfully completing the sale of our interest in the Grasberg mine in Indonesia for \$3.5 billion.

Underlying EBITDA of \$2.8 billion was 46% higher than 2017. Our strong performance was primarily driven by increased volumes of copper and gold, lower costs linked to productivity improvements at our managed operations, and Escondida running at full capacity after the 2017 strike. These drivers more than offset the impact of higher input costs and the increase in our evaluation expenditure as we advanced the Resolution copper project in Arizona.

Gross sales revenue of \$6.5 billion was 34% higher than 2017. This reflected increased copper and gold volumes which were driven by higher grades. The rise is also connected to productivity improvements and increased plant throughput at Rio Tinto Kennecott, a return to capacity at Escondida, higher gold grades at Oyu Tolgoi, and a greater metal share at Grasberg.

Average copper prices increased 6% to 297 US cents per pound, and the average gold price rose 1% to \$1,269 per ounce compared with 2017. These price rises were more than offset by provisional pricing movements, resulting in a \$25 million decrease in underlying EBITDA compared with 2017.

In 2018, we generated \$2.1 billion in cash from our operating activities, a 25% increase on the previous year. This included \$786 million of dividends from Escondida, in line with the \$780 million received in 2017. Working capital, productivity and cost management initiatives also contributed to favourable cash flows, partially offsetting the impact of raw materials and consumables inflation at certain sites.

We also delivered free cash flow of \$266 million, net of a \$474 million increase in capital expenditure, as we ramped up activities at the Oyu Tolgoi underground project.

Review of operations

Mined copper production was 33% higher than 2017, attributable to:

- The commissioning of the Los Colorados concentrator at Escondida in the second half of 2017 and full recovery from the 2017 strike.
- Increases at Rio Tinto Kennecott as mining activity moved into a higher grade area of the pit and fleet productivity improved.
- Higher recoveries at Oyu Tolgoi.
- An attributable metal share of 26 thousand tonnes from Grasberg.

Refined copper production was 39% higher, reflecting a return to normal operating activities both at Rio Tinto Kennecott, after the 2017 smelter shutdown, and at Escondida.

Rio Tinto Kennecott

Mined copper production in 2018 was 37% up on 2017 as activity continued in a higher-grade area of the pit, productivity improved and plant throughput increased.

Refined copper was 55% higher than 2017 as better mine grades improved concentrate quality and smelting throughput.

Escondida

2018 mined copper production from our 30% stake in the Escondida mine was 29% higher than 2017. This reflected commissioning of the Los Colorados concentrator and full recovery from the 2017 strike.

Grasberg

In 2018, we completed the sale of our entire interest in the Grasberg copper/gold mine in Indonesia for \$3.5 billion. This was part of a series of transactions involving Inalum (PT Indonesia Asahan Aluminium (Persero)), Indonesia's state mining company, and Freeport-McMoRan Inc.

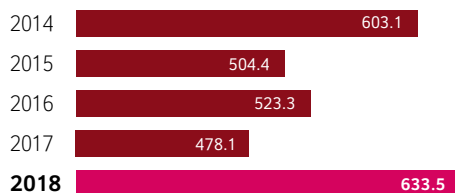
Underlying EBITDA margin

43%

(2017: 39%)

Mined copper production

(thousand tonnes – Rio Tinto share)



Total proceeds from the sale were \$3.5 billion. This included \$0.1 billion for the 2018 attributable metal share of 26 thousand tonnes of copper and 267 thousand ounces of gold, net of the capital contribution for the year.

Oyu Tolgoi

Mined copper production from the open pit in 2018 was 1% higher than 2017, with higher copper recovery partly offset by lower plant throughput due to the processing of harder ore. Gold production was 150% higher than 2017 due to higher grades and recoveries.

Diamonds

Diamond production was 15% lower than 2017. At Argyle, production was 18% less than 2017, when we enhanced production by processing higher grade alluvial tailings. At Diavik, production was 3% lower, with lower recovered grades partially offset by higher ore processing.

New projects and growth options

The Oyu Tolgoi underground project continued to progress through 2018 with the construction of critical above- and below-ground infrastructure to develop Oyu Tolgoi into one of the largest copper mines in the world.

Detailed engineering design work and overall construction progress is mostly on track. The main focus in 2018 has been underground lateral development, the fit-out of shaft 2 (our main production shaft), support infrastructure and the convey-to-surface decline. Recent achievements include the completion of the overland conveyor connecting shaft 2 to the coarse ore stockpile, significant progress on the second underground crusher and the expansion of the central heating plant.

Overall, the underground lateral development has been proceeding well, with a total of 19.0km achieved at the end of January 2019 against our second annual reforecast target of 19.8km. With the structural, mechanical and electrical fit-out

of shaft 2, it is now clear that the completion of this technically complex installation and commissioning work will be delayed by several months. Delayed completion of the shaft, which provides additional hoist capacity to accelerate lateral development, will further delay the date we reach sustainable production beyond the nine-month delay indicated in October 2018.

As announced at that time, difficult ground conditions encountered had slowed progress in some areas of the underground development. As the lateral development continues, we learn more about the rock mass around and under the orebody and have access to more detailed geotechnical data than was available from surface drilling. This data reveals there are areas of the mine footprint where the strength of the rock mass is more variable than anticipated in the feasibility study. This will require some potentially significant changes to the design of some future elements of the development, and the development schedule.

Detailed design work is under way, as is the work necessary to estimate the impact on cost and schedule from these changes and the delay in commissioning shaft 2.

At the end of 2018, we announced the signing of the Power Source Framework Agreement between Oyu Tolgoi and the government of Mongolia. This agreement is a binding framework and pathway for the construction of a power plant, and sets out an amended timetable for Oyu Tolgoi to meet its obligation to source power domestically as set out in the 2009 Investment Agreement. The 300MW plant will be majority-owned by Oyu Tolgoi LLC and will be situated close to the Tavan Tolgoi coalfields. Construction is scheduled to start in 2020, with the commissioning of the plant by mid-2023. The agreement also paves the way for Oyu Tolgoi to supplement its power-sourcing requirements with renewable energy.

In 2018, we progressed stripping activities at the \$0.9 billion south wall pushback project at Rio Tinto Kennecott. This will allow us to continue open-pit mining activities beyond 2019. We expect to access higher, more consistent grade ore from this project in late 2020. This will offset grade variability over the longer term.

We made further advances at our Resolution Copper project in Arizona. The board approved \$368 million in late 2017 to improve infrastructure and facilitate permitting and mine planning as part of the pre-feasibility study.

This year, we also completed the development of a fourth diamond pipe, known as A21, at the Diavik Diamond Mine in the Northwest Territories of Canada within budget and ahead of schedule. The pit is now at full production following four years of construction and a \$350 million investment.

Markets and outlook

Copper demand in the first half of 2018 was shaped by China's gradual deceleration and buoyant and broad-based demand in the rest of the world. Certain factors reduced the copper price in the second half of the year: increasing geopolitical uncertainty, volatility in equity markets and a deterioration of macroeconomics in mature economies.

On the supply side, fewer major new projects or expansions, plus lower volumes from some of the largest producers, are expected to result in a decline in mined copper production growth in 2019. This is in contrast to growth of 3.4% in 2018.

In 2020, market expectations are for mined copper production to grow by around 4%, driven by a partial return of Indonesian supply, strong growth in the African copper belt, ramp-up of greenfield projects and no major mine disruptions.

Global trade in scrap copper has been disrupted by China's low-quality scrap import restrictions, and disruptions are likely to continue into 2019. China's smelters are importing more high-quality scrap, as well as more blister and concentrate, while manufacturers are importing more cathode. Gross scrap imports collapsed 32% compared with 2017.

Longer term, the market expects total copper demand to be solid at a compound annual growth rate (CAGR) of around 2% per year (2019–23), driven by continued urbanisation, industrialisation and electrification in China and other emerging economies.

The global supply of natural rough diamonds in 2018 was lower than 2017. We expect this trend to continue into 2019, as new sources of supply are unable to satisfy growing demand. We saw a reduction in miners' inventories over the first half of the year, coinciding with improved prices. However, in the latter part of 2018, there was an increase in inventories, predominantly of lower-quality rough diamonds. This led to a softening of prices, particularly in lower-end categories.

Greenhouse gas emissions

We have improved emissions intensity by 18.6% since 2008. We discontinued the use of a coal-fired power plant at Rio Tinto Kennecott and are also working to reduce our environmental footprint at both of our diamonds operations. At Diavik in remote Canada, our windfarm continues to reduce diesel usage through leading-edge cold-climate technology. And at Argyle in remote Western Australia, the hydropower scheme reduces our diesel usage for electricity.

Energy & Minerals

“
The minerals we produce
are essential to a wide
variety of industries –
agriculture to
construction – and
ultimately, to people’s
everyday lives.”

Bold Baatar

Chief executive, Energy & Minerals

10
mining sites

Operations in
6
countries

5
sectors: borates, iron ore
concentrate and pellets,
salt, titanium dioxide
and uranium

10,000
employees



The products from our diverse portfolio of high-quality mining, refining and marketing operations and projects make important contributions to people’s everyday lives, as well as to a wide variety of industries.

The Energy & Minerals (E&M) portfolio includes titanium dioxide, rutile and zircon; borates; iron ore concentrate and pellets; salt; and uranium. E&M products are used in everything from television screens to paints and plastics, and in industries from healthcare to aerospace.

As a key global supplier of borates, we account for approximately 25% of global demand – with mining, processing, commercial and research facilities. Our Iron & Titanium business is a major global producer of high-grade titanium dioxide feedstock. The Iron Ore Company of Canada produces premium iron ore pellets and high-grade concentrate with low levels of impurities. We also have three operations at Dampier Salt, in Western Australia. We continue to study the Jadar lithium-borate project in Serbia. And in 2018, we also owned interests in two uranium businesses – Energy Resources of Australia and Rössing Uranium in Namibia – and a uranium project in Canada.

In 2018, we completed the sale of our remaining coal interests in Australia, formerly part of E&M.

The Rio Tinto Ventures team, also part of E&M, is exploring partnerships and other opportunities that will allow us to expand into metals critical to a low-carbon economy with a strong focus on battery materials.

Ti, B,

Snapshots from the year...

2018 in numbers

2

fatalities
(2017: 0 fatalities)

\$5.7bn

gross revenue
(2017: \$7.8bn)

38%

underlying EBITDA margin
(2017: 36%)

\$1.3bn

cash generated from
operating activities
(2017: \$1.9bn)

Selling our coal assets

This year saw a milestone: the sale of our remaining Australian coal assets – our interests in the Hail Creek and Kestrel coal mines and the Valeria and Winchester South coal development projects – for \$4.15 billion pre-tax. This is helping us to strengthen our portfolio by focusing on assets that will deliver the highest returns through targeted allocation of capital. The sale of our Australian coal assets began in 2013. The total sale proceeds, including from our interests

in the Coal & Allied business, are approximately \$8.7 billion – delivering value to our shareholders, while helping us to reshape our business for long-term success in a low-carbon economy.

\$4.15bn

sales of coal assets in 2018
delivered, pre-tax

Iron Ore Company of Canada: into the Moss Pit

In the 1950s, geologist Dr AE Moss was instrumental in exploring and developing mining operations in Labrador City, as well as in clearing ski runs on the nearby Smokey Mountain. In September 2018, our Iron Ore Company of Canada (IOC) business opened a new pit named in his honour at its nearby Labrador City operations.

The project was delivered ahead of schedule and on budget, the result of 15 months of work and an investment of C\$79 million. This addition to the IOC mining infrastructure will increase productivity and extend the life of operations, helping to increase the competitiveness of IOC in the iron ore market.

Employing around 70 people during its construction, it is also benefitting nearby communities with the ongoing support of our employees, local unions and community organisations, as well as the Newfoundland and Labrador government. We are developing our partnership with Labrador City, which worked with us to protect the back-up water supply at Dumbell Lake. We are also working with the Menihek Nordic Ski club to monitor water at the nearby falls.

C\$79m

invested in the new pit

Fe

Energy & Minerals continued

2018 results	2018	2017	Change
Hard coking coal production (000 tonnes – Rio Tinto share)	3,988	7,704	-48%
Thermal coal production ¹ (000 tonnes – Rio Tinto share)	2,527	4,065	-38%
Iron ore pellets and concentrates production ² (000 tonnes – Rio Tinto share)	8,952	11,166	-20%
Titanium dioxide slag production (000 tonnes – Rio Tinto share)	1,116	1,315	-15%
Borates production (000 tonnes – Rio Tinto share)	512	517	-1%
Salt production (000 tonnes – Rio Tinto share)	6,153	5,090	+21%
Uranium production (000 lbs – Rio Tinto share)	6,764	6,650	+2%
Gross sales revenue (\$ millions)	5,697	7,764	-27%
Underlying EBITDA (\$ millions)	2,193	2,803	-22%
Underlying EBITDA margin	38%	36%	
Underlying earnings (\$ millions)	1,012	1,242	-19%
Net cash generated from operating activities (\$ millions)	1,262	1,939	-35%
Capital expenditure (\$ millions)	(456)	(467)	-2%
Free cash flow (\$ millions)	798	1,467	-46%

1 To allow production numbers to be compared on a like-for-like basis, production from asset divestments completed in 2017 have been excluded from the Rio Tinto share of prior year production data, but assets sold in 2018 remain in the comparative. Financial data above includes the results of divested assets up to the date of sale.

2 Iron Ore Company of Canada and the Simandou iron ore project in Guinea are reported within Energy & Minerals, reflecting management responsibility.

Underlying EBITDA 2017 vs 2018

(\$ million)

2017 underlying EBITDA	2,803
Price	384
Exchange rates	(2)
Energy	(31)
Inflation	(92)
Flexed 2017 underlying EBITDA	3,062
Volumes and mix	(5)
Cash costs	(201)
Gains on coal projects disposals and royalty	445
Absence of coal EBITDA following disposal	(718)
One-off items	(339)
Other	(51)
2018 underlying EBITDA	2,193

Safety

2018 was a tough year with two fatalities and an increase in our all-injury frequency rate from 0.43 (in 2017) to 0.55. Every fatality is a tragedy and our thoughts remain with the families, friends and colleagues of the two men who lost their lives. All serious incidents and injuries have been thoroughly investigated with learnings shared around the Group.

Process safety is one of our biggest risks. This was brought sharply into focus during 2018 by a number of incidents. We have responded with a targeted improvement plan, including enhanced-engineered barriers and strong business unit, product group and Group support to our sites.

In 2019, we will continue to focus on controlling critical risks by improving leadership in the field, rigorously applying our critical-risk management programme and making targeted interventions as needed. Our objective, as always, is to make sure each member of the team goes home safely after every shift.

Financial performance

2018 was a challenging year for the business with disruptions to operations, including two fatalities at Rio Tinto Iron & Titanium and a strike at Iron Ore Company of Canada. The year also marked the completion of the sales of our remaining coking coal assets in Australia.

Underlying EBITDA, including coal, of \$2.2 billion was 22% lower than 2017. Coal EBITDA in 2018 included a \$278 million gain from the sales of the Winchester South and Valeria coal development projects and a \$167 million pre-tax gain from the revaluation of a royalty receivable arising from the disposal of the Mount Pleasant coal project in 2016. Excluding the entire contribution from coal in both years, 2018 EBITDA of \$1.3 billion was 18% lower than the 2017 comparative of \$1.6 billion.

We benefitted from higher prices, in particular for titanium dioxide feedstocks, zircon and metallics. However, our performance was affected by a number of events in the first half of the year. At Iron Ore Company of Canada, we suspended operations due to a two-month strike while collective bargaining negotiations took place. We also experienced disruptions at our titanium dioxide operations: in Canada we suspended activities for ten days following a fatality, and in South Africa we had intermittent stoppages related to labour disputes between contractors and their employees.

Gross sales revenue was \$5.7 billion, including coal. Excluding the entire contribution from coal in both years, 2018 revenue of \$4.7 billion was 5% lower than the 2017 comparative of \$4.9 billion. This reflected lower volumes in iron ore and titanium dioxide feedstocks, partly offset by higher prices.

We generated net cash of \$1.3 billion from our operating activities. This included \$233 million of pre-tax divestment proceeds from the Winchester South and Valeria coal development projects.

