SOUTH32

ANNUAL REPORT 2019

OUR PURPOSE

Our purpose is to make a difference by developing natural resources, improving people's lives now and for generations to come. We are trusted by our owners and partners to realise the potential of their resources.

WHO WE ARE

South32 is a globally diversified mining and metals company. We produce bauxite, alumina, aluminium, energy and metallurgical coal, manganese, nickel, silver, lead and zinc at our operations in Australia, Southern Africa and South America. We are also the owner of a high grade zinc, lead and silver development option in North America and have several partnerships with junior explorers with a bias to base metals.

OUR VALUES

Care

We care about people, the communities we're a part of and the world we depend on.

Trust

We deliver on our commitments and rely on each other to do the right thing.

Togetherness

We value difference and we openly listen and share, knowing that together we are better.

Excellence

We are courageous and challenge ourselves to be the best in what matters.

This Annual Report is a summary of the operations, activities and performance of South32 Limited (ABN 84 093 732 597) and its controlled entities and joint arrangements for the year ended 30 June 2019 and its financial position as at 30 June 2019.

South32 Limited is the parent company of the South32 Group of companies. In this report, unless otherwise stated, references to South32, the South32 Group, the Company, we, us and our, refer to South32 Limited and its controlled entities and joint arrangements, as a whole. South32 Limited shares trade on the ASX, JSE and LSE under the listing code of S32.

Metrics describing sustainability and HSEC performance apply to operated assets that have been wholly owned and operated by South32, or that have been operated by South32 in a joint venture operation, from 1 July 2018 to 30 June 2019. South32's GRI Navigator and Sustainability data tables are available at *www.south32.net*.

Forward-looking statements

This report contains forward-looking statements. Please refer to page 36, which contains a notice in respect of these statements.

Non-IFRS

This report includes certain non-IFRS financial measures, including underlying measures of earnings, effective tax rate, returns on invested capital, cash flow and net debt. For an explanation of how South32 uses non-IFRS measures, see page 22. The meanings of individual non-IFRS measures used in this report are set out in the Glossary on page 137. Non-IFRS measures should not be considered as alternatives to an IFRS measure of profitability, financial performance or liquidity.

For information or to contact South32, visit *www.south32.net*.

Printed copies of this Annual Report will only be posted to those shareholders who have requested a printed copy. Other shareholders are notified when the Annual Report becomes available and given details of where to access it electronically.

CONTENTS

See the rest of our 2019 annual reporting suite at *www.south32.net*.



- Corporate Governance Statement
  Our corporate governance practices and a description of our approach to promoting responsible and ethical behaviour.
- Our Approach to Climate Change
  Climate-related risk and opportunities reported in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures.
- Tax Transparency and Payments to Governments Report
  All payments to governments which meets the requirements of mandatory and voluntary disclosure initiatives.
- FY19 Sustainability Performance Report
- Our Approach to Water Stewardship
- Modern Slavery Statement (November 2019)

YEAR AT A GLANCE

Total recordable injury frequency

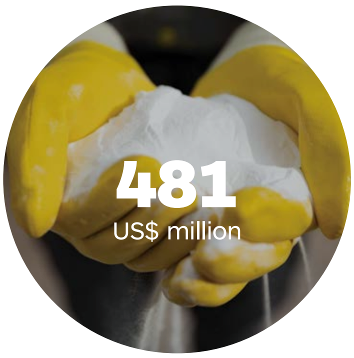
Paid in taxes and royalties

Community investment[1]

Total recordable illness frequency

Underlying EBITDA[2]

Net cash balance[2]



Dividends returned in respect of FY19

On-market share buy-back

Our Scope 1 Greenhouse gas emissions FY15 baseline[3]

(1) Community investment consists of cash, in-kind support and administrative costs and includes donations and investments of funds in the broader community.

(2) This is a non-IFRS measure. For an explanation of how South32 uses non-IFRS measures, see page 22 of this Report.

(3) Our short-term carbon emission reduction target is to stay below our FY15 Scope 1 carbon emission baseline in FY21.

FROM OUR CHAIR

On behalf of the Board, I am pleased to present our 2019 Annual Report, my first as Chair.

South32 was fortunate to have David Crawford as its inaugural Chair. David worked tirelessly to ensure South32 was well positioned for life as an independent global resources company. Working with the Board and Chief Executive Officer, Graham Kerr, he led the development of the Company's purpose and strategy, underpinned by its values of care, trust, togetherness and excellence.

His extensive experience in business, particularly in the resources sector, served the Company well in its formative years. David's focus on shareholder value is evident, as is the role he played in protecting the interests of the communities where we operate. On behalf of our shareholders and our people, I thank him for his service.

The 2019 financial year marked a turning point for South32. We completed the acquisition of Arizona Mining, acquired a 50 per cent interest in the Eagle Downs Metallurgical Coal project, and progressed the divestment of South Africa Energy Coal. These decisions play an important part in reshaping and improving our portfolio to promote long-term shareholder value, consistent with our purpose and strategy.

> **Over the past four years, South32 has delivered a total shareholder return of 84 per cent**

Our strong operating performance delivered Underlying earnings before interest, tax and depreciation of US$2.2 billion and free cash flow of US$1 billion. We finished the year with a net cash balance of US$504 million, having returned US$938 million to shareholders during the period.

This included US$366 million returned to shareholders as part of our ongoing capital management program, with US$281 million allocated to our on-market share buy-back program and US$85 million returned in the form of a special dividend. The increase in our capital management program by US$250 million to US$1.25 billion reflects our disciplined approach to capital management and positive outlook for the business.

The Board declared a fully franked final dividend of US 2.8 cents per share, bringing the full year dividend to US 7.9 cents per share.

We were saddened by the significant loss of life and the immense environmental damage caused by the failure of the tailings storage facility at Brumadinho in Brazil. We've supported the work of the International Council on Mining and Metals to develop an international standard for safe tailings management. In June, we released our Tailings Storage Facilities Management Report. We compiled this in line with the Investor Mining and Tailings Safety Initiative, and it details our approach to tailings management.

The Board is committed to making regular visits to our operations and offices around the world to engage with our people. During the year, we visited operations and offices in South Africa, Singapore, the United States and Australia. In each of these places, we were pleased to see a strong commitment to the safety of our people. This commitment remains at the heart of everything we do.

We're also committed to creating value through social and environmental leadership. We continued to advance our work in response to climate change, in line with our commitment to achieve net zero emissions from our operations by 2050. We have again detailed our work in the 2019 report, Our Approach to Climate Change, which meets the recommendations of the Task Force on Climate-related Financial Disclosures, and reports our progress towards emissions reduction and the resilience of our portfolio in a low-carbon world.

Lately, there has been much commentary on corporate culture, particularly in the financial services sector in Australia. We believe this commentary contains lessons for all of us in how we approach our role as Directors. First and foremost is the appointment of the right Chief Executive and a competent and capable leadership team, whose work is underpinned by the right values that are clearly set, communicated and reinforced. In this, we're well served, but equally, not complacent. From our purpose and our strategy, to our reward frameworks, we're as committed to how we achieve our goals as we are to the goals themselves.

Over the past four years, South32 has delivered a total shareholder return of 84 per cent, which has exceeded both the sector index and the world index (Morgan Stanley Capital International). We will continue to focus on improving return on invested capital and prioritising a strong balance sheet to ensure we remain in control through economic cycles.

There will be no shortage of challenges for our company and our sector as we grapple with the economic and geopolitical realities of our time. The Board is confident that our people, led by Graham and his team, are well equipped to respond and contribute to South32's ongoing success.

On behalf of the Board, I would like to thank our shareholders and every one of the South32 team for their ongoing support.

Karen Wood
Chair

FROM OUR CEO

This year we continued to reshape and improve our portfolio, securing high potential development options for the future, while maintaining a leadership position in alumina and manganese. Overall, our operating performance was strong as we focused on growing value per share.

Our commitment to improving safety at our operations to avoid, mitigate and manage safety risks was reflected in a 12 per cent year-on-year reduction in our total recordable injury frequency. We also took a significant step to improve risk management, with our new platform for real-time risk and control administration successfully deployed across the business.

In the 2019 financial year, we delivered a three per cent increase in Group production. Australia Manganese achieved record ore sales, while Hillside Aluminium delivered record production as the smelter continued to test its maximum technical capacity. Worsley Alumina finished the year well, with an increase in calciner availability, which contributed to a 12 per cent production increase in the June quarter. Illawarra Metallurgical Coal production increased by 57 per cent, following work to improve longwall and development performance.

Our growth agenda has seen us create a pipeline of high-quality development opportunities in commodities we believe will have strong fundamentals into the future. Last August, we completed the acquisition of Arizona Mining, adding the high-grade zinc, lead and silver Hermosa development option to our portfolio.

In June, we reached an important milestone for Hermosa, declaring a Mineral Resource for the Taylor Deposit in accordance with the JORC Code. We also completed the acquisition of a 50 per cent interest in the Eagle Downs Metallurgical Coal project, and maintained our option with Trilogy Metals for the third and final year.

Part of improving our portfolio means assessing our current operations against our view of the future. Divesting South Africa Energy Coal (SAEC) is an important next step. Our intention is that the business becomes sustainable, black-owned and operated, consistent with the South African government's transformation agenda. We received bids for SAEC during the June quarter and have entered into an exclusivity agreement with Seriti Resources as we work to finalise the offer.

A fundamental shift in the global market for manganese alloys over many years led to the decision to review our manganese alloys smelters, TEMCO and Metalloys. Our people, suppliers and the local communities will be top of mind as we consider which path to take.

Effective environmental management is as important to our long-term success as our operational performance. We continued our progress towards our five-year emissions reduction target, advancing decarbonisation studies at Worsley Alumina and Illawarra Metallurgical Coal.

This year, we continued our transparent approach to reporting critical environmental issues with the publication of our first Our Approach to Water Stewardship Report. The report details how we manage water consumption and the steps we're taking to safeguard future water supply. This work will remain a key focus for us, working with the Board, through our Sustainability Committee.

We also released our 2019 Tailings Storage Facilities Management Report. In FY17 and FY18, we conducted a detailed assessment of our highest potential consequence tailings dams. Through this, we concluded that our dam structures are well managed, and we've implemented the identified improvement actions. Through ICMM, we're committed to playing our part in the development of an international standard for safe tailings management.

"Our operating performance was strong as we focused on growing value per share

Our operations are just one part of a bigger picture. We support our communities by backing community programs and infrastructure, and promoting jobs and business opportunities. Our total community spend was US$17.3 million, with a commitment to invest up to US$125 million over the next five years. To make a difference for those in need, we contributed US$800,000 in response to floods in Townsville, Australia, as well as US$250,000 to support the recovery from Cyclone Idai in Mozambique.

Our success is underpinned by our leadership capability and the diversity of our people. Our leaders play a critical role in creating an inclusive and diverse culture, and we've invested more than A$10 million in leadership development over the past two years.

We closed FY19 well positioned for the future. We have a strong balance sheet and a solid pipeline of future opportunities. Our portfolio will include high returning options with a bias to base metals and the potential to deliver meaningful growth in shareholder value over the medium-term. Above all, the most important thing we must do is make sure everyone goes home safe and well at the end of every shift.

I would like to thank our people for all their efforts in making South32 a success.

Graham Kerr
Chief Executive Officer

OUR PORTFOLIO

Commodities

Aa Al	**Bauxite, Alumina, Aluminium** Large alumina refineries and high-quality bauxite resources integrated with our African aluminium smelters with a significant long alumina position.
EC	**Energy Coal** One of the largest coal exporters and domestic suppliers in South Africa.
Mn	**Manganese** World's largest producer of manganese ore and a producer of alloy.
MC	**Metallurgical Coal** A major exporter of high-quality metallurgical coal.
Ni	**Nickel** One of the world's largest ferronickel producers.
Ag Pb Zn	**Silver, Lead, Zinc** One of the world's largest producers of silver and lead.

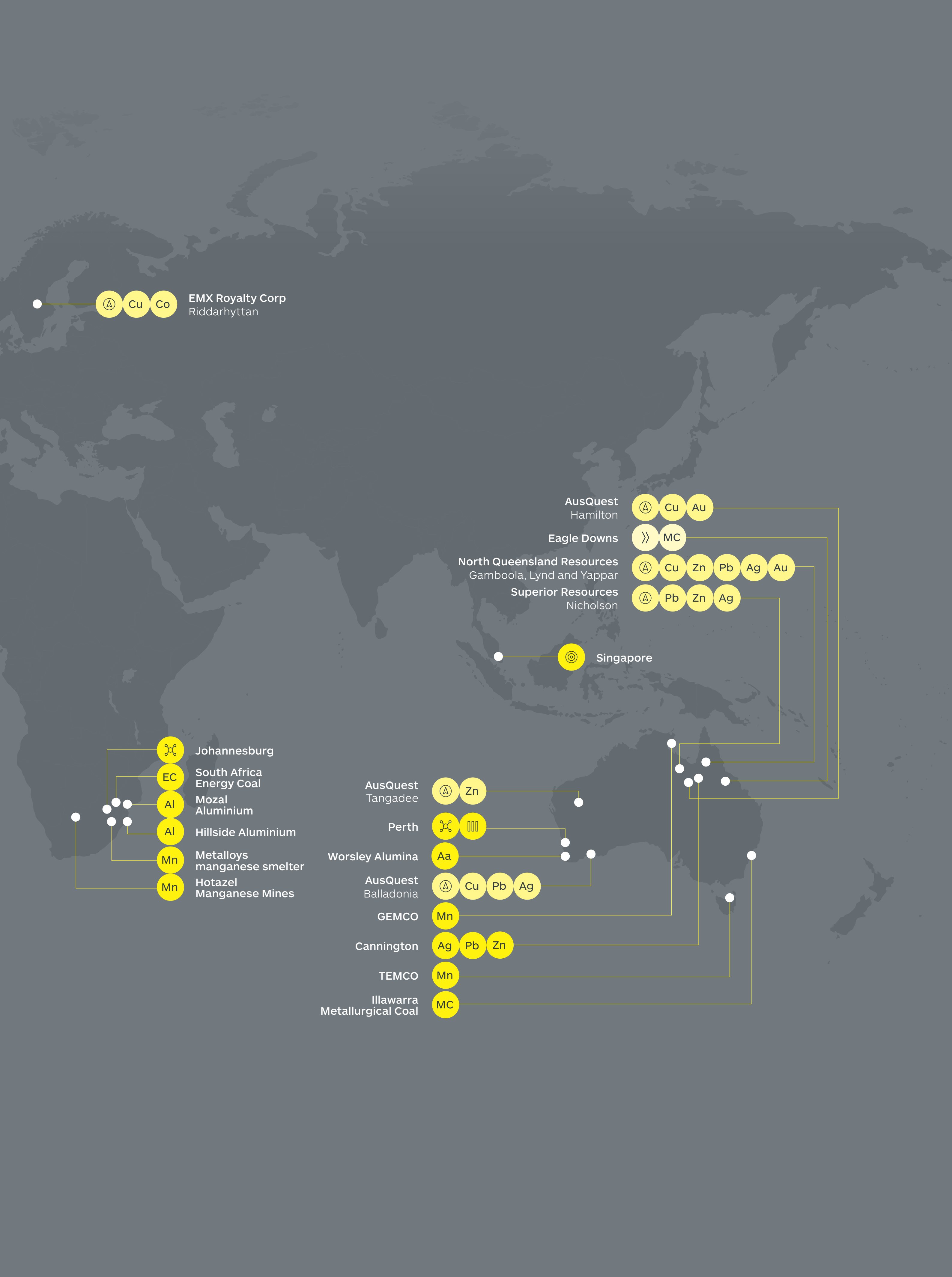
Cu **Copper** Au **Gold** Co **Cobalt**

OFFICES

- **Head Office**
- **Corporate Office**
- **Marketing Office**

PROJECTS

- **Exploration Project**
- **Development Option**



Ⓐ Cu Co EMX Royalty Corp Riddarhyttan
AusQuest Hamilton Ⓐ Cu Au
Eagle Downs MC
North Queensland Resources Gamboola, Lynd and Yappar Ⓐ Cu Zn Pb Ag Au
Superior Resources Nicholson Ⓐ Pb Zn Ag
Singapore
Johannesburg
EC South Africa Energy Coal
Al Mozal Aluminium
Al Hillside Aluminium
Mn Metalloys manganese smelter
Mn Hotazel Manganese Mines
AusQuest Tangadee Ⓐ Zn
Perth
Worsley Alumina Aa
AusQuest Balladonia Ⓐ Cu Pb Ag
GEMCO Mn
Cannington Ag Pb Zn
TEMCO Mn
Illawarra Metallurgical Coal MC

WHO WE ARE

Around the world, we're helping people improve their lives through the development of natural resources.

We produce bauxite, alumina, aluminium, energy coal, metallurgical coal, manganese, nickel, silver, lead and zinc in Australia, Southern Africa and South America. We also own a high-grade zinc, lead and silver development option in North America and have partnered with several junior explorers with a bias to base metals.

Whether it's for use in infrastructure, energy generation, consumables or vehicles, we believe the extraction and processing of minerals and metals can be done in a responsible way.

That's why we continually challenge ourselves to be the best in what matters – the safety and wellbeing of our people and communities, our operational performance, and minimising our environmental impact.

OUR PURPOSE IS TO MAKE A DIFFERENCE

Our purpose is to make a difference by developing natural resources, improving people's lives now and for generations to come. We're trusted by our owners and partners to realise the potential of their resources.

We do this by creating local jobs, empowering and investing in communities, and contributing to governments through paying taxes and royalties – while achieving sector-leading returns for our shareholders.

OUR STRATEGY AND BREAKTHROUGHS

Our purpose is underpinned by our strategy, which is focused on:

- Optimising the performance of our existing operations;
- Unlocking their potential by converting high-value resource into reserve; and
- Identifying new opportunities to compete for capital.

To deliver on our purpose and strategy, we're guided by our 'Breakthroughs', which outline how we'll make a difference through our safety performance, stakeholder engagement, operations, functions, technology, environmental and social leadership, and portfolio optimisation. Across the organisation, our Breakthroughs form the basis of our Business Plans to ensure we're all aligned.

While our strategy and Breakthroughs focus on the 'what', our values focus on 'how' we achieve our purpose. We hold ourselves and each other to account to act and make decisions aligned with our values of care, trust, togetherness and excellence.

- We all guarantee everyone goes home safe and well
- We are meaningfully connected and believe in our purpose
- Our operations run to their full potential and maximise return on investment
- Our functions are lean and enable our operations to deliver their full potential
- Technology and innovation is radically lifting our performance
- We create value through our environmental and social leadership
- We have optimised our portfolio and have multiple growth options with a bias to base metals

OUR PEOPLE

Our people are the foundation of our success. We're constantly challenging ourselves to ensure the work we do is well designed and reliably delivers safe results, with a strong focus on continuous improvement and learning.

Together, we create an inclusive workplace where we hold ourselves and each other to account to demonstrate our values, where we're empowered to be the best we can be and contribute to exceptional business performance and sustainable outcomes.

Representation of women

18%
Women in our workforce
FY18 **17%**

37%
Women in senior leadership
FY18 **31%**

Representation of Black People in our workforce in South Africa

82%
Total Employees
FY18 **81%**

49%
Management Roles
FY18 **45%**

OUR COMMITMENT TO SAFETY

The most important commitment we make at South32 is to ensure everyone goes home safe and well. The core focus for safety at South32 has been the creation of an inclusive workplace. This helps our people to speak up and share any concerns or ideas regarding safety. Our openness contributes to a learning culture and helps us work towards continuous improvement in everything we do.

Total recordable injury frequency per million work hours
4.5
units
FY18 **5.1**

Total recordable illness frequency per million work hours
1.3
units
FY18 **1.7**

Occupational exposures % change from FY18

12%
Material[(1)] Occupational Exposures

16%
Potential exposures to airborne contaminants

6%
Potential exposures to noise

CREATING SHARED VALUE

In FY19 we continued to create long-term value for our stakeholders by maintaining financial discipline and adhering to our strategy.

Leading through our strong environmental and social commitments

From providing jobs and business opportunities, to empowering suppliers and supporting community programs, we know we can make a significant contribution to the way people live and work. We're continually looking at ways to reduce our land requirements, biodiversity impacts, waste, carbon and water usage.

Community investment[(2)]
17.3
US$ million
FY18 **US$20.4 million**

Enterprise and Supplier Development Programs
9.5
US$ million
FY18 **US$11.2 million**

Scope 1 and 2 Greenhouse gas emissions
23.5
Million tonnes
FY18 **22.8 million tonnes**[(3)]

Scope 1 Greenhouse gas emissions
9%
below our FY15 baseline[(4)]

(1) Material occupational exposures include potential exposure to carcinogens and coal dust.
(2) Community investment consists of cash, in-kind support and administrative costs and includes donations and investments of funds in the broader community.
(3) Scope 2 emissions have been restated to better reflect newly available assumption data.
(4) Our short-term carbon emission reduction target is to stay below our FY15 Scope 1 carbon emission baseline in FY21.

Running our operations to maximise return on investment

We aspire to be a leading operator in our industry, where we safely deliver stable and predictable performance and maximise the potential of our operations. We're doing this by ensuring our work is well designed and supported by easy-to-use systems that provide smart data.

Underlying EBITDA[1]
2,197
US$ million
FY18 **US$2,516 million**

Dividends returned in respect of FY19
481
US$ million
FY18 **US$691 million**

On-market share buy-back
281
US$ million
FY18 **US$254 million**

Return on invested capital[1]
11.1%
FY18 **15.0%**

Managing today's portfolio while developing opportunities for tomorrow

We're positioning ourselves for the next phase of growth in demand by creating a pipeline of opportunities to compete for capital, with a bias to base metals.

In the first half of FY19, we expanded our global footprint with the acquisition of the high-grade zinc, lead and silver Hermosa project in Arizona. We also acquired a 50 per cent interest in the Eagle Downs Metallurgical Coal project in Queensland's Bowen Basin.

Exploration is an important part of how we create future opportunities. We assess numerous opportunities every year and have more than 20 active greenfield exploration projects in Australia, the Americas and Europe.

Acquired the remaining 83 per cent of Arizona Mining, and declared the first Mineral Resource for the Taylor Deposit which forms part of the Hermosa project.

Maintained our third and final year of the Option Agreement with Trilogy Metals targeting a high grade copper resource in Alaska.

Acquired a 50% interest in the Eagle Downs Metallurgical Coal project.

We invested US$34 million in greenfield exploration projects with our partners.

(1) This is a non-IFRS measure. For an explanation of how South32 uses non-IFRS measures, see page 22 of this Report.

OUR OPERATIONS

WORSLEY ALUMINA

South32 holds an 86 per cent interest in Worsley Alumina, while Japan Alumina Associates (Australia) Pty Ltd owns 10 per cent and Sojitz Alumina Pty Ltd owns four per cent.

Bauxite is mined near the town of Boddington, 130 kilometres south-east of Perth. It is transported by overland conveyor to the alumina refinery near Collie and turned into alumina powder, before being transported by rail to Bunbury Port. It is then shipped to smelters around the world, including South32's Hillside and Mozal aluminium smelters in Africa.

BRAZIL ALUMINA

South32's interests consist of the non-operated Mineração Rio do Norte (MRN) mine (14.8 per cent), Brazil Alumina refinery (36 per cent) and aluminium smelter (40 per cent), which is currently on care and maintenance.

The MRN mine is an open-cut strip mining operation. Mined ore is hauled to primary crushers and then transported by conveyor belt to the beneficiation plant. The bauxite produced from the MRN mine is sold to its shareholders. South32's share of bauxite produced from the MRN mine is supplied to the Brazil Alumina refinery. The alumina produced from the refinery is exported through the Alumar Port.

HILLSIDE ALUMINIUM

The Hillside Aluminium smelter is located in Richards Bay in the South African province of KwaZulu-Natal and is 100 per cent owned and operated by South32.

The smelter uses alumina predominantly imported from Worsley Alumina to produce high-quality, primary aluminium for the export and domestic markets.

To support the development of the downstream aluminium industry in South Africa, a portion of liquid metal is supplied to Isizinda Aluminium which, in turn, supplies aluminium slab to Hulamin, a local company that produces products for the domestic and export markets.

MOZAL ALUMINIUM

South32 has a 47.1 per cent share of Mozal Aluminium, while Mitsubishi Corporation Metals Holding GmbH holds 25 per cent, Industrial Development Corporation of South Africa Limited holds 24 per cent and the State of Mozambique holds 3.9 per cent (through preference shares). Mozal Aluminium is located 20 kilometres west of Mozambique's capital city Maputo.

Mozal Aluminium is the only aluminium smelter in Mozambique and the second largest aluminium smelter in Africa. It produces standard aluminium ingots.

ILLAWARRA METALLURGICAL COAL

Located in the southern coalfields of New South Wales, Illawarra Metallurgical Coal is 100 per cent owned by South32 and operates two underground metallurgical coal mines, Appin mine and Dendrobium mine, and West Cliff and Dendrobium coal preparation plants. Illawarra Metallurgical Coal also manages the Port Kembla Coal Terminal on behalf of a consortium of partners.

Illawarra Metallurgical Coal produces premium-quality, hard coking coal for steelmaking, with energy coal as a by-product. The product is processed at the coal preparation plants before being transported by road and rail to the processing facilities and to the Port Kembla Coal Terminal for distribution to domestic and international customers.

AUSTRALIA MANGANESE

Australia Manganese consists of Groote Eylandt Mining Company (GEMCO) in the Northern Territory and Tasmanian Electro Metallurgical Company (TEMCO) in Tasmania. South32 owns 60 per cent of GEMCO and Anglo American Plc holds the remaining 40 per cent. TEMCO is wholly owned by GEMCO.

GEMCO is an open-cut strip mining operation, producing high-grade ore and is located in close proximity to Asian export markets. Using mainly ore shipped from GEMCO, TEMCO produces high-carbon ferromanganese, silicomanganese and sinter, primarily using hydroelectric power.

SOUTH AFRICA MANGANESE

South Africa Manganese is made up of two manganese mines and an alloy smelter. Hotazel Manganese Mines (HMM) is located in the Kalahari Basin and the Metalloys manganese smelter site is in Meyerton.

South32 holds a 60 per cent interest in Samancor Holdings (Pty) Ltd and Anglo American Plc holds the remaining 40 per cent. Samancor indirectly owns 74 per cent of HMM, which gives South32 its ownership interest of 44.4 per cent. The remaining 26 per cent of HMM is owned by B-BBEE entities. South32 holds an effective 60 per cent interest in Samancor Manganese (Pty) Ltd (Metalloys manganese smelter).

CERRO MATOSO

Cerro Matoso is an integrated nickel laterite mine and smelter located in the Cordoba area of northern Colombia, consisting of a truck and shovel open-cut mine and a processing plant. South32 owns 99.94 per cent of Cerro Matoso. Current and former employees own 0.02 per cent, with the balance of shares held in a reserve account following a buy-back.

Cerro Matoso is a major producer of nickel contained in ferronickel which is used to make stainless steel. Ore mined is blended with ore from stockpiles, which is then dried in rotary kilns and smelted in two electric arc furnaces where ferronickel is produced.

CANNINGTON

Located in north-west Queensland, Cannington is 100 per cent owned by South32 and is one of the world's largest producers of silver and lead.

Cannington consists of an underground hard rock mine and surface processing facility, a road-to-rail transfer facility and a concentrate handling and ship loading facility at the Port of Townsville.

Silver, lead and zinc are extracted from the ore using grinding, sequential flotation and leaching techniques that produce high-grade, marketable lead and zinc concentrates with a high silver content.

SOUTH AFRICA ENERGY COAL

South32 owns 92 per cent of South Africa Energy Coal (SAEC), with the remaining eight per cent held by a B-BBEE consortium, led by Phembani Holdings. Energy coal operations consist of primary coal mining operations (Khutala colliery, Klipspruit colliery, Ifalethu colliery and Wolvekrans colliery), as well as three processing plants. SAEC operations are located in the coalfields of Mpumalanga.

From 30 April 2018, we have managed SAEC as a stand-alone business separately from the rest of the South32 Group.

BOARD OF DIRECTORS

Ms Karen Wood
BEd, LLB (Hons), FCIS, 63

Chair and Independent Non-Executive Director, appointed 1 November 2017 (Chair from 12 April 2019)

Location: Australia

During her career, Ms Wood has attained a variety of executive and leadership skills which she brings to her role as Chair of South32.