Review of operations

Energy

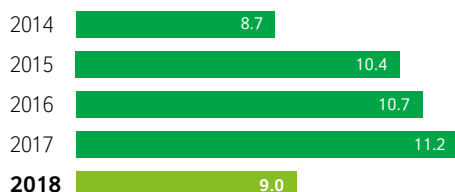
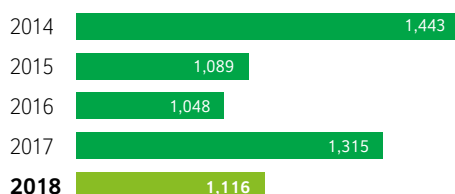
In 2018, we sold our interests in the Kestrel and Hail Creek coking coal mines and the Valeria and Winchester South coal development projects. We completed these transactions by 1 August 2018, for a combined consideration of \$4.15 billion. As of this date, we are no longer producing coal. We expect to pay approximately \$0.9 billion in tax on these disposals to the Australian Taxation Office in the first half of 2019.

Uranium production was 2% higher than 2017. Energy Resources of Australia continued to process existing low-grade stockpiles, and production was 13% lower due to declining grades and completion of laterite processing.

Underlying EBITDA margin

38%

(2017: 36%)

Iron ore pellets and concentrate production
(million tonnes – Rio Tinto share)**Titanium dioxide slag production**
(thousand tonnes – Rio Tinto share)

“Higher prices offset by lower contributions from our coal business, following divestment, and one-off disruptions.”

Production at Rössing Uranium was 17% higher due to higher mill grades.

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. The transaction is subject to certain conditions, including merger approval from the Namibian Competition Commission. Subject to these conditions being met, we expect the transaction to complete in the first half of 2019.

Iron Ore Company of Canada (IOC)

IOC production and sales in 2018 were affected by a two-month strike at the mine in the second quarter. Pellet production of 8.5 million tonnes (our share 5.0 million tonnes) was 18% lower than 2017, while concentrate production for sale of 6.7 million tonnes (our share 3.9 million tonnes) was 22% lower.

Total sales of pellets and concentrates in 2018 were 15.0 million tonnes (our share 8.8 million tonnes), 21% lower than 2017.

Minerals

Titanium dioxide feedstock production was 15% lower in 2018 compared to 2017. This was mainly because of disruptions at Rio Tinto Fer et Titane (RTFT) in Canada, including the deflagration of a furnace, and intermittent stoppages related to labour disputes between contractors and their employees at Richards Bay Minerals (RBM) in South Africa in the first half of the year.

On 26 April 2018, a contractor suffered fatal injuries during an incident at RTFT. We immediately suspended operations while investigating the incident. In early July, we safely restarted and ramped-up to normal operations.

On 10 July 2018, a serious incident occurred at RBM's mining operation, resulting in the fatality of a security contractor. We suspended operations temporarily, and the incident was investigated by the police.

Production of borates and salt were 1% lower and 21% higher, respectively, with production aligned to customer demand.

New projects and growth options

We completed the Wabush 3 open-pit mine at IOC in the third quarter, ahead of schedule and on budget.

We have significant capacity for growth in titanium dioxide feedstocks, subject to market conditions. Three of the nine furnaces at RTFT are idle, two of which are currently being rebuilt. One of the four furnaces at RBM remains idle. Our focus is on maximising the productivity of the furnaces in operation, and we will decide when to restart idle furnaces with a view to maximising value over volume.

Work continued on the feasibility study for the Zulti South mine expansion at RBM, which has the potential to maintain RBM's low-cost smelting capacity and zircon production. This project is geologically one of the best undeveloped mineral sand deposits in the industry, given its large ilmenite resource with high rutile and zircon content in the overall mineral suite. We will decide whether to proceed with the project in the first half of 2019.

We are continuing our pre-feasibility study at the Jadar lithium-borate project in Serbia to establish the economic business case for the project and to advance the environmental and socioeconomic impact assessments.

The non-binding heads of agreement, originally signed on 28 October 2016, for Chinalco to acquire our entire interest in the Simandou iron ore project in Guinea has lapsed. Rio Tinto and Chinalco, who respectively own 45.05% and 39.95% of Simandou, will continue to work with the government of Guinea to explore other options to realise value from the world-class Simandou iron ore deposit. The government of Guinea owns a 15% stake in the project.

Markets and outlook

We saw stronger demand for titanium dioxide in 2018 as downstream volume growth supported high utilisation rates at pigment plants. The supply of high-grade mineral sands (titanium dioxide and zircon) remained tight due to a combination of grade decline and production disruptions – and this has underpinned robust prices. We expect long-term demand growth to be solid at 3% per year, driven by growth in emerging economies.

Medium- to long-term demand for borates is tied to increases in wealth and living standards. Demand for high-value borates remains firm and increased in line with global industrial production growth in 2018, supported by the agriculture and engineered materials sectors.

Iron ore pellet demand in 2018 continued to be supported by the structural trend towards increasing steelmaking efficiency and reducing the industry's environmental footprint in China and beyond. Meanwhile, key competitor pellet operations remained offline and may only gradually resume production. In that context, the spot premium rallied to a record \$90 per dry metric tonne in September. Although it has moderated since, pellet pricing outside China is expected to stay elevated in 2019.

Greenhouse gas emissions

Compared with 2017, our absolute GHG emissions in 2018 reduced by 27%, primarily driven by the sale of our coal assets. There was a small deterioration in our overall GHG intensity which remains slightly above the 2008 baseline year, largely due to a reduced number of operational days at some of our sites.

Growth & Innovation

“We grow and improve the Group’s business by discovering the minerals and metals we need today and tomorrow, applying new technologies, delivering our projects and optimising our operations.”

Stephen McIntosh

Group executive, Growth & Innovation

2,200

employees

12,000

contractors working in exploration and construction

3

new Centres of Excellence – Processing in Montreal, Surface Mining in Perth and Underground Mining in Brisbane – with around 25 people in each

8

different commodities being explored for in 16 countries

\$2.3bn

spent on capital projects in 2018

Whether exploring or building assets, we find ground-breaking ways to add value across the entire lifecycle of our operations.

We work across Rio Tinto, supporting each product group’s daily operations from start to finish. We are responsible for exploration – the search for new sources of commodities – and the design and construction of new assets. This year, our projects team completed, with Aluminium, the Amrun bauxite project in Queensland, Australia and, with Iron Ore, started work on Koodaideri, our intelligent mine in the Pilbara, Western Australia.

We also provide technical expertise and project management to close our sites when they reach the end of their lives. We work to create a more efficient, safe and agile Rio Tinto by managing major technical risks, researching and developing new ways of operating, automating for safety and productivity, providing information technology systems and services, and partnering with our sites to replicate industry-leading best practice.

Safety

We had a fatality-free year and our all-injury frequency rate of 0.19 improved by 42%¹ compared with 2017. This improvement reflects the time we have spent reinforcing our existing safety culture.

Projects

Working with Iron Ore, this year in Australia we completed AutoHaul™. We also began a three-year project to enhance the hydroelectric power supply for the Kitimat aluminium smelter in British Columbia. The world-class underground copper project at Oyu Tolgoi, in Mongolia, also progressed, including with the signing of the Power Source Framework Agreement. The detailed engineering design work and overall construction is mostly on track, but more detailed geotechnical information and difficult ground conditions have required a review of the mine design. This, combined with fit-out and commissioning challenges with the main production shaft, is ultimately expected to result in a further revised ramp-up schedule to sustainable first production (beyond the nine-month delay indicated in October 2018). Detailed design work is underway to estimate the impact these issues will have on cost and schedule.

Exploration

We have an extensive global exploration programme. This year, we explored in 16 countries looking for eight commodities and generated more opportunities than ever before. Expenditure on exploration and evaluation in 2018 was \$488 million. Of this, \$231 million relates to the exploration and evaluation of our greenfield programmes and \$257 million to our product groups, mostly copper. We have had some early success in copper exploration in the Pilbara, Western Australia, at the Winu project where phase 2 drilling is now underway. The majority of our projects this year are in the early stages of drilling. Projects at a more advanced stage are listed in the table below.

Productivity and technical support

We are continuing to focus on productivity initiatives and we remain on track to deliver \$1.5 billion a year in additional cash flow from productivity improvements from 2021. We formed three Centres of Excellence – Processing, Surface Mining and Underground Mining – to bring together our most critical technical capabilities. To better support our technical people in building their careers, we entered into a landmark partnership with AusIMM and created a technical career pathway programme called RioExcel.

Information Systems & Technology (IS&T)

Technology has the power to change Rio Tinto. This year, our IS&T function continued to make us more resilient to cyber threats and began a digital transformation journey to make us safer, better-connected and more productive. We upgraded critical infrastructure, built an integrated data platform and made more of our applications mobile.

Top of the class

This year, we asked Deloitte to benchmark our capital projects team. Working with Oxford Global Projects and the Project Management Institute, they did a series of assessments, interviews, workshops and data analysis, to benchmark 21 of our projects against more than 500 capital projects from a range of industries, including those of five of our mining peers. The results:

- We were ranked fourth for safety performance, underscoring the focus we place on improving safety.
- Our projects have a stronger cost performance with a median underrun of 10%, while our peers’ average was 0%.
- Our project schedule performance is 20% better than the industry average, with a median overrun of just 1%.

Advanced stage exploration projects

Project	Commodity	Country	Type	Stage
Cape York	Bauxite	Australia	Greenfield	Project of Merit
Borborema	Mineral Sands	Brazil	Greenfield	Project of Merit
Sudi	Mineral Sands	Tanzania	Greenfield	Project of Merit
FalCon ²	Diamond	Canada	Greenfield	Order of Magnitude
Pilbara	Iron ore	Australia	Brownfield	Project of Merit
Grader West	Industrial Mineral	Canada	Brownfield	Project of Merit
Oyu Tolgoi	Copper	Mongolia	Brownfield	Project of Merit
Bingham Canyon	Copper	US	Brownfield	Project of Merit
Winu	Copper	Australia	Greenfield	Order of Magnitude
Kalindi	Copper	Zambia	Greenfield	Project of Merit
Korgantas	Copper	Kazakhstan	Greenfield	Project of Merit

¹ Excludes Oyu Tolgoi operations and support functions that were transferred to Copper & Diamonds in 2018.

² This project was referred to as Stella in 2017.

Project of Merit – Preliminary evaluation of orebody size, quality and potential.
Order of Magnitude – judging whether an opportunity will be economical to develop.

“Commercial partners with our product groups, customers and suppliers to generate insights and unlock value for all our stakeholders.”

Simon Trott

Chief commercial officer

1,300
employees

Singapore Commercial Hub

with satellite offices in Chicago and Frankfurt and offices in China, Japan and South Korea

Approximately

2,000
customers across 96 countries

More than

200
contracted ships managed at any one time

Managing around

37,000
suppliers in more than 120 locations

Our Commercial group creates value using customer, supplier and market insights generated through the visibility we enjoy across the entire value chain. Deeper understanding of the needs of our customers and suppliers is crucial to successfully navigating commodity and economic cycles while achieving our growth aspirations.

This year, the Commercial group brought together our global sales and marketing, procurement, marine, logistics and marketing analysis activities to strengthen our ability to share commercial insights and build cross-product group capabilities. We are the voice of customers and suppliers within Rio Tinto, connecting market perspectives back to our assets and operations.

The year has been a formative one. We consolidated our American and European commercial activities into Chicago and Frankfurt to be closer to customers. These offices are closely integrated with our Singapore hub and our offices in China, Japan and South Korea, enhancing opportunities to identify and respond to market developments.

Safety

We are committed to ensuring the safety, health and wellbeing of our workforce. We face a diverse range of risks across multiple geographies in our global sales and marketing, procurement marine and logistics activities. Our primary focus has been implementing Group standards and critical-risk management fatality prevention programmes across our areas of greatest exposure, primarily Marine & Logistics, and Procurement. In 2018, we had zero fatalities and a 0.18 all-injury frequency rate. In 2019, we intend to build on this and share our focus on safety, health and wellbeing in a tangible and visible way through our daily interactions with our customers and suppliers.

Performance

Our customer and supplier interactions provide us with unique insights and data that we can use to create and unlock value today, as well as shaping our future resource investment decisions.

We also work hand-in-hand with our product groups to enable us to better address customer needs and adjust our operations to meet market demands. As an example, in 2018, we introduced a secondary iron ore product, to protect the quality of our flagship Pilbara Blend™ products. This was in direct response to market feedback, which underscored the importance of maintaining the premium brand position occupied by the Pilbara Blend™ due to its consistent quality and market liquidity.

With the formation of the Commercial group, the product groups now have a single point of interface from managing procurement needs through to turning contracts into cash. Our goal is to simplify our systems, automate interfaces and provide a common approach and set of processes to our product groups across commodities.

Our procurement function has significantly simplified its contractual terms and conditions. This has reduced the number of different template contracts from 400 to four, simplified the language, reduced the length by two-thirds to make them ready for automation. Contracts are now easier to prepare, negotiate and understand.

We also work in partnership with our product groups to safely and sustainably source the optimal raw materials and supplies for the Group at competitive prices. In 2018, we delivered more than 400 cash-generating initiatives, with the mindset of bringing our customers and suppliers into the heart of our business. We continue to try to address issues and challenges together, and deliver outcomes that benefit every business, including our own.

Digitalisation of trade

Our goal is to improve customer experience, and we are investing time and resources into simplifying systems and automating activities. As an example, in 2018, we successfully trialled a blockchain transaction as part of the first fully digitised end-to-end trade transaction completed in Singapore. The sale included electronic shipping documents as well as a digital letter of credit. While the technology is not ready for widescale use, this is a significant step forward in the digitalisation of international trade. Our ambition is to continuously improve the experience of doing business with Rio Tinto, reduce documentation turnaround times and optimise working capital.

Markets and outlook

For our analysis of the markets and outlook for 2019 see the Iron Ore, Aluminium, Copper & Diamonds and Energy & Minerals sections.

Sustainable development



Our business by its very nature must have sustainability at the centre of its strategy.”

At Rio Tinto, we produce materials essential to human progress. Achieving this purpose requires us to work, as often as not, in remote locations and sensitive, beautiful environments, often on land owned by Indigenous people.

Our values, experience and history tell us that we must work in a way that delivers real, lasting benefits for the owners of our company as well as the wider communities in which we operate. We must care for our employees, respect and care for the environment while we operate, and rehabilitate the land when we cease. We must contribute our fair share to local and national economies, including via taxes, and do so transparently. These beliefs are the foundation of our views on sustainability.

This year, we again took stock of the issues facing our business, as well as the societal and economic trends changing the global landscape, and developed an approach to sustainability that ensures material issues are integrated into our business strategy and corporate governance. The expected outcome is commercial success coupled with a meaningful contribution to the world around us.

This approach comprises every facet of the work we do, but begins with running a safe, responsible and profitable business. Safety is important to Rio Tinto not only because we care for the people we work with, but because a safe business is also operationally sound. Responsibility also starts at home, with a commitment to the safety, rights and wellbeing of our employees, the integrity of our business and supply chain, and respect for the environment. Profitability enables us to meet our commitments to our shareholders and assume leadership in other areas, including sustainability.

We work hard to leave a lasting, positive legacy, everywhere we work. Our long-term economic contribution is one way we do this. In 2018, Rio Tinto paid billions in taxes and royalties to governments around the world¹. Our direct economic contribution was \$42.8 billion. Over the past five years, our business has contributed more than \$200 billion to countries and communities, everywhere we operate. We do not always build and maintain roads and bridges, schools and hospitals, ourselves – but the billions we contribute support each of these.

Our business is often the major source of jobs and livelihoods – and sometimes, one of few avenues to opportunity. We take this responsibility seriously.

We employ 47,500 people in around 35 countries. In Mongolia, we are the single largest private sector employer; approximately 93% of our employees there are Mongolian. In Western Australia in our Iron Ore product group, we employ 10,500 people: 13.5% of the residential workforce are members of Indigenous groups from the Pilbara region. We are a major employer in the Saguenay, in Quebec. We also work with about 37,000 suppliers in more than 120 locations, supporting the employment of many thousands more. In 2018, we paid \$4.7 billion in wages and other employment costs, and \$12.3 billion on goods and services, often supplied locally, by local businesses. This year, we invested \$192 million to strengthen the health, education, cultural heritage and environment of the places that so many of us call home.

This is how economic development and prosperity is created, and sustained.

To be clear, protecting the environment is also critically important. Rio Tinto has long acknowledged the reality of climate change and its potential to have a negative impact on our business, our communities and the world around us. In 2015, we supported the outcomes of the Paris Agreement and the long-term goal to limit global average temperature rise to well below 2°C, recognising that doing so will require governments and companies alike to approach climate change with more ambition and action.

We believe we are doing our part – from helping to develop technology that can make aluminium smelters entirely GHG-emissions-free to providing the world with the materials it needs to build the new, low-carbon economy, from electric vehicles to smart phones. This year, we also exited fossil fuel production, becoming the only major mining company to do so.

As much as we have done, there is more to do. We are not where we want to be on safety, or diversity. We appreciate that the changing nature of work presents opportunities for our business, but also significant challenges for many of our communities and employees. Managing the coming closure of certain sites, and doing so well, will reflect our commitment.

However, as our performance in 2018 illustrates, commercial success can indeed be coupled with a meaningful contribution to the world around us.

The pages that follow aim to illustrate this contribution.

“Our values, experience and history tell us that we must work in a way that delivers real, lasting benefits for the owners of our company as well as the wider communities in which we operate.”

In this section, we focus on topics central to sustainability at Rio Tinto, and summarise our 2018 performance. For a fuller report on the year, please see our 2018 Sustainable development report, available on our website.



Further important information relating to our approach to sustainability is set out on page 63

¹ Our 2018 Taxes paid report will be published in April 2019.

Proud to be
recognised for sustainability by
**Dow Jones &
FTSE4Good**
again in 2018

Our sustainability framework

Our three pillars each contribute to the
United Nations' 17 Sustainable
Development Goals.

Pioneering materials for human progress

We are helping to pioneer a more sustainable future – through examining our own global carbon footprint, forming smart partnerships and producing materials that contribute to a low-carbon economy.



Collaborating to enable long-term economic benefits

We collaborate with others to enable long-term benefits where we operate – working with governments at all levels and community partners to help make a difference in people's lives.



Running a safe, responsible and profitable business

The foundation of our approach is to run a safe, responsible and profitable business.



UN Sustainable Development Goals (SDGs)

Sustainable development continued



Running a safe, responsible and profitable business

Staying safe, keeping others safe, and being responsible are core to who we are as a company. Profitability allows us to meet our commitment to our shareholders while contributing to the world around us.

Running our business in this way means not only meeting production, financial and productivity targets, but also paying close attention to safety and wellbeing, inclusion and diversity, and ethics and integrity. It means thoughtfully managing our operational environment, including resources like water and air, and the rights, traditions and heritage of the communities where we operate.

2018 performance against targets

Goals	Performance
To reach zero fatalities, and to eliminate workplace injuries and catastrophic events	<ul style="list-style-type: none"> – 3 fatalities at managed operations – All injury frequency rate (AIFR) at 0.44 (target: 0.38), up 5% on 2017 – 1.45 million CRM verifications (target: 1.2 million)
To minimise exposure to critical fatality health-risks by verifying that effective controls are in place at all managed operations by the end of 2018	<ul style="list-style-type: none"> – 77% of managed operations achieved this target
To reduce the rate of new occupational illnesses each year	<ul style="list-style-type: none"> – 15% increase in the rate of new occupational illnesses since 2017
To achieve approved local water targets in all managed operations with material water risk	<ul style="list-style-type: none"> – 79% of operations met their 2014-18 water targets (target 100%)
To improve diversity in our business by: <ul style="list-style-type: none"> – Increasing women in senior management by 2% each year – Aiming for 50% women in our graduate intake, with 30% from places where we are developing new businesses 	<ul style="list-style-type: none"> – 22.6% of senior management were women, up from 22.4% in 2017 – 25% of our Executive Committee were women – 36% of our graduate intake were women, down 5% from 2017 – 31% of our graduate intake were from the places we are developing new businesses – 17.7%¹ of our total workforce were women
Improving our employee engagement and satisfaction	<ul style="list-style-type: none"> – An eight-point increase in our Employee Net Promoter Score (eNPS) – Two-point increase in employee satisfaction score (eSAT) – Six-point increase in average monthly engagement on Yammer

¹ Gender distribution for our total workforce is based on managed operations (excludes non-managed operations and joint-ventures) as of 31 December 2018. Less than 1% of the workforce gender is undeclared.

Running a safe, responsible and profitable business: priorities for 2019

Safety and wellbeing

- Achieve our first fatality-free year, in part by building stronger leadership in the field around health and safety critical risks.
- Continue to work with joint-venture partners and other industry safety leaders to learn new ways to improve our health and safety performance.
- Continue to strengthen employee mental health and wellbeing, including by expanding initiatives like Iron Ore's long-standing peer support programme into other product groups and countries.
- Focus on major hazard risk management, particularly around water and tailings facilities and process safety.

Environment

- Set new water targets for 2019-23.
- Establish easier internal systems that improve our live reporting.
- Introduce a programme to further enhance our management of tailings risk.

Communities

- Continue to build technical excellence in communities and social performance.
- Update and strengthen our approach to regional economic development.
- Continue to strengthen our ability to prevent the causes of community complaints.

Safety and wellbeing

Safety and health performance¹ 2014-18

	2018	2017	2016	2015	2014
Fatalities at managed operations from safety and security incidents	3	1	1	4	2
Fatalities at managed operations from health incidents	–	– ⁴	–	–	–
All injury frequency rate (per 200,000 hours worked)	0.44	0.42	0.44	0.44	0.59
Number of lost-time injuries	228	199	206	220	381
Lost-time injury frequency rate (per 200,000 hours worked)	0.27	0.25	0.26	0.25	0.37
New cases of occupational illness (per 10,000 employees)	29	25 ³	47	32	17
Number of employees ²	47,500	47,000	51,000	55,000	60,000

1 Data relating to fatalities, all injury frequency rate and lost-time injury frequency rate includes all employee and contractor exposure hours and incidents. New cases of occupational illness are reported for employees only.

2 Includes our share of joint ventures and associates.

3 Numbers adjusted from previous years to ensure comparability over time.

4 Health fatality in 2017 was reclassified as non-work related.

Safety

Our number one priority is to keep our people, contractors, communities and suppliers safe. We believe that all accidents and health risks are preventable, so we concentrate on identifying and managing these – and where possible, eliminating them.

This year, tragically, three people lost their lives. In April, a maintainer lost his life while working on a furnace rebuild at our Sorel-Tracy plant in Quebec, Canada. In July, a security guard at Richards Bay Minerals in South Africa was fatally assaulted. And in August, a heavy haul truck driver was in a fatal accident at our Paraburdoo mine in Western Australia.

We have been deeply affected by these losses, and our thoughts remain with the families and many friends, colleagues and communities affected. We have offered support after each tragedy and completed full investigations.

We continue to focus on eliminating fatalities in other ways, including through our critical risk management programme, embedded at more than 60 sites this year. This programme systematically identifies major hazard risks (low-probability, high-consequence events) and helps us to manage them through standards, analysis, external reviews and rigorous verification of controls.

In 2018, we improved how we categorise occupational illness. The rate of new cases of occupational illness rose by 15% from 2017 – the main types recorded being musculoskeletal disorders (33%), noise-induced hearing loss (32%) and stress (23%).

Our goal is zero fatalities; our performance in 2018 shows that we have a lot more to do. From 2013-18, our AIFR improved by 32% but deteriorated by 5% since last year.

Wellbeing

Rio Tinto promotes a healthy and balanced lifestyle, work-life balance, good nutrition, regular exercise, and access to health care – all elements of wellbeing. We also have an increasing focus on mental health.

Mental illness is one of the most rapidly growing causes of long-term sick leave and labour market exclusion across developed countries despite improved rates of detection and methods of intervention. We provide mental health training for managers because studies have suggested that these improve occupational outcomes for employees with mental health problems.

One way we support mental health is through our Employee Assistance Programme, which gives employees access to professional coaching, advice and support for themselves and their families. It can help with many types of concern, including financial and legal questions, children's needs, family relationships, advice for supporting an ill parent, balancing work and home life, and dealing with change and stress. More than 95% of our employees are covered by this programme, with the remainder supported by on-site counsellors.

This year, in Australia, we were also pleased that we achieved White Ribbon Workplace Accreditation, which recognises our work to raise awareness of, and to eradicate, domestic violence, particularly that which affects our employees and communities. We have extended the programme to Canada and the US, where employees in need can take up to ten days of paid extra leave, work flexible hours and receive financial aid and emergency accommodation.

“Our number one priority is to keep our people, contractors and suppliers safe.”

Our values at work

Some of the best people in the industry work at Rio Tinto, and we want to make sure this tradition continues. We do this by fostering a culture where every voice is heard, every idea is encouraged and everyone is supported.

Inclusion and diversity

Respect is core to how we work. We employ people based on job requirements alone. We do not discriminate on any grounds, and we do not tolerate discrimination.

This year, we revised our policy on inclusion and diversity, jointly owned by the board and Executive Committee, in order to articulate explicit expectations around behaviours and personal accountability. We also implemented our gender-neutral paid parental leave in every country where we operate, making 18 weeks of paid leave available to primary carers, including single parents and employees in same-sex relationships.

We employ people with disabilities and make considerable efforts to offer suitable alternative employment and retraining to employees who become disabled and can no longer perform their regular duties.

On gender diversity, we are still not where we want to be: our overall percentage of female employees decreased by 0.3% to a Group-wide 17.7% (6,963 women; 32,419 men). Although the number of women in operations roles increased from 5% to 15%, only 22.6% of our senior management roles are held by women (112 women; 383 men) up from 22.4% in 2017 (117 women; 406 men). We define senior management as general managers, Group advisers and chief advisers as well as employees in leadership roles who report directly to Executive Committee members. Women represented 15% of the directors of our principal controlled subsidiary undertakings during 2018 (20 women; 112 men).

Sustainable development continued

Running a safe, responsible and profitable business continued

36%

women in our graduate intake in 2018 – still short of our 50% target

Our gender pay gap this year was 1% in favour of men overall and 2% in favour of men like-for-like. We are addressing these issues – for example, we are working with recruitment agencies and universities to bring more diverse graduates into our business. We are working to substantially increase the number of women employed at all levels to help boost the percentage of women in senior management. In 2018, there were 62 women in our graduate intake (36%), and our aim is to make this 50%. We also target improving the proportion of women in senior management by 2% each year.

Engaging our employees

We know that having engaged people will make our business more productive, and we have regular dialogue with all our employees, at all levels. Our chief executive held well over 30 town hall and small group discussions in 20 locations; he also conducted webcasts to present annual and half-year financial results to our global employees. This year, he also launched open-door sessions, where employees at manager level and below can stop by and talk to him about whatever they like. We also use Yammer, an internal social networking app, to support engagement: in 2018 nearly half of our employees were on Yammer, and average monthly engagement across nearly 2,000 groups was up six points year on year. This year, our board held its first-ever employee AGM in Brisbane, where directors discussed our purpose, strategy, culture and values, and answered questions on a wide range of topics. We also run global engagement surveys twice each year to understand employees' views and perceptions.

Human rights

We respect and support human rights everywhere we work, in line with the Universal Declaration of Human Rights. The human rights issues that have the most potential to affect us centre around operational security, land access and resettlement, Indigenous people's rights, labour rights, environmental issues such as access to water, and issues related to migration such as access to local health services.

We continue to support employees' right to belong to a union and to bargain collectively – for a fuller discussion, please see our 2018 Sustainable development report. We do not employ forced, bonded or child labour.

We have due diligence processes and systems in place, such as social impact assessments, community engagement plans, grievance mechanisms and digital tools that identify community sentiment. This in turn allows us to prevent and minimise the adverse effects of our

operations on human rights. Ensuring that we do no harm is a core consideration in our social risk analysis and impact assessment processes. We also integrate human rights considerations into our health, safety, environment, communities and security and procurement practices, and into our business performance audits. Where our standards and procedures are stricter than existing laws or regulations, we apply our own standards.

This year, we were named the top extractives company in the Corporate Human Rights Benchmark for continuing to improve how we approach the management of human rights risks.

More detail on the steps we have taken to prevent human rights issues in our business and across our supply chain can be found in our Modern Slavery Act statement online. Our policies and statements relating to human rights, together with a list of the international standards we follow, are also available on our website.

Operational environment

We aim to minimise the potentially adverse impact of our operations on the environment and on the communities where we operate. This involves establishing very clear internal standards and practices that are in line with – and sometimes go beyond – international and local regulations.

It also means having open dialogue with local communities and other stakeholders. We operate joint community monitoring programmes and share air-quality monitoring information, including on our website.

Water

Water is a valuable resource and is vital to our operations. We use it to process ore, manage dust, produce hydroelectric power and as drinking water. Each of our sites has its own unique water context – from environments where water is scarce to places with high rainfall.

For the 28 Rio Tinto sites where water management is a material risk, we set site-specific targets for the period 2014-18. These include the security of the water supply, managing the quality of water returned to the environment, and balancing our operational needs with regulatory requirements and those of local communities and Traditional Owners. 79% of sites met their five-year targets. We remain committed to continuing the water target programme and will set new targets for 2019-23.

In 2019, we will start reporting our practices against the commitments outlined in the International Council on Mining and Metals (ICMM) position statement on water stewardship.

Environmental performance 2014-18

	2018	2017	2016	2015	2014
Freshwater used (billion litres)	401	465	467	460	465
Land footprint – disturbed (square kilometres)	3,595	3,616	3,696	3,629	3,592
Land footprint – rehabilitated (square kilometres)	485	497	541	533	502

88%

of water used at
Oyu Tolgoi is recycled

Waste

Our main types of waste are mineral waste such as waste rock, slag and tailings and non-mineral waste such as used oil and office waste. When it is not possible to reuse or recycle waste, we build facilities to manage it in ways that minimise adverse environmental and community impact, disposal costs and future liabilities. Roughly 31% of our mineral waste has the potential to react with air and water or break down to create potentially harmful contaminants like acid and metalliferous drainage (AMD). So we have in place rigorous and regularly monitored controls to prevent and mitigate the potential harmful impact of AMD.

In 2018, we safely stored or disposed of 886 million tonnes of mineral waste (predominantly waste rock and tailings) and 274,245 tonnes of non-mineral waste.

Managing tailings

Mining processes create residues called tailings. Where it is not possible to reclaim and reuse these, they are discharged – normally as slurry – to storage facilities. We manage the operation of tailings and/or large water storage facilities at 32 sites worldwide, including closed and legacy sites not yet fully rehabilitated. We also have a further four non-managed operational sites and 14 non-managed legacy sites with joint-venture partners.

There were no tailings or water dam related failures at our managed operations in 2018. At our non-managed operations, we work with our partners to minimise the environmental and social impacts and risks associated with tailings management.

Our approach to tailings management is in line with the ICMM position statement, and we continually review and audit our practices, including externally. We are working with our industry peers to better manage risks associated with tailings and water storage facilities, and also participating in two research projects led by the University of Western Australia, specifically on reducing tailings risks. And we are working to help develop and update tailings management guidelines in Australia and Canada.

To raise awareness on tailings risks and good practices, we hold regular webinars where internal and external experts share their knowledge with our employees. We also continue to develop our executive reporting protocol, and we are piloting an integrated control effectiveness tool to monitor progress and drive improvements on the ground.

In 2018, following our 2017 site reviews, we created and have started delivering seven training modules to increase understanding and capabilities around effective tailings management, particularly for nominated role personnel under our tailings standard. We also completed technical risk reviews at five sites to strengthen our technical assurance process. These were in addition to business conformance audits at 14 sites that assessed compliance with our tailings performance standard. Group Internal Audit also completed an independent assurance process to assess our approach to tailings risk management: we have good fundamentals in place, but we will continue to learn, evolve and improve our approach.

Working with non-managed assets

We hold interests in companies and joint ventures that we do not manage and control. In 2018, the two largest were the Grasberg copper-gold mine in Indonesia, managed by PT Freeport Indonesia (PTFI), a subsidiary of Freeport-McMoRan, and the Escondida copper mine in Chile, managed by BHP.