She has held various senior global leadership roles with BHP, including Group Company Secretary, Chief People Officer and President Corporate Affairs and served as a member of BHP's leadership team.

Ms Wood gained extensive expertise as a key adviser to the Board and CEO on matters of governance, the composition of leadership teams, development and succession planning, organisational design and culture, remuneration structures and stakeholder relations. She served as Chair of The Global Ethics Advisory Panel, the Disclosure Committee and as Chief Governance Officer.

Following the merger between BHP Limited and Billiton Plc in 2001, she established the multi-jurisdictional governance framework for the merged entity. She joined BHP as Group Company Secretary in 2001, and retired in 2014.

Ms Wood's governance experience is strengthened by her membership of the Takeovers Panel (Australia) from 2000 to 2012 and her roles with the ASIC (Business Consultative Panel) and the Australian Federal Government's Business Regulatory Advisory Group.

Before joining BHP, she held the role of General Counsel and Company Secretary with Bonlac Foods Limited.

Following her retirement from BHP, Ms Wood chaired the BHP Foundation, where she oversaw grant provisions for not-for-profit organisations to deliver large, long-term global programs in the areas of natural resource governance, human capability and social inclusion and conserving and sustainably managing natural environments.

She is currently a Non-Executive Director of Djerriwarrh Investments Limited (and a member of the Audit Committee), a member of Chief Executive Women and a Fellow of Monash University.

Current ASX listed directorships:

- Djerriwarrh Investments Limited: Independent Non-Executive Director since July 2016.

Other Directorships and Offices:

- Director, State Library Board of Victoria and Member of the Foundation Council;
- Director, Robert Salzer Foundation; and
- Vice President, Melbourne Cricket Club.

Mr Graham Kerr
BBus, FCPA, 48

Chief Executive Officer since October 2014
Managing Director, appointed 21 January 2015

Location: Australia

Mr Kerr has been our Chief Executive Officer since October 2014. He's responsible for running all parts of our business. In May 2015, he led the charge on establishing South32 and its public listing in three countries.

Mr Kerr is passionate about health, safety and sustainability, with a strong track record in global resource development. Before joining us, he worked in a range of roles at BHP, including Chief Financial Officer and President of Diamonds and Specialty Products.

As President of Diamonds and Specialty Products, he was accountable for the Ekati Diamond Mine in Canada, the Richards Bay Minerals Joint Venture in South Africa, diamond exploration in Angola, the Corridor Sands Project in Mozambique and the development of BHP's potash portfolio in Canada. In 2004, he left BHP for two years to become General Manager Commercial for Iluka Resources.

Mr Kerr holds a Business degree from Edith Cowan University and studied at Deakin University to become a Certified Practicing Accountant

Other Directorships and Offices:

- Chair, CEOs for Gender Equity.

Mr Frank Cooper AO
BCom, FCA, FAICD, 63

Independent Non-Executive Director, appointed 7 May 2015
Chair of Risk and Audit Committee

Location: Australia

Mr Cooper's combined experience gives him a uniquely rich understanding of the challenges and mechanisms of operating in different cultural and political environments. He brings this to South32, alongside a strong focus on organisational philosophy, values and standards.

Mr Cooper is a chartered accountant with over 35 years of experience in the finance and accounting profession. He previously held the position of Partner at both Ernst & Young and PricewaterhouseCoopers, and was Managing Partner for Arthur Andersen in Perth. During his time in the profession he specialised in the mining, energy and utility sectors.

Mr Cooper is currently a Non-Executive Director of Woodside Petroleum Limited (including Chair of the Audit and Risk Committee and member of the Human Resources and Compensation Committee and Nominations Committee). Until 2006, he was a Director of Alinta Infrastructure Limited and Alinta Funds Management Limited.

In 2014, Mr Cooper was awarded an Officer of the Order of Australia and was named West Australian of the Year in the Professions category in 2015. Mr Cooper is also a Fellow of the Australian Institute of Company Directors and Chartered Accountants Australia and New Zealand.

Current ASX listed directorships:

- Woodside Petroleum Limited: Independent Non-Executive Director since February 2013.

Other Directorships and Offices:

- Commissioner and Chairman, Insurance Commission of Western Australia;
- Member, Senate of the University of Western Australia;
- Trustee, St John of God Health Care;
- Director, St John of God Australia Limited;
- Advisor, Azure Capital;
- President, WA Council of the Australian Institute of Company Directors; and
- Member, ASIC Director Advisory Panel.

Dr Xiaoling Liu
BEng (Extractive Metallurgy), PhD (Extractive Metallurgy), FAusIMM, FTSE, GAICD, 62

Independent Non-Executive Director, appointed 1 November 2017

Location: Australia

Dr Xiaoling Liu is a metallurgical engineer with a 26 year career at the Rio Tinto Group. Dr Liu's technical experience is an essential contribution to the South32 Board.

Dr Liu's roles at Rio Tinto included General Manager and Managing Director positions in smelting operational management. She held other senior positions, including Managing Director Technical Services where she led Rio Tinto's global technical services unit, and as President and Chief Executive Officer where she led the Borate business with integrated mining, processing, and supply chain operations in the United States, Europe and Asia. Gained from this experience, Dr Liu contributes strong technical, strategic, marketing and risk management skills to the South32 Board.

She was a board member of the California Chamber of Commerce, Vice President of the Board of Australian Aluminium Council, and member of the University Council of the University of Tasmania.

Before joining Rio Tinto, Dr Liu held an academic position as Research Fellow of City University, London.

Since her retirement from Rio Tinto in 2014, Dr Liu has held the position of Non-Executive Director of Newcrest Mining Limited (including as a member of the Human Resources and Remuneration Committee; Audit and Risk Committee and Nominations Committee). She was also a Non-Executive Director of Iluka Resources Limited until April 2019 (including member of the Audit and Risk Committee and Nominations Committee). These roles have contributed to Dr Liu's skills and experience in remuneration, acquisition and divestment.

Dr Liu is a Fellow of the Australian Academy of Technological Science and Engineering, a Fellow of AusIMM and a member of Chief Executive Women.

Current ASX listed directorships:

- Newcrest Mining Limited: Independent Non-Executive Director since September 2015.

Previous ASX listed directorships:

- Iluka Resources Limited: Independent Non-Executive Director February 2016 until April 2019.

Other Directorships and Offices:

- Director, Melbourne Business School; and
- Member, China Matters Advisory Council.

“The Board of Directors is committed to representing shareholders and protecting the interests of South32. Underpinned by strong corporate governance practices, the Board believes South32 has the right people and the right strategy to be positioned well for future growth.”

Dr Xolani Mkhwanazi
BSc, MSc, PhD (Applied Physics), 64

Non-Independent Non-Executive Director, appointed 2 July 2015

Location: South Africa

With vast experience across global and regional mining operations, combined with expertise in science, Dr Mkhwanazi has a deep understanding and appreciation for environmental and sustainability opportunities and risks as they relate to South32.

He was previously Chairman of BHP Billiton in South Africa and President and Chief Operations Officer of South Africa Aluminium with BHP Billiton. During this time, he was responsible for the southern African aluminium smelters of Hillside, Bayside and Mozal with accountability for maximising their value and potential by providing appropriate strategic direction, while also facilitating future aluminium opportunities in the region.

Dr Mkhwanazi also served as Chief Executive Officer of Bateman Africa Limited and at the National Electricity Regulator, where he was instrumental in the restructuring of the electricity supply industry in South Africa.

Prior to this, he held senior positions at the Council for Scientific and Industrial Research, where he played a significant role in the formulation of the South African National Science and Technology Policy. Earlier in his career, Dr Mkhwanazi was a Senior Scientist at the Atomic Energy Corporation and Head of the Physics Department at the University of Swaziland.

Dr Mkhwanazi is also a Director of JSE-listed Murray and Roberts Holdings Limited, where he is a member of the Risk Management Committee, Health, Safety and Environment Committee and Social and Ethics Committee. He has also been appointed as Chairperson of EOH Holdings Limited.

Current JSE listed directorships:

- Murray and Roberts Holdings Limited: Independent Non-Executive Director since August 2015; and
- EOH Holdings Limited; Director and Chairperson since 5 June 2019.

Other Directorships and Offices:

- Director, South32 South Africa Energy Coal Holdings (Pty) Ltd; and
- Deputy Chairman, The Public Investment Corporation (SOC) Limited.

Dr Ntombifuthi (Futhi) Mtoba
DCom (Honoris Causa), BCompt (Hons), HDip Banking Law, BA (Econ)(Hons), BA (Arts), CA(SA), 64

Independent Non-Executive Director, appointed 7 May 2015

Location: South Africa

Dr Mtoba is a chartered accountant with an extensive career in business and community engagement in South Africa. In addition, she brings valuable sustainability and environmental experience to our Board.

Dr Mtoba joined Deloitte and Touche South Africa in 1988, specialising in financial services. Later, she become one of the first African black women to be appointed as a Partner by one of the Big Four accounting firms; she then became the first African woman Deputy Chairman and then Chairman of Deloitte Southern Africa.

Dr Mtoba has been a member of the International Monetary Fund Advisory Group of Sub-Saharan Africa, the World Economic Forum Global Advisory Council, the B20 Financing Growth and Infrastructure Task Force and the B20 Transparency Task Team. She was also the first woman president of the Association for the Advancement of Black Accountants of Southern Africa.

She served as Chair of the Public Investment Corporation Limited, President of Business Unity South Africa, and board member of the Public Accountants and Auditors Board, the South African Institute of Chartered Accountants and the New Partnership for Africa’s Development Business Foundation.

Dr Mtoba is engaged in the regional and global community. Previously, she was on the board of the United Nations Global Compact.

For her contributions, Dr. Mtoba has received numerous awards, most recently Most Outstanding Leadership Women of the Year (Africa Economy Builders, 2018). She is also a Harvard Advanced Leadership Initiative Fellow (2017).

Other Directorships and Offices:

- Director, Discovery Bank Limited;
- Director, Discovery Bank Holdings Limited;
- Chairman and Trustee, WBD Trust;
- Chair of Council, University of Pretoria;
- Founding Trustee, ZM Foundation;
- Trustee, Allan Gray Orbis Foundation Endowment; and
- Trustee and Audit Committee Chairman, Nelson Mandela Foundation.

Mr Wayne Osborn
Dip Elect Eng, MBA, FAICD, FTSE, 67

Independent Non-Executive Director, appointed 7 May 2015
Chair of Remuneration Committee, Chair of Nomination and Governance Committee

Location: Australia

Mr Osborn brings over 40 years of experience from the mining, resources and manufacturing sectors to our Board.

Mr Osborn was Managing Director of Alcoa in Australia from 2001 until 2008, leading an integrated business comprised of bauxite mining, alumina refining, coal mining, power generation and aluminium smelting. This included operations in Victoria and Western Australia. His prior role at Alcoa included accountability for its Asia Pacific manufacturing operations in China, Japan, Korea and Australia.

He joined Alcoa in 1979 after working as an engineer in the iron ore and telecommunications sector.

Since 2008, Mr Osborn has worked as a Non-Executive Director in the mining, construction and energy industries. He was also Chairman of the Australian Institute of Marine Science, Chairman of the Western Australia Branch of the Australia Business Arts Foundation and Vice President of the Chamber of Commerce and Industry, Western Australia.

Mr Osborn is currently a Non-Executive Director of Wesfarmers Limited, where he is a member of the Remuneration Committee and the Nomination Committee.

He has been awarded a WA Business Leader Award from the Australian Business Arts Foundation in 2007 and an Australian Institute of Company Directors excellence award in 2018.

Current ASX listed directorships:

- Wesfarmers Limited: Independent Non-Executive Director since March 2010.

Previous ASX listed directorships:

- Alinta Energy Limited March 2011 until April 2017.

Other Directorships and Offices:

- Fellow, Australian Academy of Technological Sciences and Engineering; and
- International Fellow, Explorers Club (New York).

Mr Keith Rumble
BSc, MSc (Geology), 65

Independent Non-Executive Director, appointed 27 February 2015
Chair of Sustainability Committee

Location: South Africa

Mr Rumble has more than 40 years of experience in the resources industry, specifically in titanium and platinum mining. He also has experience as a principal investor and private equity fund manager in Russia, India and other emerging markets. Mr Rumble contributes to the Board of South32 this valuable combination of skills and knowledge.

He has held various leadership roles including CEO of SUN Mining (a wholly-owned entity of the SUN Group), CEO of Impala Platinum (Pty) Ltd and CEO of Rio Tinto Iron and Titanium Inc in Canada.

Mr Rumble also worked for Verref, a division of the Anglo American Corporation, prior to joining Richards Bay Minerals in 1980, working in smelting and metallurgy, progressing to General Manager and later CEO in 1996.

Mr Rumble has been a Non-Executive Director of a variety of private companies, including Platinum Mining Corporation of India PLC, Barplats Holdings Limited, Western Platinum (Pty) Limited, Eastern Platinum (Pty) Limited and Sarplat Investments Limited. He was also an independent Non-Executive Director at BHP Billiton plc and BHP Limited and at JSE-listed Aveng Limited.

Mr Rumble completed the Stanford (US) Executive Program in 1990.

Other Directorships and Offices:

- Director, Acetologix Pty Limited;
- Director, Enzyme Technologies (Pty) Limited;
- Director, Elite Wealth (Pty) Limited;
- Member of Board of Governors, Rhodes University; and
- Trustee, World Wildlife Fund, South Africa.

LEAD TEAM

Graham Kerr
BBUS, FCPA, 48

Chief Executive Officer and Managing Director

See page 11 for Graham Kerr's qualifications and experience.

Simon Collins
BE (Mining), MBA, 46

Chief Development Officer

Simon Collins became our Chief Development Officer in October 2018. He's responsible for Business Development, Greenfields Exploration, Brazil Alumina and the Hermosa project.

Before this, he was our Head of Corporate Development and led the acquisitions of Arizona Mining and a 50 per cent interest in the Eagle Downs metallurgical coal project in Australia.

Simon brings 25 years' experience in the resources industry, working in senior leadership and business development roles. Before joining us, he worked for BHP for more than a decade, leading business development teams in Belgium, the United Kingdom, Singapore and Australia.

Simon holds a Master of Business Administration from London Business School and a Bachelor of Engineering (Mining) from the University of New South Wales.

Nicole Duncan
BA (Hons), LLB, MAICD, FGIA, FCIS, 47

Chief People and Legal Officer, Company Secretary

Nicole Duncan became our Chief People Officer in July 2017, having been our Chief Legal Officer and Company Secretary. She's responsible for our Human Resources functions, as well as our Company Secretariat, Legal and Business Integrity teams.

Before joining us, Nicole was Vice President, Company Secretariat for BHP. She was also Vice President Supply, Group Information Management from 2011 to 2013. During her legal career, she's worked in various BHP roles in Australia, the United States and the Netherlands.

Nicole graduated from the Australian National University with a Bachelor of Laws and a Bachelor of History (Hons).

Peter Finnimore
BCom, LLB, 54

Chief Marketing Officer

Peter Finnimore has been our Chief Marketing Officer since August 2017, having been our Head of Marketing following our Demerger in May 2015. He's responsible for our Commodity Marketing and Supply functions.

Peter has more than 25 years of global commodity marketing experience. Before joining us, he worked in various roles in BHP, starting in The Hague in 2008 as Vice President Marketing Aluminium. He then led the consolidation of the Aluminium and Stainless Steel Materials Marketing teams in August 2012. In 2013, he was appointed Vice President Marketing Aluminium, Manganese & Nickel, where he was based out of Singapore.

In his career, Peter has worked in various marketing roles in Japan, Australia, Russia, Cyprus and Switzerland, including for Rio Tinto and Rusal.

Peter completed degrees in Commerce and Law at the University of Queensland.

He'll be succeeded by Brendan Harris in the role of Chief Marketing Officer on 1 January 2020.

Mike Fraser
BCom, MBL, 54

Chief Operating Officer

Mike Fraser became our Chief Operating Officer on 30 April 2018, having been our President and Chief Operating Officer for the Africa region from January 2015. He's responsible for the Group's alumina operations in Australia, aluminum operations in Southern Africa and the Cerro Matoso operation in Colombia. He's also responsible for South Africa Energy Coal.

Before joining us, Mike was President, Human Resources with BHP. Before this, he was Asset President of Mozal Aluminium in Mozambique. He's also worked in various roles in BHP's coal, manganese and aluminium businesses. During his career, Mike held leadership roles in a large internationally diversified industrial business, and has worked in the United Kingdom, South Africa, Mozambique and Australia.

Mike holds a Master of Business Leadership and a Bachelor of Commerce from the University of South Africa.

Brendan Harris
BSc, CPA, 47

Chief Financial Officer (up to 1 May 2019)
Chief Marketing Officer (elect)

Brendan Harris will become our Chief Marketing Officer from 1 January 2020 and be responsible for our Commodity Marketing and Supply operations. Brendan will move to Singapore in the second half of 2019 to enable a handover of our global customer relationships from Peter Finnimore. Previously, he was our inaugural Chief Financial Officer, looking after Financial Reporting, Management Reporting, Treasury, Business Evaluation, Tax, Corporate Affairs, Investor Relations, Risk and Assurance, and Brazil Alumina – and played a key role in our establishment, Demerger and listing.

Before joining us, Brendan was Head of Investor Relations at BHP, based in the United Kingdom and then Australia, having been Vice President Investor Relations Australasia. During his career, he also held roles in investment banking, including Executive Director Metals and Mining Research at Macquarie Equities.

Brendan holds a Bachelor of Science in Geology and Geophysics from Flinders University.

Paul Harvey
BEng, 55

Chief Operating Officer

In April 2018, Paul Harvey became our Chief Operating Officer for the Group's manganese operations in South Africa and Australia, and the Illawarra Metallurgical Coal and Cannington operations in Australia. Prior to this, Paul was our President and Chief Operating Officer for the Australia region, and Chief Transformation Officer.

Before joining us, Paul was the Asset President of BHP's Nickel West operation in Australia and Asset President at its Ekati diamond mine in Canada. He also held leadership roles in operations management, major capital projects, business planning, strategy and growth across uranium, base metals, diamonds and specialty products in Africa, Australia and Canada.

Paul holds a Bachelor of Engineering (Mining) from the Western Australian School of Mines.

Rowena Smith
BCom, 52

Chief Sustainability Officer

Rowena Smith became our Chief Sustainability Officer in August 2017, having been our Vice President Supply in the Australia region. She's responsible for Health, Safety, Environment, Sustainability, Risk and Compliance.

Before joining us, Rowena worked with BHP Nickel West as Head of Resource Planning and Development. In her 14 years with BHP, she also held senior roles in marketing and operations, including General Manager, Kwinana Nickel Refinery. Before this, she worked in operational leadership roles within Rio Tinto's aluminium smelting business.

Rowena holds a Bachelor of Commerce from the University of Western Australia.

Vanessa Torres
BSc (Chemical), MEng, DEng, 49

Chief Technology Officer

Vanessa Torres became our Chief Technology Officer in August 2018. She is responsible for Technology Strategy, Digital Operations, Innovation and Improvement, Enterprise Resource Planning Transformation, Greenfield Technology and Global Business Services.

Before this, Vanessa was Vice President Operational Infrastructure for BHP Western Australia Iron Ore. She has over 27 years of global mining experience across Australia, Canada, Brazil, Peru and New Caledonia, and has held various senior roles at BHP and Vale in strategy, projects, business development, and operations.

Vanessa holds Doctorate and Master degrees in Minerals Engineering from the University of Sao Paulo, and a Bachelor of Science from the Federal University of Minas Gerais, Brazil. She was also a Visiting Scholar at the University of British Columbia, Canada, where her research focused on the application of Artificial Intelligence to the mining industry.

Katie Tovich
BCom, CA, GAICD, 49

Chief Financial Officer

Katie Tovich became our Chief Financial Officer in May 2019, having been our Vice President Corporate Affairs and Investor Relations, as well as our Head of Treasury. She's responsible for Financial Reporting, Management Reporting, Treasury, Business Evaluation, Tax, Investor Relations, Risk and Assurance, and Corporate Affairs including Community.

Katie brings more than 25 years of global experience in the resources sector. Before joining us, she held senior finance and marketing roles at BHP in Australia and Asia, including Vice President Corporate Finance, Head of Finance Worsley Alumina and Vice President Finance Marketing – Carbon Steel Materials. Earlier in her career, she held finance and marketing leadership positions at WMC Resources Limited in Australia and North America.

Katie holds a Bachelor of Commerce from the University of Tasmania and is a member of Chartered Accountants Australia and New Zealand.

RISK MANAGEMENT

At South32, risk management underpins almost everything we do, enabling us to identify and manage threats and opportunities, to support the delivery of our business goals and company strategy.

Our risk management framework is well established, with strong governance and risk management processes in place. In FY19, as part of our continuous improvement process, we have simplified the approach, provided more effective tools and focused our efforts on lifting the risk capability and practices across our business.

Through ongoing engagement, management keeps the board informed on the strategic risks facing the Company globally. The identification and assessment of these risks is informed, among other things, by an understanding of our business, significant trends in our operating environment and the relevant interests, expectations and concerns of key stakeholders that are most likely to influence our success. Our annual evaluation with senior leaders and the Board considers emerging trends, new impacts from internal and external factors, while ensuring continued alignment with our purpose.

We have identified 13 strategic exposures that have the potential to significantly impact the performance and sustainability of our business. Some elements of these risks may be relevant across the entire Group, while others may be specific to a single commodity or operation.

Strategic Risk	Our Response
Ensuring that our people go home safe and well	
A safe and healthy working environment is fundamental to living our values. This goal promotes the culture we aspire to and meets societal expectations, as well as our expectations of each other. If we don't provide a safe working environment, it may result in physical harm to our employees, contractors and communities. This could negatively impact team morale, Total Shareholder Returns (TSR) and stakeholder confidence.	■ In everything we do, we focus on the health and safety of our people, contractors and communities; ■ We engage, develop and train our people to ensure our work is well designed; ■ We continuously improve our work environment to make it safer and more productive for our people; ■ We have comprehensive health and safety policies, systems and standards with associated performance requirements designed to prevent and mitigate exposure to health and safety risks; ■ We investigate significant events, put preventive and corrective controls in place, and share our learnings across the organisation – so that everyone can benefit; and ■ We have an independent assurance function that reviews our risk register and the associated controls, to test how effective they are.
Actions by governments, political events or tax authorities	
When changes in legislation, regulation, and/or policy impact our strategic goals and the way we work, we aim to effectively manage this uncertainty. This includes uncertainty surrounding direct and indirect taxes and royalties in the countries where we operate, as well as around broader policy decisions and regulatory changes, relating to: ■ Nationalisation of mineral resources; ■ Renegotiation or nullification of contracts; ■ Leases, permits or agreements; and ■ Environmental performance.	■ We have the specialised knowledge we need in our functions and through consultants, including tax management capability, tax advice, and external relations advice; ■ We monitor political activity in all jurisdictions we operate in; ■ We engage with our key stakeholders, identifying them through active mapping and developing comprehensive engagement plans; ■ We work through selected industry associations to influence how the industry is positioned; ■ While we monitor policy, legislative and regulatory changes, we also engage with relevant authorities; and ■ We produce an annual Tax Transparency and Payments to Governments Report, which shows how we meet our regulatory tax obligations.

Strategic Risk	Our Response
Portfolio composition	
Our aim is to outperform our peers by reshaping our portfolio. This will create exposure to high-quality operations in commodities with a strong and sustainable outlook, as well as in jurisdictions where we believe we can operate into the future – in line with our values. We invest for value in our preferred commodity and jurisdictional exposures. We do this by progressing our internal development options and by acquiring exploration opportunities, development projects or existing operations. If we don't invest in a disciplined way, or divest non-preferred exposures, we could reduce TSR.	■ We keep our strategy front of mind – it informs our portfolio composition, including an annual review with Board and Lead Team together; ■ We have a dedicated greenfields exploration team focused on delivering a flow of low-cost, high-quality resource development options; ■ We apply a rigorously developed and independently verified Commodity Price Protocol (CPP) process, to develop long-term prices for our portfolio commodities; ■ We maintain a strong life of operations planning process. By evaluating the embedded options in our operations, we can progress with organic options at the right time; ■ We follow strong due diligence processes for acquisitions and new business ventures; ■ We apply a standardised valuation methodology with consistent key macro-economic assumptions; ■ We have a mature and independent peer review process, which we rigorously follow to make key investment decisions; and ■ We actively manage portfolio change with dedicated specialists, to deliver integration and separation benefits.
Global economic uncertainty and liquidity	
Our aim is to manage risks related to uncertain and changing macroeconomic conditions. We'll do the same when it comes to the volatility in commodity, currency and debt capital markets – given how much they can impact our earnings, balance sheet and growth goals.	■ Our diverse portfolio strengthens our resilience to the disruption of any one commodity, geography or operation – compared with single mine or commodity companies; ■ We prioritise a strong balance sheet and an investment grade credit rating, so that we remain in control through economic cycles; ■ We test our financial strength across a range of scenarios, including a depressed demand and pricing environment. We also maintain a minimum liquidity buffer; ■ Our commercial strategy is designed to ensure we stay resilient and take advantage of new opportunities; ■ We carry out qualitative global economic scenario assessments, monitor meaningful leading indicators, and adjust our commercial approach accordingly; ■ We maintain strong relationships with high-quality customers and suppliers from all around the world; ■ We mostly sell our products with reference to floating, market-based prices, which are broadly correlated with floating global currency markets and the input costs we're exposed to; and ■ We carry out an annual review of our CPP, which we use to inform our financial planning and how we operate.
Unexpected operational or natural catastrophes	
Our operations and transport networks can be disrupted by events such as: ■ Fire; ■ Explosion; ■ Flooding; ■ Geotechnical failures; ■ Tailings dam failures; ■ Loss of power supply; ■ Mechanical/electrical equipment failures; and ■ Unexpected natural catastrophes.	■ When facing potential catastrophes, we put safety and wellbeing at the heart of everything we do; ■ We use a strong system of risk management in design, construction and operation phases, to analyse risks and design plans that prevent or limit business impacts; ■ We have business continuity and disaster recovery plans in place. We've tested these to make sure we can respond rapidly to major events and safely restore our operations; ■ We have governance functions independent of the operations. These give us assurance against our own comprehensive internal standards for equipment integrity, tailings dams management and technical stewardship; ■ We maintain insurance against many, but not all, potential losses or liabilities arising from operating risks. This may not fully cover all financial losses; and ■ We work with external experts, relevant industry bodies and technology suppliers, to provide additional assurance and input.

Strategic Risk	Our Response
Key talent identification, attraction and retention	
Our ability to identify, attract and retain key talent and develop capabilities is fundamental to delivering our strategic priorities. Failure to ensure the right capabilities and talent within our business erodes shareholder value.	■ We focus on enhancing our offering to employees and potential employees to distinguish ourselves in the market; ■ We continually seek ways to better engage and empower our workforce, including leading flexibility policies and a focus on ensuring we maintain an inclusive workplace; ■ Our dedication to "making a difference" inspires our people; ■ We identify key talent and provide them with experience and growth through time in critical roles; ■ We have effective approaches to talent and recruitment management, remuneration, skills development and succession planning; ■ Our strategic planning process identifies capability requirements for the future; ■ We work to strengthen our reputation and status in the community as an employer of choice through community engagement programs; and ■ We have developed and are implementing a long-term workforce planning and talent management program across the organisation.
Changing societal expectations and acceptance	
There are growing expectations of shared value outcomes from mining and metals companies by government, investors, employees, host communities and broader society. By understanding and maintaining stakeholder acceptance, we can manage the effect of business impacts to achieve shared value.	■ We embrace the concept of shared value – it's at the heart of our purpose; ■ We maintain connection and understanding of stakeholder acceptance and needs through routine mapping and engagement on a wide range of environmental, social and governance issues; ■ We work with appropriate industry associations and organisations who are shaping the dialogue between society and mining. This helps us enhance our understanding of social expectations across our portfolio; ■ We have internal subject matter expertise, policies and governance processes to help us identify shared value opportunities, as well as integrate social expectations into our planning and decision-making – at all levels; ■ Our organisational investment proposition and purpose is clear, to minimise any misalignment with our owners' expectations of us; and ■ We manage and transparently report on regulatory obligations, commitments, and areas where we're working. This means we can optimise our value proposition to society and the communities we operate in.
Evolving culture of the organisation	
We recognise the value of a strong culture. It's at the core of how we deliver our purpose and strategy. As our organisation grows and matures, our culture must evolve with it. This will help us keep delivering on our strategy, achieve our purpose and live our values.	■ We're working to better understand the gap between what our culture is and what we want it to be – and to have a clear approach to help us close it; ■ We make sure our ways of working (systems, symbols and behaviours) are aligned to our aspired culture; and ■ We identify effective levers to move our culture and use them deliberately to address any misalignment.
Predictable operational performance	
Predictable operational performance improves our ability to keep our people safe, meet our regulatory and social obligations, provide quality products to our customers and deliver TSR. If we can't safely achieve our production targets and mitigate rising unit costs, it will impact directly on our profits and cash flow, as well as our ability meet our commitments to our stakeholders.	■ We carry out rigorous quality assurance programs over our operations and marketing; ■ We review our asset health and integrity on a regular basis; ■ We reconcile the performance of our mineral resource and ore reserve quality against production on an annual basis; ■ We carry out rigorous modelling and reviews of our geotechnical drilling data; ■ We operate within target operating windows and regularly review our internal scheduling and operational planning; ■ We monitor raw material supply contracts and implement early detection procedures at load port; ■ We've developed and implemented long-term and short-term planning, scheduling and verification of developments; ■ We carry out operational resource planning and regularly review our productivity metrics; ■ We apply structured work design processes for critical or high value tasks; and ■ We apply verification systems to ensure we're compliant with work standards.