We work closely with our partners in these joint ventures through formal governance structures and technical exchanges to learn and improve performance. We encourage all our partners to embed a strong safety, security and human rights culture in their workforces, and have a two-way process for sharing health and safety practices including fatality prevention initiatives, such as critical risk management (CRM) and learning critical lessons.

At Grasberg, we have traditionally engaged with PTFI through five forums: the Operating, Technical, Exploration and Sustainable Development Committees and the Tailings Management board. In December 2018, we completed the sale of our entire interest in the Grasberg mine for \$3.5 billion.

We also own a 30% interest in Escondida and give regular input on strategic and policy matters through its Owners' Council. Escondida has recently commissioned one of the largest desalinisation plants in the world, announcing in 2018 their intention to extract significantly less groundwater from the arid region around the mine from 2020 onwards.

Sustainable development continued

Running a safe, responsible and profitable business continued

“Today, we remain focused on acting with integrity, being transparent and continuing to foster a culture in which our employees never need a reason to do the right thing.”

Environmental regulations

While we reported no significant environmental incidents with a major or catastrophic impact in 2018, we were fined \$284,683 by the governments in Canada, Mongolia and the US. The concerns outlined by each have since been addressed; more details can be found in the Directors' report on page 140 ^{AR} and in our Sustainable development report on our website.

Ethics and integrity

We have clear standards around antitrust, bribery and corruption, conflicts of interest, benefits, sponsorships and donations, data privacy, fraud and third-party due diligence. Our code of conduct, *The way we work*, provides a clear framework for how we should conduct our business, no matter where we work or where we are from.

We recognise that our reputation has been damaged by the ongoing investigations into the impairment of our coal investment in Mozambique and payments made to a consultant in relation to the Simandou project in Guinea, activities that took place more than six years ago.

On the former, we reached a settlement in 2017 with the UK Financial Conduct Authority (FCA), who believe we should have impaired the asset six months earlier than we did. Importantly, the FCA found no evidence of fraud or systemic failure. Both the Australian and US authorities are pursuing claims against the Group in relation to the impairment of our Mozambique coal project. We believe these cases are unwarranted and intend to strenuously deny the allegations in court.

On Simandou, after commissioning an independent investigation, the board took the decision to self-report to the authorities in the UK, the US and Australia. We continue to co-operate fully with the relevant authorities, but the conduct and timing of these investigations are outside our control.

Today, we remain focused on acting with integrity, being transparent and continuing to foster a culture in which our employees never need a reason to do the right thing.

In October, we publicly committed to disclosing on our website our contracts with, and taxes and payments to, governments, as well as the identities of the owners of companies with which we work (beneficial ownership). We are on the board of the Extractive Industries Transparency Initiative (EITI), which works to improve transparency and accountability in the extractive sector. And we are working closely with governments and the Organisation for Economic Co-operation and Development (OECD) on new tax reporting codes and policies to ensure consistency in our reporting procedures.

This year, we joined other leading multinational companies in endorsing The B Team Responsible Tax Principles, which aim to drive fairer, more sustainable tax systems and global standards of responsible tax practice. In addition, every April, we publish a Taxes paid report, detailing how much tax we pay and where.

We are also working to improve the transparency of our supply chain. Our supplier code of conduct clearly lays out our expectations on human and labour rights, safety and the environment. Our Know Your Supplier (KYS) procedure enables us to understand legal, ethical and reputational risks of working with certain suppliers. We use this with all new suppliers meeting the risk criteria and, from the end of 2019, will also include it in contract renewals. We have centralised monitoring for relevant third parties we work with (5,922 in 2018).

We have a dedicated third-party due diligence team within our Ethics & Integrity function to facilitate risk-based KYS and Know Your Customer (KYC) due diligence assessments on our commercial relationships.

The assessments cover bribery, corruption, human rights, money laundering, trade sanctions and other areas which may result in potential legal, ethical or reputational risks. We apply automated monitoring of relevant third parties to highlight significant changes in our risk profile.

Talk to Peggy

In 2018, a key activity was making ongoing improvements to Talk to Peggy, our confidential and independently operated whistleblowing programme available to all employees, contractors and community members. Key statistics for the year:

- 679 incidents reported either through Talk to Peggy, compliance managers or team leaders, down approximately 5% on last year.
- We substantiated or took corrective action for 34% of reported incidents.



Collaborating to enable long-term economic benefits

Our aim is to partner with communities and governments to nurture and grow sustainable economies. We do this by creating jobs – both directly and indirectly – by paying taxes and royalties, and by nurturing entrepreneurship where we can. This includes sourcing from local suppliers and helping to educate and train people in local communities for the skills of the future.

We also work to maintain and preserve cultural and community heritage, for example, through our work cataloguing and preserving ancient rock art in the Pilbara, Western Australia.

Partnerships are key to developing sustainable solutions. In 2018, we began extending our collaboration to link communities with government agencies and other businesses, to help them succeed even when we are no longer present.

\$192m

(2017: \$176 million)
spent on community programmes

2018 performance against targets

Goals

By 2020:
To demonstrate local economic benefits from employment and procurement of goods and services by reporting yearly against a locally defined target

To be effectively capturing and managing community complaints and reducing repeat and significant complaints each year

Performance

- 36% of managed operations on track to meet targets
- 59% of managed operations are actively managing and making progress towards achievement of 2020 targets. Sites that have indicated a risk of non-attainment are focused on identifying suitable intervention to ensure attainment.

Direct economic contribution 2014-18

	2018	2017	2016	2015	2014
Value add (\$ million) ¹	30,504	27,734	20,065	18,888	29,178
Payments to suppliers (\$ million) ²	12,331	14,123	15,253	17,896	21,370
Community contributions (\$ million)	192	176	168	187	264

¹ Sum of payment to employees, governments and returns on capital invested in operations.

² Includes our share of joint-ventures and associates.

Collaborating to enable long-term economic benefits: priorities for 2019

- Continuing to increase local employment and procurement from our local communities and surrounding areas.
- Having more informed conversations with civil society organisations about environmental, social and governance issues, as well as partnership opportunities.
- Finding and strengthening long-term partnerships for regional economic development.

Working with shared purpose

Our goal is to add value to every community in which we have a footprint. In 2018, we spent \$192 million on 994 community programmes covering health, education, environmental protection and business development. This is on top of the taxes and royalties we pay to regional and federal governments, which in turn contribute to local and national economics and infrastructure (see our 2018 Taxes paid report to be published in April 2019).

Our communities and social performance (CSP) standard also helps us to identify relevant economic opportunities for communities. Our CSP targets for 2016-20 include creating more local contract awards and jobs.

At the end of 2018, 36% of our sites were on track to meet their targets by 2020. Sites that reported a risk of not achieving their 2020 targets are focused on identifying suitable interventions to ensure attainment.

We have an Indigenous strategy for Canada and Australia that focuses on understanding and improving social, economic and cultural wellbeing. To achieve this, and to help with approvals and permits, we create community agreements.

These agreements are the basis of many of our relationships, and are an essential part of the planning, operation and closure of every project and operational site asset. They typically include commitments on land use, cultural heritage, environment, employment and procurement. We have 40 comprehensive agreements and more than 120 global exploration access agreements in place across the business.

Sustainable development continued

Collaborating to enable long-term economic benefits continued

“Socioeconomic development is about more than employment and social investment. It is about efforts to make local communities successful and resilient over the long term.”

Regional economic development

Socioeconomic development is about more than employment and social investment. It is about efforts to make local communities successful and resilient over the long term. This, in turn, requires meaningful partnerships at the local level, with both governments and community organisations.

In 2018, for example, we launched a partnership with the government of Western Australia and South Metropolitan TAFE (Technical and Further Education) to develop the first nationally recognised certificates in Automation and Remote Operations. This partnership aims to train people in the new skills required for the automation age and certify those skills, so they are easily transferable across industries.

In Mongolia, we are part of the Sustainable Cashmere Project, an initiative to strengthen the supply chain of high-quality cashmere. This project works to give Mongolian herders better-than-market prices, more direct access

to markets, and support for improved quality and grazing – all in return for adopting better practices. Other incentives will eventually include assistance to diversify herders' income as well as other financial support, including access to loans and insurance against loss of herds.

We contribute in other ways as well, often through our network of local suppliers. Our payments to suppliers comprise a big part of our global economic contribution – this year such payments totalled \$12.3 billion, out of a total direct economic contribution of \$42.8 billion.

We also support regional economies through our procurement processes. For example, local businesses in Australia can use a special portal to find and bid for contracts, and we offer 30-day payment terms to help smaller businesses with cash flow. In 2018, we spent A\$1.9 billion on goods and services from Western Australian businesses alone.

Global engagement

We take an active role in a variety of dialogues with the global community on social issues as well as the environment. This allows us to both harness opportunities and address collective challenges that we cannot effectively tackle on our own.

Rio Tinto is a member of many trade and industry associations, which we join where membership provides value to our business, investors and other stakeholders. We believe engagement is important even where there is a wide range of views with which we do not always agree. We do not favour any political party, group or individual. We do not involve ourselves in party political matters, nor make any type of payments to political parties or candidates.

For example, we support, or are members of, a range of initiatives and organisations ranging from the ICMM to the UN Global Compact to EITI and this year, the World Economic Forum.

Rio Tinto in the Queensland Community

In 2015, we announced an A\$2.6 billion investment in far north Queensland, Australia, for the construction of a bauxite mine, processing and port facilities. At the request of Traditional Owners, it was named Amrun, the Wik Waya name for the area. Starting in 2019, Amrun is expected to produce up to 22.8 million tonnes of bauxite per year. The first shipment left port in December 2018, six weeks ahead of schedule.

Amrun's economic impact has been felt across Australia; we have made more than A\$2.1 billion in purchases from more than 1,200 Australian suppliers – over 800 from the state of Queensland. Western Cape York businesses alone have supplied more than A\$240 million worth of goods and services.

We are working to address local community needs: because working parents in the area face child-care pressures, we are funding a programme that encourages local educators to open new daycare facilities. We are also funding education, employment and training opportunities for the local Indigenous community.

We are also helping to safeguard the environment: the nursery we planted is today 86,000 seedlings strong. These seedlings will be used to support rehabilitation across our Weipa operations, including Amrun. And last year, as part of their work to counter baby turtle predation, our team potentially saved approximately 7,600 turtle eggs.



Pioneering materials for human progress

The metals and minerals we produce have an essential role to play in the transition to a low-carbon economy, and we believe our portfolio is relatively well positioned for the future. While climate change presents complex challenges, we are aiming to be part of the solution.

One way we are doing this is by working to reduce the amount of energy it takes to mine and process our materials. We are also committed to being open about our own challenges and activities and have published our first Task Force on Climate-related Financial Disclosures (TCFD) report. We are forging innovative partnerships to help to reduce carbon emissions from our activities and to bring more sustainable products to the market. Our products are needed for innovative energy solutions and a low-carbon future.

“Across our company, 71% of the electricity used is now from renewable energy: hydro, wind and solar power.”

Greenhouse gas and energy performance 2014-18

	2018	2017	2016	2015	2014
Greenhouse gas emissions intensity (indexed relative to 2008)	71.1	72.9 ¹	74.4	79.7	81.7
Total energy use (petajoules)	420	440 ¹	458	433	450

¹ Numbers adjusted from previous years to ensure comparability over time.

Pioneering materials for human progress: priorities for 2019

- Identifying short- and long-term opportunities that allow our carbon-intensive assets to transition to a low-carbon footprint.
- Continuing to optimise AutoHaul™ for safety, environmental and productivity gains.
- Finalising design and starting construction of Koodaideri intelligent mine in the Pilbara.
- Building excellence through technical career paths (RioExcel) which is being phased in and will be fully in place in 2019.
- Continuing to empower and harness the creativity of our employees through our Pioneering Pitch programme which invests in innovative ideas around safety, environment, community and productivity.

Climate change: risks but also opportunities

The global climate is changing, largely due to human activities. If left unchecked, climate change will create significant risks and hardship for both human life and natural ecosystems.

We support the aim of the United Nations Paris Agreement to limit global warming to less than 2°C above pre-industrial levels. Our operations are energy intensive, and we are working to reduce emissions, manage risk and build our own resilience to climate change. We are also putting the transition to a low-carbon future and future energy scenarios at the heart of our business strategy.

We do so by creating scenarios based on the International Energy Agency's (IEA) Sustainable Development scenario. We are assessing the resilience of the commodities we produce to potential market-related impacts of climate change, as well as the potential exposure of our operations to related physical risks. Such considerations play into our decision-making in many ways, and we are working to:

- Integrate more renewable energy sources in our operations, such as the hydropower we use at our Canadian aluminium facilities.
- Find ways to reduce our greenhouse gas emissions, which have dropped by 43% since 2008, and by 7.9% since last year.
- Explore opportunities within our portfolio to develop battery storage technology.
- Focus on copper as part of the solution for global electrification and renewable energy sources, and aluminium as a key driver of light-weighting cars, trucks and other transport.

You can read more detail on these and other actions in our first TCFD report, available on our website at riotinto.com/TCFD2018.

Sustainable development continued

Pioneering materials for human progress continued

“We are the first company in the world to become certified under the Aluminium Stewardship Initiative (ASI), the highest internationally recognised standard for robust environmental, social and governance practices across the aluminium lifecycle of production, use and recycling.”

Materials of the low-carbon future

Many of our products are well suited to developing energy solutions, such as renewable energy storage and electricity transmission. Copper is the primary conductor in the world's electrical infrastructure and plays a significant role in the electrification of transportation and smart technologies. By 2027, we expect our Oyu Tolgoi mine in Mongolia to become one of the world's top producers of copper, demand for which is linked to the use of renewable energies and electric vehicles.

Aluminium has always been the leading choice for sustainable product development due to its lightweight, strength and infinite recyclability. Its properties make it ideally suited to lighter and more fuel-efficient vehicles. And as battery storage technology develops, lithium is expected to play an increasing role in the low-carbon economy, particularly in markets such as the US, EU and China. The pre-feasibility studies of our Jadara lithium project in Serbia have continued to progress this year.

Groundbreaking partnerships

In 2018, we announced Elysis, a pioneering partnership with Alcoa, supported by Apple and the governments of Canada and Quebec. This joint venture will further develop a revolutionary process that eliminates direct GHG emissions from the aluminium smelting process, replacing them with pure oxygen. The technology will be developed and licensed for use in both existing and new smelters.

We are also the first company in the world to become certified under the Aluminium Stewardship Initiative (ASI), the highest internationally recognised standard for robust environmental, social and governance practices across the aluminium lifecycle of production, use and recycling. This has led to immediate benefits such as our partnership with Nespresso to supply responsible, sustainable aluminium for their coffee capsules by 2020.

Our Ventures team is exploring partnerships and other opportunities that will allow us to expand even more into the metals and minerals of the future, as technology continues to change the way we live and work.

Closure: ending production

Planning for the future of our sites is a core business function, which is governed by our Closure Steering Committee.

A centralised closure group supports all our businesses and oversees work to minimise the impacts and risks and to maximise benefits for stakeholders. A number of our assets are coming to the end of their operating lives. At the end of 2018, we had almost \$10 billion set aside on our balance sheet for the cost of closing these sites.

Last year, we developed a strategy to help drive greater consistency and effectiveness in the planning and implementation of our closure

activity at every site. This includes progressively rehabilitating land throughout the life of an operation; in 2018, we rehabilitated 24% of the land we disturbed for mining. We also look to incorporate closure into the design of our assets, as well as how to optimise decommissioning, remediation and any long-term management obligations, such as water treatment. And we continually assess the potential to repurpose and reuse sites for future economic or social benefit. In some instances, we manage historic sites for the long term.

This work is highly collaborative, involving sustained input from our employees, landowners, communities, governments and NGOs. In some regions, regulations for large mine closures are undeveloped or untested. We are working with our stakeholders and peers to better understand the opportunities around closure, to find solutions to the challenges and to engage governments to create effective and proportionate policies.

We manage a number of historic (post-production) sites, often inherited through acquisitions or mergers. We rehabilitate these sites and, where and when we can, we transfer them to local authorities or third parties.

Intelligent mining

Through our Mine of the Future™ programme, we harness new and emerging technologies to make our operations safer, more efficient, and more environmentally friendly. In 2018, for the first time, our driverless trains – 2.4 kilometres in length – delivered iron ore from our mines to our ports in the Pilbara in Western Australia. With the programme fully implemented, we have now completed more than 1.6 million kilometres in driverless mode, reducing risk at level crossings and cutting light vehicle travel across the Pilbara by 1.5 million kilometres a year.

We also approved funding for the Koodaideri iron ore mine in Western Australia, the world's first intelligent mine. In addition to technology already in use across Rio Tinto, such as autonomous trucks, trains and drills, the site has more than 70 design innovations in scope. Fully integrated mine operation and simulation systems, including digital twin technology, will improve safety, maintenance and productivity – and will be accessible in real-time in the field. Koodaideri will set a benchmark for our industry in terms of automation and the use of data.

Using technology to construct assets intelligently, and with respect for the environment and local communities, is also a priority. At our Amrun bauxite mine in Queensland, Australia, we used innovative modular engineering techniques to build the wharf more safely, faster and with a smaller environmental footprint. We also used virtual reality to help the local community and Traditional Owners understand how the mine and surrounding areas would eventually look. Today, we oversee activities at Amrun in real-time, using the latest technology and predictive mathematical tools to run operations safely and efficiently.

Our approach to sustainability

Governance and materiality

The Sustainability Committee reviews our approach to ensure consistency with our purpose and values, the effective management of material sustainability risks and our contribution to sustainable development (more information on page 95 [AR](#)).

Every year we review the sustainability topics that matter most to our business and stakeholders. Following the Global Reporting Initiative (GRI) Standards, this year we prioritised our material topics, combining an analysis of the external environment with feedback from Rio Tinto leaders and subject-matter experts while also considering stakeholder expectations.

We also have a robust infrastructure in place for capitalising on opportunities and mitigating risk: a clear strategy, comprehensive policies and standards, and rigorous audits to verify progress.

Assurance

We engaged an independent external assurance organisation, PricewaterhouseCoopers LLP, to provide the directors of Rio Tinto with assurance on selected sustainable development subject matters, as explained on pages 290 and 291 [AR](#).

PricewaterhouseCoopers LLP's assurance statement satisfies the requirements of subject matters 1 to 4 of the ICMM assurance procedure. See pages 92 to 94 [AR](#) of the governance report for more information on our external auditors and internal assurance.

Notes on data

The data summarised in this section relates to calendar years, and unless stated otherwise, parameters are reported for all managed operations without adjustment for equity interests. Where possible, we include data for operations acquired before 1 October of the reporting period. Divested operations are included in data collection processes up until the transfer of management control.

We report against GRI standards and the requirements of other select reporting frameworks, and reflect the ten principles of the ICMM and the mandatory requirements in the ICMM position statements within our policies, standards and procedures. For more about our data definitions, our reporting of GRI disclosure requirements and our alignment with the ICMM, see our Sustainable development report, that will be published in March.

Task Force on Climate-related Financial Disclosures (TCFD)

In June 2017, the Financial Stability Board released its final report on the recommendations of the TCFD. This voluntary framework seeks to encourage businesses to disclose climate-related risks and opportunities. For our operations, climate-related risks and opportunities span several areas ranging from managing our carbon emissions, water usage where water is scarce, through to understanding how the products we produce fit into the low-carbon future.

We have provided information relating to these areas under the relevant pillar of our sustainability framework. In addition, we have provided disclosure, as envisaged by the TCFD, in our TCFD report, which can be found on our website at riotinto.com/TCFD2018.

Non-financial information statement

This section (pages 52 to 63) provides information as required by regulation in relation to:

- Environmental matters
- Our employees
- Social matters
- Human rights
- Corruption and bribery

In addition, other related information can be found as follows:

- Business model – pages 14 and 15
- Principal risks and how they are managed – pages 64 to 72
- Non-financial key performance indicators – pages 20 to 23

Risk management



The geopolitical context remained unsettled during 2018, with rising trade tensions creating increased market volatility.”

We are exposed to a variety of risks (both threats and opportunities) that can affect our business performance, reputation and licence to operate – financially, operationally and in terms of compliance. Creating shareholder value is the reward for taking and accepting risk. Effective management of risk is therefore critical to whether we can achieve our strategic objectives.

The risk landscape in 2018

The geopolitical context remained unsettled during 2018, with rising trade tensions creating increased market volatility. We have, however, generally experienced a favourable market and pricing environment. While there have been inflationary cost pressures affecting the industry, we have focused on delivering continued operational efficiencies through our mine-to-market productivity programme to defend our margins. Our solid cash flows, underpinned by strong prices and cash from divestments, have further strengthened our balance sheet and decreased our liquidity risk. We have also maintained a strong discipline around capital allocation: returning cash to shareholders and investing in high-quality long-term greenfield and brownfield projects.

In 2018, we continued to enhance our controls for managing operational risks. In particular, we are strengthening how we manage the risks of major hazards through a Group-wide improvement programme, and are applying more rigorous cyber-security controls to deal with the evolving and growing threat of cyber attacks and security exposures.

Our trading and sales and marketing teams have continued to develop a more sophisticated market interface with the ongoing expansion of our Commercial division in Singapore. We are building a robust governance, risk and controls framework to support the Commercial team and to manage the strategic, financial and operational risks to which they are exposed.

We also continue to focus on managing risks relating to our relationships with governments, communities and key customers and suppliers. Our partner-to-operate strategy supports the creation and maintenance of mutually beneficial partnerships with key stakeholders, particularly host governments.

Our managed and non-managed joint-ventures, particularly operations in places with higher sovereign risk, continue to need close monitoring and active management. Our non-managed joint-venture portfolio is now better aligned with our strategic priorities and appetite for risk, after the sale of our interest in the Grasberg mine in Indonesia. And we are continuing to refine our portfolio for a future carbon-constrained world, with the sale of our Australian coal assets.

You can see changes to our risk profile during 2018 on the following page. For more detail on movements and the monitoring of these exposures, see pages 34 to 51 (Business reviews) 76 to 141 [AR](#) (the Directors' report) and the Notes to the 2018 financial statements on page 150 [AR](#).

Emerging risks

In the near term, we expect to face continued macroeconomic and geopolitical uncertainty. The global economic cycle is expected to weaken due to monetary policy normalisation, the fading impacts of the US stimulus and weakening demand in China. We see the most significant short-term risks to be the impact on market sentiment of continuing global trade tensions, the potential for a sharp and prolonged downward correction in global equities, and a worse-than-expected slowdown in the Chinese economy.

We are also mindful of the ongoing rise of populism in many of the markets in which we operate. This is likely to lead to increasing




resource nationalism and pressure from governments, communities and customers for a greater share of the wealth that our business creates. Related to this, we also see a tightening of scrutiny around foreign investments.

In the medium term, we see both threats and opportunities in technological disruption – from mining and processing automation to machine learning and artificial intelligence. We aim to use these technologies to improve productivity in increasingly sophisticated markets, while managing the social implications of automation in partnership with our host governments.

In the longer term, we predict increasing demand for sustainable working practices and a growing need to manage environmental and other risks to our licence to operate, such as land reform. Climate change represents perhaps the greatest long-term threat to our business, but also brings opportunities. We will need to show resilience to the risks it poses – physical, regulatory and market. A low-carbon economy may lead to structural shifts such as a step-change in recycling, but it will also fuel higher demand for commodities like copper and raw materials for batteries.

Already, societal expectations around water and closure management are changing. We have considerably enhanced our framework for managing water risk, developing a comprehensive Water Risk Profile, Group-wide water metric and Group water target. We have also created a centrally coordinated closure strategy and a dedicated Closure team to provide strong lifecycle planning and to oversee our growing activities related to closing and repurposing our sites.

Principal risks and uncertainties exposure at a glance – 2018 trend

	External	Internal	Internal and external
Increasing risk or uncertainty	 <ul style="list-style-type: none"> – Sovereign risk – China development pathway – Commodity prices 		<ul style="list-style-type: none"> – Attracting and retaining talent
No change in risk or uncertainty	 <ul style="list-style-type: none"> – Strategic partnerships 	<ul style="list-style-type: none"> – Execution of acquisitions and divestments – Capital project development – Health, safety, environment and communities 	<ul style="list-style-type: none"> – Exploration and resources – Operational excellence – Regulation and regulatory intervention
Decreasing risk or uncertainty			<ul style="list-style-type: none"> – Liquidity

Considering the potential speed and degree of change possible in factors like Chinese demand, commodity prices and exchange rates, we have set a three-year range for our long-term viability statement. We feel this strikes the right balance between long- and short-term influences on performance, and allows credible detailed forecasts.

We have undertaken robust stress-testing as part of the business planning process to confirm the long-term viability of the business. The variables tested include commodity price and exchange rate movements, and assumptions relating to production, political and stakeholder risks, acting both individually and in combination. We analyse severe but plausible risk levels well beyond those expected in the normal course of business.

The viability of the business under these scenarios remained sound, with a suite of management actions available to preserve resilience, including accessing lines of credit, reducing capital expenditure and changing levels of shareholder returns.

In summary, taking into account the Group's current position and principal risks, the directors have assessed the prospects of the business over the next three years (until 31 December 2021) and have a reasonable expectation that we will be able to continue to operate and meet our liabilities as they fall due over that period.

It is impossible to predict all risks and the combinations in which they might appear. There may be risks that do not seem material at the moment, but which could turn out to be material, particularly if they appear at or around the same time.

Assessing our risks

With the help of management, the board has carried out a robust assessment of the principal risks of the business, as listed above. They have also tested the Group's financial plans for each of these principal risks, and for a number of severe but plausible scenarios related to certain principal and material risks appearing at or around the same time.

We will continue to monitor the potential impacts of the UK's departure from the European Union as a result of the June 2016 referendum. At the moment, we foresee no material impacts from this on our operations or business, although it could well create volatility in equity markets and contribute to political instability in the UK and Europe.

Longer-term viability statement

Our business planning processes include preparing detailed financial plans for the next two years, as well as more strategic and higher level financial plans for the next five years. We develop our strategy and make capital investment decisions based on an assessment of cash flows over a multi-decade horizon. We also regularly test our investment capacity to make sure any capital commitments are in line with our capital allocation model. This multi-year approach to planning reflects our business model of investing in and running long-life assets, and selling into commodity markets over which we have limited influence.

Our planning includes modelling a series of macroeconomic scenarios and using a range of assumptions, including:

- Projections of economic growth and commodity demand in major markets, primarily China.
- Commodity prices and exchange rates, which are often correlated.
- Potential new technology and productivity enhancements.
- Cost and supply parameters for our major inputs.
- The schedule and cost of organic and inorganic growth programmes.

How we manage risk

Underpinned by our risk policy and standards, our approach to risk management and internal control is aimed at embedding risk awareness in all decision-making, and a commitment to managing risk proactively and effectively. This includes:

- Identifying and evaluating threats and opportunities early.
- Managing and preventing threats before they materialise, and responding effectively if they do.
- Actively pursuing opportunities to capture value within agreed risk tolerances.

We make accountability for risk management very clear in our business – this is a key performance area for line managers.

Our Risk team supports the understanding and management of risk at all levels of the business. They provide a framework for managing and reporting material risks, escalating key issues to the Executive Committee and ultimately to the board, if appropriate. They also support the Risk Management Committee.

Risk management continued

Our process for identifying, evaluating and managing material business risks is designed to manage rather than eliminate threats – where appropriate, accepting a degree of risk to generate returns. Certain threats, such as natural disasters, cannot be managed using internal controls, and there is limited capacity in the international insurance markets to transfer such risks.

We have material investments in a number of jointly controlled entities. Where we do not have managerial control, we may be unable to ensure that management will comply with our policies and standards, but we use what influence we have.

Our risk management framework

The responsibility for identifying, evaluating and managing risks lies with all our employees and business leaders. They operate within the Group-wide framework to manage risks within approved limits.

The framework also defines the oversight responsibilities of the board and the Executive Committee. Both are supported by our Risk Management Committee and central support functions, such as Risk and Group Internal Audit, to enable the effective identification, evaluation and management of risk across our business.

Our framework lays out a three lines of defence approach to managing risks and controls:

First line: employees and business leaders own risks.

Second line: our central support functions and Risk Management Committee control our risk framework and internal control systems.

Third line: Group Internal Audit assures our internal control systems.

The key risk management responsibilities throughout the Group are outlined below.

Our risk management framework

Oversight	Board	<ul style="list-style-type: none"> – Determines the nature and extent of acceptable risk as we pursue our strategic objectives. – Confirms that management's risk limits reflect the level of risk the board is willing to accept to achieve our strategic objectives. – Oversees the risk management process.
	Board committees	<ul style="list-style-type: none"> – At least once a year, the Audit Committee monitors and reviews the maturity and effectiveness of our risk management and internal control systems. – The Audit and Sustainability Committees review regular reports from management on the strategies and controls applied to any material business risks identified within the Committees' scope.
Third line	Group Internal Audit	<ul style="list-style-type: none"> – Provides independent and objective assurance that our risk management and internal control systems are adequate and effective.
Second line	Executive Committee	<ul style="list-style-type: none"> – Sets our risk strategy and assesses the risks inherent in key investments and in strategic, business or annual plans.
	Risk Management Committee	<ul style="list-style-type: none"> – Oversees our risk management framework to help identify significant risks to Group-level objectives and to make sure we have effective risk management processes.
	Risk function	<ul style="list-style-type: none"> – Coordinates and supports Group-level risk management activity and reporting. – Embeds risk management into core business processes, such as planning and capital allocation. – Builds risk management capability and a risk-aware culture throughout the Group.
	Other central support functions and management committees	<ul style="list-style-type: none"> – Provide targeted expertise and support to risk, action and control owners. – Develop and maintain specific controls, including policies, standards and procedures, to support the effective management of material Group-level risk within the agreed limits. – Assure first line of defence compliance with controls.
First line	Product groups and central functions, executive/audit forums	<ul style="list-style-type: none"> – Monitor material risks and track activities to manage risk within their own business activities, escalating when appropriate. – Consider risk and uncertainty in strategic and business planning and capital allocation proposals.
	Product groups and business units	<ul style="list-style-type: none"> – Identify, assess and manage risks in operations, functions and projects.
	Risk Community of Practice	<ul style="list-style-type: none"> – Supports alignment, consistency and continuous improvement of risk management.

Principal risks and uncertainties

The principal risks and uncertainties outlined in this section reflect the inherent risks that could materially affect Rio Tinto or its ability to meet its strategic objectives, either directly or by triggering a succession of events that in aggregate become material to the Group.

Rio Tinto's business units and functions assess the potential economic and non-economic consequences of their respective risks using the framework defined by the Group's Risk standard. Once identified, each principal risk or uncertainty is reviewed and monitored by the relevant internal experts and by the Risk Management Committee and, as appropriate, by the relevant board committees and the board.

There may be additional risks unknown to Rio Tinto and other risks currently not believed to be material which could turn out to be material. A number of them, particularly those with longer-term potential impacts, are referred to in the sustainable development section of this Annual report on pages 52 to 63.

The principal risks and uncertainties should be considered in connection with any forward-looking statements in this Annual report and the cautionary statement on page 300 ^{AR}.

Market risks

Rio Tinto operates in global markets and accepts the impact of exchange rate movements and market-driven prices for our commodities, seeking premiums where possible.

Commodity prices: inherent risk and uncertainty

Commodity prices, driven by demand and supply for the Group's products, vary outside of expectations over time.

Exchange rate variations and geopolitical issues may offset or exacerbate this risk.

Anticipating and responding to market movements is inherently uncertain and outcomes may vary.

Risk exposure 2018 trend



Potential impact

- Business model
- Future financial performance
- Solvency
- Liquidity
- Financial market reputation

Opportunities

A rise in commodity prices, or favourable exchange rate movements, generates more cash flow from operations, enabling the Group to pursue growth options or capital expansions, pay down debt and/or increase returns to shareholders.

Capturing above-planned returns from commercial insights relating to market movements would deliver additional cash flow to the Group.

Threats

Falling commodity prices, or adverse exchange rate movements, reduce cash flow, limiting profitability and shareholder returns. These may trigger impairments and/or impact rating agency metrics. Extended subdued prices may reflect a longer-term fall in demand for the Group's products, and the reduced earnings and cash flow streams resulting from this may limit investment and/or growth opportunities.

Failure to deliver planned returns from commercial insights would negatively impact cash flows for the Group.