Strategic Risk	Our Response
Maintain competitiveness through innovation and technology	
It's clear that technology and innovation are advancing at a rapid pace. And companies who don't keep up find themselves falling behind in TSR. To stay competitive, we'll organise our business in a way that means we can identify, adopt and maintain innovation and technology that delivers shareholder return.	■ We've implemented a clear approach to innovation, improvement and technology; ■ We've organised the coordination and delivery of programs focused on adoption of critical technology across the business; ■ We've planned to identify opportunities to test and scale emerging innovation and technology; ■ We've developed and implemented rigorous internal standards and processes (technology 'ways of working'); ■ We benchmark our digital operations performance to industry best practice, and we implement strategies to close any gaps; ■ We actively manage cyber security and data centre risks through our system of risk management; ■ We monitor customer satisfaction and manage customer support; and ■ We follow a rigorous assurance process for our approach to innovation, improvement and technology.
Security of supply of logistics chain and critical services	
Our logistics chain includes road, rail and ports. Our critical services include gas, power (sourcing and generating) and water. By securing our supply at commercially acceptable terms, we can capitalise on market opportunities, run safe and predictable operations, and deliver life of operations plans. If we fail to do this, it could result in a disruption to our operations, increased operational costs and financial penalties.	■ We build strong strategic partnerships with Tier 1 suppliers of road, rail, port facilities, water, gas and power, on a long-term, mutually beneficial basis; ■ We have a clearly defined B-BBEE (Broad-Based Black Economic Empowerment) strategy in South Africa to support the secure supply of electricity to the smelters; ■ We actively work to secure resources within our control to strengthen the resilience of our operations' logistics and critical services against supply disruption; and ■ We explore opportunities to optimise existing sources, and identify alternate sources, for critical services.
Maintain, realise or enhance the value of our resources and reserves	
We exist to realise the potential of the resources and reserves we are entrusted to develop. We work to continually optimise our operations through our sound technical and economic understanding of our resources and reserves. If we fail to do this, it will have a significant impact on TSR and ultimately, the sustainability of the Company.	■ We report Mineral Resources and Ore Reserves (including Coal Resources and Coal Reserves) in accordance with the JORC Code as required by Chapter 5 of the ASX Listing Rules; ■ We apply an annual business planning standard and process, structured to get maximum value across the life of our operations; ■ Our capital prioritisation, capital allocation & short-term planning processes prioritise the highest value options across our portfolio; ■ We apply a rigorous project development process that includes independent peer review of project risks and approval tollgates; and ■ Our closure standard ensures that our full life of operations value incorporates closure and rehabilitation liabilities.
Climate change resilience	
By using climate change scenarios, we can identify opportunities and threats to our portfolio and operations. We assess these risks through a framework that includes policy, market and physical factors.	■ We seek to understand our portfolio performance in a range of future climate scenarios, considering both opportunities and threats; ■ We use the latest climate modelling data to inform us of the level of risk to our operational plans; ■ We identify potential controls in the short, medium and long-term to improve the climate change resilience of our portfolio; ■ We prioritise our land management efforts to improve resilience, including minimising land disturbance and maximising rehabilitation efforts; ■ We support the Paris Agreement objectives and are committed to achieving net zero carbon emissions by 2050; ■ We identify and implement greenhouse gas reduction and energy efficiency projects, with our emission reduction targets linked to our remuneration; and ■ We're transparent with our disclosure of climate change-related opportunities and threats in our annual Our Approach to Climate Change report, which is prepared with regard to the Recommendations of the Task Force on Climate-related Financial Disclosures.

OPERATING AND FINANCIAL REVIEW

INTRODUCTION

The following operating and financial review is intended to convey the Directors' perspective of the Group's operating performance and financial position, development potential and future prospects.

The following information forms part of this operating and financial review and the information cross-referenced therein:

- Year at a glance on page 1 of the Annual Report;
- From our Chair and From our CEO on pages 2 to 3 of the Annual Report;
- Our portfolio on pages 4 to 5 of the Annual Report;
- Who we are on pages 6 to 8 of the Annual Report, which sets out our strategy and Breakthroughs;
- Our operations on pages 9 to 10 of the Annual Report; and
- Risk management on pages 18 to 21 of the Annual Report.

The Group uses a number of non-International Financial Reporting Standards financial measures in addition to those reported in accordance with International Financial Reporting Standards (IFRS), including underlying measures of earnings, effective tax rate (ETR), returns on invested capital (ROIC), cash flow and net debt. The Directors believe that these non-IFRS measures are important when assessing the underlying financial and operating performance of the Group and its operations as set out below. The meanings of individual non-IFRS measures used in this report are set out in the Glossary on page 137.

Underlying earnings, Underlying EBIT and Underlying EBITDA are included on page 86 in note 4 to the financial statements. We believe that Underlying earnings, Underlying EBIT and Underlying EBITDA provide useful information, but should not be considered as an indication of, or an alternative to, profit/(loss) after tax as an indicator of actual operating performance or as an alternative to cash flow as a measure of liquidity.

In discussing the operating results of the Group, the focus is on Underlying earnings and ROIC. Underlying earnings is the key measure that is used to assess the performance of the Group, make decisions on the allocation of resources and assess senior management's performance.

In addition, the performance of each of the Group's operations and operational management is assessed based on Underlying EBIT. Management uses this measure because financing structures and tax regimes differ across the Group's operations and substantial components of tax and interest charges are levied at a group level rather than an operation level.

In order to calculate Underlying earnings, Underlying EBIT and Underlying EBITDA, the following items are adjusted as applicable each period, irrespective of materiality:

- Exchange rate (gains)/losses on restatement of monetary items;
- Impairment losses/(reversals);
- Net (gains)/losses on disposal and consolidation of interests in businesses;
- Fair value (gains)/losses on non-trading derivative instruments and other investments;
- Major corporate restructures; and
- Earnings adjustments included in profit/(loss) of equity accounted investments.

In addition, South32 management retains the discretion to adjust for other significant non-recurring items that are not considered reflective of the underlying performance of the Group's operations. Significant items are detailed on page 89 in note 4(b)(ii) to the financial statements.

FINANCIAL KEY PERFORMANCE INDICATORS FOR FY19

Financial highlights

US$M	FY19	FY18	Change
Revenue[1]	7,274	7,549	(4%)
Profit/(loss) before tax and finance cost	887	1,719	(48%)
Profit/(loss) after tax and finance cost	389	1,332	(71%)
Basic earnings per share (US cents)[2]	7.7	25.8	(70%)
Ordinary dividends per share (US cents)[3]	7.9	10.5	(25%)
Special dividends per share (US cents)[4]	1.7	3.0	(43%)
Other financial measures			
Underlying EBITDA	2,197	2,516	(13%)
Underlying EBITDA margin	33.9%	37.3%	(3.4%)
Underlying EBIT	1,440	1,774	(19%)
Underlying EBIT margin	22.2%	26.2%	(4.0%)
Underlying earnings	992	1,327	(25%)
Basic Underlying earnings per share (US cents)[2]	19.7	25.7	(23%)
ROIC	11.1%	15.0%	(3.9%)
Ordinary shares on issue (million)	5,006	5,120	(2.2%)

(1) Revenue includes revenue from third party products and services.

(2) FY19 basic earnings per share is calculated as Profit/(loss) after tax divided by the weighted average number of shares for FY19 (5,048 million). FY19 basic Underlying earnings per share is calculated as Underlying earnings divided by the weighted average number of shares for FY19. FY18 basic earnings per share is calculated as Profit/(loss) after tax divided by the weighted average number of shares for FY18 (5,159 million). FY18 basic Underlying earnings per share is calculated as Underlying earnings divided by the weighted average number of shares for FY18.

(3) FY19 ordinary dividends per share is calculated as H1 FY19 ordinary dividend announced (US$258 million) divided by the number of shares on issue at 31 December 2018 (5,051 million) plus H2 FY19 ordinary dividend announced (US$140 million) divided by the number of shares on issue at 30 June 2019 (5,006 million). FY18 ordinary dividend per share is calculated as H1 FY18 ordinary dividend announced (US$223 million) divided by the number of shares on issue at 31 December 2017 (5,181 million) plus H2 FY18 ordinary dividend announced (US$317 million) divided by the number of shares on issue at 30 June 2018 (5,120 million).

(4) FY19 special dividends per share is calculated as FY19 special dividend announced (US$86 million) divided by the number of shares on issue at 31 December 2018 (5,051 million). H1 FY18 special dividend per share is calculated as H1 FY18 special dividend announced (US$155 million) divided by the number of shares on issue at 31 December 2017 (5,181 million).

EXTERNAL FACTORS AND TRENDS AFFECTING THE GROUP'S RESULT

The following describes the main external factors and trends that have had a material impact on the Group's financial position and results of operations. Details of the Group's most significant risk factors and how they are mitigated can be found in Risk management on pages 18 to 21 of the Annual Report.

Management monitors particular trends arising from external factors with a view to managing the potential impact on the Group's future financial position and results of operations.

COMMODITY PRICES AND CHANGES IN PRODUCT DEMAND AND SUPPLY

South32 produces metals and ores, prices of which are largely driven by global demand and supply for each of these commodities. Commodity prices were generally lower in FY19 compared to FY18 as most physical markets weakened on the back of slower demand and heightened macroeconomic uncertainty. The prices that the Group obtains for its products are a key driver of its business, and fluctuations in these commodity prices affect its results, including cash flows and asset values.

Estimated impact on Underlying EBIT of a +/- 10% change in commodity price

US$M	FY19
Alumina	217
Aluminium[1]	198
Manganese ore[2]	125
Metallurgical coal	99
Energy coal	67
Nickel	43
Manganese alloy[2]	25
Silver	18
Lead	17
Zinc	10

(1) Aluminium sensitivity shown without any associated increase in alumina pricing.

(2) The sensitivity impacts for manganese ore and manganese alloy are on a pre-tax basis. The Group's manganese operations are reported as an equity accounted investment. As a result, the profit after tax for manganese is included in the Underlying EBIT of South32.

The following table shows prices of the Group's most significant commodities for FY19 and FY18. These prices represent quoted prices from the relevant sources as indicated. These prices differ from the realised prices on the sale of production due to contracts to which the Group is a party, differences in quotational periods, quality of products, delivery terms and the range of quoted prices that are used for contracting sales in different markets.

Quoted commodity prices

	Average price			Closing price		
Year ended 30 June	FY19	FY18	Change	FY19	FY18	Change
Alumina[1] (US$/t)	435	421	3%	321	445	(28%)
Aluminium (LME Cash)[2] (US$/t)	1,921	2,132	(10%)	1,774	2,183	(19%)
Energy coal[3] (US$/t)	86.3	93.6	(8%)	64.3	103.8	(38%)
Metallurgical coal[4] (US$/t)	204.9	203.0	1%	193.5	199.0	(3%)
Manganese ore[5] (US$/dmtu)	6.68	6.88	(3%)	5.74	6.83	(16%)
Manganese alloy[6] (US$/t)	1,150	1,342	(14%)	1,150	1,143	1%
Nickel (LME Cash)[2] (US$/t)	12,353	12,450	(1%)	12,665	14,910	(15%)
Silver[7] (US$/toz)	15.0	16.7	(10%)	15.2	16.0	(5%)
Lead (LME Cash)[2] (US$/t)	1,998	2,434	(18%)	1,914	2,432	(21%)
Zinc (LME Cash)[2] (US$/t)	2,657	3,182	(16%)	2,581	2,948	(12%)

(1) Platts Alumina Index (PAX) Free on Board (FOB) Australia – market price assessment of calcined metallurgical/smelter grade alumina.

(2) LME Cash represents the Official Seller price for nickel, zinc and lead and the A.M. Official price for aluminium.

(3) Richards Bay Coal Terminal (RBCT) FOB (API4).

(4) Platts Low Vol Hard Coking Coal Index FOB Australia – representative of high-quality hard coking coals.

(5) Metal Bulletin manganese ore 44 per cent Mn CIF Tianjin China.

(6) Bulk Ferro Alloy high-carbon ferromanganese (HCFeMn) Western Europe DDP.

(7) Daily London Bullion Market Association (LBMA) Silver Fix.

The following summarises the pricing trends of our most significant commodities for FY19. The price change reflects the average of FY19 over FY18.

Alumina: The average FOB Australia price for the year was three per cent higher than FY18. The price increase was largely driven by supply disruptions.

Aluminium: The average LME cash settlement price for the year was 10 per cent lower than FY18, driven by weaker demand.

Energy coal: The FY19 average API4 FOB Richards Bay price was eight per cent lower than FY18. Higher Chinese domestic coal output, delays in Chinese port clearance of imported coal and higher exports from seaborne suppliers such as Australia and Indonesia weighed on price.

Metallurgical coal: The FY19 average Platts Premium Low Vol Hard Coking Coal price was one per cent higher than FY18. Prices were supported by higher Chinese pig iron output and supply disruptions in Australia.

Manganese: The average Manganese Ore Metal Bulletin 44 per cent CIF China price was three per cent lower than FY18. While strong Chinese demand provided support, an increase in ore supply weighed on prices. The Western Europe spot high carbon ferromanganese average price weakened 14 per cent during FY19 due to persisting oversupply of ferroalloy in the seaborne market.

Nickel: The FY19 average LME cash settlement price was one per cent lower than FY18. Despite a decline in exchange stocks, prices remained stable as strong stainless steel demand was met by rising Chinese and Indonesian nickel pig iron production.

Silver: The FY19 average LBMA silver price was 10 per cent lower than FY18. Macroeconomic drivers, including escalating trade tensions, pushed the silver market from a deficit into a more balanced position resulting in the price retreat.

Lead: The FY19 average LME cash settlement price was 18 per cent lower than FY18. In the first half of the financial year, prices were supported by Chinese environmental clampdowns which impacted supply amid historical low exchange inventories. However, a weak global automotive sector and heightened macroeconomic uncertainty weighed on prices in the second half of FY19.

Zinc: The FY19 average LME cash settlement price was 16 per cent lower than FY18. Increasing concentrate supply and the return of Chinese smelters following the environmental clampdown weighed on prices.

EXCHANGE RATES

The Group is exposed to exchange rate risk on foreign currency sales, purchases and expenses, as no active currency hedging is undertaken. As the majority of sales are denominated in US dollars, and the US dollar plays a dominant role in the Group's business, funds borrowed and held in US dollars provide a natural hedge to currency fluctuations. Operating costs and costs of locally sourced equipment are influenced by fluctuations in local currencies, primarily the Australian dollar, Brazilian real, Colombian peso, Euro and South African rand.

The Group is also exposed to exchange rate translation risk in relation to net monetary liabilities, being foreign currency denominated monetary assets and liabilities, including debt, tax and other long-term liabilities. Details of the exposure to foreign currency fluctuations are set out in note 19 to the financial statements on pages 103 to 111.

The following table indicates the estimated impact on FY19 Underlying EBIT of a change in the principal currencies to which the Group is exposed against the US dollar. The sensitivities give the estimated impact on Underlying EBIT based on the exchange rate movement in isolation. The sensitivities assume all variables except for exchange rates remain constant. There is an inter-relationship between currencies and commodity prices where movements in exchange rates can cause movements in commodity prices and vice versa. This is not reflected in the sensitivities below. These sensitivities should therefore be used with care.

Estimated impact on Underlying EBIT of a +/-10% change in producer currencies relative to the US dollar

US$M	FY19
Australian dollar(1)	155
South African rand(1)	119
Colombian peso	23
Brazilian real	15

(1) The sensitivity impacts for manganese ore and manganese alloy are on a pre-tax basis. The Group's manganese operations are reported as an equity accounted investment. As a result, the profit after tax for manganese is included in the Underlying EBIT of South32.

The following table shows the average and period end closing exchange rates of the most significant currencies that affect the Group's results:

Exchange rates(1)

	Average Value			Closing Value		
Year ended 30 June	FY19	FY18	Change	FY19	FY18	Change
Australian dollar(2)	0.72	0.78	(8%)	0.70	0.74	(5%)
Brazilian real(3)	3.86	3.31	(17%)	3.83	3.85	1%
Colombian peso(3)	3,125	2,917	(7%)	3,197	2,945	(9%)
Euro(4)	1.14	1.19	(4%)	1.14	1.16	(2%)
South African rand(3)	14.19	12.86	(10%)	14.17	13.73	(3%)

(1) Positive per cent change in FX indicates strengthening currency relative to US$.
(2) Displayed as US$ to A$ based on common convention.
(3) Displayed as local currency to US$.
(4) Displayed as US$ to € based on common convention.

Local economic conditions, commodity prices and US policies remain key drivers of our producer currencies. In FY19, producer currencies broadly weakened against the US dollar on the back of stronger US economic growth relative to local economies and widening interest rate differentials as the US Federal Reserve raised interest rates twice in FY19. Heightened macroeconomic uncertainty and escalating trade tensions also bolstered US dollar strength given its safe haven status.

2019 FINANCIAL YEAR SUMMARY

PERFORMANCE SUMMARY

The Group's statutory profit after tax decreased by 71 per cent to US$389 million in FY19 following the recognition of impairment charges totalling US$504 million (US$578 million after tax, including de-recognition of deferred tax assets) in relation to our South Africa Energy Coal operation.

Underlying earnings decreased by 25 per cent (or US$335 million) to US$992 million as our strong operating performance that delivered a three per cent increase in Group production volumes, and cost reduction initiatives across labour, energy and materials usage were more than offset by lower aluminium and thermal coal prices. Basic Underlying earnings per share decreased by a lesser 23 per cent to US 19.7 cents per share as we benefitted from the continuation of our on-market share buy-back program which has reduced our shares on issue by six per cent since its commencement.

Specific highlights for the year included:

- Record production at Hillside Aluminium and strong performance at Mozal Aluminium, despite an increase in load-shedding events;
- A 57 per cent increase in production at Illawarra Metallurgical Coal as the Appin colliery continued to ramp up towards historical rates;
- Manganese ore production of 5.5Mt, with South Africa Manganese exceeding guidance and Australia Manganese operating the Premium Concentrate Ore (PC02) circuit at approximately 120 per cent of its design capacity;
- The acquisition of the remaining 83 per cent interest in Arizona Mining for US$1.4 billion (including transaction costs), which adds the Hermosa project and a prospective land package to our portfolio;
- A first time Mineral Resource estimate in accordance with the JORC Code (2012) guidelines for the Taylor deposit, which forms part of the Hermosa project, de-risking our investment and increasing our confidence in the project as we advance its pre-feasibility study;
- The commencement of a feasibility study at Eagle Downs Metallurgical Coal, following our acquisition of a 50 per cent interest in the project and assumption of operating control for US$106 million; and
- Payment of the third and final instalment (US$10 million) to maintain our option with Trilogy Metals Inc. (TSX:TMQ) to earn a 50 per cent interest in the Upper Kobuk Mineral projects in Alaska by committing approximately US$150 million to a 50:50 joint venture by 31 January 2020.

Subsequent to the end of the financial year following a comprehensive and competitive process we entered into exclusive negotiations with Seriti Resources Holdings Proprietary Limited (Seriti) as we work towards finalisation of their indicative offer to acquire our South Africa Energy Coal business. In November 2017 we announced our intention to broaden the ownership of South Africa Energy Coal, with a vision that it become a sustainable, black-owned and operated business, consistent with South Africa's transformation agenda. At that time we also approved a 4.3 billion South African Rand investment to extend the life of the Klipspruit Colliery by at least 20 years and improve the competitiveness of the business. The recognition of an impairment charge at 30 June 2019 considers Seriti's current offer, which includes a modest up-front cash payment with a mechanism whereby both parties will share commodity price upside for an agreed period, and assumes that transaction approvals are fulfilled by June 2020.

We finished the year with a net cash balance of US$504 million having generated free cash flow from operations, including distributions from our manganese equity accounted investments of US$1.0 billion. Our strong financial position allowed us to return US$762 million to shareholders in respect of the period. This included payment of a US$256 million fully franked interim dividend and declaration of a US$140 million fully franked final dividend in accordance with our dividend policy, which seeks to return a minimum 40 per cent of Underlying earnings in each six month period.

A further US$366 million was returned to shareholders as part of our ongoing capital management program, with US$281 million allocated to our on-market share buy-back program and US$85 million returned in the form of a special dividend. Demonstrating the disciplined approach we are taking to our capital management program, our confidence in the outlook for our business and an anticipated unwind in working capital during H1 FY20, the Board has expanded our program by US$250 million to US$1.25 billion, leaving US$264 million expected to be returned by 4 September 2020.

EARNINGS

The Group's statutory profit after tax declined by US$943 million (or 71 per cent) to US$389 million in FY19. Consistent with our accounting policies, various items are excluded from the Group's statutory profit to derive Underlying earnings including: exchange rate loss on restatement of monetary items (US$3 million pre-tax); South Africa Energy Coal impairment charges (US$504 million pre-tax); loss on fair value movements of non-trading derivative instruments and other investments (US$35 million pre-tax); major corporate restructures (US$28 million pre-tax); profit associated with earnings adjustments included in our equity accounted investments (US$17 million); exchange rate gains associated with the Group's non US dollar denominated net debt (US$34 million pre-tax), and the tax expense for all pre-tax earnings adjustments and exchange rate variations on tax balances (US$84 million). Further information on these earnings adjustments is included on page 89.

The Group's Underlying EBITDA declined by US$319 million (or 13 per cent) to US$2.2 billion, for an operating margin of 34 per cent. Lower aluminium and thermal coal prices more than offset stronger prices for alumina, contributing to a US$275 million reduction in Revenue, despite higher volumes. While the Group benefitted from weaker producer currencies and cost reduction initiatives across labour, energy and materials usage, total costs rose with higher production and the commencement of several improvement initiatives at Worsley Alumina to support a sustainable increase in production to nameplate capacity.

Underlying EBIT decreased by US$334 million (or 19 per cent) to US$1.4 billion as depreciation and amortisation increased by a modest US$15 million with the higher production volumes. Underlying earnings declined by US$335 million (or 25 per cent) to US$992 million as a change in our geographic earnings mix and permanent differences led to an increase in our Underlying ETR.

OPERATING COSTS

FY19 and FY18 comparative operating costs are set out below, excluding earnings adjustment items impacting operating costs. Earnings adjustment items are detailed on page 89 in note 4(b)(i) to the financial statements.

US$M	FY19	FY18
Operating cash costs	4,964	4,877
Third party commodity purchases	801	842
Depreciation and amortisation expense	757	742
Total operating costs included in Underlying EBIT	6,522	6,461

CAPITAL EXPENDITURE

Capital expenditure continues to be scrutinised in every location as we seek to optimise the performance of our business and sustainably grow ROIC, without compromising the safety or reliability of our operations.

US$M	FY19	FY18
Stay in business, Minor discretionary and Deferred stripping (including underground development)	433	368
Major project capital expenditure	219	62
Intangibles and capitalisation of exploration expenditure	58	6
Total capital expenditure (excluding equity accounted investments)	710	436
Equity accounted investment capital expenditure (including intangibles and capitalised exploration)	96	65
Total capital expenditure (including equity accounted investments)	806	501

Total capital expenditure, excluding equity accounted investments, increased by US$274 million to US$710 million as major project activity ramped up at the Klipspruit Life Extension (KPSX) project (US$123 million) and work progressed at the Hermosa project (US$85 million) following the acquisition of Arizona Mining in August 2018. Sustaining capital expenditure increased by US$65 million to US$433 million with expenditure at Illawarra Metallurgical Coal rising by US$44 million.

Increased spend on intangibles and the capitalisation of exploration expenditure reflects a greater rate of investment in technology to support our operations and US$28 million of expenditure on exploration. This included US$18 million at Hermosa to improve our knowledge of the Taylor deposit where we released a first time Mineral Resource estimate in accordance with the JORC Code (2012) guidelines and commenced work on the broader, prospective land package. Total capital expenditure associated with our equity accounted investments increased by US$31 million to US$96 million during FY19 as we invested in additional tailings storage capacity at Australia Manganese.

NET FINANCE COST

The Group's Underlying net finance cost, excluding equity accounted investments, was US$118 million in FY19 and largely reflects the unwinding of the discount applied to our closure and rehabilitation provisions (US$103 million) and finance lease interest (US$47 million), primarily at Worsley Alumina.

TAX EXPENSE

The Group's Underlying income tax expense, which excludes tax associated with equity accounted investments, was US$330 million for an Underlying ETR of 37.8 per cent in FY19. The Group's Underlying ETR reflects the geographic distribution of the Group's profit. The primary corporate tax rates applicable to the Group for FY19 include: Australia 30 per cent, South Africa 28 per cent, Colombia 33 per cent (37 per cent to 31 December 2018), Mozambique zero per cent (the Mozambique operations are subject to a royalty on revenues instead of income tax) and Brazil 34 per cent.

It should also be noted that permanent differences have a disproportionate effect on the Group's Underlying ETR when commodity prices are lower and profit margins are compressed or losses are incurred in specific jurisdictions. Permanent differences are items which are treated differently for tax and accounting purposes.

The Underlying income tax expense for manganese equity accounted investments was US$338 million, including royalty-related taxation of US$92 million at GEMCO (Australia Manganese), for an Underlying ETR of 42.2 per cent.

CASH FLOW

The Group's free cash flow from operations, excluding equity accounted investments, declined by US$302 million (or 35 per cent) to US$571 million as we increased our investment in our development projects and underground development at Illawarra Metallurgical Coal, with rates increasing ahead of a planned return to a three longwall configuration in the June 2020 quarter.

Free cash flow from operations, excluding equity accounted investments

US$M	FY19	FY18
Profit/(loss)	887	1,719
Non-cash items	1,335	815
(Profit)/loss from equity accounted investments	(467)	(521)
Change in working capital	(129)	(392)
Cash generated	1,626	1,621
Total capital expenditure, excluding equity accounted investments, including intangibles and capitalised exploration	(710)	(436)
Operating cash flows before financing activities and tax, and after capital expenditure	916	1,185
Interest (paid)/received	1	(6)
Income tax (paid)/received	(346)	(306)
Free cash flow from operations	571	873

We also received (net) distributions totalling US$458 million from our manganese equity accounted investments, comprising dividends and capital returns of US$542 million and a net drawdown in shareholder loans (-US$84 million).

Working capital increased by US$129 million as we re-established inventories at Illawarra Metallurgical Coal and Cannington following improved performance at both operations during the year. Further, provisions and other liabilities declined following the payment of previously recognised redundancy and restructuring charges as we simplified the Group's functional structures and continued to invest in concurrent rehabilitation at South Africa Energy Coal.