China development pathway: inherent risk and uncertainty

China's growth pathway could impact demand for the Group's products outside of expectations.

Risk exposure 2018 trend



Potential impact

- Business model
- Future financial performance
- Solvency
- Liquidity

Opportunities

Strong growth, positive policy decisions and reforms drive demand for commodities, resulting in rising prices which may justify capital expansion and increased shareholder returns in the short to medium term.

Threats

China is the largest market for our products, and Chinese demand is a strong driver, at times the dominant one, of the market price of the commodities we produce. An economic slowdown in China, and/or a material change in policy, could result in a slowdown in demand for our products and reduced earnings and cash flow for the Group.

Mitigating actions include:

- Pursue low-cost production, allowing profitable supply throughout the commodity price cycle.
- Maintain a diverse portfolio of commodities across a number of geographies.
- Maintain global portfolio of customers and contracts.
- Maintain a strong balance sheet.
- Monitor multiple leading indicators and undertake detailed industry analysis to develop more accurate assumptions in our commodity price and exchange rate forecasting that is used for capital allocation and planning processes, and for commercial insights.
- Comply with the Group's Treasury policy and standard, which outlines the fundamental principles that govern the Group's financial risk management practices.
- Closely coordinate market-facing sales and marketing and trading resources in the Group.
- Apply strong governance reflecting relevant regulatory frameworks and jurisdictions.

Principal risks and uncertainties continued

Strategic risks

Rio Tinto enforces disciplined capital allocation to the best returning opportunities (organic and inorganic growth projects) or returns to shareholders.

Execution of acquisitions and divestments: inherent risk and uncertainty

Rio Tinto's ability to secure planned value by successfully executing divestments and acquisitions may vary.

Risk exposure 2018 trend



Potential impact

- Business model
- Future performance
- Solvency
- Liquidity
- Group reputation

Opportunities

Proceeds realised from divested assets are greater than planned, allowing more capital to be returned to shareholders or redeployed into higher returning or more productive uses. The Group is successful in acquiring businesses on acceptable terms that provide sustainable future cash flow and/or future growth optionality.

Threats

Divestment and acquisition activity incurs transaction costs that cannot be recouped, or may result in value destruction by realising less than fair value for divestments or paying more than fair value for acquisitions. This could result in unforeseen pressure on the Group's cash position or reduce the Group's ability to expand operations. The Group may also be liable for the past acts or omissions of assets it has acquired that were unforeseen or greater than anticipated at the time of acquisition. The Group may also face liabilities for divested entities if the buyer fails to honour commitments or the Group agrees to retain certain liabilities.

Capital project development: inherent risk and uncertainty

The Group's ability to deliver projects successfully may vary.

Risk exposure 2018 trend



Potential impact

- Future performance
- HSE&C
- Group reputation
- Solvency
- Liquidity

Opportunities

An ability to develop projects safely, on time and within budget enhances the Group's licence to operate and investor confidence.

Threats

A delay or overrun in a project schedule could negatively impact the Group's profitability, cash flows, ability to repay project-specific indebtedness, asset carrying values, growth aspirations and relationships with key stakeholders.

Strategic partnerships: inherent risk and uncertainty

Strategic partnerships play a material role in delivering the Group's production, cash and market positioning, and these may not always develop as planned.

Risk exposure 2018 trend



Potential impact

- Business model
- Future performance
- HSE&C
- Group reputation

Opportunities

Joint-ventures and partnerships offer opportunities to access resources, increase shareholder returns, and reduce political and operational risks.

Threats

Joint-venture partners may hinder growth by not agreeing to support investment decisions. For non-managed operations, the decisions of the controlling partners may cause adverse impacts to the value of the Group's interest in the operation or to its reputation and may expose it to unexpected financial liability.

Mitigating actions include:

- Complete detailed, objective due diligence on all material divestments and acquisitions.
- Resource Business Development team appropriately supported by external specialists as required.
- Involve business unit leaders early in process to recognise integration planning and synergies, or separation threats and opportunities.
- Undertake post-investment reviews on divestments and acquisitions to identify key learnings to embed into future initiatives.
- Consistently approach development of large-scale capital projects through a specialised projects division.

- Follow rigorous project approval and stage-gating our process, including monitoring and status evaluation, as articulated in Project Evaluation Standard and guidance.
- Ensure effective stakeholder management in project development.
- Approach investments and partnerships with a view to long-term development of relationships rather than short-term transactional advantage.
- Maintain strong focus on contractor management.
- Actively participate within the governance structures of joint ventures to promote, where possible, alignment with the Group's policies and strategic priorities.
- Undertake rigorous third-party due diligence and assurance.

Financial risk

Rio Tinto maintains a strong balance sheet and liquidity position to preserve financial flexibility through the cycle.

Liquidity: inherent risk and uncertainty

External events and internal capital discipline may impact Group liquidity.

Risk exposure 2018 trend



Potential impact

- Future performance
- Solvency
- Liquidity
- Group reputation

Opportunities

Favourable market conditions and strong internal capital discipline could increase Group liquidity and/or balance sheet strength and allow the Group to pursue investment or growth opportunities, pay down debt and/or enhance returns to shareholders.

Threats

The Group's ability to raise sufficient funds for planned expenditure, such as capital growth and/or mergers and acquisitions, as well as the ability to weather a major economic downturn, could be compromised by a weak balance sheet and/or inadequate access to liquidity.

Mitigating actions include:

- Comply with the Group's Treasury policy and standard, which outlines the fundamental principles that govern the Group's financial risk management practices.
- Maintain a prudent gearing ratio and other financial metrics commensurate with a strong investment-grade credit rating.
- Manage the liquidity and financing structure of the Group using forecasts and sensitivity analysis tools to actively monitor, determine and enable access to the appropriate level, sources and types of financing required.
- Subject funds invested by the Group to credit limits and maturity profiles based on board-approved frameworks to promote diversification and maintain appropriate liquidity.
- Maintain accurate financial reporting and tracking of our business performance.
- Report financial performance monthly to senior management and the board.
- Seek board approval of the financial strategy, long-term planning and cash flow forecasting.
- Apply a shareholder returns policy which allows shareholder returns to adjust with the cycle.

Resources risks

Rio Tinto invests materially to accurately identify new deposits and develop orebody knowledge, underpinning our operations and projects.

Exploration and resources: inherent risk and uncertainty

The success of the Group's exploration activity may vary. In addition, estimates of ore reserves are based on uncertain assumptions that, if changed, could result in the need to restate ore reserves and mine plans.

Risk exposure 2018 trend



Potential impact

- Business model
- Future performance
- Group reputation

Opportunities

The discovery of a new viable orebody can significantly improve future growth options.

The volume of ore in reported reserves/resources is based on the geological, commercial and technical information available at the date of the report that is, by its nature, incomplete. As new information comes to light, the economic viability of some ore reserves and mine plans can be restated upwards. As a result, projects may be more successful and of longer duration than initially anticipated.

Threats

A failure to discover new viable orebodies could undermine future growth prospects.

The risk that new information comes to light or that operating conditions change means that the economic viability of some ore reserves and mine plans can be restated downwards. As a result, projects may be less successful and of shorter duration than initially anticipated, and/or the asset value may be impaired.

Mitigating actions include:

- Comply with the Group's resources and reserves standard.
- Recruit and retain skilled and experienced exploration and evaluation personnel.
- Provide stable funding for exploration activities.
- Continually review the prospectivity of opportunities in the exploration portfolio and prioritise spend accordingly.
- Utilise new technologies where appropriate.
- Develop, leverage and manage third-party partnerships.
- Coordinate orebody knowledge through active Group-wide leadership forum.

Principal risks and uncertainties continued

Health, safety, environment and community (HSE&C) risks

Rio Tinto's operations are inherently hazardous. We manage responsibly to preserve our licence to operate and ensure our employees and contractors go home safe and healthy.

HSE&C: inherent risk and uncertainty

Our operations and projects are inherently hazardous with the potential to cause illness or injury, damage to the environment, disruption to a community or a threat to personal security.

Risk exposure 2018 trend



Potential impact

- Future performance
- HSE&C
- Group reputation

Opportunities

Delivering leading health, safety, environment and communities performance is essential to our business success. Meeting or exceeding our commitments in these areas contributes to sustainable development and underpins our continued access to resources, capital and a diverse workforce to sustain the organisation.

Good performance in closure and legacy management of closed sites can enhance our reputation and enable us to maintain access to land, resources, people and capital, so we can continue to establish new projects with the support of local communities.

Threats

Failure to manage our health, safety, environment or community risks could result in a catastrophic event or other long-term damage which could in turn harm the Group's financial performance and licence to operate.

Recognised hazards and threats include, among others, underground operations, pit slope instability, tailings facilities, process safety, infrastructure, vector-borne and pandemic disease, chemicals, gases, vehicles and machinery, aviation, extreme natural environments, endangered flora or fauna, areas of cultural heritage significance, water supply stress and climate change.

Mitigating actions include:

- Continue focus on HSE&C as a core priority at all operations and projects, overseen by the Sustainability Committee.
- Clearly define and ensure compliance with Group HSE&C strategy, policy and performance standards.
- Regularly review and audit HSE&C processes, training and controls to promote and improve effectiveness at managed and (where practicable) non-managed operations.
- Monitor monthly HSE&C performance at the Group level.
- Report, investigate and share learnings from HSE&C incidents.
- Build safety targets into personal performance metrics to incentivise safe behaviour and effective risk management (see Remuneration report).
- Develop mutually beneficial partnerships with local communities and establish appropriate social performance targets.
- Report annually on performance on greenhouse gas emissions, water, land use and rehabilitation, among others.
- Focus on fatality elimination through implementation of a programme to verify safety risk controls.

Stakeholder risks

Rio Tinto recognises the value of positive engagement with a range of stakeholders, and seeks to develop collaborative and mutually beneficial partnerships through our partner-to-operate strategy.

Sovereign risk: inherent risk and uncertainty

The Group's operations are located across a number of jurisdictions, which exposes the Group to a wide range of economic, political, societal and regulatory environments.

Risk exposure 2018 trend



Potential impact

- Business model
- Future performance
- Group reputation

Opportunities

Proactive engagement with governments, communities and other stakeholders can increase access to new resources, support stable and predictable investment frameworks and operational environments, and shape mutually beneficial policies and legal/regulatory frameworks.

Threats

Adverse actions by governments and others can result in operational/project delays or loss of licence to operate. Other potential actions can include expropriation, changes in taxation, and export or foreign investment restrictions, which may threaten the investment proposition, title, or carrying value of assets. Legal frameworks with respect to policies such as energy, climate change and mineral law may also change in a way that increases costs.

Mitigating actions include:

- Shape governance structures to ensure appropriate influence and engagement.
- Participate in strategic partnerships or financing structures to moderate political risk.
- Maintain geographically diverse portfolio to reduce concentration of exposure to changes in the particular locations.
- Monitor jurisdictional, including sovereign, risks and take appropriate action.
- Develop long-term relationships with a range of international and national stakeholders.
- Comply with Group policies and standards which provide guidance concerning risk management, human rights, cyber threat, data privacy, business integrity and external communications.

Governance risks

Rio Tinto employees operate in compliance with *The way we work* – our global code of business conduct, the Group delegation of authorities and all Group policies, standards and procedures.

Regulation and regulatory intervention: inherent risk and uncertainty

The Group's reputation and regulatory licences are dependent upon appropriate business conduct and are threatened by actual or perceived breaches of law, reputation or our code of conduct.

Risk exposure 2018 trend



Potential impact

- Business model
- Future performance
- Group reputation

Opportunities

Good corporate citizens are acknowledged to operate to a high ethical standard, thus attracting talent and securing access to resources and investment opportunities.

Threats

Fines may be imposed against Group companies for breaching anti-trust rules, anti-corruption legislation, sanctions or human rights violations or for other inappropriate business conduct.

A serious allegation or formal investigation by increasingly connected regulatory authorities (regardless of ultimate finding) could result in a loss in share price value and/or assets or loss of business. Other consequences could include the criminal prosecution of individuals and/or Group companies, imprisonment, fines, legal liabilities and reputational damage to the Group. There may also be considerable cost and disruption in responding to allegations or investigations and related litigation, and in taking remedial action.

Mitigating actions include:

- Identify and meet our regulatory obligations and respond to emerging requirements.
- Comply with Group policies, standards and procedures that provide guidance to our businesses and drive compliance with regulatory obligations.
- Dedicate legal and compliance teams to assist Group businesses in complying with regulatory obligations and internal standards and procedures.
- Maintain appropriate oversight and reporting, supported by training and awareness, to drive compliance with regulatory obligations.
- Continue to develop and deploy training across relevant sectors of the workforce.

Principal risks and uncertainties continued

Operations, projects and people risks

Rio Tinto seeks to achieve operational and commercial excellence, and to attract and retain the best people in the industry.

Operational excellence: inherent risk and uncertainty

Excellence at our operations and projects is derived from high operational and human productivity and innovation, which requires quality people, processes and systems.

Risk exposure 2018 trend



Potential impact

- Future performance
- Liquidity
- HSE&C
- Group reputation

Opportunities

Improved productivity and innovation from new systems can decrease costs and increase output, delivering additional cash flow.

Development and retention of talent enhances productivity, financial and HSE&C outcomes.

Threats

Business interruption may arise from a number of circumstances, including:

- Operational difficulties throughout the value chain, such as extended industrial dispute, delayed development, bottlenecks or interruptions to infrastructure for power, water and transportation.
- Operational failure such as a process safety incident, major pit slope, dump or tailings/water impoundment failure or underground incident.
- Cyber breach/incident affecting commercial and operational systems.
- Natural disasters such as earthquakes, subsidence, drought, flood, fire and storm can impact mines, smelters, refineries and infrastructure installations. Some of these risks are likely to increase through the impact of climate change.

Any of these events could result in a significant HSE&C incident, an interruption to operations, the inability to deliver products or a commercial loss.

Mitigating actions include:

- Preserve geographically diverse portfolio, limiting physical events/disruptions to a specific business, single infrastructure or logistical event.
- Comply with slope geotechnical, tailings management, underground mining and process safety technical and safety standards, supported by subject-matter experts and audit protocols, reducing the risk (likelihood and consequence) of operational failure.
- Comply with the Acceptable use of information and electronic resources standard, supported by periodic reviews of IT infrastructure and security controls by dedicated in-house cyber-security team.
- Operate under strong human resources and employee relations framework.
- Undertake business resilience planning and preparedness exercises for execution of plans across all operations.

Attracting and retaining talent: inherent risk and uncertainty

Attracting and retaining talent as the company and industry evolves presents a constant challenge.

Risk exposure 2018 trend



Potential impact

- Business model
- Future performance
- Group reputation

Opportunities

Leveraging the evolving company and market to attract a diverse and engaged workforce will deliver a competitive advantage to the Group.

Threats

The inability to attract or retain key talent will constrain the Group's ability to reach its goals within planned timeframes.

Mitigating actions include:

- Continue to provide leadership and technical development opportunities.
- Continue employee engagement programme and metrics.
- Enhance focus on inclusion, diversity and wellbeing at all levels of the Group.
- Maintain purpose, values and vision statements.

Five-year review

Selected financial data

The selected consolidated financial information below has been derived from the historical audited consolidated financial statements of the Rio Tinto Group. The selected consolidated financial data should be read in conjunction with, and qualified in their entirety by reference to, the 2018 financial statements and notes thereto. The financial statements as included on pages 144 to 243 ^{AR} have been prepared in accordance with IFRS as defined in note 1.

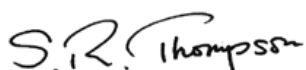
Rio Tinto Group					
Income statement data					
For the years ending 31 December Amounts in accordance with IFRS	2018 US\$m	2017 US\$m	2016 US\$m	2015 US\$m	2014 US\$m
Consolidated sales revenue	40,522	40,030	33,781	34,829	47,664
Group operating profit ^(a)	17,687	14,135	6,795	3,615	11,346
Profit/(loss) for the year	13,925	8,851	4,776	(1,719)	6,499
Basic earnings/(losses) for the year per share (US cents)	793.2	490.4	256.9	(47.5)	353.1
Diluted earnings/(losses) for the year per share (US cents) ^(b)	787.6	486.9	255.3	(47.5)	351.2
Dividends per share					
Dividends declared during the year					
US cents					
– interim	127.0	110.0	45.0	107.5	96.0
– final	180.0	180.0	125.0	107.5	119.0
– special	243.0				
UK pence					
– interim	96.82	83.13	33.80	68.92	56.9
– final	135.96	129.43	100.56	74.21	78.0
– special	183.55				
Australian cents					
– interim	170.84	137.7	59.13	144.91	103.1
– final	250.89	228.5	163.62	151.89	153.0
– special	338.70				
Dividends paid during the year (US cents)					
– ordinary	307.0	235	152.5	226.5	204.5
Weighted average number of shares – basic (millions)	1,719.3	1,786.7	1,797.3	1,824.7	1,848.4
Weighted average number of shares – diluted (millions) ^(b)	1,731.7	1,799.5	1,808.6	1,824.7	1,858.7
Balance sheet data					
Total assets	90,949	95,726	89,263	91,564	107,827
Share capital/premium	8,000	8,666	8,443	8,474	9,053
Total equity/Net assets	49,823	51,115	45,730	44,128	54,594
Equity attributable to owners of Rio Tinto	43,686	44,711	39,290	37,349	46,285

(a) Group operating profit includes the effects of charges and reversals resulting from impairments (other than impairments of equity accounted units) and profit and loss on disposals of interests in businesses. Group operating profit amounts shown above excludes equity accounted operations, finance items, tax and discontinued operations.

(b) The effects of dilutive securities has not been taken into account when calculating diluted loss per share for the year ended 31 December 2015, in accordance with IAS 33 'Earnings Per Share'.

Directors' approval statement

This Strategic report is delivered in accordance with a resolution of the board, and has been signed on behalf of the board by:



Simon Thompson

Chairman

27 February 2019

Independent Limited Assurance Report to the Directors of Rio Tinto plc and Rio Tinto Limited



The board of directors of Rio Tinto plc and Rio Tinto Limited (together "Rio Tinto") engaged us to provide limited assurance on the selected subject matter within the Sustainable development sections of the Rio Tinto 2018 Annual Report and the Rio Tinto 2018 Strategic report for the year ended 31 December 2018.

Our conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has been identified that causes us to believe that the selected subject matter within the Sustainable Development sections of the Rio Tinto 2018 Annual Report and the Rio Tinto 2018 Strategic report for the year ended 31 December 2018 has not been prepared, in all material respects, in accordance with the Reporting Criteria. This conclusion is to be read in the context of what we say in the remainder of our report.

Selected information

The scope of our work was limited to assurance over the selected subject matter within the Sustainable development sections of the Rio Tinto 2018 Annual Report and the Rio Tinto 2018 Strategic report for the year ended 31 December 2018 (the "Selected Information").

The Selected Information and the Reporting Criteria against which it was assessed are summarised below.

Selected subject matter

- Rio Tinto's assertion that it has incorporated the requirements of the 10 sustainable development principles of the International Council on Mining and Metals (ICMM) and the mandatory requirements set out in ICMM Position Statements into its own policies.
- Rio Tinto's assertions regarding the approach that it has adopted to identify and prioritise its material sustainable development risks and opportunities.
- Rio Tinto's assertions regarding the existence and status of implementation of systems and approaches used to manage the following selected sustainable development risk areas:
 - Safety
 - Greenhouse gas emissions
 - Energy use
 - Water management
- The following Rio Tinto performance data related to the selected sustainable development risk areas:
 - Number of fatalities
 - All injury frequency rate
 - Lost time injury frequency rate
 - Number of lost time injuries
 - Total greenhouse gas emissions
 - Greenhouse gas emissions intensity
 - Total energy use
 - Percentage of managed operations with material water risk that achieved their approved local water performance target

Our Independence and Quality Control

We applied the Institute of Chartered Accountants in England and Wales (ICAEW) Code of Ethics, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour. We apply International Standard on Quality Control (UK) 1 and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. Our work was carried out by an independent and multi-disciplinary team with experience in sustainability reporting and assurance.

Understanding reporting and measurement methodologies

The Selected Information needs to be read and understood together with the Reporting Criteria, being the ICMM Sustainable Development Framework and the definitions and approaches within the Glossary which will be presented at www.riotinto.com/sd2018/glossary as at 27 February 2019, which Rio Tinto is solely responsible for selecting and applying. The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measurement techniques and can affect comparability between entities and over time.

Responsibilities

PricewaterhouseCoopers

We are responsible for:

- planning and performing the engagement to obtain limited assurance about whether the Selected Information is free from material misstatement, whether due to fraud or error;
- forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- reporting our conclusion to the Directors of Rio Tinto.

Rio Tinto

Rio Tinto management are responsible for:

- designing, implementing and maintaining internal controls over information relevant to the preparation of the Selected Information that is free from material misstatement, whether due to fraud or error;
- establishing objective Reporting Criteria for preparing the Selected Information;
- measuring and reporting the Selected Information based on the Reporting Criteria; and
- the content of the Rio Tinto 2018 Annual Report and the Rio Tinto 2018 Strategic report.

Professional standards applied

We performed a limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) 'Assurance Engagements other than Audits and Reviews of Historical Financial Information', issued by the International Auditing and Assurance Standards Board.

Inherent limitations

Inherent limitations exist in all assurance engagements due to the selective testing of the information being examined. Therefore fraud, error or non-compliance may occur and not be detected. Additionally, non-financial data may be subject to more inherent limitations than financial data, given both its nature and the methods used for determining, calculating and sampling or estimating such data.

Restriction on use

This report, including our conclusions, has been prepared solely for the board of directors of Rio Tinto in accordance with the agreement between us, to assist the Directors in reporting Rio Tinto's 2018 Annual Report and the Rio Tinto 2018 Strategic report performance and activities. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the board of directors and Rio Tinto for our work or this report except where terms are expressly agreed between us in writing. We permit this report to be disclosed in the Rio Tinto 2018 Annual Report and the Rio Tinto 2018 Strategic report for the year ended 31 December 2018, to assist the Directors in responding to their governance responsibilities by obtaining an independent assurance report in connection with the Selected Information.

Limited assurance

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

Work done

We are required to plan and perform our work in order to consider the risk of material misstatement of the Selected Information. In doing so, we:

- Made enquiries of relevant management of Rio Tinto regarding the processes and controls for capturing, collating and reporting the performance data within the selected subject matter, and evaluating the design and effectiveness of these processes and controls;
- Validated the operation of controls over the accuracy of injury classification and assessing the final injury classification applied for a sample of injuries reported during the year ended 31 December 2018;
- Tested the arithmetic accuracy of a sample of calculations of performance data within the selected subject matter;
- Assessed the appropriateness of the greenhouse gas emission factors applied in calculating the Total greenhouse gas emissions and Greenhouse gas emissions intensity;
- Tested performance data, on a selective basis, substantively at both an operational and corporate level, which included testing at a selection of 5 operations from across Aluminium, Copper & Diamonds, Energy & Minerals, and Iron Ore;
- Undertook analytical procedures over the performance data within the selected subject matter; and
- Made enquiries of relevant management and reviewing a sample of relevant management information and documentation supporting assertions made in the selected subject matter.

We believe that the information we have obtained is sufficient and appropriate to provide a basis for our conclusion.



27 February 2019

PricewaterhouseCoopers LLP
Chartered Accountants
1 Embankment Place, London
WC2N 6RH, United Kingdom

Annual statement by the Remuneration Committee chairman



The Committee's overarching aim is to ensure our remuneration structure and policies reward fairly and responsibly."

On behalf of the board, I am pleased to introduce my first Directors' remuneration report (the Remuneration report) since being appointed the chair of the Remuneration Committee (Committee). I want to begin by acknowledging that the Committee is mindful of its responsibilities in determining executive pay. We are committed to ongoing engagement with our shareholders, and to hearing all perspectives.

This year, we have taken the opportunity to refresh the format of our Remuneration report. It is divided into three parts. We have provided a summary of key information and highlights through a new remuneration *At a glance* section. We have also provided relevant extracts from our Remuneration Policy (Policy). Our full Policy is available on the company website. The Implementation report shows how the Policy was applied in 2018. Throughout this Remuneration report, the members of the executive committee, including our executive directors, are collectively referred to as "executives".

Remuneration Policy

The Committee's overarching aim is to ensure our remuneration structure and policies reward fairly and responsibly with a clear link to corporate and individual performance, and to the company's long-term strategy and values. We make sure that such policies are both effective and competitive in the market place, and are appropriately stretching and rewarding the right behaviours. We also ensure that there is alignment between executive remuneration and wider company pay policies, and we closely scrutinise gender pay differential to ensure equality.

All resolutions relating to remuneration presented to the 2018 AGMs, including the triennial policy review, were passed with majorities of some 90% or above. There was a consistent view that our Policy, and the new umbrella Equity Incentive Plan (EIP) that governs our long-term share-based remuneration including our Performance Share Awards (PSA), are aligned with market practice.

During our consultation with shareholders, one of the proposals under our Policy was to substitute restricted stock for the PSA granted under the EIP, and significantly reduce the maximum quantum of the award. This proposal received a mixed response and was therefore ultimately excluded from our Policy. The board and management will continue to review the appropriateness and effectiveness of our Policy. We remain of the view that restricted stock has considerable merits in a long-term cyclical industry such as mining.

During 2018, we observed a number of ASX-listed companies review and replace their more traditional executive remuneration framework with

more flexible frameworks that better suit their particular circumstances. While no clearly preferred remuneration model has emerged, we will continue to engage with shareholders on the merits of restricted stock.

2019 decisions

In 2019, annual base salary increases for our executives will be based on Consumer Price Index forecasts for each executive's country of employment. This increase will be the same as or lower than the overall country budget for our broader workforce. The chairman's fee and the fees for our non-executive directors will be unchanged for 2019.

The maximum opportunity for executives under the Short Term Incentive Plan (STIP) remains unchanged, and outcomes are aligned to business performance. The 2019 safety measures, weightings and targets are fully disclosed on page 124. We expect to disclose the 2019 financial and individual targets retrospectively in the 2019 Implementation report.

The overall level of PSA to be granted to executives in March 2019, as a percentage of base salary, will be slightly lower than the PSA granted in 2018. Consistent with our practice since 1998, the awards will be made using the average share price over the previous calendar year. As such, PSA granted in 2019 will be calculated using the 2018 average share prices of £38.94 and A\$78.17. Our decision to use average prices, rather than spot prices, is intended to mitigate the impact of share price volatility. The performance conditions for the 2019 PSA are set out in the Implementation report.

2018 performance and remuneration

The 2018 single total figure of remuneration for the chief executive, Jean-Sébastien Jacques, is higher than in 2017, mainly because the value of Long Term Incentive Plan (LTIP) awards vesting under the 2014 PSA were higher than those that vested under the 2013 PSA. This higher value was primarily due to the 2013 PSA vesting in two equal tranches in 2016 and 2017 under a transitional arrangement. The impact was partly offset by the estimated lower overall vesting level for the 2014 PSA, as well as higher share prices at the time of vesting for the 2013 PSA.

For the former chief financial officer, Chris Lynch, the single total figure of remuneration is lower than in 2017. This is due mainly to 2018 representing a part-year of remuneration up to 30 September 2018 when Chris retired. This was partly offset by the value of LTIP awards vesting as explained above for the chief executive. No comparison is made for Jakob Stausholm as he only joined the company in September 2018.

Short Term Incentive Plan

In our *At a glance* section on page 104, and on pages 114 to 121, we retrospectively disclose the financial and individual STIP targets set by the board for 2018. While most of the 2018 targets were achieved, the overall 2018 STIP awards for Jean-Sébastien Jacques and Chris Lynch, expressed as a percentage of the maximum award, are lower than last year. Further details are given below.

Short Term Incentive Plan – Safety

Unfortunately, we did not achieve our goal of zero fatalities in 2018, with three colleagues not returning home from work. In April, a maintenance contractor was fatally struck by a falling object while performing work on one of the furnaces at Energy & Mineral's Sorel-Tracy operations; in July, a security contractor was fatally assaulted while on duty at Energy & Mineral's Richards Bay Minerals operations; and in August, a truck operator was fatally injured as a result of his truck colliding with a windrow at Iron Ore's Paraburdoo operations. Performance against the fatality measure was therefore zero for all executives.

The combined performance against our safety measures meant that the Group's STIP safety result was below target at 22% of maximum, and the STIP safety results for all executives were below target.

Short Term Incentive Plan – Financial

The "flexed" earnings and "unflexed" cash flow results for the Group were close to target, the "unflexed" earnings was between target and outstanding and the "flexed" cash flow result, adjusted for commodity prices, was below target. These outcomes are reflected in the financial component of the STIP awards for all executives. Together, the outcomes resulted in a Group performance against the financial targets of 60% of maximum.

The Committee made adjustments to the targets in 2018 to take account of events outside management's control and to ensure a like-for-like comparison with the targets.

The most significant adjustments in 2018 related to the gain on disposal of surplus land at Kitimat in Canada, the impact of the disposal of our remaining coal assets in Australia, and the impact of the strike at our iron ore operations in Canada. The net impact of all adjustments, both positive and negative, decreased the Group's result against the financial targets from 63% to 60% of maximum (2017: increase from 56% to 67% of maximum). Further details are provided on page 115.

Long Term Incentive Plans

Our LTIP is designed to reflect alignment with shareholder returns and our relative performance. PSA granted under the LTIP in 2014 had three equally weighted performance metrics: Total Shareholder Return (TSR) relative to the EMIX Global Mining Index (formerly known as the Euromoney Index); TSR relative to the MSCI World Index; and improvement in Earnings Before Interest and Tax (EBIT) margin relative to global mining comparators. Rio Tinto outperformed against the Mining Index, but under performed against the MSCI World Index, resulting in a 33.3% vesting of the award under these two components, out of a maximum of 66.7%. This outcome reflects the design intention that executives should not unduly benefit from windfall gains when commodity prices are high, nor be unduly penalised when prices are low.

The estimated performance against the EBIT margin measure is that Rio Tinto ranked no.5 against a comparator group of 11, which would result in a vesting of 24.0% for this measure (representing 8.0% of the total award). We can only provide an estimate at this time as we do not have the reported data for all comparator companies.

Overall, the estimated vesting for the award when the TSR and EBIT margin portions are combined is 41.3% of maximum. The Committee gave consideration to the Group's overall performance during the five-year performance period and concluded that vesting of awards was justified. As a consequence, the portion of the award relating to TSR will vest on 28 February 2019. The Committee will make a final determination of the relative improvement in EBIT margin measure when the final EBIT margin performance of the comparator group companies becomes available in May 2019. If applicable, this portion of the award will vest on 31 May 2019.

Former directors

Chris Lynch retired in September 2018 after providing the company notice of his intention to retire in September 2017. Until his retirement, Chris continued to receive his contractual entitlements.

As disclosed in the 2016 and 2017 Annual reports, a deed of deferral was entered into with the former chief executive, Sam Walsh. This was in connection to the investigations concerning the Simandou project. Given that the regulatory investigations are still not complete, the Committee has determined that a further deferral of the amounts that were payable on 31 December 2018 is appropriate.

This matter is still under discussion and the company will disclose the outcome when the process is complete.

UK Corporate Governance

We welcome the introduction of the new Corporate Governance Code which came into effect on 1 January 2019. We believe we are well placed to comply with this code, and will continue to consider matters such as post-employment shareholding and pension arrangements. In this year's Remuneration report, we are voluntarily disclosing our chief executive pay ratio. The ratio of the total remuneration of the chief executive to the median total remuneration of all employees for 2018 was 45:1. The Committee continues to monitor the ratio between our executive pay and our broader workforce, which will be supported through regular and detailed reporting. I was also delighted to have the opportunity to discuss a range of executive remuneration topics with our workforce at our inaugural employee AGM with the board in Brisbane in November 2018. We will continue to engage with employees in a range of innovative ways.

Fair pay

The Committee continues to monitor both equal pay and the gender pay gap across our workforce. As at 31 December 2018, the Group-wide equal pay gap was less than 2% and gender pay gap less than 1%. While we have made further progress in ensuring equal pay for equal work in 2018, we do need to continue our focus on the relatively low level of gender diversity in senior management roles in order to continue to close the gender pay gap in all locations. Further details of both equal pay and the gender pay gap, together with the steps we are taking to address this issue, are provided on page 56 of this report.