Working capital movement reconciliation

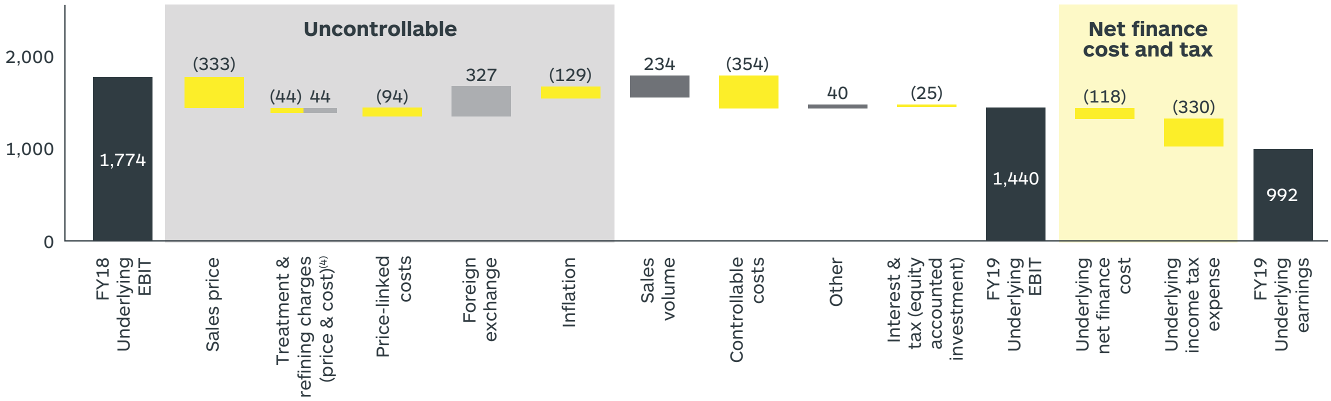
US$M	FY19	FY18
Trade and other receivables	6	(153)
Inventories	(58)	(99)
Trade and other payables	(13)	(22)
Provisions and other liabilities	(64)	(118)
Working capital movement	(129)	(392)

With no change to our payment terms, we expect a portion of working capital to unwind in H1 FY20 as trade and other receivables reduce following receipt of the initial insurance progress payment for the Klipspruit dragline incident at South Africa Energy Coal and the collection of receipts from June 2019 sales.

EARNINGS ANALYSIS

The following key factors influenced Underlying EBIT in FY19, relative to FY18.

Reconciliation of movements in Underlying EBIT (US$M)[(1)(2)(3)]



(1) Sales price variance reflects the revenue impact of changes in commodity prices, based on the current period's sales volume. Price-linked costs variance reflects the change in royalties together with the change in input costs driven by changes in commodity prices or market-traded consumables. Foreign exchange reflects the impact of exchange rate movements on local currency denominated costs and sales. Volume variance reflects the revenue impact of sales volume changes, based on the comparative period's sales prices. Controllable costs variance represents the impact from changes in the Group's controllable local currency cost base, including the variable cost impact of production volume changes on expenditure, and period-on-period movements in inventories. The controllable cost variance excludes earnings adjustments including significant items.

(2) Underlying net finance cost and Underlying income tax expense are actual FY19 results, not year-on-year variances.

(3) South32's ownership share of operations is as follows: Worsley Alumina (86 per cent share), Hillside Aluminium (100 per cent), Mozal Aluminium (47.1 per cent share), Brazil Alumina (Alumina 36 per cent share, Aluminium 40 per cent share), South Africa Energy Coal (100 per cent until B-BBEE vendor loans are repaid), Illawarra Metallurgical Coal (100 per cent), Australia Manganese (60 per cent share), South Africa Manganese (60 per cent share), Cerro Matoso (99.9 per cent share), Cannington (100 per cent), Hermosa (100 per cent), and Eagle Downs Metallurgical Coal (50 per cent share).

(4) The FY19 results reflect the Group's adoption of AASB 15 *Revenue from Contracts with Customers* (AASB 15), with revenue recognised net of treatment and refining charges. These changes result in lower realised prices (US$44 million) and operating unit costs (US$44 million), with no net impact to earnings.

Earnings analysis	US$M	Commentary
FY18 Underlying EBIT	**1,774**	
Change in sales price	(333)	Lower average realised prices for our commodities, including: Aluminium (-US$194 million). Energy coal (-US$88 million). Nickel (-US$45 million). Lead (-US$44 million). Zinc (-US$41 million). Offset by higher average realised prices for: Alumina (+US$105 million).
Treatment and refining charges	-	Net impact from reclassifying Cannington's treatment and refining charges (AASB 15).
Net impact of price-linked costs	(94)	Higher royalties (-US$40 million), primarily Illawarra Metallurgical Coal volumes. Higher smelter raw material costs (-US$35 million), including pitch and coke. Higher freight costs and diesel prices (-US$34 million). Higher Brazil Alumina bauxite costs (-US$17 million). Lower LME-linked electricity costs at Hillside Aluminium (+US$19 million). Lower caustic soda prices at Worsley Alumina (+US$34 million).
Change in exchange rates	327	Australian dollar (+US$160 million). South African rand (+US$127 million). Brazilian real (+US$21 million).
Change in inflation	(129)	Southern Africa (-US$80 million). Australia (-US$33 million).
Change in sales volume	234	Illawarra Metallurgical Coal (+US$449 million). Australia and South Africa Manganese (+US$48 million). Brazil Alumina (-US$60 million). South Africa Energy Coal (-US$215 million).
Controllable costs	(354)	Worsley Alumina (-US$111 million; initiatives to sustainably return production to nameplate capacity and inventory drawdown). South Africa Energy Coal (-US$66 million; higher contractor mining, rehabilitation costs and inventory). Illawarra Metallurgical Coal (-US$46 million; higher volumes with improvement in longwall performance). South Africa Manganese (-US$33 million; increased activity to take advantage of market conditions).
Other	40	Klipspruit dragline initial insurance progress payment at South Africa Energy Coal. Proceeds from Mining Lease relinquishment at Illawarra Metallurgical Coal. Lower EBIT on third party product. Higher depreciation and amortisation.
Interest & tax (equity accounted investments)	(25)	Higher effective tax rate in our jointly controlled manganese operations.
FY19 Underlying EBIT	**1,440**	

Further analysis of operations performance is outlined on pages 30 to 35.

BALANCE SHEET AND CAPITAL MANAGEMENT

While the Group generated US$1 billion in free cash flow from operations, including net distributions from our manganese equity accounted investments, our net cash balance decreased by US$1.5 billion to finish the period at US$504 million. Our strong balance sheet and disciplined approach to capital allocation allowed us to return US$938 million to shareholders during the period by way of dividends (US$657 million) and the continuation of our on-market share buy-back program (US$281 million). We also funded the Arizona Mining and Eagle Downs Metallurgical Coal transactions for a combined investment of US$1.5 billion out of our cash reserves.

Demonstrating our confidence in our financial position and consistent with our dividend policy, our Board resolved to pay a fully franked final dividend of US$140 million, representing 40 per cent of Underlying earnings in respect of H2 FY19. The Board has also exercised its discretion to increase and extend our approved capital management program by US$250 million to US$1.25 billion, leaving US$264 million to be returned by 4 September 2020, further demonstrating the disciplined and flexible approach we are taking.

With the declaration of our final dividend, we will return US$2.5 billion to shareholders in respect of the last four-year period, equivalent to 27 per cent of our market capitalisation as at 16 August 2019 (calculated as the number of shares on issue (5,006 million) and the South32 closing share price A$2.76). Having established this strong track record, we will continue to return any excess capital to shareholders in a timely and efficient manner by monitoring our optimal financial position within the context of the prevailing macroeconomic environment and our capital management framework.

From 1 July 2019, the Group's adoption of AASB 16 *Leases* (AASB 16), which affects the accounting classification of leases, will result in an increase to our gross debt balance of approximately US$140 million following the recognition of additional liabilities. The majority of the increase relates to the reclassification of existing operating leases which will continue to be captured in the aforementioned monitoring of our optimal financial position.

Our capital management framework remains unchanged and we continue to believe that a combination of high operating leverage and undue financial leverage delivers a sub-optimal outcome for shareholders.

NET DEBT AND SOURCES OF LIQUIDITY

Our policies on debt and treasury management are as follows:

- Commitment to maintain an investment grade credit rating;
- Diversification of funding sources; and
- Generally maintain borrowings and cash in US dollars.

GEARING AND NET DEBT

The table below presents net cash/(debt) and net assets of the Group, based on the balance sheet as at 30 June 2019:

US$M	FY19	FY18
Cash and cash equivalents	1,408	2,970
Current external debt	(313)	(333)
Non-current external debt	(591)	(596)
Net cash	504	2,041
Net assets	10,168	10,709

Given the net cash position of the Group, a gearing ratio is not presented.

FUNDING SOURCES

In addition to cash flow from operations as a primary source of funding, the Group has a US$1.5 billion revolving credit facility, which is a standby arrangement to the Group's US$1.5 billion US commercial paper program.

This borrowing facility is not subject to financial covenants at the Group's current credit rating. Standard and Poor's and Moody's reaffirmed their respective BBB+ and Baa1 credit ratings for the Group. Certain financing facilities in relation to specific operations are the subject of financial covenants that vary from facility to facility; however, these are considered normal for such facilities.

As at 30 June 2019, the Group's cash and cash equivalents on hand were US$1.4 billion. Details of major standby and support arrangements are as follows:

US$M	Available FY19	Used FY19
Commercial paper program(1)	1,500	-

(1) The Group has an undrawn US$1.5 billion revolving credit facility which is a standby arrangement to the US$1.5 billion US commercial paper program. The size of the multi-currency revolving credit facility is US$1.5 billion until February 2021, and then US$1.4 billion from February 2021 until the facility expires in February 2022.

Additional information regarding the maturity profile of the Group's debt obligations and details of the standby and support agreements are included in note 19 to the financial statements on pages 103 to 111.

OPERATIONS ANALYSIS

A summary of the underlying performance of the Group's operations is presented below and more detailed analysis is presented on pages 30 to 35.

Operations table (South32 share)(1)

	Revenue		Underlying EBIT	
US$M	FY19	FY18	FY19	FY18
Worsley Alumina	1,619	1,473	541	422
Brazil Alumina	566	551	160	136
Hillside Aluminium	1,439	1,583	(75)	213
Mozal Aluminium	556	629	(21)	99
South Africa Energy Coal	1,037	1,366	(46)	276
Illawarra Metallurgical Coal	1,135	686	359	(62)
Australia Manganese	1,095	1,111	638	651
South Africa Manganese	553	503	188	186
Cerro Matoso	489	559	40	120
Cannington	467	584	104	183
Third party products and services(2)	815	870	5	25
Inter-segment / Group and unallocated	(857)	(749)	(78)	(125)
Total	8,914	9,166	1,815	2,124
Equity accounting adjustment(3)	(1,640)	(1,617)	(375)	(350)
South32 Group	7,274	7,549	1,440	1,774

(1) South32's ownership share of operations is as follows: Worsley Alumina (86 per cent share), Hillside Aluminium (100 per cent), Mozal Aluminium (47.1 per cent share), Brazil Alumina (Alumina 36 per cent share, Aluminium 40 per cent share), South Africa Energy Coal (100 per cent until B-BBEE vendor loans are repaid), Illawarra Metallurgical Coal (100 per cent), Australia Manganese (60 per cent share), South Africa Manganese (60 per cent share), Cerro Matoso (99.9 per cent share), Cannington (100 per cent), Hermosa (100 per cent), and Eagle Downs Metallurgical Coal (50 per cent share).

(2) FY19 third party products and services sold comprise US$57 million for aluminium, US$2 million for alumina, US$392 million for coal, US$239 million for freight services, US$116 million for aluminium raw materials and US$9 million for manganese. Underlying EBIT on third party products and services comprise nil for aluminium, US$2 million for alumina, US$9 million for coal, (US$5 million) for freight services, (US$1 million) for aluminium raw materials and nil for manganese. FY18 third party products and services sold comprise US$206 million for aluminium, US$49 million for alumina, US$290 million for coal, US$198 million for freight services, US$124 million for aluminium raw materials and US$3 million for manganese. Underlying EBIT on third party products and services comprise US$11 million for aluminium, US$2 million for alumina, US$12 million for coal, (US$1 million) for freight services and US$1 million for aluminium raw materials.

(3) The equity accounting adjustment reconciles the proportional consolidation of the South32 manganese operations to the treatment of the manganese operations on an equity accounted basis (including third party product).

ALUMINA BUSINESS

WORSLEY ALUMINA

(86% SHARE)

Worsley Alumina is one of the largest and lowest cost bauxite mining and alumina refining operations in the world.

South32 share	FY19	FY18
Alumina production (kt)	3,795	3,764
Alumina sales (kt)	3,857	3,763
Realised alumina sales price (US$/t)	420	391
Operating unit cost (US$/t)[1]	238	235

(1) Operating unit cost is Revenue less Underlying EBITDA divided by sales volume.

Volumes

Worsley Alumina saleable production increased by one per cent (or 31kt) to 3.8Mt in FY19 as we opportunistically sold stockpiled hydrate at alumina equivalent prices during the year, offsetting the impact of additional calciner maintenance.

South32 share (US$M)	FY19	FY18
Revenue	1,619	1,473
Underlying EBITDA	702	588
Underlying EBIT	541	422
Net operating assets	2,831	3,028
Capital expenditure	57	52
All other capital expenditure	57	52
Exploration expenditure	1	1
Exploration expensed	1	1

Operating costs

Operating unit costs increased by one per cent in FY19 to US$238/t as lower caustic soda prices (FY19: US$489/t, FY18: US$582/t) and consumption rates (FY19: 98kg/t, FY18: 103kg/t) were offset by additional calciner maintenance and the opportunistic drawdown of hydrate stocks.

Financial performance

Underlying EBIT increased by 28 per cent (or US$119 million) in FY19 to US$541 million as a seven per cent rise in the average realised price of alumina (+US$109 million), a weaker Australian dollar (+US$51 million) and lower caustic soda costs (price and consumption, +US$46 million) were partially offset by initiatives to increase calciner availability (-US$42 million) and a drawdown in inventory as a result of higher sales (-US$34 million).

The average realised price for alumina sales in FY19 was a discount of approximately five per cent to the Platts Alumina Index (PAX) on a volume-weighted M-1 basis. This discount narrowed to one per cent in the June 2019 half year and reflects the structure of specific legacy supply contracts with our Mozal Aluminium smelter that are linked to the LME aluminium price and the elevated alumina to aluminium price ratio in the spot market during FY19. All alumina sales to other customers were at market-based prices.

Capital expenditure

Sustaining capital expenditure increased by US$5 million in FY19 to US$57 million as we invested in additional bauxite residue disposal and water catchment capacity.

BRAZIL ALUMINA

(ALUMINA 36% SHARE, ALUMINIUM 40% SHARE)

Brazil Alumina operations include the MRN mine in the Trombetas Region, Para, and refinery and smelter, which is currently on care and maintenance, located at Sao Luis, Maranhao.

South32 share	FY19	FY18
Alumina production (kt)	1,255	1,304
Alumina sales (kt)	1,240	1,341
Realised alumina sales price (US$/t)	456	411
Alumina operating unit cost (US$/t)[1]	270	252

(1) Operating unit cost is Revenue less Underlying EBITDA divided by sales volume.

Volumes

Brazil Alumina saleable production decreased by four per cent (or 49kt) to 1,255kt in FY19 as poor boiler performance and power outages impacted production.

South32 share (US$M)	FY19	FY18
Revenue	566	551
Alumina	566	551
Other income	3	46
Underlying EBITDA	219	192
Alumina	231	213
Aluminium	(12)	(21)
Underlying EBIT	160	136
Alumina	172	157
Aluminium	(12)	(21)
Net operating assets/(liabilities)	687	644
Alumina	696	656
Aluminium	(9)	(12)
Capital expenditure	26	12
All other capital expenditure	26	12

Operating costs

Operating unit costs increased by seven per cent in FY19 to US$270/t as poor boiler performance resulted in lower volumes and additional maintenance activity, while bauxite costs increased as we sourced additional third party material in the period and the cost of supply from MRN was reset in accordance with its linkage to alumina and aluminium.

Financial performance

Alumina Underlying EBIT increased by 10 per cent (or US$15 million) in FY19 to US$172 million as an 11 per cent increase in the average realised price of alumina (+US$56 million) and a weaker Brazilian real (+US$21 million) were partially offset by lower sales volumes (-US$42 million), higher bauxite (-US$17 million) and boiler maintenance (-US$9 million) costs.

Aluminium Underlying EBIT increased by US$9 million in FY19 to a loss of US$12 million as an indirect legacy tax obligation was settled and our commitment to purchase electricity from Eletronorte was fulfilled during the prior period following termination of the contract in December 2015.

Capital expenditure

Sustaining capital expenditure increased by US$14 million in FY19 to US$26 million as we invest in additional bauxite residue disposal capacity and undertake further de-bottlenecking work at the refinery.

ALUMINIUM BUSINESS

HILLSIDE ALUMINIUM

(100%)

Hillside Aluminium is an aluminium smelter in South Africa and has a solid metal production capacity of 720ktpa.

South32 share	FY19	FY18
Aluminium production (kt)	715	712
Aluminium sales (kt)	707	711
Realised sales price (US$/t)	2,035	2,226
Operating unit cost (US$/t)[1]	2,045	1,826

(1) Operating unit cost is Revenue less Underlying EBITDA divided by sales volume.

Volumes

Hillside Aluminium saleable production increased by 3kt to a record 715kt in FY19 as the smelter continued to test its maximum technical capacity, despite an increase in the frequency of load-shedding events.

South32 share (US$M)	FY19	FY18
Revenue	1,439	1,583
Underlying EBITDA	(7)	285
Underlying EBIT	(75)	213
Net operating assets	1,027	1,202
Capital expenditure	19	28
All other capital expenditure	19	28

Operating costs

Operating unit costs increased by 12 per cent in FY19 to US$2,045/t as a rise in raw material input costs for alumina, coke, pitch and aluminium tri-fluoride, accounting for 58 per cent of the smelter's cost base (FY18: 56 per cent), more than offset lower aluminium price-linked electricity costs.

The smelter sources alumina from our Worsley Alumina refinery with prices linked to the Platts Alumina Index on an M-1 basis, while its power is sourced from Eskom under long-term contracts. The price of electricity supplied to potlines one and two is linked to the LME aluminium price and the South African rand/US dollar exchange rate. The price of electricity supplied to potline three is South African rand-based. We are advancing discussions with Eskom to agree a path forward to extend and consolidate our power contracts.

Financial performance

Underlying EBIT decreased by 135 per cent (or US$288 million) in FY19 to a loss of US$75 million as a nine per cent decrease in the average realised price of aluminium (-US$134 million), higher raw material and cathode prices (-US$129 million), an unfavourable movement in inventory (-US$35 million) and additional pot relining costs (-US$11 million) more than offset the benefits of a weaker South African rand (+US$34 million) and lower aluminium price-linked power costs (+US$19 million). During FY19, 171 pots were relined at a cost of US$249 thousand per pot (FY18: 122 pots at US$220 thousand per pot).

Capital expenditure

Sustaining capital expenditure decreased by US$9 million in FY19 to US$19 million.

MOZAL ALUMINIUM

(47.1% SHARE)

Mozal Aluminium is an aluminium smelter located in Mozambique and has a solid metal production capacity of 572ktpa (100 per cent basis).

South32 share	FY19	FY18
Aluminium production (kt)	267	271
Aluminium sales (kt)	268	274
Realised sales price (US$/t)	2,075	2,296
Operating unit cost (US$/t)[1]	2,026	1,810

(1) Operating unit cost is Revenue less Underlying EBITDA divided by sales volume.

Volumes

Mozal Aluminium saleable production decreased by one per cent (or 4kt) to 267kt in FY19 as the smelter's strong operating performance was impacted by an increase in the frequency of load-shedding events.

South32 share (US$M)	FY19	FY18
Revenue	556	629
Underlying EBITDA	13	133
Underlying EBIT	(21)	99
Net operating assets	534	553
Capital expenditure	19	10
All other capital expenditure	19	10

Operating costs

Operating unit costs increased by 12 per cent in FY19 to US$2,026/t as raw material input costs increased for alumina, coke, pitch and aluminium tri-fluoride, which combined account for 49 per cent of the smelter's cost base (FY18: 49 per cent).

The smelter sources alumina from our Worsley Alumina refinery with approximately 50 per cent priced as a percentage of the LME aluminium index under a legacy contract and the remainder linked to the Platts Alumina Index on an M-1 basis, with caps and floors embedded within specific contracts.

Electricity requirements are largely met by hydroelectric power that is generated by Hidroeléctrica de Cahora Bassa (HCB). HCB delivers power into Eskom's South African grid and Mozal Aluminium sources electricity via the Mozambique Transmission Company (Motraco) under a long-term contract. The price of electricity is South African rand-based with the rate of escalation linked to a South Africa domestic producer price index plus a margin.

Financial performance

Underlying EBIT decreased by US$120 million in FY19 to a loss of US$21 million following lower average realised aluminium prices (-US$60 million) and sales volumes (-US$13 million), higher raw material and cathode prices (-US$27 million), higher power costs (-US$5 million) and additional pot relining costs (-US$4 million). Across FY19, 103 pots were relined at a cost of US$234 thousand per pot (FY18: 60 pots at US$211 thousand per pot).

Capital expenditure

Sustaining capital expenditure increased by US$9 million in FY19 to US$19 million as the smelter commenced the roll out of the AP3XLE energy efficiency technology in its pot relining program ahead of schedule.

COAL BUSINESS

SOUTH AFRICA ENERGY COAL

(92% SHARE)

South Africa Energy Coal operations are located near Emalahleni and Middelburg in the coalfields of Mpumalanga.

100 per cent terms[(1)]	FY19	FY18
Energy coal production (kt)	24,979	27,271
Domestic sales (kt)[(2)]	15,035	15,396
Export sales (kt)[(2)]	9,875	12,518
Realised domestic sales price (US$/t)	24	25
Realised export sales price (US$/t)	69	79
Operating unit cost (US$/t)[(3)]	40	36

(1) South32's interest in South Africa Energy Coal is accounted at 100 per cent until B-BBEE vendor loans are repaid.

(2) Volumes and prices do not include any third party trading that may be undertaken independently of equity production.

(3) Operating unit cost is Revenue less Underlying EBITDA, excluding third party sales, divided by sales volume.

Volumes

South Africa Energy Coal saleable production decreased by eight per cent (or 2,292kt) to 25.0Mt in FY19, despite a 10 per cent improvement in the June 2019 quarter, as export sales volumes were impacted by an extended outage of the Klipspruit dragline following an incident in August 2018.

100 per cent terms (US$M) [(1)]	FY19	FY18
Revenue[(2)]	1,037	1,366
Underlying EBITDA	42	353
Underlying EBIT	(46)	276
Net operating assets/(liabilities)	(373)	(23)
Capital expenditure	213	164
Major projects (>US$100M)	123	62
All other capital expenditure	90	102

(1) South32's interest in South Africa Energy Coal is accounted at 100 per cent until B-BBEE vendor loans are repaid.

(2) Includes domestic and export sales Revenue.

Operating costs

Operating unit costs increased by 11 per cent in FY19 to US$40/t as we completed concurrent rehabilitation work and added extra contractor capacity to recover lost dragline availability at Klipspruit. This impact was partially offset by an initial insurance progress payment awarded in June 2019 for the volume and cost impact of the dragline outage, and a weaker South African rand.

Financial performance

Underlying EBIT decreased by 117 per cent (or US$322 million) in FY19 to a loss of US$46 million as lower sales volumes (-US$215 million), average realised prices (-US$75 million), and higher contractor mining (-US$75 million) and concurrent rehabilitation (-US$37 million) costs more than offset a favourable movement in inventory (+US$70 million) and a weaker South African rand (+US$48 million).

Capital expenditure

Sustaining capital expenditure decreased by US$12 million in FY19 to US$90 million despite incurring additional costs to recover from and mitigate the impact of the Klipspruit dragline incident, and our investment in new mining areas at the Wolverkrans Middelburg Complex (WMC) returning to typical levels.

We also invested US$123 million in Major project capital expenditure in FY19 to progress the KPSX project, which was approved by the Board in November 2017. The 8Mtpa brownfield project extends the life of the colliery by more than 20 years. The project is approximately 72 per cent complete and remains on schedule and budget.

ILLAWARRA METALLURGICAL COAL

(100%)

Illawarra Metallurgical Coal operations are located in the southern coal fields of New South Wales, Australia.

South32 share	FY19	FY18
Metallurgical coal production (kt)	5,350	3,165
Energy coal production (kt)	1,297	1,079
Metallurgical coal sales (kt)[(1)]	5,044	2,937
Energy coal sales (kt)[(1)]	1,262	1,179
Realised metallurgical coal sales price (US$/t)	209	203
Realised energy coal sales price (US$/t)	66	76
Operating unit cost (US$/t)[(2)]	94	142

(1) Volumes and prices do not include any third party trading that may be undertaken independently of equity production.

(2) Operating unit cost is Revenue less Underlying EBITDA, excluding third party sales, divided by sales volume.

Volumes

Illawarra Metallurgical Coal saleable production increased by 57 per cent (or 2,403kt) to 6.6Mt in FY19 as the Dendrobium and Appin longwalls continued to perform strongly and we successfully concluded the renegotiation of all major labour agreements.

South32 share (US$M)	FY19	FY18
Revenue[(1)]	1,135	686
Underlying EBITDA	542	103
Underlying EBIT	359	(62)
Net operating assets	1,410	1,408
Capital expenditure	138	89
Major projects (>US$100M)	5	-
All other capital expenditure	133	89
Exploration expenditure	9	7
Exploration expensed	3	7

(1) Includes metallurgical coal and energy coal sales Revenue.

Operating costs

Operating unit costs decreased by 34 per cent in FY19 to US$94/t as the operation benefitted from a substantial increase in sales volumes and a commercial agreement to relinquish a portion of its Mining Lease in the Appin area.

Financial performance

Underlying EBIT increased by US$421 million in FY19 to US$359 million as stronger sales volumes (+US$449 million), a weaker Australian dollar (+US$47 million), and lower labour (+US$16 million) and electricity (+US$15 million) costs were partially offset by higher price-linked royalties (-US$31 million). The volume-related impact on costs (-US$80 million) was tempered by the high fixed-cost base of the operation.

Capital expenditure

Sustaining capital expenditure increased by US$44 million in FY19 to US$133 million as we increased underground development rates at Appin.

We also invested US$5 million in FY19 to progress studies for the Dendrobium Next Domain project, submitting our Environmental Impact Statement to the NSW Department of Planning and Environment during the June 2019 quarter. While still subject to necessary regulatory approvals, the project has the potential to extend the mine life of Dendrobium to approximately FY36, with a financial investment decision anticipated in H2 FY21.

MANGANESE BUSINESS

AUSTRALIA MANGANESE

(60% SHARE)

GEMCO mines manganese ore in the Northern Territory, while TEMCO is a manganese alloy plant in Tasmania.

South32 share	FY19	FY18
Manganese ore production (kwmt)	3,349	3,396
Manganese alloy production (kt)	154	165
Manganese ore sales (kwmt)	3,438	3,290
External customers	3,094	2,917
TEMCO	344	373
Manganese alloy sales (kt)	151	170
Realised external manganese ore sales price (US$/dmtu, FOB)[1][2]	6.35	6.38
Realised manganese alloy sales price (US$/t)[1]	1,311	1,518
Ore operating unit cost (US$/dmtu)[2][3]	1.59	1.63
Alloy operating unit cost (US$/t)[3]	947	906

(1) Realised ore prices are calculated as external sales Revenue less freight and marketing costs, divided by external sales volume. Realised alloy prices are calculated as sales Revenue, including sinter revenue, divided by alloy sales volume. Ore converted to sinter and alloy, and sold externally, is eliminated as an intracompany transaction.

(2) Manganese Australia FY19 average manganese content of ore sales was 45.9 per cent on a dry basis (FY18: 45.7 per cent). 95 per cent of FY19 external manganese ore sales (FY18: 94 per cent) were completed on a CIF basis. FY19 realised FOB ore prices and operating unit costs have been adjusted for freight and marketing costs of US$47 million (FY18: US$43 million), consistent with our FOB cost guidance.

(3) FOB ore operating unit cost is Revenue less Underlying EBITDA, freight and marketing costs, divided by ore sales volume. Alloy operating unit cost is Revenue less Underlying EBITDA divided by alloy sales volume and includes costs associated with sinter sold externally.

Volumes

Australia Manganese saleable ore production decreased by one per cent (or 47kwmt) to 3,349kwmt in FY19 as we maintained elevated production levels, operating our PC02 circuit at approximately 120 per cent of its design capacity. We also set an ore sales record of 3,438kwmt in FY19 as we continued to take advantage of strong market conditions. Manganese alloy saleable production decreased by seven per cent (or 11kt) to 154kt in FY19.

South32 share (US$M)	FY19	FY18
Revenue[1]	1,095	1,111
Manganese ore	930	884
Manganese alloy	198	258
Intra-segment elimination	(33)	(31)
Underlying EBITDA	698	710
Manganese ore	643	606
Manganese alloy	55	104
Underlying EBIT	638	651
Manganese ore	588	552
Manganese alloy	50	99
Net operating assets/(liabilities)	316	289
Manganese ore	303	284
Manganese alloy	13	5
Capital expenditure	65	48
All other capital expenditure	65	48
Exploration expenditure	2	1
Exploration expensed	1	1

(1) Revenues of sales from GEMCO to TEMCO are eliminated as part of the consolidation.

Operating costs

FOB manganese ore operating unit costs decreased by two per cent in FY19 to US$1.59/dmtu as record sales volumes and the optimisation of contractor usage mitigated an increase in strip ratio (FY19: 4.5, FY18: 4.0) and a temporary decline in product yield.

Manganese alloy operating unit costs increased by five per cent to US$947/t as raw material input costs rose and our TEMCO smelter produced lower volumes. We continue to review options for our manganese alloy smelters as changes in market dynamics have reduced the attractiveness of our exposure and we will update the market in due course.

Financial performance

Underlying EBIT decreased by two per cent (or US$13 million) in FY19 to US$638 million as lower realised alloy prices (-US$18 million) and a rise in diesel, coke and freight costs (-US$13 million) were only partially offset by a weaker Australian dollar (+US$20 million) and lower maintenance contractor costs at GEMCO (+US$6 million).

Our average realised price for external sales of Australian ore was in line with the high-grade 44 per cent manganese lump ore index in FY19, despite the 40 per cent grade PC02 product contributing 10 per cent to the sales mix (FY18: nine per cent).

Capital expenditure

Sustaining capital expenditure increased by US$17 million in FY19 to US$65 million (including US$6 million for alloys).

SOUTH AFRICA MANGANESE

(ORE 44.4% SHARE, ALLOY 60% SHARE)

South Africa Manganese comprises Hotazel Manganese Mines in the Kalahari Basin and Metalloys Manganese Smelter in Meyerton.

South32 share	FY19	FY18
Manganese ore production (kwmt)	2,187	2,145
Manganese alloy production (kt)	69	79
Manganese ore sales (kwmt)	2,113	2,082
External customers	1,990	1,919
Metalloys	123	163
Manganese alloy sales (kt)	73	67
Realised external manganese ore sales price (US$/dmtu, FOB)(1)(2)	5.57	5.21
Realised manganese alloy sales price (US$/t)	1,068	1,269
Ore operating unit cost (US$/dmtu)(2)(3)	2.69	2.53
Alloy operating unit cost (US$/t)(3)	1,178	970

(1) Volumes and prices do not include any third party trading that may be undertaken independently of equity production. Realised ore prices are calculated as external sales Revenue less freight and marketing costs, divided by external sales volume. Ore converted to alloy, and sold externally, is eliminated as an intracompany transaction. Manganese ore sales are grossed up to reflect a 60 per cent accounting effective interest.

(2) Manganese South Africa FY19 average manganese content of external ore sales was 40.5 per cent on a dry basis (FY18: 39.9 per cent). 74 per cent of FY19 external manganese ore sales (FY18: 70 per cent) were completed on a CIF basis. FY19 realised FOB ore prices and operating costs have been adjusted for freight and marketing costs of US$40 million (FY18: US$33 million), consistent with our FOB cost guidance.

(3) FOB ore operating unit cost is Revenue less Underlying EBITDA, freight and marketing costs, divided by ore sales volume. Alloy operating unit cost is Revenue less Underlying EBITDA, excluding third party sales, divided by alloy sales volume.

Volumes

South Africa Manganese saleable ore production increased by two per cent (or 42kwmt) to 2,187kwmt in FY19 as productivity improvements at our high-grade Wessels mine delivered an increase in premium material. Manganese alloy saleable production decreased by 13 per cent (or 10kt) to 69kt in FY19.

South32 share (US$M)	FY19	FY18
Revenue(1)	553	503
Manganese ore(2)	488	436
Manganese alloy	78	85
Intra-segment elimination	(13)	(18)
Underlying EBITDA	215	215
Manganese ore(2)	223	195
Manganese alloy	(8)	20
Underlying EBIT	188	186
Manganese ore(2)	205	175
Manganese alloy	(17)	11
Net operating assets	312	297
Manganese ore(2)	253	234
Manganese alloy	59	63
Capital expenditure	30	17
All other capital expenditure	30	17

(1) Revenues associated with sales from Hotazel Manganese Mines (HMM) to Metalloys are eliminated as part of the consolidation.

(2) Consistent with the presentation of South32's segment information, South Africa Manganese ore production and sales have been reported at 60 per cent. South32 has a 44.4 per cent ownership interest in HMM. 26 per cent of HMM is owned by a B-BBEE consortium comprising Ntsimbintle Mining (nine per cent), NCAB Resources (seven per cent), Iziko Mining (five per cent) and HMM Education Trust (five per cent). The interests owned by NCAB Resources, Iziko Mining and HMM Education Trust were acquired using vendor finance with the loans repayable via distributions attributable to these parties, pro rata to their share in HMM. Until these loans are repaid, South32's interest in HMM is accounted at 54.6 per cent.

Operating costs

FOB manganese ore operating unit costs increased by six per cent in FY19 to US$2.69/dmtu. Higher price-linked royalties combined with an increase in workforce activity and the use of higher cost trucking to take advantage of strong market conditions, more than offset the effect of a weaker South African rand.

Manganese alloy operating unit costs increased by 21 per cent to US$1,178/t as an unfavourable movement in inventory and higher labour costs more than offset higher sales volumes from our Metalloys smelter. We continue to review options for our manganese alloy smelters as changes in market dynamics have reduced the attractiveness of our exposure and we will update the market in due course.

Financial performance

Underlying EBIT increased by US$2 million in FY19 to US$188 million as higher ore sales volumes (+US$35 million) and a weaker South African rand (+US$24 million) were largely offset by lower realised alloy prices (-US$14 million), an increase in costs associated with opportunistic trucking of ore (-US$10 million), an unfavourable movement in alloy inventory (-US$10 million), lower other income (-US$10 million) and higher labour costs (-US$9 million).

Our average realised price for external sales of South African ore reflects the medium grade 37 per cent manganese lump ore index (FOB Port Elizabeth, South Africa) in FY19 as we increased production of premium material, reducing the contribution of our lower quality fines product (FY19: six per cent, FY18: 13 per cent).

Capital expenditure

Sustaining capital expenditure increased by US$13 million in FY19 to US$30 million (including US$6 million for alloys).

OTHER METALS BUSINESS

CERRO MATOSO

(99.9% SHARE)

Cerro Matoso is a producer of ferronickel and has been operating for more than 30 years in Colombia.

South32 share	FY19	FY18
Ore mined (kwmt)	2,278	3,741
Ore processed (kdmt)	2,738	2,722
Ore grade processed (%, Ni)	1.66	1.79
Payable nickel production (kt)	41.1	43.8
Payable nickel sales (kt)	41.2	43.3
Realised nickel sales price (US$/lb)	5.38	5.86
Operating unit cost (US$/lb)(1)	3.99	3.67
Operating unit cost (US$/t)(2)	132	129

(1) Operating unit cost is Revenue less Underlying EBITDA divided by sales volume.

(2) Operating unit cost per tonne is Revenue less Underlying EBITDA divided by ore processed. Periodic movements in finished product inventory may impact operating unit costs as related marketing costs may change.

Volumes

Cerro Matoso payable nickel production decreased by six per cent (or 2.7kt) to 41.1kt in FY19 following a planned increase in the contribution of lower grade stockpiled ore feed.

South32 share (US$M)	FY19	FY18
Revenue	489	559
Underlying EBITDA	127	209
Underlying EBIT	40	120
Net operating assets	479	551
Capital expenditure	32	22
All other capital expenditure	32	22
Exploration expenditure	10	9
Exploration expensed	8	8

Operating costs

Operating unit costs increased by nine per cent in FY19 to US$3.99/lb. The impact of lower production, increased contractor and maintenance spend and costs arising from the Constitutional Court of Colombia ruling more than offset a weaker Colombian peso and energy procurement and usage optimisations intended to partially mitigate inflationary cost pressure.

Financial performance

Underlying EBIT decreased by US$80 million in FY19 to US$40 million as the lower average realised nickel price (-US$45 million), sales volumes (-US$25 million) and higher maintenance expenditure (-US$10 million), were partially offset by a weaker Colombian peso (+US$18 million).

Capital expenditure

Sustaining capital expenditure increased by US$10 million in FY19 to US$32 million.

CANNINGTON

(100% SHARE)

Cannington is a silver, lead and zinc mining and processing operation in North-West Queensland.

South32 share	FY19	FY18
Ore mined (kwmt)	2,725	2,463
Ore processed (kdmt)	2,495	2,355
Ore grade processed (g/t, Ag)	184	194
Ore grade processed (%, Pb)	5.0	5.3
Ore grade processed (%, Zn)	3.0	2.6
Zinc equivalent production (kt)(1)	193.6	187.2
Payable silver production (koz)	12,201	12,491
Payable lead production (kt)	101.4	104.4
Payable zinc production (kt)	51.6	41.3
Payable silver sales (koz)	13,034	11,985
Payable lead sales (kt)	101.5	97.9
Payable zinc sales (kt)	47.6	45.0
Realised silver sales price (US$/oz)	14.4	16.6
Realised lead sales price (US$/t)	1,754(3)	2,463
Realised zinc sales price (US$/t)	2,122(3)	3,185
Operating unit cost (US$/t ore processed)(2)	123(3)	150

(1) Payable zinc equivalent (kt) was calculated by aggregating revenues from payable silver, lead and zinc, and dividing the total Revenue by the price of zinc. FY18 realised prices for zinc (US$3,185/t), lead (US$2,463/t) and silver (US$16.6/oz) have been used for FY18 and FY19.

(2) Operating unit cost is Revenue less Underlying EBITDA divided by ore processed. Periodic movements in finished product inventory may impact operating unit costs.

(3) The FY19 results reflect the Group's adoption of AASB 15, with revenue recognised net of treatment and refining charges (previously recognised on a gross basis with treatment and refining charges included as a separate expense).

Volumes

Cannington payable zinc equivalent production increased by three per cent (or 6.4kt) to 193.6kt in FY19 as improved productivity underground supported higher mill throughput and zinc grades improved in accordance with our expectations.

South32 share (US$M)	FY19	FY18
Revenue	467	584
Underlying EBITDA	161	230
Underlying EBIT	104	183
Net operating assets	243	210
Capital expenditure	55	51
All other capital expenditure	55	51
Exploration expenditure	4	3
Exploration expensed	3	2

Operating costs

Operating unit costs decreased by 18 per cent to US$123/t in FY19 as the adoption of AASB 15, which affects the accounting classification of treatment and refining charges, reduced costs by US$19/t. A weaker Australian dollar and lower power costs following the renegotiation of a supply contract provided a further benefit, offsetting additional haulage costs incurred as a result of significant floods in North Queensland during the March 2019 quarter.

Financial performance

Underlying EBIT decreased by 43 per cent (or US$79 million) in FY19 to US$104 million as lower average realised prices (-US$107 million) and higher labour (-US$11 million) and freight (-US$6 million) costs were partially offset by an increase in sales volumes (+US$34 million) and a weaker Australian dollar (+US$23 million).

Capital expenditure

Sustaining capital expenditure increased by US$4 million in FY19 to US$55 million.

THIRD PARTY PRODUCT SALES

The Group differentiates the sale of its production from the sale of third party products due to a significant difference in profit margin earned on these sales. The table below shows the breakdown between the Group's production and third party products:

US$M	FY19	FY18
Group production		
Revenue	6,468	6,682
Related operating costs (net of other income)	(5,483)	(5,424)
Group production Underlying EBIT	985	1,258
Margin on Group production	15.2%	18.8%
Third party products		
Revenue	806	867
Related operating costs (net of other income)	(801)	(842)
Third party Underlying EBIT	5	25
Margin on third party products	0.6%	2.9%

The Group engages in third party trading for the following reasons:

- To ensure a consistent supply of materials to its customers;
- As a result of production variability and occasional shortfalls from the Group's operations; and
- To enhance value through product blending and supply chain optimisation.

OUTLOOK

This report contains forward-looking statements. While these forward-looking statements reflect South32's expectations at the date of this report, they are not guarantees or predictions of future performance or statements of fact. They involve known and unknown risks and uncertainties, which may cause actual results to differ materially from those expressed in the statements contained in this Annual Report. For further information regarding South32's approach to risk, please see page 18 of this Annual Report.

South32 makes no representation, assurance or guarantee as to the accuracy or likelihood or fulfilment of any forward-looking statement or any outcomes expressed or implied in any forward-looking statement. Except as required by applicable laws or regulations, the South32 Group does not undertake to publicly update or review any forward-looking statements, whether as a result of new information or future events. Past performance cannot be relied on as a guide to future performance.

Information on likely developments in the Group's business strategies, prospects and operations for future financial years and the expected results that could result in unreasonable prejudice to the Group (for example, information that is commercially sensitive, confidential or could give a third party a commercial advantage) has not been included below. The categories of information omitted include forward-looking estimates and projections prepared for internal management purposes, information regarding the Group's operations and projects, which are developing and susceptible to change, and information relating to commercial contracts.

PRODUCTION

The Group's production volumes are expected to rise by three per cent in FY20 (based on revenue-equivalent production which assumes average realised prices remain unchanged from FY19). Key guidance assumptions include:

- Illawarra Metallurgical Coal returning to a three longwall configuration from H2 FY20;
- South Africa Energy Coal recovering from the dragline incident and commencing production from the Klipspruit Extension Project;
- An improvement in calciner availability at Worsley Alumina; and
- Brazil Alumina realising the full benefits of the De-bottlenecking Phase One project following the introduction of package boilers to improve the reliability in steam generation.

Production guidance (South32's share)[(1)]

	FY19	FY20e[(2)]	FY21e[(2)]	Key guidance assumptions
Worsley Alumina				**FY20 guidance unchanged**
Alumina production (kt)	3,795	3,965	3,965	Improvement in calciner availability and a drawdown of excess hydrate.
Brazil Alumina (non-operated)				**FY20 guidance decreased by three per cent**
Alumina production (kt)	1,255	1,330	1,370	Ramp-up of package boilers installed in the June 2019 quarter expected to delay the realisation of benefits from the De-bottlenecking Phase One project.
Hillside Aluminium				**FY20 guidance unchanged (subject to load-shedding)**
Aluminium production (kt)	715	720	720	Smelter to test its technical capacity following record FY19 production.
Mozal Aluminium				**FY20 guidance unchanged (subject to load-shedding)**
Aluminium production (kt)	267	273	273	AP3XLE energy efficiency project to add incremental production between FY20 and FY24.
Illawarra Metallurgical Coal				**FY20 guidance unchanged**
Total coal production (kt)	6,647	7,000	8,000	Expected return to a three longwall configuration during the June 2020 quarter.
Metallurgical coal production (kt)	5,350	5,800	6,800	
Energy coal production (kt)	1,297	1,200	1,200	
Australia Manganese				**FY20 guidance provided for the first time (subject to market demand)**
Manganese ore production (kwmt)	3,349	3,560	Subject to demand	PC02 circuit to continue to operate above nameplate capacity.
South Africa Manganese				**FY20 guidance provided for the first time (subject to market demand)**
Manganese ore production (kwmt)	2,187	2,100	Subject to demand	Sales of lower quality fines product remain subject to market demand.
Cerro Matoso				**FY20 guidance unchanged**
Ore to kiln (kt)	2,738	2,500	2,750	Planned furnace outage in the June 2020 quarter.
Payable nickel production (kt)	41.1	35.6	37.4	
Cannington				**FY20 guidance increased by six per cent in payable zinc equivalent production[(3)]**
Ore processed (kdmt)	2,495	2,700	2,600	Silver, lead and zinc production revised higher to reflect an increase in mill throughput as we draw down inventory.
Payable zinc equivalent production (kt)[(3)]	218.2	221.0	213.7	
Payable silver production (koz)	12,201	11,200	10,550	
Payable lead production (kt)	101.4	104.0	103.0	
Payable zinc production (kt)	51.6	59.0	57.0	

	FY19	FY20e[(2)]	Key guidance assumptions
South Africa Energy Coal			**FY20 guidance decreased (previously 30.3Mt)**
Total coal production (kt)	24,979	26,000 - 28,000	Recovery from the Klipspruit dragline incident and a planned reduction in contractor activity at the WMC, as we respond to the lower thermal coal price environment and adjust volumes to maximise margins.
Domestic coal production (kt)	14,978	15,300 - 16,100	
Export coal production (kt)	10,001	10,700 - 11,900	
			FY21 not provided subject to divestment

(1) South32's ownership share of operations is as follows: Worsley Alumina (86 per cent share), Hillside Aluminium (100 per cent), Mozal Aluminium (47.1 per cent share), Brazil Alumina (Alumina 36 per cent share, Aluminium 40 per cent share), South Africa Energy Coal (100 per cent until B-BBEE vendor loans are repaid), Illawarra Metallurgical Coal (100 per cent), Australia Manganese (60 per cent share), South Africa Manganese (60 per cent share), Cerro Matoso (99.9 per cent share), Cannington (100 per cent), Hermosa (100 per cent), and Eagle Downs Metallurgical Coal (50 per cent share).

(2) The denotation (e) refers to an estimate or forecast year.

(3) Payable zinc equivalent (kt) was calculated by aggregating revenues from payable silver, lead and zinc, and dividing the total revenue by the price of zinc. FY19 realised prices for zinc (US$2,122/t), lead (US$1,754/t) and silver (US$14.4/oz) were used for FY19, FY20e and FY21e.

COSTS AND CAPITAL EXPENDITURE

Stronger production volumes, lower support costs following simplification of the Group's functional structures that are on track to deliver US$50 million in annual savings, and the realisation of benefits from our labour, energy and materials usage are expected to combine with a stronger US dollar to lower operating unit costs across the majority of our operations in FY20. While we do not provide unit cost guidance for our downstream processing operations, the lagged effect of a reduction in raw material prices during H2 FY19 is expected to provide some relief to the cost base of our aluminium smelters in FY20.

Group and unallocated costs of US$90 million are expected in FY20 as we increase functional support for our development projects and invest in technology to support our operations. We also expect to capitalise US$30 million of expenditure on information technology systems.

Operating unit cost guidance(1)(2)

	FY18	FY19	FY20e(3)(4)	Key guidance assumptions
Worsley Alumina (US$/t)	235	238	230	Increased production, lower energy costs following the renegotiation of legacy gas contracts and lower caustic soda price assumptions.
Brazil Alumina (non-operated) (US$/t)	252	270	Not provided	Not provided but expected to benefit from lower caustic soda prices and a six per cent increase in production volumes.
Hillside Aluminium (US$/t)	1,826	2,045	Not provided	Not provided but expected to benefit from the lagged effect of lower raw material input costs and the workforce restructure completed in the June 2019 quarter.
Mozal Aluminium (US$/t)	1,810	2,026	Not provided	Not provided but expected to benefit from the lagged effect of lower raw material input costs.
Illawarra Metallurgical Coal (US$/t)	142	94	97	Increased production volumes and lower maintenance spend, more than offset by the prior year benefit from an agreement to relinquish a portion of a Mining Lease on commercial terms.
Australia Manganese Ore (FOB) (US$/dmtu)	1.63	1.59	1.60	Equipment productivity gains and the PC02 circuit operating above design capacity to offset a further planned increase in strip ratio.
South Africa Manganese Ore (FOB) (US$/dmtu)	2.53	2.69	2.44	Weaker South African rand and lower price-linked royalties.
Cerro Matoso				Lower price-linked royalties and the continued benefit of our energy optimisation strategy to offset the impact of lower production.
(US$/t)(5)	129	132	128	
(US$/lb)	3.67	3.99	4.00	
Cannington (US$/t)(6)	150	123	119	Higher mill throughput and lower haulage costs.
South Africa Energy Coal (US$/t)	36	40	37-40	Weaker South African rand and a planned reduction in contractor activity at the WMC.

(1) South32's ownership share of operations is as follows: Worsley Alumina (86 per cent share), Hillside Aluminium (100 per cent), Mozal Aluminium (47.1 per cent share), Brazil Alumina (Alumina 36 per cent share, Aluminium 40 per cent share), South Africa Energy Coal (100 per cent until B-BBEE vendor loans are repaid), Illawarra Metallurgical Coal (100 per cent), Australia Manganese (60 per cent share), South Africa Manganese (60 per cent share), Cerro Matoso (99.9 per cent share), Cannington (100 per cent), Hermosa (100 per cent), and Eagle Downs Metallurgical Coal (50 per cent share).

(2) Operating unit cost is Revenue less Underlying EBITDA, excluding third party sales, divided by sales volume. Operating cost is Revenue less Underlying EBITDA excluding third party sales.

(3) FY20 operating unit cost guidance includes royalties (where appropriate), the influence of exchange rates and includes various assumptions for FY20, including: an alumina price of US$348/t; an average blended coal price of US$158/t for Illawarra Metallurgical Coal; a manganese ore price of US$5.64/dmtu for 44 per cent manganese product; a nickel price of US$5.54/lb; a thermal coal price of US$69/t (API4) for South Africa Energy Coal; a silver price of US$15.82/troy oz; a lead price of US$1,921/t (gross of treatment and refining charges); a zinc price of US$2,483/t (gross of treatment and refining charges); an AUD:USD exchange rate of 0.70; a USD:ZAR exchange rate of 15.06; a USD:COP exchange rate of 3,112; and a reference price for caustic soda; all of which reflected forward markets as at June 2019 or our internal expectations.

(4) The denotation (e) refers to an estimate or forecast year.

(5) US dollar per tonne of ore to kiln. Periodic movements in finished product inventory may impact operating unit costs.

(6) US dollar per tonne of ore processed. Periodic movements in finished product inventory may impact operating unit costs.

CAPITAL EXPENDITURE

Sustaining capital expenditure, excluding equity accounted investments, is expected to rise by US$82 million to US$515 million as we further increase underground development rates and expenditure on infrastructure improvements at Illawarra Metallurgical Coal in support of a return to a three longwall configuration, continue to invest in tailings storage capacity across our portfolio and commence a major refurbishment of a furnace at Cerro Matoso. Sustaining capital expenditure associated with our equity accounted investments is expected to be largely unchanged at US$90 million as we also continue to invest in additional tailings storage capacity at Australia Manganese.

Major project capital expenditure is expected to increase by US$37 million to US$256 million in FY20 as we increase activity at the Hermosa project and progress study work for the Eagle Downs Metallurgical Coal and Dendrobium Next Domain projects. South Africa Energy Coal's KPSX project is approximately 72 per cent complete and remains on schedule and budget for completion in FY21.

Capital expenditure guidance (South32's share)(1)(2)

US$M	FY18	FY19	FY20e(3)
Worsley Alumina	52	57	60
Brazil Alumina	12	26	35
Hillside Aluminium	28	19	23
Mozal Aluminium	10	19	12
Illawarra Metallurgical Coal	89	133	185
Australia Manganese	48	65	64
South Africa Manganese	17	30	26
Cerro Matoso	22	32	55
Cannington	51	55	55
South Africa Energy Coal	102	90	90
Group and unallocated	2	2	-
Sustaining capital expenditure (including equity accounted investments)	433	528	605
Equity accounting adjustment(4)	(65)	(95)	(90)
Sustaining capital expenditure (excluding equity accounted investments)	368	433	515
Hermosa	-	85	109
Illawarra Metallurgical Coal – Dendrobium Next Domain	-	5	21
Eagle Downs Metallurgical Coal	-	6	11
South Africa Energy Coal	62	123	115
Major capital expenditure	62	219	256
Total capital expenditure (including equity accounted investments)	495	747	861

(1) South32's ownership share of operations is as follows: Worsley Alumina (86 per cent share), Hillside Aluminium (100 per cent), Mozal Aluminium (47.1 per cent share), Brazil Alumina (Alumina 36 per cent share, Aluminium 40 per cent share), South Africa Energy Coal (100 per cent until B-BBEE vendor loans are repaid), Illawarra Metallurgical Coal (100 per cent), Australia Manganese (60 per cent share), South Africa Manganese (60 per cent share), Cerro Matoso (99.9 per cent share), Cannington (100 per cent), Hermosa (100 per cent), and Eagle Downs Metallurgical Coal (50 per cent share).

(2) Total capital expenditure comprises capital expenditure, the purchase of intangibles and capitalised exploration expenditure. Capital expenditure comprises Sustaining capital expenditure and Major projects capital expenditure. Sustaining capital expenditure comprises Stay-in-business (SIB), Minor discretionary and Deferred stripping (including underground development) capital expenditure.

(3) The denotation (e) refers to an estimate or forecast year.

(4) The equity accounting adjustment reconciles the proportional consolidation of the South32 manganese operations to the treatment of the manganese operations on an equity accounted basis.

EXPLORATION EXPENDITURE

Guidance for greenfield exploration expenditure to progress our early stage projects is US$30 million (FY19: US$34 million). We also expect to capitalise US$25 million (FY19: US$18 million) of exploration expenditure at Hermosa to further increase our knowledge of the Taylor deposit and the greater Hermosa land package.

DEPRECIATION AND AMORTISATION, AND TAX EXPENSE

Depreciation and amortisation (excluding equity accounted investments) is expected to reduce to approximately US$735 million (FY19: US$757 million) following the recognition of impairment charges for South Africa Energy Coal during the period. Depreciation and amortisation of US$95 million (FY19: US$87 million) is expected for our equity accounted investments. Guidance includes the impact from adopting the new AASB 16 accounting standard from 1 July 2019.

Our geographical earnings mix continues to have a significant bearing on our ETR given differing country tax rates, while the impact of permanent differences is magnified when margins are compressed. Although it is difficult to predict our ETR (excluding equity accounted investments), we do expect it to remain at elevated levels in FY20 (FY19: 37.8 per cent) should the compressed margins within our African aluminium operations persist. In addition, the de-recognition of tax assets in South Africa Energy Coal will further increase the Group's ETR should the operation make losses in FY20.

RESOURCES AND RESERVES

As required by Chapter 5 of the ASX Listing Rules, we report Mineral Resources and Ore Reserves (including Coal Resources and Coal Reserves) in accordance with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code).

In this report, information relating to Mineral Resources and Ore Reserves is based on, and fairly represents, information and supporting documentation prepared by our Competent Persons.

A Competent Person is defined in the JORC Code, they have sufficient experience relevant to the style of mineralisation, the type of deposit under consideration and the activity being undertaken.

Each of our Competent Persons has given consent to the inclusion of the information in this report in the form and context in which it appears. You can find more details on each of their professional affiliations, employer and areas of accountability on page 42. Unless we state otherwise, all Competent Persons listed are full-time employees at South32, or at one of our related entities.

We report Mineral Resources and Ore Reserves in 100 per cent terms and represent estimates as at 30 June 2019. Our Mineral Resource estimations include Measured and Indicated Mineral Resources which, after the application of all Modifying Factors, and development of a mine plan, have been classified as Ore Reserves.

We report all quantities as dry metric tonnes (unless we state otherwise).

It's important to note that Mineral Resources and Ore Reserves are estimations, not precise calculations. We've rounded tonnes and grade information to reflect the relative uncertainty of the estimate, which is why computational differences may be present in the totals.

Our long-range forecasts are the basis for the commodity prices and exchange rates used to estimate the economic viability of Ore Reserves.

Our Ore Reserves are within existing, permitted mining tenements. Our mineral leases are of sufficient duration, or, convey a legal right to renew the tenure, to enable all Ore Reserves on the leased properties to be mined in accordance with the current production schedules. These Ore Reserves may include areas where additional approvals are required, and it's expected that such approvals will be obtained within the timeframe needed for the current production schedule.

OUR GOVERNANCE ARRANGEMENTS AND INTERNAL CONTROLS

We have internal standards and governance arrangements that cover regulatory requirements for public reporting. Our governance processes are managed by the Mining Governance function in coordination with the Company Secretariat function. By doing this, we're making sure our public reporting is correct and accurate.