Yours sincerely



Sam Laidlaw
Remuneration Committee chairman
27 February 2019

Remuneration summary

Single total figure of remuneration

The table below provides the single total figure of remuneration for each individual who acted as an executive director during 2018, with appropriate prior year comparison figures, in accordance with the UK legislation. The amounts in this table are stated in currency of actual payment. This is in addition to the Australian statutory disclosure requirements set out in US dollars in Table 1a on pages 130 and 131 of the 2018 Annual report which include theoretical accounting values relating to various parts of the remuneration package, most notably Performance Share Awards (PSA) granted under the Group's Long Term Incentive Plan (LTIP) arrangements, and require a different methodology for calculating the pension value.

	Jean-Sébastien Jacques			Chris Lynch			Jakob Stausholm
(stated in £'000)	2018	2017	2016	2018	2017	2016	2018
Base salary paid ^(a)	1,105	1,080	887	642	853	836	258
STIP payment – cash	778	792	732	760	615	717	126
STIP payment – deferred shares ^(b)	778	793	732	0	616	718	126
Total short-term pay	2,661	2,665	2,351	1,402	2,084	2,271	510
Value of LTIP awards vesting ^(c)	1,293	829	497	1,925	1,682	1,008	0
Pension or superannuation ^(d)	274	269	225	159	221	209	57
Other benefits ^(e)	61	58	43	72	97	144	440
Single total figure of remuneration	4,289	3,821	3,116	3,558	4,084	3,632	1,007
Percentage change in total remuneration (2018 versus 2017; 2017 versus 2016)	12.2%	22.6%	–	(12.9%)	12.4%	–	–
Percentage of total remuneration provided as performance related pay (STIP and LTIP)	66.4%	63.2%	62.9%	75.5%	71.3%	67.3%	25.0%
Percentage of total remuneration provided as non-performance related pay (Base salary, Pension & Other benefits)	33.6%	36.8%	37.1%	24.5%	28.7%	32.7%	75.0%
Percentage of maximum STIP awarded ^(f)	70.1%	73.4%	82.4%	59.3%	71.9%	85.8%	49.4%
Percentage of maximum STIP forfeited	29.9%	26.6%	17.6%	40.7%	28.1%	14.2%	50.6%
Percentage of target STIP awarded	116.8%	122.3%	139.9%	98.8%	119.8%	143.0%	98.8%
Percentage of PSA vesting ^(g)	41.3%	66.7%	50.5%	41.3%	66.7%	50.5%	–
Percentage of SOP award vesting ^(h)	–	–	–	–	–	–	–

(a) Salary paid in the financial year to 31 December. Salaries are generally reviewed with effect from 1 March. However, in 2016 Jean-Sébastien's base salary was increased from £553,300 to £800,000 on appointment as deputy chief executive with effect from 17 March 2016 and increased to £1,080,000 on appointment as chief executive with effect from 2 July 2016.

(b) Value of STIP deferred, the vesting of which is subject to the relevant plan rules.

(c) Based on the estimated value of the PSA, including dividend shares where applicable, which vested on 28 February 2019 (TSR portion) and which are anticipated to vest at the end of May 2019 (EBIT margin portion) for the performance period that ended 31 December 2018 and the PSA which vested for the performance periods that ended 31 December 2017 and 31 December 2016. For Jean-Sébastien, a total of 70,057 shares were granted under the 2014 PSP which had a performance period which ended on 31 December 2018. It is estimated that a total of 34,537 shares, inclusive of an estimated 5,581 dividend shares will vest. For Chris, a total of 104,312 shares were granted under the 2014 PSP which had a performance period which ended on 31 December 2018. It is estimated that a total of 51,426 shares, inclusive of an estimated 7,942 dividend shares will vest. Jakob had no LTIP awards vest in respect of the performance period that ended up to 31 December 2018. The Rio Tinto plc share price used to calculate the estimated value of the award vesting with respect to 2018 is the average share price over the last quarter of 2018 of £37.44. The performance conditions for awards vesting for the period ending 31 December 2018 are detailed in the notes to table 3 on pages 134 to 136.

For Jean-Sébastien, The estimated value of LTIP awards for 2017 included in the 2017 Annual report was £694,000 compared with the restated actual value of £829,000. For Chris, the estimated value of the LTIP awards for 2017 included in the 2017 Annual report was £1,407,000 compared with the restated actual value of £1,682,000. This was calculated based on an estimate of the vesting of the EBIT margin portion of the award of 91 per cent resulting in a total estimated vesting of 63.7 per cent. The higher actual vesting of the EBIT margin portion of the award of 100 per cent, based on a ranking of no.2 against the comparator group of 11, resulted in a total actual vesting of 66.7 per cent. The impact of the higher vesting level was further increased by higher share prices at the time of vesting (£40.72 for the TSR portion which vested on 19 February 2018 and £42.47 for the EBIT margin portion which vested on 31 May 2018) compared with the average share price over the last quarter of 2017 of £36.27 which was used to calculate the estimated value.

(d) Pension reflects the value of the pension contribution and payment in lieu of pension paid during the year.

(e) Includes healthcare, allowance for professional tax services and car allowance. For Jakob, this includes a grossed-up tax benefit (£45,505) and one-time lump sum gross payment for relocation (£330,778).

(f) The maximum potential STIP award is 200 per cent of base salary.

(g) Jakob had no LTIP awards vest in respect of the performance period that ended up to 31 December 2018.

(h) No awards were received under the Share Option Plan (SOP).

Table 1b – Single total figure of remuneration for non-executive directors

The table below provides details of the fees and other benefits paid to the chairman and non-executive directors in 2018 and 2017 and is reported in US dollars

Stated in US\$ '000 ^(a)		Fees and allowances ^(b)	Non-monetary benefits ^(c)	Single total figure of remuneration ^(d)	Currency of actual payment
Chairman					
Simon Thompson ^(f)	2018	844	8	852	£
	2017	232	3	235	£
Jan du Plessis ^{(d)(g)}	2018	174	18	192	£
	2017	940	68	1,008	£
Non-executive directors					
Megan Clark	2018	303	29	332	A\$
	2017	281	20	301	A\$
David Constable	2018	289	34	323	£
	2017	229	25	254	£
Ann Godbehere	2018	304	12	316	£
	2017	265	9	274	£
Moya Greene ^(h)	2018	70	–	70	£
	2017	215	9	224	£
Simon Henry	2018	150	2	152	£
	2017	229	8	237	£
Sam Laidlaw	2018	177	7	184	£
	2017	256	19	275	A\$
Michael L'Estrange	2018	215	19	234	A\$
	2017	87	27	114	£
Paul Tellier ⁽ⁱ⁾	2018	248	50	298	£
	2017				

Notes to table 1b – Non-executive directors' remuneration

- (a) The remuneration is reported in US\$. The amounts have been converted using the relevant 2018 average exchange rates of £1 = US\$1.33546 and A\$1 = US\$0.74799 (1 January to 31 December 2018 average).
- (b) "Fees and allowances" comprises the total fees for the chairman and all non-executive directors, and travel allowances for the non-executive directors (other than the chairman). The payment of statutory minimum superannuation contributions for Australian non-executive directors is required by Australian superannuation law. These contributions are included in the "Fees and allowances" amount disclosed for Australian non-executive directors.
- (c) "Non-monetary benefits" include, as in previous years, amounts which are deemed by the UK tax authorities to be benefits in kind relating largely to the costs of non-executive directors' expenses in attending board meetings held at the company's UK registered office (including associated hotel and subsistence expenses) and professional tax compliance services/advice. Given these expenses are incurred by directors in the fulfilment of their duties, the company pays the tax on them.
- (d) For Jan du Plessis, "non-monetary benefits" includes the value of company-provided transport and medical insurance premiums. Jan was provided with a car and driver in his capacity as chairman of Rio Tinto. For the year ended 31 December 2018, the reportable value of this benefit was £2,947.
- (e) Represents disclosure of the single total figure of remuneration under Schedule 8 of the Large- and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008 (as amended) and total remuneration under the Australian Corporations Act 2001 and applicable accounting standards.
- (f) The amounts reported for Simon Thompson reflect the period when he was a non-executive director from 1 January to 4 March 2018 and then chairman of the board from 5 March to 31 December 2018.
- (g) The amounts reported for Jan du Plessis reflect the period when he was chairman of the board from 1 January to 5 March 2018.
- (h) The amounts reported for Moya Greene reflect the period when she was an active member of the board from 17 September 2018.
- (i) The amounts reported for Paul Tellier reflect the period when he was an active member of the board from 1 January to 2 May 2018.

Further details in relation to aggregate compensation for executives, including directors, are included in note 38 (Directors' and key management remuneration).

Contact details

Registered offices

Rio Tinto plc
6 St James's Square
London
UK
SW1Y 4AD
Registered in England No. 719885
Telephone: +44 (0)20 7781 2000
Website: riotinto.com

Rio Tinto Limited
Level 7
360 Collins Street
Melbourne
Victoria 3000
Australia
ABN 96 004 458 404
Telephone: +61 (0) 3 9283 3333
Fax: +61 (0) 3 9283 3707
Website: riotinto.com

Rio Tinto's agent in the US is Cheree Finan,
who may be contacted at
Rio Tinto Services Inc.
80 State Street
Albany
US
NY 12207-2543

Shareholders

Please refer queries about shareholdings to
the investor centre of the respective registrar.

Rio Tinto plc
Computershare Investor Services PLC
The Pavilions
Bridgwater Road
Bristol
BS99 6ZZ
UK
Telephone: +44 (0)370 703 6364
Fax: +44 (0)370 703 6119
UK residents only
Freephone: +44 (0)800 435021
Website: computershare.com

Holders of Rio Tinto American depository
receipts (ADRs)
Please contact the ADR administrator if
you have any queries about your ADRs.

ADR administrator
JPMorgan Chase & Co
PO Box 64504
St. Paul
MN 55164-0854
US
Telephone: +1 (651)453 2128
US residents only, toll free general:
+1(800) 990 1135
US residents only, toll free Global invest direct:
+1 (800) 428 4267
Website: adr.com
Email: jpmorgan.adr@eq-us.com

Rio Tinto Limited
Computershare Investor Services Pty Limited
GPO Box 2975
Melbourne
Victoria 3001
Australia
Telephone: +61 (0) 3 9415 4030
Fax: +61 (0) 3 9473 2500
Australian residents only, toll free: 1800 813 292
New Zealand residents only, toll free:
0800 450 740
Website: computershare.com

Former Alcan Inc. shareholders
Computershare Investor Services Inc.
8th Floor
100 University Avenue
Toronto, ON
Canada
M5J 2Y1
Telephone: +1 514-982-7555
North American residents only,
toll free: +1 (800) 564-6253
Website: computershare.com

Investor Centre

Investor Centre is Computershare's free, secure,
self-service website, where shareholders can
manage their holdings online. The website
enables shareholders to:

- View share balances
- Change address details
- View payment and tax information
- Update payment instructions

In addition, shareholders who register their email
address can be notified electronically of events
such as annual general meetings, and can receive
shareholder communications such as the Annual
report or notice of meeting electronically online.

Rio Tinto plc shareholders

Website: investorcentre.co.uk/riotinto

Rio Tinto Limited shareholders

Website: investorcentre.com/rio

Financial calendar

2019

18	January	Fourth quarter 2018 operations review (Sydney 17 January)
27	February	Announcement of results for 2018
27	February	Publication of 2018 Annual report and notices of AGMs (Sydney 28 February)
4	March	Form 20-F publication
7	March	Rio Tinto plc and Rio Tinto Limited ordinary shares quoted "ex-dividend" for the 2018 final dividend
7	March	Rio Tinto plc ADRs quoted "ex-dividend" for the 2018 final dividend
8	March	Record date for the 2018 final dividend for Rio Tinto plc and Rio Tinto Limited shares and Rio Tinto plc ADRs
28	March	Final date for elections under the Rio Tinto plc and Rio Tinto Limited dividend reinvestment plans and under facilities for dividends to be paid in alternative currency for the 2018 final dividend
10	April	Annual general meeting for Rio Tinto plc, London
11	April	Dividend currency conversion date (Rio Tinto plc holders electing to receive Australian dollars and Rio Tinto Limited holders electing to receive pounds sterling)
15	April	First quarter 2019 operations review (Sydney 16 April)
18	April	Payment date for the 2018 final dividend to holders of ordinary shares and ADRs
9	May	Annual general meeting for Rio Tinto Limited, Perth
15	July	Second quarter 2019 operations review (Sydney 16 July)
1	August	Announcement of half-year results for 2019
8	August	Rio Tinto plc and Rio Tinto Limited ordinary shares quoted "ex-dividend" for the 2019 interim dividend
8	August	Rio Tinto plc ADRs quoted "ex-dividend" for the 2019 interim dividend
9	August	Record date for the 2019 interim dividend for Rio Tinto plc and Rio Tinto Limited shares and Rio Tinto plc ADRs
29	August	Final date for elections under the Rio Tinto plc and Rio Tinto Limited dividend reinvestment plans and under facilities for dividends to be paid in alternative currency for the 2019 interim dividend
12	September	Dividend currency conversion date (Rio Tinto plc holders electing to receive Australian dollars and Rio Tinto Limited holders electing to receive pounds sterling)
19	September	Payment date for the 2019 interim dividend to holders of ordinary shares and ADRs
15	October	Third quarter 2019 operations review (Sydney 16 October)

2020

January	Fourth quarter 2019 operations review
February	Announcement of results for 2019
April	Annual general meeting for Rio Tinto plc, London
April	First quarter 2020 operations review
May	Annual general meeting for Rio Tinto Limited, Brisbane
July	Second quarter 2020 operations review
August	Announcement of half-year results for 2020
October	Third quarter 2020 operations review

Forward-looking statements

This announcement includes "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts included in this announcement, including, without limitation, those regarding Rio Tinto's financial position, business strategy, plans and objectives of management for future operations (including development plans and objectives relating to Rio Tinto's products, production forecasts and reserve and resource positions), are forward-looking statements. The words "intend", "aim", "project", "anticipate", "estimate", "plan", "believes", "expects", "may", "should", "will", "target", "set to" or similar expressions, commonly identify such forward-looking statements.

Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Rio Tinto, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Such forward-looking statements are based on numerous assumptions regarding Rio Tinto's present and future business strategies and the environment in which Rio Tinto will operate in the future. Among the important factors that could cause Rio Tinto's actual results, performance or achievements to differ materially from those in the forward-looking statements are levels of actual production during any period, levels of demand and market prices, the ability to produce and transport products profitably, the impact of foreign currency exchange rates on market prices and operating costs, operational problems, political uncertainty and economic conditions in relevant areas of the world, the actions of competitors, activities by governmental authorities such as changes in taxation or regulation and such other risk factors identified in Rio Tinto's most recent Annual report and accounts in Australia and the United Kingdom and the most recent Annual report on Form 20-F filed with the United States Securities and Exchange Commission (the "SEC") or Form 6-Ks furnished to, or filed with, the SEC. Forward-looking statements should, therefore, be construed in light of such risk factors and undue reliance should not be placed on forward-looking statements. These forward-looking statements speak only as of the date of this announcement. Rio Tinto expressly disclaims any obligation or undertaking (except as required by applicable law, the UK Listing Rules, the Disclosure Guidance and Transparency Rules of the Financial Conduct Authority and the Listing Rules of the Australian Securities Exchange) to release publicly any updates or revisions to any forward-looking statement contained herein to reflect any change in Rio Tinto's expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

Nothing in this announcement should be interpreted to mean that future earnings per share of Rio Tinto plc or Rio Tinto Limited will necessarily match or exceed its historical published earnings per share.

Produced by Superunion

www.superunion.com

Printed by Park Communications on FSC® certified paper.

Park is an EMAS certified company and its Environmental Management System is certified to ISO 14001.

100% of the inks used are vegetable oil based, 95% of press chemicals are recycled for further use and, on average, 99% of any waste associated with this production will be recycled.

This document is printed on GalerieArt Matt, a paper containing fibre sourced from well managed, responsible, FSC® certified forests. The pulp used in this product is bleached using an elemental chlorine free (ECF) process.





Rio Tinto Annual report 2018
riotinto.com