Our comprehensive review and audit program is aimed at assuring our Mineral Resources and Ore Reserves estimates. This includes:

- Annual review of Mineral Resources and Ore Reserves declarations and reports;
- Annual review of reconciliation performance metrics for operating mines;
- Periodic internal mine planning and Ore Reserve audits; and
- Independent audit of Mineral Resources or Ore Reserves that are new or have materially changed.

In FY19, we undertook one independent assurance audit of Mineral Resources and three internal mine planning and Ore Reserve assurance audits. The frequency and scope of the audits are a function of the perceived risks and uncertainties associated with a particular Mineral Resource and Ore Reserve.

The accompanying tables outline our Mineral/Coal Resources and Ore/Coal Reserves holdings.

AT A GLANCE - RESOURCES AND RESERVES (AS AT 30 JUNE 2019)

Operations and development options	Total Ore/ Coal Reserve (Mt)	Reserve Life Years[1]	Total Mineral/ Coal Resource (Mt)
Worsley Alumina	270	15	1,190
Brazil Alumina	44	2.7	494
South Africa Energy Coal[2][3]	510	26	4,970
Eagle Downs[4]			1,080
Illawarra Metallurgical Coal[2][3]	107	19	1,240
Cerro Matoso	32	10	312
Australia Manganese	65	6.4	162
South Africa Manganese[3]	130	58	235
Cannington	21	12	85
Taylor			155

(1) Scheduled extraction period in years for the Total Ore Reserves in the approved Life of Operation Plan.

(2) Coal Reserves in this table are presented as Marketable Coal Reserves. Process recoveries are reported in the following detailed disclosures for each Coal operation.

(3) Reserve Life for Illawarra Coal, South Africa Manganese and South Africa Energy Coal is reported as the life of scheduled Ore/Coal Reserves for Bulli seam, Wessels and Klipspruit respectively. The Reserve Life for the remaining operations are stated in the following detailed disclosures.

(4) Metallurgical coal development option reported for the first time.

OUR EXPLORATION, RESEARCH AND DEVELOPMENT

In our operations, we carry out the necessary exploration, research and development to support our activities. Our brownfield exploration activities target the delineation and categorisation of mineral deposits connected or adjacent to our existing operations. Our greenfield exploration activities focus on the discovery and delineation of opportunities outside of our operational footprint, with a bias to base metals.

During FY19, we expanded our global exploration footprint; we funded greenfield exploration in Australia, Peru, Colombia, Sweden, Mexico and the United States. Our exploration expenditure for FY19 was US$76 million (FY18: US$41.3 million) of which US$42 million related to brownfield and US$34 million related to greenfield (FY18: US$20.0 million and US$23.1 million respectively).

FOREIGN ESTIMATE

The information that relates to estimates of Mineral Resources for the Clark Deposit (formerly the Central Deposit) of the Hermosa project is a foreign estimate under ASX Listing Rules and is not reported in accordance with the JORC Code.

We are not in possession of any new information or data relating to that foreign estimate that materially impacts the reliability of the estimate, nor do we have the ability to verify the foreign estimate as a Mineral Resource in accordance with the JORC Code. The supporting information contained in the clarifying statement in the market announcement 'South32 to acquire Arizona Mining in agreed all cash offer' dated 18 June 2018 continues to apply and has not materially changed.

Our Competent Persons have not done sufficient work to classify the foreign estimate as a Mineral Resource or Ore Reserve in accordance with the JORC Code. It is uncertain that following evaluation and further exploration we will be able to report the foreign estimate as a Mineral Resource or Ore Reserve in accordance with the JORC Code. During FY20 we will commence a work program to increase confidence in the resource to ensure that resources are reported in accordance with the JORC Code.

COMPETENT PERSONS

MINERAL RESOURCES

WORSLEY: P Soodi Shoar, MAusIMM; **J Binoir**, MAusIMM; **R Brown**, MAusIMM, employed by SRK Consulting (Australasia) Pty Ltd

MINERAÇÃO RIO DO NORTE: M A H Monteiro, MAusIMM, employed by Mineração Rio do Norte S.A.

GEMCO: J Harvey, MAusIMM; **D Hope**, MAusIMM

WESSELS & MAMATWAN: E P Ferreira, Pri. Sci. Nat., SACNASP; **F T Rambuda**, Pri. Sci. Nat., SACNASP

CERRO MATOSO: I Espitia, MAusIMM

CANNINGTON: P Boamah, MAusIMM

TAYLOR: M Readford, MAusIMM (CP)

ORE RESERVES

WORSLEY: G Burnham, MAusIMM

MINERAÇÃO RIO DO NORTE: C J da Silva, MAusIMM, employed by Mineração Rio do Norte S.A.

GEMCO: U Sandilands, MAusIMM

WESSELS & MAMATWAN: J Lamprecht, Pri. Sci. Nat., SACNASP, employed by Deswik Mining Consultants (Pty) Ltd

CERRO MATOSO: N Monterroza, MAusIMM

CANNINGTON: T Curypko, MAusIMM (CP)

COAL RESOURCES

LEANDRA & NAUDESBANK: S Nzama, Pri. Sci. Nat., SACNASP

KHUTALA: S Ramluggan, Pri. Sci. Nat., SACNASP

WOLVEKRANS MIDDELBURG COMPLEX: S Kara, Pri. Sci. Nat., SACNASP; **L Visser**, Pri. Sci. Nat., SACNASP

KLIPSPRUIT: J Conradie, Pri. Sci. Nat., SACNASP, MGSSA

PEGASUS & DAVEL: P Maseko, Pri. Sci. Nat., SACNASP

BULLI & WONGAWILLI: J Gale, MAusIMM

EAGLE DOWNS: M Blaik, MAusIMM, employed by JB Mining Services Pty Ltd

COAL RESERVES

KHUTALA & KLIPSPRUIT: P Mulder, MSAIMM

WOLVEKRANS MIDDELBURG COMPLEX: P Mulder, MSAIMM; **Z Smith**, MSAIMM

BULLI & WONGAWILLI: M Rose, MAusIMM

ALUMINIUM

MINERAL RESOURCES

As at 30 June 2019		Measured Mineral Resources			Indicated Mineral Resources			Inferred Mineral Resources			Total Mineral Resources			South32 Interest	As at 30 June 2018 Total Mineral Resources		
Deposit[1]	Material Type	Mt	% A. Al_2O_3	% R. SiO_2	Mt	% A. Al_2O_3	% R. SiO_2	Mt	% A. Al_2O_3	% R. SiO_2	Mt	% A. Al_2O_3	% R. SiO_2	%	Mt	% A. Al_2O_3	% R. SiO_2
Worsley[2]	Laterite	364	28.3	1.4	416	29.3	2.0	408	28.7	2.1	1,190	28.8	1.9	86	1,170	28.7	1.9
MRN[3]	MRN Washed	311	49.7	4.4	48	49.2	4.8	134	49.9	3.7	494	49.7	4.2	14.8	503	49.7	4.2

ORE RESERVES

As at 30 June 2019		Proved Ore Reserves			Probable Ore Reserves			Total Ore Reserves			Reserve Life	South32 Interest	As at 30 June 2018 Total Ore Reserves			Reserve Life
Deposit[1][6][7]	Ore Type	Mt	% A. Al_2O_3	% R. SiO_2	Mt	% A. Al_2O_3	% R. SiO_2	Mt	% A. Al_2O_3	% R. SiO_2	Years	%	Mt	% A. Al_2O_3	% R. SiO_2	Years
Worsley[4]	Laterite	254	27.7	1.7	16	28.8	1.4	270	27.7	1.7	15	86	298	27.8	1.7	17
MRN[3][5]	MRN Washed	35	48.2	5.6	9.2	49.4	5.0	44	48.5	5.5	2.7	14.8	43	48.8	5.3	2.7

(1) Cut-off grade

	Mineral Resources	Ore Reserves
Worsley	Variable ranging from 22-25% $A.Al_2O_3$, ≤3.5% $R.SiO_2$ and ≥1m thickness.	Variable ranging from 22.5-25% $A.Al_2O_3$, ≤3.5% $R.SiO_2$ and ≥1m thickness (except Marradong West ≥2m thickness).
MRN	≥46% $A.Al_2O_3$, ≤7% $R.SiO_2$, ≥1m thickness and ≥30% recovery on weight per cent basis.	≥46% $A.Al_2O_3$, ≤7% $R.SiO_2$, ≥1m thickness and ≥30% recovery on weight per cent basis.

(2) Mineral Resource increase due to additional drilling and updated resource model.

(3) MRN washed tonnes and grades represent the expected product based on forecast beneficiation yield.

(4) Ore Reserves decrease following update of reserve model and sterilization drilling.

(5) Ore Reserves increase following granting of Operational Licenses.

(6) Ore delivered to process plant.

(7) Metallurgical recovery for the operations:

Worsley	94.1%
MRN	90%

ENERGY COAL

South Africa Energy Coal

COAL RESOURCES

As at 30 June 2019			Measured Coal Resources					Indicated Coal Resources					Inferred Coal Resources					Total Coal Resources					South32 Interest	As at 30 June 2018 Total Coal Resources				
Deposit[(1)(2)]	Mining Method	Coal Type	Mt	% Ash	% VM	% S	KCal/kg CV	Mt	% Ash	% VM	% S	KCal/kg CV	Mt	% Ash	% VM	% S	KCal/kg CV	Mt	% Ash	% VM	% S	KCal/kg CV	%	Mt	% Ash	% VM	% S	KCal/kg CV
Operating mines																							92					
Khutala	OC	Th	1,098	30.4	22.6	1.20	4,890											1,098	30.4	22.6	1.20	4,890		1,099	30.4	22.6	1.20	4,890
	UG	Th	123	34.7	20.3	0.77	4,390											123	34.7	20.3	0.77	4,390		130	34.7	20.3	0.77	4,390
Klipspruit	OC	Th	311	28.3	22.6	1.28	5,210	151	30.8	22.0	1.22	5,000	171	31.2	21.7	1.15	4,950	633	29.7	22.2	1.23	5,090		641	29.7	22.2	1.22	5,090
Wolvekrans	OC	Th	629	26.9	22.6	1.11	5,470	18	29.9	22.8	0.99	5,110	178	24.5	23.6	1.24	5,710	825	26.5	22.8	1.13	5,510		843	26.4	22.8	1.16	5,510
Middelburg Complex (WMC)	SP	Th						7.1	31.1	20.2	0.87	5,210						7.1	31.1	20.2	0.87	5,210		6.8	31.1	20.6	0.84	4,900
Projects																							92					
Davel	UG	Th											222	22.8	27.2	1.49	5,790	222	22.8	27.2	1.49	5,790		222	22.8	27.2	1.49	5,790
Leandra	UG	Th	636	29.4	22.9	1.12	4,800	371	29.0	21.5	0.90	4,780	792	28.8	21.8	0.98	4,770	1,799	29.0	22.1	1.02	4,780		1,792	29.0	22.1	1.01	5,280
Naudesbank	OC & UG	Th	60	24.2	26.1	1.12	5,670	156	24.9	25.3	1.04	5,600	28	24.0	25.8	1.04	5,700	244	24.6	25.5	1.06	5,630		243	24.6	25.5	1.06	5,630
Pegasus	OC	Th	12	27.4	21.1	1.35	5,340	1.7	23.5	22.3	1.32	5,730						14	27.0	21.3	1.35	5,390		13	26.9	21.3	1.35	5,380

ENERGY COAL (CONTINUED)

South Africa Energy Coal (continued)

COAL RESERVES

As at 30 June 2019			Proved Coal Reserves	Probable Coal Reserves	Total Coal Reserves	Proved Marketable Coal Reserves					Probable Marketable Coal Reserves					Total Marketable Coal Reserves					Reserve Life	South32 Interest	As at 30 June 2018 Total Marketable Coal Reserves					Reserve Life
Deposit[(1)(3)(6)(7)]	Mining Method	Coal Type	Mt	Mt	Mt	Mt	% Ash	% VM	% S	KCal/kg CV	Mt	% Ash	% VM	% S	KCal/kg CV	Mt	% Ash	% VM	% S	KCal/kg CV	Years	%	Mt	% Ash	% VM	% S	KCal/kg CV	Years
Operating mines																						92						
Khutala	OC	Th	0.3	0.9	1.2	0.3	36.4	21.4	1.00	4,360	0.9	35.3	22.3	1.10	4,450	1.2	35.6	22.0	1.07	4,420	9.5		1.3	37.4	18.1	1.10	4,240	8.0
	UG[(4)]	Th	31	15	46	31	36.2	20.2	0.74	4,280	15	36.3	20.9	1.25	4,400	46	36.2	20.4	0.90	4,320			36	36.0	20.3	0.75	4,300	
Klipspruit[(5)]	OC	Th Export				40	15.1	22.6	0.68	5,950	15	15.0	22.2	0.66	5,980	54	15.1	22.5	0.68	5,960	26		65	14.4	22.4	0.66	5,900	30
	OC	Th	186	61	247	65	29.6	22.0	1.06	4,660	14	29.4	21.4	0.86	4,670	78	29.6	21.9	1.03	4,660			89	28.2	21.2	0.85	4,590	
	OC	Th Eskom				43	36.3	20.8	0.73	4,050	21	36.1	20.0	0.78	4,160	64	36.3	20.6	0.75	4,080			48	35.8	21.3	1.09	4,100	
Wolvekrans Middelburg Complex (WMC)	OC	Th	383	32	415																23							22
	SP	Th		7.1	7.1																							
	OC	Th Export				205	19.3	24.3	0.73	6,260	9.9	21.3	24.2	0.34	5,900	214	19.4	24.3	0.70	6,240			209	19.2	24.8	0.61	6,180	
	OC	Th Domestic				40	25.8	21.9	0.98	5,600	13	24.7	23.1	0.86	5,470	53	25.6	22.2	0.95	5,560			61	25.4	22.1	0.91	5,320	

(1) Cut-off grade	Coal Resources	Coal Reserves
Khutala	≥1.0m seam thickness for OC, ≥2.5m seam thickness for UG, ≥24% dry ash-free volatile matter.	≥1.0m seam thickness for OC, ≥2.5m seam thickness for UG.
Klipspruit	≥0.8m, ≤45% Ash, ≥24% dry ash-free volatile matter.	≥0.8m seam thickness, varying CV ≥3,580 KCal/kg, ≤45% ash.
WMC	≥1.0m seam thickness, ≤45% ash, ≥17.9% volatile matter.	≥1.0m seam thickness, ≥2,870 KCal/kg CV, ≤45% ash, ≥17.9% volatile matter.
Davel	≥1.2m seam thickness, ≥24% dry ash-free volatile matter.	
Leandra	≥1.8m seam thickness, ≤45% ash, ≥24% dry ash-free volatile matter.	
Naudesbank	≥0.8m seam thickness, ≤45% Ash, ≥22% Dry Ash-free volatile matter.	
Pegasus	≥1.0m seam thickness, ≤45% Ash, ≥24% dry ash-free volatile matter.	

(2) Coal Resource tonnes are reported on an in situ moisture basis and qualities are reported as raw on an air-dried basis.

(3) Coal Reserve tonnes and quality are reported on an air-dried basis. Ash, VM, S and CV reported as product qualities.

(4) Coal Reserves increase following project development approval.

(5) Changes in product specification for Marketable Coal Reserves due to update in pit design and market assessment.

(6) Coal delivered to wash plant, except for Khutala where coal is delivered to the power station.

(7) Process recovery for the operations:

Khutala	100%
Klipspruit	78%
WMC	64%

METALLURGICAL COAL

Australia Metallurgical Coal

COAL RESOURCES

As at 30 June 2019			Measured Coal Resources				Indicated Coal Resources				Inferred Coal Resources				Total Coal Resources				South32 Interest	As at 30 June 2018 Total Coal Resources			
Deposit[2]	Mining Method	Coal Type	Mt	% Ash	% VM	% S	Mt	% Ash	% VM	% S	Mt	% Ash	% VM	% S	Mt	% Ash	% VM	% S	%	Mt	% Ash	% VM	% S
Eagle Downs[1][3][4]	UG	Met	740	29.6	15.0	0.47	133	29.6	14.4	0.48	210	29.8	15.2	0.51	1,080	29.7	14.9	0.48	50	–	–	–	–
Illawarra Metallurgical Coal[5]																			100				
Bulli[6]	UG	Met/Th	140	11.2	23.9	0.37	313	12.4	23.7	0.36	342	13.6	23.0	0.36	796	12.7	23.4	0.36		828	12.7	23.5	0.36
Wongawilli	UG	Met/Th	48	28.7	23.6	0.59	240	29.5	22.2	0.57	151	29.6	22.5	0.57	439	29.5	22.5	0.57		446	29.5	22.4	0.57

COAL RESERVES

As at 30 June 2019			Proved Coal Reserves	Probable Coal Reserves	Total Coal Reserves	Proved Marketable Coal Reserves				Probable Marketable Coal Reserves				Total Marketable Coal Reserves				Reserve Life	South32 Interest	As at 30 June 2018 Total Marketable Coal Reserves				Reserve Life
Deposit[2][7][8][9]	Mining Method	Coal Type	Mt	Mt	Mt	Mt	% Ash	% VM	% S	Mt	% Ash	% VM	% S	Mt	% Ash	% VM	% S	Years	%	Mt	% Ash	% VM	% S	Years
Illawarra Metallurgical Coal																			100					
Bulli[6]	UG	Met	21	93	114	18	8.9	24.1	0.37	78	8.9	24.7	0.36	95	8.9	24.6	0.36	19		117	8.9	24.8	0.36	20
Wongawilli	UG	Met/Th	5.7	10	16													3.7						4.1
	UG	Met				2.9	10.7	24.2	0.60	5.9	10.7	24.1	0.60	8.8	10.7	24.1	0.60			10	10.7	23.9	0.59	
	UG	Th				1.5	27.0			2.1	27.0			3.6	27.0					5.1	27.0			

(1) Coal Resources are reported for the first time.

(2) Cut-off grade

	Coal Resources	Coal Reserves
	No seam thickness cut-off applied, minimum thickness is economic.	No seam thickness cut-off applied, minimum thickness within the mine layout is economic.

(3) Coal Resource tonnes are reported on an in situ moisture basis. Ash, VM and S reported as raw.

(4) HCL seam excluded where distance to HCU seam is <10m, this may be revised following the completion of the Prefeasibility Study.

(5) Coal Resource tonnes are reported on an in situ moisture basis. Ash is reported as raw, VM and S are reported as potential product on an air-dried basis.

(6) Coal Resources and Coal Reserves decrease following partial lease relinquishment and mine layout revision.

(7) Total Coal Reserves are at the moisture content when mined (6% Bulli, 7% Wongawilli). Total Marketable Coal Reserves are the tonnes of coal available at moisture content (9% Bulli, 15.5% Wongawilli Met, 7% Wongawilli Th) and air-dried qualities after the beneficiation of the Total Coal Reserves.

(8) Coal delivered to wash plant.

(9) Process recovery for the operations:

Bulli	84%
Wongawilli	77%

NICKEL

Cerro Matoso

MINERAL RESOURCES

As at 30 June 2019		Measured Mineral Resources		Indicated Mineral Resources		Inferred Mineral Resources		Total Mineral Resources		South32 Interest	As at 30 June 2018 Total Mineral Resources	
Deposit(1)	Material Type	Mt	% Ni	Mt	% Ni	Mt	% Ni	Mt	% Ni	%	Mt	% Ni
Cerro Matoso	Laterite	37	1.2	160	0.9	51	0.8	248	0.9	99.94	250	0.9
	SP	9.7	1.1	37	0.9			47	0.9		47	0.9
	MNR - Ore	17	0.2					17	0.2		17	0.2

ORE RESERVES

As at 30 June 2019		Proved Ore Reserves		Probable Ore Reserves		Total Ore Reserves		Reserve Life	South32 Interest	As at 30 June 2018 Total Ore Reserves		Reserve Life
Deposit(1)(2)(3)	Ore Type	Mt	% Ni	Mt	% Ni	Mt	% Ni	Years	%	Mt	% Ni	Years
Cerro Matoso	Laterite	12	1.2	3.6	1.1	15	1.2	10	99.94	18	1.2	11
	SP	7.4	1.2	9.7	1.1	17	1.2			19	1.2	

(1) Cut-off grade

	Mineral Resources	Ore Reserves
Laterite	0.6% Ni	0.6% Ni
SP	0.6% Ni	0.6% Ni
MNR-Ore	0.12% Ni	

(2) Ore delivered to process plant.

(3) Metallurgical Recovery: 80%.

MANGANESE

MINERAL RESOURCES

As at 30 June 2019		Measured Mineral Resources			Indicated Mineral Resources			Inferred Mineral Resources			Total Mineral Resources			South32 Interest	As at 30 June 2018 Total Mineral Resources		
Deposit[1]	Material Type	Mt	% Mn	% Yield	Mt	% Mn	% Yield	Mt	% Mn	% Yield	Mt	% Mn	% Yield	%	Mt	% Mn	% Yield
Australia Manganese														60			
GEMCO	ROM[2]	75	45.8	49	54	41.8	48	22	39.9	48	151	43.5	48		161	43.8	48
	Sands[3]				8.8	20.8		2.3	20.0		11	20.6			12	20.6	
		Mt	% Mn	% Fe	Mt	% Mn	% Fe	Mt	% Mn	% Fe	Mt	% Mn	% Fe		Mt	% Mn	% Fe
South Africa Manganese														44.4			
Wessels	Lower Body				42	44.9	12.0	7.7	44.1	15.8	50	44.8	12.6		48	46.1	11.6
	Upper Body				94	41.4	18.3				94	41.4	18.3		94	41.4	18.3
Mamatwan	M, C, N Zones	21	37.3	4.4	37	36.8	4.6	0.5	37.4	5.2	59	37.0	4.5		56	37.1	4.5
	X Zone	2.8	37.3	4.7	2.8	35.8	4.6				5.6	36.5	4.6		3.4	37.2	4.7
	Top Cut (balance I&O)	11	29.9	6.1	15	29.2	6.2				26	29.5	6.2		25	29.5	6.2

ORE RESERVES

As at 30 June 2019		Proved Ore Reserves			Probable Ore Reserves			Total Ore Reserves			Reserve Life	South32 Interest	As at 30 June 2018 Total Ore Reserves			Reserve Life
Deposit[1][6]	Ore Type	Mt	% Mn	% Yield	Mt	% Mn	% Yield	Mt	% Mn	% Yield	Years	%	Mt	% Mn	% Yield	Years
Australia Manganese												60				
GEMCO[4]	ROM	44	43.6	60	14	42.5	61	58	43.3	60	6.4		65	44.2	59	7.4
	Sands				7.2	40.0	22	7.2	40.0	22			7.3	40.0	23	
		Mt	% Mn	% Fe	Mt	% Mn	% Fe	Mt	% Mn	% Fe	Years		Mt	% Mn	% Fe	
South Africa Manganese[5]												44.4				
Wessels	Lower Body				14	45.6	11.8	14	45.6	11.8	58		14	45.4	11.5	58
	Upper Body				64	41.7	17.9	64	41.7	17.9			64	41.8	17.9	
Mamatwan	M, C, N Zones	18	37.0	4.5	32	36.4	4.5	50	36.6	4.5	16		49	36.9	4.5	16
	X Zone				2.2	37.3	4.8	2.2	37.3	4.8			3.0	36.9	4.9	

(1) Cut-off grade

		Mineral Resources	Ore Reserves
GEMCO	ROM	≥35% Mn washed product.	≥40% Mn washed product.
	Sands	No cut-off grade applied.	No cut-off grade applied.
Wessels	Lower Body	≥37.5% Mn.	≥37.5% Mn.
	Upper Body	≥37.5% Mn.	≥37.5% Mn.
Mamatwan	M, C, N Zones	No cut-off grade applied.	≥35% Mn.
	X Zone	≥35% Mn.	≥35% Mn.
	Top Cut (balanace I&O)	≥28% Mn.	

(2) ROM Mineral Resource tonnes are stated as in situ, manganese grades are reported as per washed ore samples and should be read together with their respective mass yields.

(3) Sands Mineral Resource tonnes and manganese grades are stated as in situ.

(4) Ore Reserve tonnes are stated as delivered to process plant, manganese grades are reported as expected product and should be read together with their respective mass yields.

(5) Ore delivered to process plant.

(6) Metallurgical/Plant recovery for the operations:

GEMCO	See yield in Ore Reserves table.
Wessels	88%
Mamatwan	96%

SILVER, LEAD, ZINC

MINERAL RESOURCES

As at 30 June 2019																		As at 30 June 2018			
		Measured Mineral Resources				Indicated Mineral Resources				Inferred Mineral Resources				Total Mineral Resources				South32 Interest	Total Mineral Resources			
Deposit[1]	Material Type	Mt	g/t Ag	% Pb	% Zn	Mt	g/t Ag	% Pb	% Zn	Mt	g/t Ag	% Pb	% Zn	Mt	g/t Ag	% Pb	% Zn	%	Mt	g/t Ag	% Pb	% Zn
Cannington	UG Sulphide	50	191	5.42	3.35	4.3	123	3.96	2.89	1.1	86	4.34	2.28	55	184	5.28	3.29	100	55	188	5.31	3.33
	OC Sulphide	25	103	3.24	2.42	3.4	68	2.67	2.05	1.3	70	2.49	1.70	30	98	3.14	2.34		31	100	3.20	2.30
Taylor	UG Sulphide	21	51	3.61	4.07	86	75	3.73	3.14	42	67	3.56	3.30	149	70	3.66	3.32	100	–	–	–	–
	UG Transition					5.2	55	3.85	5.41	1.0	71	3.65	4.25	6.2	57	3.82	5.22		–	–	–	–

ORE RESERVES

As at 30 June 2019																As at 30 June 2018				
		Proved Ore Reserves				Probable Ore Reserves				Total Ore Reserves				Reserve Life	South32 Interest	Total Ore Reserves				Reserve Life
Deposit[1][2][3]	Ore Type	Mt	g/t Ag	% Pb	% Zn	Mt	g/t Ag	% Pb	% Zn	Mt	g/t Ag	% Pb	% Zn	Years	%	Mt	g/t Ag	% Pb	% Zn	Years
Cannington	UG Sulphide	21	173	5.28	3.28	0.6	164	5.18	3.60	21	173	5.28	3.29	12	100	23	183	5.46	3.40	13

(1) Cut-off grade

	Mineral Resources	Ore Reserves
Cannington	Net smelter return in A$/t	Net smelter return in A$/t
UG Sulphide	130	130
OC Sulphide	58	
Taylor	Net smelter return in US$/t	
UG Sulphide	90	
UG Transition	90	

(2) Ore delivered to process plant.

(3) Metallurgical recovery: 87% Ag, 88% Pb and 86% Zn.

REMUNERATION REPORT

LETTER FROM OUR REMUNERATION COMMITTEE CHAIR

Dear Shareholders

On behalf of the Board, I'm pleased to present the Remuneration Report for the year ended 30 June 2019.

Our aim in preparing this report is to ensure that our shareholders and stakeholders better understand our approach to remunerating Executives. This includes the key principles we use to determine our Reward Framework and ensure our Executives are focused on delivering long-term shareholder value consistent with our purpose and strategy.

The Board endeavours to find the right balance between remuneration that attracts and incentivises management, while reflecting business performance and shareholder returns. This can be challenging, particularly in relation to Long-Term Incentive (LTI) plans where there is greater variability of outcomes.

During FY19, we initiated a review of our Executive Reward Framework, which will continue into FY20 and will include consultation with our shareholders. As this work is ongoing, we have not made any material changes to our approach to Executive reward in FY19.

Short-Term Incentives

The intent of the Short-Term Incentive (STI) is to focus our Executives on what they can influence in the performance year.

In FY19, our Total Recordable Injury Frequency (TRIF) improved by 12 per cent. We also saw a 12 per cent reduction in material occupational exposures year-on-year. In line with our aim to create value through our environmental and social leadership, we continued to implement our approach to climate change and focus on improving our social performance.

While we had strong overall operating performance, including record production at Hillside Aluminium and a 57 per cent increase in volumes at Illawarra Metallurgical Coal, controllable costs were short of target and the impact of lower production volumes at South Africa Energy Coal and Worsley Alumina resulted in the Adjusted ROIC metric falling short of target.

Good progress was made reshaping and improving our portfolio, including completing the acquisition of Arizona Mining and a 50 per cent interest in the Eagle Downs Metallurgical Coal project, advancing the divestment of South Africa Energy Coal and announcing the review of our manganese alloys businesses.

On balance, our Board resolved that Executives would receive STI outcomes for FY19 ranging from 53 per cent to 64 per cent of maximum.

Long-Term Incentives

Our LTI aligns our Executives to the experience of our shareholders and encourages the building of long-term value.

The first South32 LTI award granted to our Executives, the FY16 LTI, was tested for performance to 30 June 2019. Our strong Total Shareholder Return (TSR) performance of 84 per cent over the four year vesting period has meant that all equity from this first grant vested in August 2019. The 66 per cent growth in our share price over the same period has also contributed to a substantial increase in the value of this award at vesting, resulting in a material uplift to year-on-year Actual Pay.

This year also sees the vesting of the last awards granted to replace unvested BHP awards at the time of the Demerger in 2015. The Replacement BHP Awards for Graham Kerr and Mike Fraser, which have a five year vesting period, were eligible to partially vest, based on the strong performance of our TSR. Following discussions between the Board and Graham, Graham has volunteered to waive 100 per cent of his Replacement Award. Mike also agreed to waive 50 per cent of his Replacement Award. Our Board approved these outcomes and is satisfied that these adjustments result in remuneration at levels aligned to the South32 Reward Framework and philosophy.

Looking Forward

There are no material changes to the Reward Framework for Executives for FY20.

Executives will receive an increase to Fixed Remuneration for FY20 of 1.2 to 2.5 per cent, which is in line with increases for our Australia-based employees. Graham will receive an increase of 2.5 per cent, which is the first increase for him since FY15.

The base fees for the Non-Executive Directors will increase by 2.3 per cent.

There has been, and will continue to be, an evolution in the world of executive pay due to changing community and shareholder expectations, corporate learnings, regulatory reviews and academic research. As such, we will continue the review of our Reward Framework in FY20 and will outline any changes in approach in next year's report.

To our shareholders, thank you for your ongoing support.

Wayne Osborn
Chair, Remuneration Committee

FY19 AT A GLANCE

Four-Year Total Shareholder Return[(1)]
84%

Underlying EBIT
1,440
US$ million

Total Recordable Injury Frequency
12%
reduction

TOTAL SHAREHOLDER RETURN (TSR)

Diagram 1.1 South32 TSR relative to comparator groups

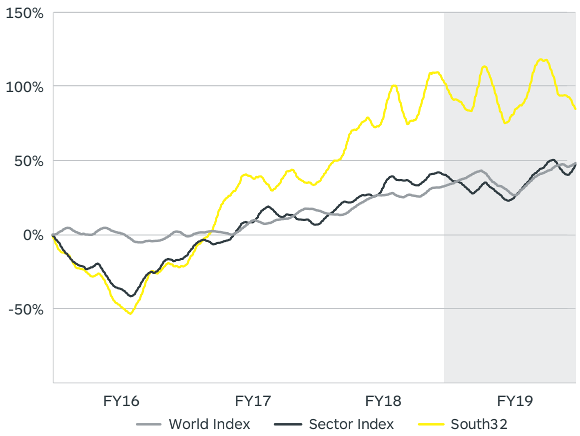
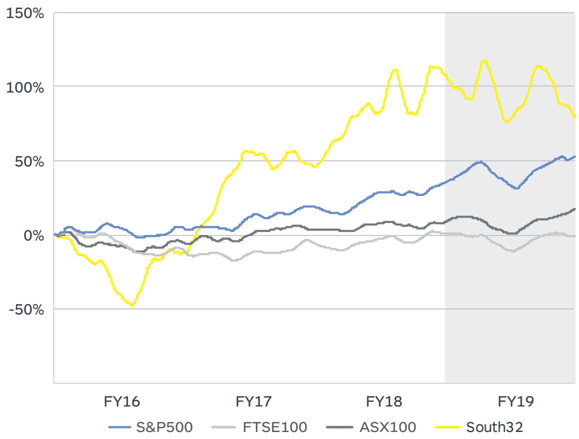


Diagram 1.2 South32 TSR relative to major indices



(1) One-month average TSR June to June.

OVERVIEW OF BUSINESS PERFORMANCE

The following table outlines historic business performance outcomes.

Table 1.1 Business performance

Performance measures	FY19	FY18	FY17	FY16	FY15 (pro forma)[(1)]
Underlying EBIT (US$M)[(2)]	1,440	1,774	1,648	356	1,001
Underlying earnings (US$M)[(2)]	992	1,327	1,146	138	575
Closing net cash/(debt) (US$M)	504	2,041	1,640	312	(402)
Movement in adjusted ROIC (percentage point)[(3)]	(1.4)	(6.8)	(1.1)	1.8	n/a
Closing share price on 30 June (A$)[(4)]	3.18	3.61	2.68	1.54	1.79
Dividends/special dividends (US cents per share)	13.0	13.7	4.6	-	-
TRIF (per million hours worked)	4.5	5.1	6.0	7.7	5.8

(1) South32's pro-forma FY15 result. To assist shareholders in their understanding of the South32 Group, pro forma financial information for FY15 was prepared to reflect the business as it was structured and as though it was in effect for the period 1 July 2014 to 30 June 2015. The pro forma financial information was not prepared in accordance with IFRS consistent with previous periods.

(2) The Underlying EBIT and Underlying earnings are not prepared in accordance with IFRS. Refer to page 89 of the Annual Report for a reconciliation to statutory earnings.

(3) The movement in adjusted ROIC is by reference to the previous performance period and removes the effect of changes in commodity prices, commodity price linked costs, market traded consumables, foreign exchange rates and movements in the Group's Effective Tax Rate (ETR), divided by the sum of fixed assets (excluding any rehabilitation asset, the impairment of South Africa Energy Coal and unproductive capital associated with Major projects).

(4) South32's share price on 25 May 2015 (date of Demerger) was A$2.32.

EXECUTIVE REMUNERATION FOR FY19 ALIGNED TO PERFORMANCE

KEY MANAGEMENT PERSONNEL (KMP) CHANGES	In May 2019, Katie Tovich was appointed as Chief Financial Officer, succeeding Brendan Harris who served in this role since Demerger. Brendan is moving into the role of Chief Marketing Officer. As this is a non-KMP role, he ceased to be KMP from 1 May 2019.	See page 15 for details on our Lead Team
FIXED REMUNERATION	There was no increase to the CEO's Fixed Remuneration in FY19. Fixed Remuneration for other Executive KMP increased modestly in FY19.	See page 57 for details on our FY19 Fixed Remuneration
STI	The focus of our STI is to reflect how management performed during the financial year. This means we exclude the impact of commodity price and foreign exchange. STI outcomes for FY19 have been assessed as below target. While safety performance has improved and key strategic measures delivered, we did not meet production and cost guidance at key operations, which impacted the financial metrics of our Scorecard. For FY19 Executive KMP STI outcomes varied from 53 per cent to 64 per cent of maximum.	See page 58 for details on our STI outcomes
SOUTH32 LTI	The first awards we granted under our four-year LTI Plan reached the end of the performance period in June 2019 and vested at 100 per cent due to our strong TSR over the performance period. Management Share Plan awards also vested for Paul Harvey and Katie Tovich and a Transitional Award vested for Paul Harvey.	See page 60 for our LTI outcomes
REPLACEMENT BHP LTIP AWARDS	The last of the Replacement BHP Awards were due to partially vest for Graham Kerr and Mike Fraser, based on BHP TSR performance to the date of Demerger and the strong performance of our TSR since Demerger for the five years to 30 June 2019.	See page 63 for details on the Replacement Award outcomes

TARGET REMUNERATION FOR FY19

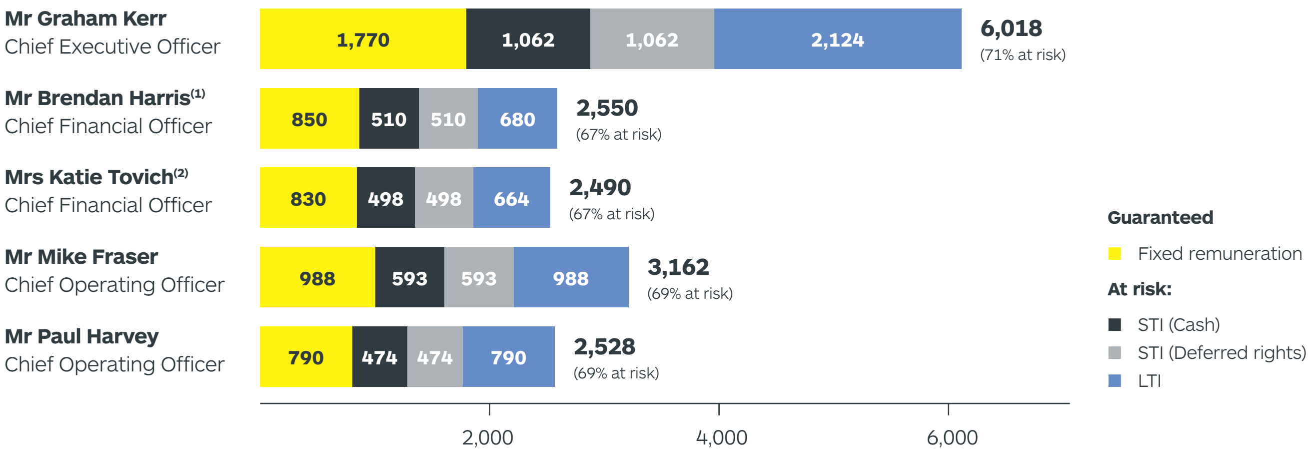
Target Remuneration for each Executive KMP is determined by the South32 Reward Framework (see page 55). This Framework outlines the key factors the Board takes into consideration in setting executive reward and the strategic drivers of pay at South32.

It is important to ensure remuneration levels fairly reflect the responsibilities and contribution of the Executives while ensuring that outcomes are aligned to performance and to the creation of shareholder value. As a result, a significant portion of our executive reward is at risk and based on demanding performance measures.

Target Remuneration, as outlined below, assumes on-target performance and, for the LTI, takes into account the difficulty of achieving performance hurdles and anticipated share price volatility. The figures reflected in the graph below are therefore based on STI paid at 100 per cent of target and LTI that is 40 per cent of the Face Value. (see page 56 for details on Face Value).

Based on these principles, the total Target Remuneration for the Executive KMP for a full year is summarised below.

Diagram 1.3 FY19 Target Pay (A$'000)



(1) Brendan Harris ceased as a member of KMP effective 30 April 2019 and was appointed to the role of Chief Marketing Officer (Elect), a non-KMP role from 1 May 2019. Details above are for the full year in the KMP role and are not pro-rated for his time as a member of KMP.

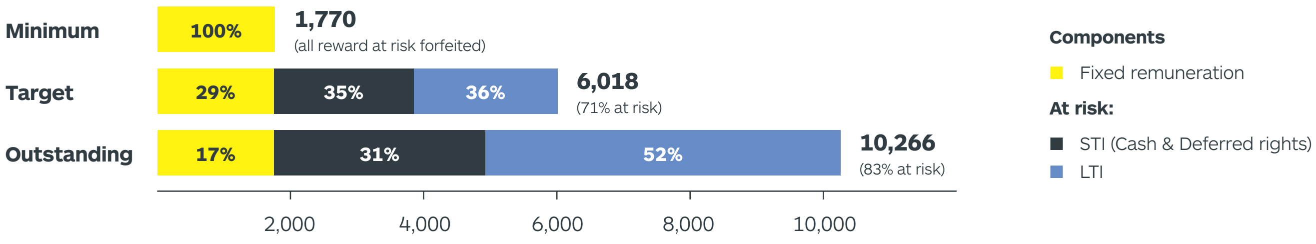
(2) Katie Tovich was appointed as a member of KMP on 1 May 2019. Previously, Katie was appointed to the role of Vice President Corporate Affairs, a non-KMP role. Details above are for the full year in the KMP role and are not pro-rated for her time as a member of KMP.

RANGE OF POSSIBLE REMUNERATION OUTCOMES

As actual business and individual achievement over the performance period determines reward outcomes, the amount of remuneration received by an executive each year will vary.

The diagram below illustrates the range of possible remuneration outcomes for the CEO, based on a number of performance outcome scenarios.

Diagram 1.4 Range of Remuneration Outcomes (A$'000)



In the **Minimum** scenario, all STI and LTI is forfeited. The CEO would receive Fixed Remuneration, inclusive of superannuation, of A$1.77 million.

Target outcomes would be achieved where the business meets the challenging STI performance hurdles, resulting in STI being paid at Target levels (i.e. 67 per cent of maximum opportunity, or 120 per cent of Fixed Remuneration, with half deferred into shares) and the LTI meeting the TSR performance threshold resulting in 40 per cent of shares vesting. Future share price movements are not included in the value of the Deferred STI or the LTI.

To deliver an **Outstanding** outcome for the STI (i.e. at maximum STI, or 180 per cent of Fixed Remuneration, with half deferred into shares) South32 will need to meet the robust stretch targets across *all* metrics in the Scorecard. For the LTI to vest in full, the South32 TSR will need to outperform both the sector index and the world index, each by more than 23.9 per cent over the four-year performance period. Future share price movements are not included in the value of the Deferred STI or the LTI.

ACTUAL PAY FOR EXECUTIVE KMP IN FY19

We disclose Actual Pay to provide our shareholders with a better understanding of cash and other benefits our Executive KMP receive in the performance year. The amount of Actual Pay is likely to vary substantially, either up or down, from Target Remuneration (see page 52) as a significant portion of our pay is "at risk" and based on demanding performance measures.

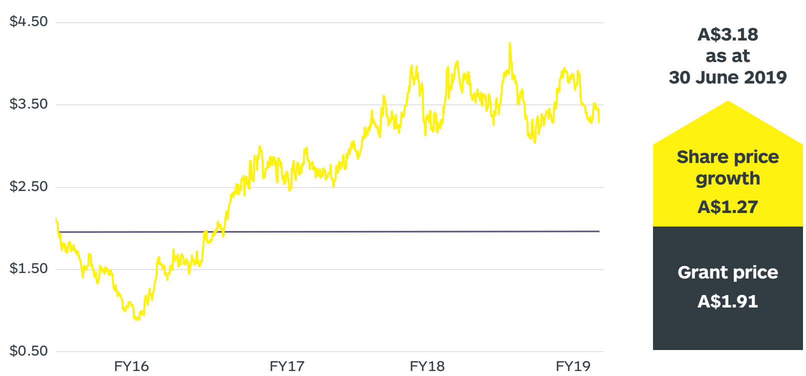
The Actual Pay for Executive KMP in FY19 includes:

- South32 Reward:
  - Fixed Remuneration earned in FY19 (salary and pension/superannuation);
  - Total FY19 STI earned (including cash and deferred rights) based on performance during this financial year (details on page 59);
  - South32 LTI awards that vested based on performance and/or service conditions to 30 June 2019 (details on page 60); and
  - Other cash and non-monetary benefits earned in FY19.
- Replacement BHP Awards (details on page 54). These include:
  - Replacement BHP FY15 LTIP; and
  - Dividend Equivalent Payments relating to the partial vesting of the Replacement BHP FY15 LTIP.

While Fixed Remuneration has remained unchanged for our CEO and only increased modestly for other Executive KMP, and STI outcomes are below target, there is a material increase in Actual Pay year on year as a result of increased value in equity awards compared to previous years. This is due to:

- The vesting of our **first four-year LTI**;
- Our **TSR outperforming** the sector and world indices, which has resulted in 100 per cent of the performance rights vesting; and
- The **strong growth in our share price** over the performance period, with the value of our LTI based on an increase in share price from A$1.91 at grant to A$3.18 at 30 June 2019 – **an increase of 66 per cent**.

Diagram 1.5 South32 four-year share price performance (A$)



REPLACEMENT BHP FY15 LTIP AWARDS

At the time of the Demerger, Replacement Awards were granted to Executive KMP to replace forfeited BHP awards, and to ensure that these Executives weren't negatively impacted by accepting roles with South32. The last of these awards, the Replacement BHP FY15 LTIP, which has a five-year vesting period, was due to vest to Graham Kerr and Mike Fraser, based on performance to 30 June 2019.

Based on the performance outcomes, these awards would have been eligible to vest, resulting in 1,261,124 shares vesting for Graham and 974,505 for Mike, with a value, including dividend equivalent payments, of A$4,733,000 and A$3,657,000 for Graham and Mike respectively (based on a closing share price on 30 June 2019 of A$3.18).

Over the past four years, South32 has delivered strong financial performance with a TSR of 84 per cent, which resulted in 100 per cent vesting of the FY16 South32 LTI. Coupled with share price growth of 66 per cent over the same period, this resulted in the South32 LTI delivering significant value.

This outperformance is testament to the work of Graham and his Lead Team.

Given this, and following discussions between the Board and Graham, Graham has volunteered to waive 100 per cent of his Replacement Award. Graham also recommended, and Mike agreed, that Mike waive 50 per cent of his Replacement Award. Our Board approved these outcomes and is satisfied that these adjustments result in remuneration at levels appropriate for our organisation. The waived awards lapsed. Additional information can be found on page 63.

Information in the table below has not been prepared in accordance with Australian Accounting Standards. You can find our Executive KMP Statutory Remuneration on page 68.

SUMMARY OF ACTUAL PAY FOR EXECUTIVE KMP IN FY19

Table 1.2 Actual pay in respect of FY19 (A$'000)

Remuneration Component	Mr G Kerr	Mr M Fraser	Mr B Harris[4]	Mrs K Tovich[5]	Mr P Harvey[6]
Fixed Remuneration	1,770	988	850	601	790
Other Benefits[1]	29	31	22	8	38
STI (Cash)	924	474	490	292	446
STI (Deferred)	924	474	490	72	446
LTI (Grant value)	5,735	2,619	1,793	675	719
FY17 Transitional LTI (Grant value)	-	-	-	-	387
South32 Actual (LTI at Grant Value)	**9,382**	**4,586**	**3,645**	**1,648**	**2,826**
South32 LTI - Value of share price growth[2]	*3,813*	*1,741*	*1,192*	*507*	*851*
South32 Actual Pay (inclusive of share price growth)	***13,195***	***6,327***	***4,837***	***2,155***	***3,677***
Replacement FY15 BHP LTIP (Grant value)	2,838	2,193			
Replacement LTIP - Value of share price growth[2]	1,173	906			
Dividend Equivalent Payment[3]	722	558			
Sub-Total - Replacement BHP LTIP	*4,733*	*3,657*			
Value waived by agreement	*(4,733)*	*(1,829)*			
FY19 Total Actual Pay	**13,195**	**8,155**	**4,837**	**2,155**	**3,677**
FY18	*7,839*	*6,865*	*3,494*	*n/a*	*3,245*

(1) Other Benefits include insurances and tax advice provided during FY19.

(2) Value of share price growth is based on a closing share price on 30 June 2019 of A$3.18.

(3) A Dividend Equivalent Payment (DEP) of A$721,690 for Graham Kerr and A$557,670 for Mike Fraser based on the eligible vesting outcome of the Replacement BHP FY15 LTIP. It is calculated based on BHP dividends of US$1.24 multiplied by the proportion of BHP shares that would have vested (being 89,626 for Graham and 69,257 for Mike), and South32 dividends of US$0.313 multiplied by the proportion of South32 shares that would have vested (being 1,261,124 for Graham and 974,505 for Mike), using a conversion rate of AUD 1 : USD 0.701. Fifty per cent of this amount will be paid in September 2019 for Mike and 100 per cent has been waived by agreement for Graham.

(4) Brendan Harris ceased as a member of KMP effective 30 April 2019. Details above are for the full year and are not pro-rated for his time as a member of KMP.

(5) Katie Tovich was appointed as a member of KMP on 1 May 2019. Details above are for the full year and are not pro-rated for her time as a member of KMP.

(6) As Paul Harvey is a member of the South32 Defined Benefit Plan (as set out on page 68), his Fixed Remuneration presented above includes a notional company contribution to the Plan of 9.5 per cent.

OUR REWARD FRAMEWORK

The pages of the Remuneration report that follow have been prepared in accordance with section 300A of the Corporations Act 2001 (Cth) (Act) and audited as required by section 308(3C) of the Act. These sections relate to those persons who were Key Management Personnel (KMP) of South32 during FY19, as named on page 52 and the Non-Executive Directors of South32.

REMUNERATION GOVERNANCE

The roles and responsibilities of our Board, Remuneration Committee, Management and external advisors in relation to remuneration for Executive KMP and employees at South32 are outlined below.

BOARD	Our Board maintains overall responsibility for overseeing the remuneration policy, and the principles and processes that underpin it. They approve the remuneration arrangements for our CEO and Non-Executive Directors. Changes to the Director fee pool are approved by shareholders.
REMUNERATION COMMITTEE	The Remuneration Committee approves reward arrangements for our Lead Team and oversees the remuneration and benefits framework for all employees in South32. By taking advice from other Board Committees (such as Sustainability and Risk and Audit Committee), the Committee helps our Board to oversee remuneration policy, its specific application to the CEO, Executives and Non-Executive Directors and, in general, our employees. They make sure our remuneration arrangements are equitable and aligned to the long-term interests of shareholders, while operating within our risk framework and supporting our purpose and values.
CEO & MANAGEMENT	Our CEO makes recommendations to the Remuneration Committee regarding our Lead Team, and how the remuneration policy and framework applies to all our employees. Our management provides information and recommendations for the Remuneration Committee, to help them consider and implement the approved arrangements.
EXTERNAL ADVISORS	We may engage external advisors either directly by the Remuneration Committee, or through management. They provide information on remuneration related issues, including benchmarking information and market data. There were no remuneration recommendations received by the Remuneration Committee from external advisors in relation to KMP in FY19.

We seek information and analysis from a range of data sources. This means our decisions are informed, objective, weighted and aligned to the requirements of the Company and consistent with our guiding principles.

HOW DO WE DETERMINE REWARD PRACTICES AND OUTCOMES?

OUR GUIDING PRINCIPLES

Purpose & Strategy

We align short-term and long-term performance measures to our strategy and purpose. This includes our commitment to:

- making sure everyone goes home safe and well at the end of every shift;
- delivering operational excellence;
- meeting key strategic priorities; and
- achieving sector-leading total shareholder returns.

The way we work

Our culture is at the core of how we deliver our strategy and purpose. You'll see it reflected in our values, the way we work, the decisions we take, the courage we show in challenging situations and the legacy we leave.

Supporting this is a strong belief that culture can be actively shaped through a focus on what we prioritise, what we measure, what we reward and who we appoint.

Shareholders

Our Reward Framework ensures Executives and management are focused on delivering superior total shareholder returns.

We do this through share ownership and LTI performance measures aligned to the shareholder experience.

We value our stakeholder's feedback, so we regularly check-in with investors and proxy advisors.

Performance

We ensure our reward outcomes are aligned to performance by delivering a large part of Executive pay "at risk" based on challenging financial and non-financial measures.

STI outcomes reflect performance over the financial year, while LTI outcomes reflect performance over a four-year period.

Market

We ensure our reward is competitive and allows us to attract and retain talented Executives.

In balance with these principles, we benchmark our reward levels with consideration given to similar-sized companies in the ASX, as well as our global mining peer group.

COMPONENTS OF OUR REWARD

OUR INTENTION	Attract & retain talented Executives to lead South32	The majority of pay at risk reflects our commitment to pay for performance and deliver value to shareholders	
		Reward business and individual performance in the financial year	Drive long-term performance and ownership behaviours
COMPONENT	**Fixed Remuneration**	**Short-Term Incentive (STI)**	**Long-Term Incentive (LTI)**
THE WHY	Fixed Remuneration is set with reference to the median of our peer groups, reflecting each Executive KMP's responsibilities, location, skills and experience.	To focus efforts on outcomes that are a priority for us in the financial year and motivate Executive KMP to achieve challenging performance objectives. Our STI reflects performance during the year and measures outcomes within management's control.	LTI is aligned to the shareholder experience and delivery of lasting, industry-leading total shareholder returns.
THE HOW	Base salary and pension/ superannuation.	50 per cent paid in cash annually 50 per cent in rights to South32 shares, deferred for two years	Rights to South32 shares, subject to TSR performance measured over a four-year period, relative to two comparator groups

OUR APPROACH IN FY19

Fixed Remuneration

Our peer groups are:

- An ASX peer group based on companies (excluding foreign domiciled and REITs) with half to double our market capitalisation; and
- A global mining peer group of 15 companies with a similar market capitalisation, commodity mix and geographic spread (see below).

The level of **Fixed Remuneration for the CEO is below the median** of our peer groups.

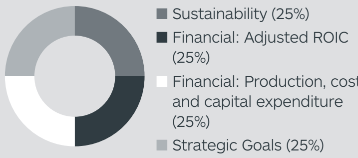
See FY19 Target Remuneration on page 52.

Short-Term Incentive (STI)

Quantum (% of Fixed Remuneration):

	Target Value	Max. Value
All Executive KMP	120%	180%

Business Scorecard:
The Business Scorecard reflects a balance of financial and non-financial measures that are a priority for us in the financial year.



Business Modifier:
As Scorecard measures do not always reflect overall performance over the year, and to mitigate any unintended reward outcomes, the Board has the discretion to apply a Modifier to the Business Scorecard outcome. The Modifier may be applied to Executive KMP on an individual or group basis, having regard to the perspectives of stakeholders including employees, shareholders and communities.

Individual Performance & Behaviours:
The Board also considers an Executive KMP's individual performance, taking into account specific key performance indicators and how these have been achieved (including alignment with our values).

Long-Term Incentive (LTI)

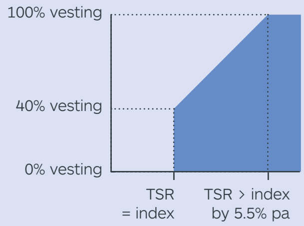
The Quantum is determined on Face Value as a percentage of Fixed Remuneration:

	Face Value	Target Value
CEO	300%	120%
Other KMP	200% to 250%	80% to 100%

Comparator groups:

- Two-thirds relative to a mining sector index (IHS Markit Global Mining Index with constrained weighting by company and sector); and
- One-third relative to a world index (Morgan Stanley Capital International (MSCI) World Index).

Vesting:



There is no retesting if the performance condition is not met at the end of the performance period.

MINIMUM SHAREHOLDING REQUIREMENT

A Minimum Shareholding Requirement (MSR), equal to 100 per cent of Fixed Remuneration for Executive KMP, drives a long-term focus and alignment with our shareholders. The MSR applies to all Executive KMP and must be obtained within five years of appointment as a KMP.

See page 71 for current shareholding of our Executives.

OUR SERVICE CONTRACTS

The key terms are consistent for all Executive KMP, and include:

- No fixed term;
- Six months' notice by either party or payment by the Company in lieu of notice; or
- Termination without notice for serious misconduct; or
- Two months' notice by the Executive where a fundamental change occurs that materially diminishes their status, duties, authority or terms and conditions (receiving payment in lieu of six months' notice).

The maximum payment in lieu of notice won't exceed six months' Fixed Remuneration. Executive KMP will be subject to several post-employment restraints for a period of up to six months after their employment with the Group ends. Shareholder approval was granted at the 2018 Annual General Meeting (AGM) in relation to termination benefits for Executive KMP for a further three years.

OUR GLOBAL PEER GROUP

Our global mining companies peer group includes: Agnico Eagle Mines; Alcoa; Anglo American; Antofogasta; Barrick Gold; Boliden AB; Eramet SA; First Quantum Minerals; Fortescue Metals Group; Freeport McMoRan; GoldCorp; Newcrest Mining; Newmont Mining; Teck Resources; Vedanta.

FIXED REMUNERATION FOR FY19

In FY19, there was no increase to Graham Kerr's Fixed Remuneration, which hasn't changed since our Demerger in May 2015. Our other Executive KMP received modest increases in FY19, which were outlined in the FY18 Remuneration report and were effective from 1 September 2018.

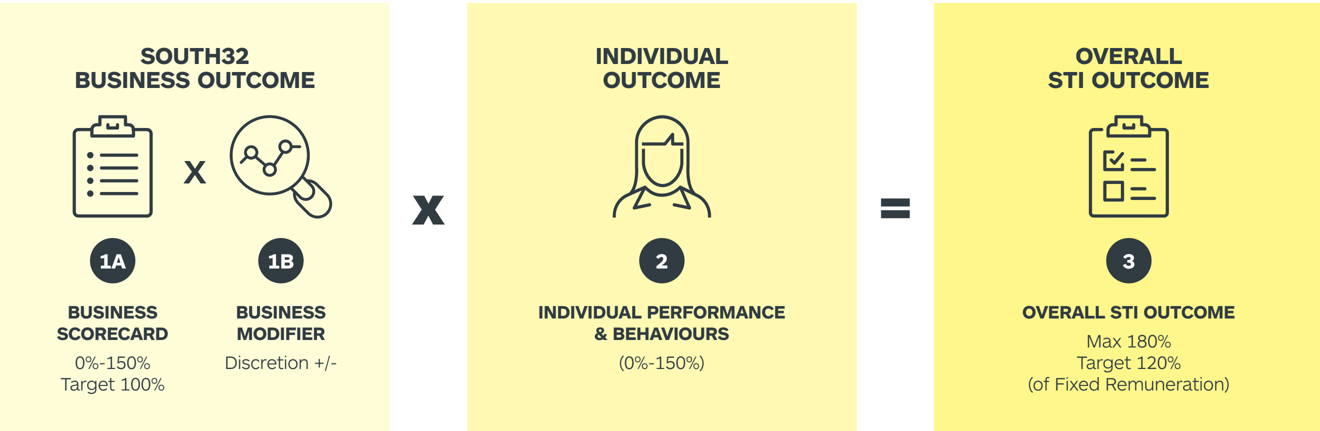
Table 1.3 Fixed Remuneration for Executive KMP in FY19

Executive KMP	FY18 Fixed Remuneration (A$)	FY19 Fixed Remuneration (A$)	Increase %
Mr G Kerr	1,770,000	**1,770,000**	0.0
Mr B Harris[(1)]	830,000	**850,000**	2.4
Mrs K Tovich[(1)]	n/a	**830,000**	n/a
Mr M Fraser	970,000	**988,000**	1.9
Mr P Harvey	775,000	**790,000**	1.9

(1) Brendan Harris ceased as a member of KMP effective 30 April 2019 and Katie Tovich was appointed as a member of KMP on 1 May 2019. Fixed Remuneration above for Katie is effective from 1 May 2019.

SHORT-TERM INCENTIVE FOR FY19

Diagram 1.6 Determination of STI awards



The determination of the STI outcome at South32 follows a structured process.

At the start of each year, the Board approves the Business Scorecard.

The individual performance process that applies to our CEO and Executive KMP, and is cascaded through the organisation, includes:

- Setting of individual performance goals at the start of each performance year, which are aligned to the Business Scorecard, our Breakthroughs and our Business Plans;
- Ensuring regular "check ins" during the year; and
- A review of performance relative to effectiveness in role, based on what is delivered and how it is delivered. For the CEO and Executive KMP, the performance in role is measured based on delivery against the Business Plans of the Operations or Functions for which they are responsible. In recognition that the strongest cultures are set from the top, our CEO and Executive KMP are also assessed based on demonstrated behaviour aligned with our values and the way we work.

Following the individual performance review, the CEO recommends to the Board the individual outcomes for each Executive KMP.

The Board assesses and approves the Business Outcome, Individual Outcomes and the overall STI Outcomes for the CEO and for the Executive KMP.

1A FY19 BUSINESS SCORECARD

The Business Scorecard, which is approved by our Board before the financial year begins, helps our Executive KMP focus on outcomes that are within their control and are a priority in that year. It also includes a balanced range of measures that take into account both our financial and non-financial performance.

Our non-financial measures are in line with our Breakthroughs and our values including safety and health, environment, community, risk management and leadership. Our performance is assessed relative to the Business Scorecard (with guidance from Board Committees, such as the Remuneration, Risk & Audit and Sustainability Committees) and individual performance outcomes.

Table 1.4 FY19 Business Scorecard outcomes

SCORECARD MEASURE	WEIGHT	PERFORMANCE	OUTCOME (Target = 25% Max = 37.5%)
SUSTAINABILITY	**25%**	**27.0%**	
Safety: Aggregated 17 per cent reduction on previous year, equating to a TRIF of 4.3.		12 per cent reduction in TRIF in FY19, to 4.5.	**Target not met**
Health: 5 per cent reduction on previous year plus plans in place to reduce the number of workers exposed above the OEL by a further 5 per cent in FY20.		Delivered a 12 per cent reduction in material exposures > 100 per cent (coal dust and carcinogens). An exposure reduction plan has been developed that will facilitate at least a further 10 per cent reduction in FY20.	**Outstanding**
Environment: Achieve emissions forecast of 24,253 kt CO_2 -e.On track for FY21 GHG reduction targets plus decarbonisation plans for Worsley and Illawarra.		Actual emissions (Scope 1 and 2) were 23,482 kt CO2e. We remain on track to achieve our FY21 public target (Scope 1). Conceptual level decarbonisation plans for Illawarra Metallurgical Coal and Worsley Alumina operations completed.	**Better than target**
Community: Implement Community Investment Framework and Community Investment Plans for each operation.		Community Investment Plans for each operation were developed and measures to assess the impact of investment were defined. Community Action Plan implemented improving performance outcomes.	**Target met**
FINANCIAL: PRODUCTION, COST AND CAPITAL EXPENDITURE	**25%**	**23.0%**	
Production: 95 per cent –105 per cent of budget		Overall, production (excluding non-operated operations) was 96 per cent of budget with record aluminium production at Hillside Aluminium and a run-of-mine production record at Dendrobium Coal Mine. However, volumes fell short at South Africa Energy Coal and Worsley Alumina.	**Target met**
Cost: Within US$50m of FY19 budget (adjusted for FX and price-linked costs).		Cash operating costs were within range across most of the business. However, controllable costs are assessed as short of target when the cost benefits of lower production are considered.	**Target not met**
Capital Expenditure: within 5 per cent of FY19 Sustaining capital expenditure budget (adjusted for FX) and Major Projects tracking within 5 per cent of budget (adjusted for FX)		Sustaining capital expenditure was 98 per cent of budget, but missed target due to underspend at Illawarra Metallurgical Coal, South Africa Manganese, Cerro Matoso and Australia Manganese.	**Target not met**
FINANCIAL: ADJUSTED ROIC	**25%**	**12.5%**	
Achieve budget FY19 **Adjusted ROIC**, consistent with our cost, production and capital expenditure targets.		Despite positive results at many other operations, the impact of lower production volumes at South Africa Energy Coal and Worsley Alumina resulted in an Adjusted ROIC outcome that was 2.9 per cent behind budget.	**Target not met**
STRATEGIC PRIORITIES	**25%**	**24.5%**	
Implement the revised **Risk Management** System, including the three lines of defence and integrated platform with a common set of metrics.		Although slightly behind schedule, we successfully implemented our integrated risk and event platform, Global 360, and piloted our enhanced second line assurance routines and tools.	**Target not met**
Lock in savings and further transform the ownership of **South Africa Energy Coal**.		The ring-fenced management of South Africa Energy Coal has delivered savings slightly lower than forecast. Divestment activities are progressing.	**Target not met**
Unlock the value in our portfolio.		Delivered on key projects across the Operations.	**Better than target**
Identify new opportunities and Introduce one base metals development project into the portfolio.		Initial JORC resources estimate for Hermosa released. Pre-feasibility study proceeding to plan. Trilogy option remains on track. Progressing with new base metal options.	**Target met**
Continue to build **leadership capability** across the group.		Leadership Development initiatives implemented globally including capability reviews for over 1,000 leaders. Improvement in broad-based engagement levels as measured through pulse surveys.	**Better than target**
SUB-TOTAL	**100%**	**87%**	

1B FY19 BUSINESS MODIFIER

The Scorecard reflects the key focus areas of the business in the financial year, with metrics that are aligned to our purpose and Breakthroughs and that measure elements in management's control. As the metrics and measures are set at the start of the performance year, the Business Modifier allows the Board to consider the impact of any event or action during the year that is not fully factored into the Scorecard.

The Board has absolute discretion in applying the modifier, to adjust the Scorecard outcome either up or down, or to apply to the Executive KMP on an individual or a group basis. As it is not formulaic, the Board has discretion to ensure that the STI outcomes reflect overall business performance, including what has been delivered and how it has been achieved.

Factors that would be considered in the modifier include, but are not limited to, the impact of fatalities and significant safety issues as well as the management of risk, governance, culture and reputational issues. Table 1.5 summarises the application of the modifier since Demerger.

For FY19, our Board considered a number of factors. We had no fatalities in the year and improved overall safety indicators. We completed the acquisition of Arizona Mining and a 50 per cent interest in Eagle Downs and made good progress with negotiations to divest South Africa Energy Coal. While we had an impairment for South Africa Energy Coal, this was impacted by the market outlook for thermal coal demand and prices, that are outside the control of management.

On balance, the Board determined that no modifier would be applied for FY19.

Table 1.5 Application of the Business Modifier by the Board (multiplier applied to the Business Scorecard outcome)

		FY16	FY17	FY18	FY19
Application of the Modifier	CEO:	-24%	-2.5%	-15%	No modifier applied
	COO Africa:	-40%	-5%	-15%	
	Other Executive KMP:	-10%	None	-5%	
		Four fatalities in Africa Region	One fatality in Africa Region	One fatality in Africa Region and impact of the temporary closure of Appin mine in FY17.	

2 FY19 INDIVIDUAL PERFORMANCE & BEHAVIOURS

Our Board determines the Individual Scorecard measures for the CEO and other Executive KMP in relation to what was delivered, as demonstrated in the performance of the Executive's portfolio, and how it was delivered, which considers demonstrated leadership and behaviour aligned to our values, risk framework and governance processes.

Individual outcomes were applied to Executive KMP, reflecting the performance of their areas of accountability. These outcomes ranged from 92 per cent to 110 per cent, as indicated in Table 1.6 below.

3 OVERALL FY19 STI OUTCOMES

Overall STI outcomes for FY19 are determined through our Board's assessment of the Business and Individual Outcomes, as outlined in the table below.

Table 1.6 STI earned by Executive KMP in respect of FY19 performance

								Percentage of maximum STI	
Executive KMP(1)	**Business Scorecard outcome** % (1A)	**Modifier +/-** % (1B)	**Individual outcome** % (2)	**Overall STI outcome** % of Target (1A x 1B x 2)	**Total STI awarded** (A$'000)	**Cash**(1) (A$'000)	**Rights** (A$'000)	**Awarded** %	**Forfeited** %
Mr G Kerr	87	-	100	**87**	**1,848**	924	924	**58**	42
Mr B Harris(2)	87	-	110	**96**	**816**	408	408	**64**	36
Mrs K Tovich(2)	87	-	100	**87**	**144**	72	72	**58**	42
Mr M Fraser	87	-	92	**80**	**948**	474	474	**53**	47
Mr P Harvey	87	-	108	**94**	**891**	446	446	**63**	37

(1) Half of the STI will be paid in cash in September 2019, with the remaining half deferred into rights to South32 shares that will be granted in or around December 2019 and will be due to vest in August 2021. The rights remain subject to continued service with the South32 Group. The minimum possible total value of the rights for future financial years is therefore nil (see page 62 for terms and conditions relating to South32's equity plans).

(2) Brendan Harris ceased as a member of KMP effective 30 April 2019 and Katie Tovich was appointed as a member of KMP on 1 May 2019. Details above for each are pro-rated for their time as a member of KMP.

LONG-TERM INCENTIVES

OUR LTI AWARDS THAT VESTED IN RESPECT OF FY19

FY16 South32 LTI Award and MSP (Performance) Award

Our first LTI Award granted since Demerger, the FY16 LTI, was tested for vesting subject to service and performance conditions to 30 June 2019. This award is subject to TSR performance conditions over four years, with two thirds relative to a mining sector index (the IHS Markit Global Mining Index) and one third relative to a world index (the MSCI World Index). The four-year period for this award was from 1 July 2015 to 30 June 2019.

We granted Paul Harvey and Katie Tovich FY16 Management Share Plan (MSP) Awards before becoming members of KMP. These performance awards have the same performance and vesting conditions as our LTI Awards.

For the LTI and MSP Awards to vest in full, they would need to outperform both indices by at least 23.9 per cent over the performance period (5.5 per cent per annum cumulative). Our Board noted that our TSR outperformed both peer indices by more than 23.9 per cent (see Diagram 1.8 and Table 1.7), and approved these awards to vest in full in August 2019.

Diagram 1.7 Indicative TSR performance: South32 vs comparators

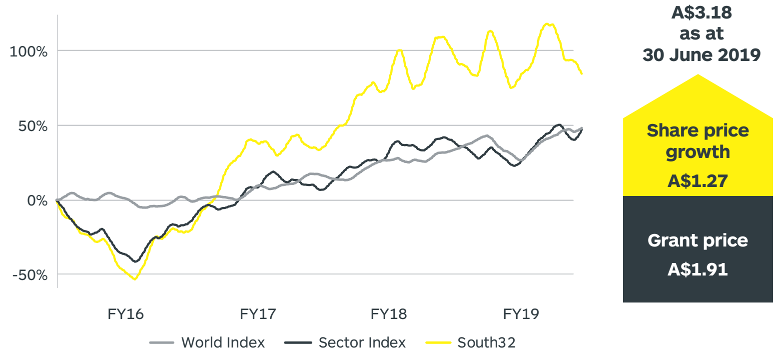


Diagram 1.8 Vesting outcome

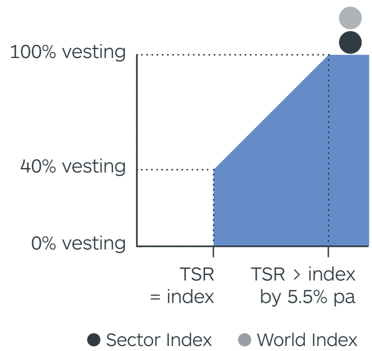
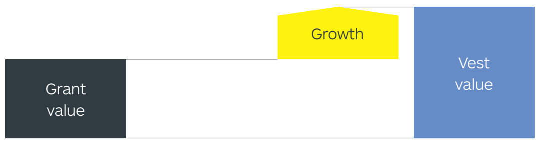


Table 1.7 South32 LTI Award vesting outcome

	TSR Performance[1] Index (A)	South32 (B)	Outperformance for 100% vesting Required	Achieved (B-A)	Vesting outcome (C)	Index weighting (D)	Weighted vesting outcome (C x D)
● Sector Index	47.6%	83.8%	+23.9%	+36.2%	100%	2/3	**66.7%**
● World Index	48.3%		+23.9%	+35.5%	100%	1/3	**33.3%**
							100.0%

(1) TSR Performance reflects the one-month average return from 30 June 2015 at the start of the performance period, to the one-month average return to 30 June 2019 at the end of the performance period.

Table 1.8 South32 LTI Awards vested



Executive KMP	Award	Number of rights granted	Number of rights vested	Number of rights forfeited	Value at grant[1] (A$'000)	Value forfeited[2] (A$'000)	Value of share price growth[3] (A$'000)	Value at vesting[4] (A$'000)
Mr G Kerr	South32 LTI	3,002,513	3,002,513	-	5,735	-	**3,813**	**9,548**
Mr B Harris[5]	South32 LTI	938,638	938,638	-	1,793	-	**1,192**	**2,985**
Mrs K Tovich[6]	FY16 MSP (Performance)	251,308	251,308	-	480	-	**319**	**799**
Mr M Fraser	South32 LTI	1,371,204	1,371,204	-	2,619	-	**1,741**	**4,360**
Mr P Harvey	FY16 MSP (Performance)	376,291	376,291	-	719	-	**478**	**1,197**

(1) 'Value at grant' is the number of shares granted multiplied by the grant determination price in June 2015 (A$1.91), based on the Volume Weighted Average Price (VWAP) of South32 shares over the last 10 trading days in June.
(2) 'Value forfeited' is the value lapsed/forfeited based on performance relative to the performance measures, multiplied by the grant determination price in June 2015 of A$1.91.
(3) 'Share price growth' is the number of shares that vested, multiplied by the difference between the grant determination price (A$1.91) and the share price at 30 June 2019 of A$3.18 This reflects the value added due to the change in share price since the start of the performance period.
(4) 'Value at Vesting' is the estimated number of shares that vested, multiplied by the closing share price of South32 shares on 30 June 2019 of A$3.18.
(5) Brendan Harris ceased as a member of KMP on 30 April 2019. Details above are for the full year and are not pro-rated for his time as a member of KMP.
(6) Katie Tovich commenced as a member of KMP on 1 May 2019. Details above are for the full year and are not pro-rated for her time as a member of KMP.

FY17 Management Share Plan (Retention) Award

We granted the FY17 Management Share Plan (Retention) Award to Katie Tovich before she became a member of KMP. Given the retention-focused objective of this award, the vesting conditions are service-based (with a service condition to 30 June 2019) and with no performance conditions. As the service condition was met, our Board approved this award to vest in full in August 2019. The structure of the MSP is detailed on page 70.

FY17 Transitional Performance Award

We granted a one-off FY17 Transitional Performance Award to Paul Harvey to cover the gap in vesting in 2019 due to his transition from the Management Share Plan (three-year retention rights and four-year performance rights) to the Executive LTI Plan (four-year performance rights).

This award is subject to the same TSR performance conditions as our LTI (see Components of our Reward on page 56), namely two thirds relative to a mining sector index (IHS Markit Global Mining Index) and one third relative to a world index (MSCI Word Index), except this award has a three-year performance period, from 1 July 2016 to 30 June 2019.

For the award to vest in full, it would need to outperform both indices by 17.4 per cent (5.5 per cent per annum cumulative). Our Board noted that our TSR outperformed both peer indices by more than 17.4 per cent (see Table 1.9), and approved this award to vest in full in August 2019.

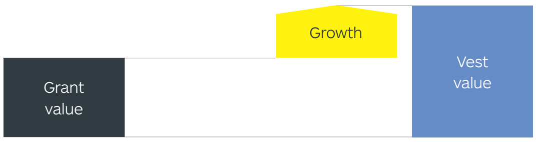
Table 1.9 Transitional Performance Award vesting outcome

	TSR Performance[1]		Outperformance for 100% vesting		Vesting outcome	Index weighting	Weighted vesting outcome
	Index (A)	South32 (B)	Required	Achieved (B-A)	(C)	(D)	(C x D)
● Sector Index	75.4%	**134.4%**	+17.4%	+59.0%	100%	2/3	**66.7%**
● World Index	48.5%		+17.4%	+85.9%	100%	1/3	**33.3%**
							100.0%

(1) TSR Performance reflects the one-month average return to 30 June 2016 at the start of the performance period, to the one-moth average return to 30 June 2019 at the end of the performance period.

Table 1.10 Other South32 Awards vested

Executive KMP	Award	Number of rights granted	Number of rights vested	Number of rights forfeited	Value at grant[1] (A$'000)	Value forfeited[2] (A$'000)	Value of share price growth[3] (A$'000)	Value at vesting[4] (A$'000)
Mr P Harvey	FY17 Transitional Award	239,197	239,197	-	387	-	**373**	**761**
Mrs K Tovich	FY17 Management Share Plan (Retention)	120,296	120,296	-	195	-	**188**	**383**



(1) 'Value at grant' is the number of shares granted multiplied by the grant determination price in June 2016 (A$1.62).

(2) 'Value forfeited' is the value lapsed/forfeited based on performance relative to the performance measures, multiplied by the grant determination price in June 2016 of A$1.62.

(3) 'Share price growth' is the number of shares that vested, multiplied by the difference between the grant determination price (A$1.62) and the share price at 30 June 2019 of A$3.18 This reflects the value added due to the change in share price since the start of the performance period.

(4) 'Value at Vesting' is the number of shares that vested, multiplied by the closing share price of South32 shares on 30 June 2019 of A$3.18.

LTI GRANTED IN FY19

As part of our FY19 LTI Plan, we granted performance rights to Executive KMP in December 2018. These have a four-year performance period, and are subject to performance hurdles (outlined on page 56).

Shareholders approved the grant of rights for the CEO at the AGM on 25 October 2018.

Table 1.11 FY19 LTI grants

	Reward Determination[1] (calculated at the start of the performance period - July 2018)				Grant (December 2018)
Executive KMP	**Face value** (% of Fixed Remuneration)	**Face Value** (A$'000)	**Target Value[2]** (% of Fixed Remuneration)	**Target Value[2]** (A$'000)	**Number of Rights granted[3]**
Mr G Kerr	300	5,310	120	2,124	**1,450,819**
Mr B Harris[4]	200	1,700	80	680	**464,480**
Mr M Fraser	250	2,470	100	988	**674,863**
Mr P Harvey	250	1,975	100	790	**539,617**

(1) The grant of awards is based on the Face Value as outlined in the Components of our Reward (see page 56).

(2) The Target Value considers the difficulty of achieving performance hurdles and anticipated share price volatility.

(3) The number of rights granted to the Executive KMP in December 2018 is calculated by dividing the Face Value by the VWAP of South32 shares traded on the ASX over the last 10 trading days of June 2018, being A$3.66. The Fair Value at grant for accounting purposes, as calculated by external consultants, was A$1.51 per right for the South32 LTI/MSP Performance Award and A$2.79 per right for the Management Share Plan (Retention) Award.

(4) Brendan Harris ceased as a member of KMP on 30 April 2019. Grant details above are for the full year and are not pro-rated for his time as a member of KMP.

TERMS AND CONDITIONS OF RIGHTS AWARDED UNDER EQUITY PLANS

TYPE OF EQUITY	We deliver deferred STI and LTI awards in the form of share rights. These are rights to receive fully paid ordinary shares in South32 Limited,[1] subject to meeting specific performance and vesting conditions (Rights). If the Rights vest, no consideration or exercise price is payable for the allocation of shares. As Rights are automatically exercised, they don't have an expiry date.
DIVIDEND AND VOTING RIGHTS	Rights carry no entitlement to voting, dividends or dividend equivalent payments.
CESSATION OF EMPLOYMENT	Unless our Board determines otherwise: ■ Resignation or termination for cause: all unvested Rights lapse; ■ Death, serious injury, disability or illness that prevents continued employment or total permanent disability: all unvested Rights vest immediately; and ■ Other circumstances: a pro-rata portion of Rights to remain on foot subject to the Remuneration Committee's discretion to lapse.
CHANGE OF CONTROL	Our Board can determine the level of vesting (if any) having regard to the portion of the vesting period elapsed, performance to date against any applicable performance conditions and other factors they deem appropriate.
MALUS & CLAWBACK	Our Board can reduce or clawback all vested and unvested STI and LTI awards in certain circumstances to ensure Executives don't obtain an inappropriate benefit. These circumstances are broad, and can include: ■ An Executive engaging in misconduct; ■ A material misstatement of our accounts results in vesting; ■ Behaviours of Executives that bring us into disrepute; and ■ Any other factor our Board deems justifiable.
RIGHTS TO PARTICIPATE IN NEW ISSUES	A participant can't take part in new issues of securities in relation to their unvested Rights. However, the relevant plan rules include specific provisions dealing with rights issues, bonus issues and corporate actions and other capital reconstructions. These provisions are intended to ensure that Rights holders aren't unfairly disadvantaged by corporate actions.

(1) References in this Remuneration report to 'South32 shares' are references to fully paid ordinary shares in South32 Limited.

REPLACEMENT BHP AWARDS

BHP outlined the arrangements regarding the Replacement Awards in the Listing Document (March 2015). The unvested BHP awards that had been granted to the Executive KMP, including LTIP, Transition Awards and Deferred STI, were to be forfeited and replaced on similar value and terms to the BHP awards, including service and performance conditions (see Table 1.12 for key terms and conditions).

These Replacement Awards were then granted to Executive KMP at the time of the Demerger, to ensure that Executives weren't negatively impacted by accepting roles with us. This enabled us to acquire the appropriate talent into South32. The Replacement BHP FY15 LTIP is the final Replacement Award.

It's important that the remuneration arrangements for Executive KMP are aligned to our strategy, performance and service conditions. That's why the Replacement Awards are linked to our performance, instead of BHP's, from the Demerger on 25 May 2015.

TERMS AND CONDITIONS OF REPLACEMENT BHP AWARDS

Table 1.12 Key terms and performance conditions for the Replacement Awards

Award	Key Terms and Performance Conditions
Replacement BHP LTIP Awards	**LTIP Performance Measure:** These are subject to relative TSR over a five-year vesting period with reference to the Sector index determining vesting of 67 per cent of the rights and the MSCI World index determining vesting of 33 per cent of the rights. For the period up to 24 May 2015, BHP TSR relative to the BHP comparator groups apply. From 25 May 2015, our TSR relative to our comparator groups apply (see page 56 for information relating to our comparator groups). **Vesting:** Vesting requires the TSR to equal or exceed the TSR of the relevant index over the performance period: ■ If combined TSR over the vesting period is below the index, zero per cent of the rights vest ■ If combined TSR is equal to the TSR of the index, 25 per cent of the rights vest ■ If combined TSR exceeds the index by 5.5 per cent per annum cumulative (Outperformance), 100 per cent of rights vest ■ If combined TSR is between the TSR of the index and Outperformance, vesting will be on a straight line between 25 – 100 per cent **Dividends:** Dividend equivalent payments will be made for any rights that vest at the end of the vesting period.

REPLACEMENT BHP FY15 LTIP AWARDS THAT VESTED IN RESPECT OF FY19

In assessing the performance of the Replacement BHP FY15 LTIP Award, we considered BHP's TSR relative to BHP's comparator groups for the period up to Demerger (i.e. from 1 July 2014 to 24 May 2015) and our TSR performance relative to our comparator groups from Demerger to 30 June 2019. Diagram 1.9 graphs the indicative TSR performance for the full five-year performance period. The time up to Demerger is shaded grey.

Our positive performance from July 2016 has meant that, for the full five-year performance period, the combined company TSR (BHP and South32) has exceeded both the sector index and the world index (the MSCI World).

For the awards to vest in full, they would need to outperform both indices by 30.7 per cent over five years (5.5 per cent per annum cumulative). For the performance period ending 30 June 2019, the Replacement BHP FY15 LTIP Award was eligible to partially vest in August 2019 for Graham Kerr and Mike Fraser (as outlined in the diagrams and table below).

Diagram 1.9 Indicative TSR performance: BHP/South32 vs comparators

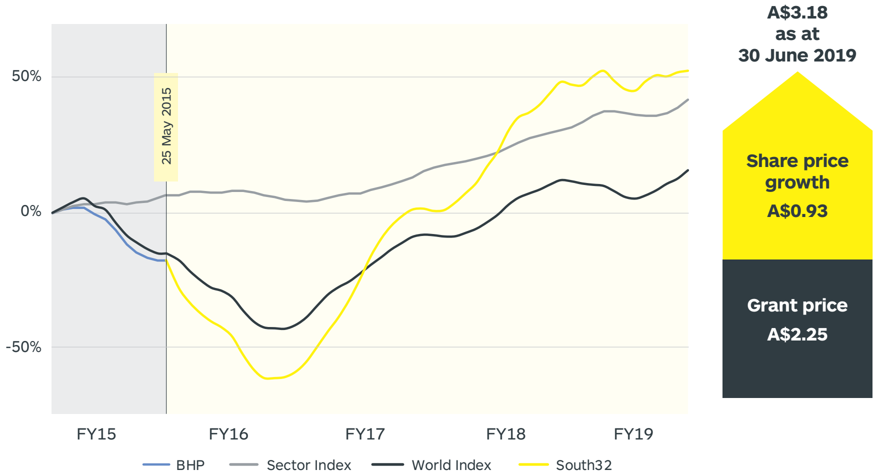


Diagram 1.10 Vesting outcome

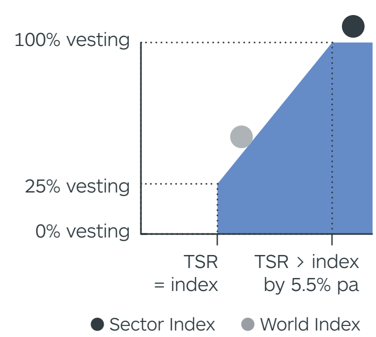


Table 1.13 Replacement BHP FY15 LTIP vesting outcome

	TSR Performance[1] vs Index		Outperformance for 100% vesting		Vesting outcome	Index weighting	Weighted vesting outcome
	BHP (A)	South32 (B)	Required	Achieved (A+B)	(C)	(D)	(C x D)
● Sector Index	(8.6%)	**39.4%**	+30.7%	+30.8%	100%	2/3	**66.7%**
● World Index	(33.1%)	**34.1%**	+30.7%	+1.0%	27.4%	1/3	**9.1%**
							75.8%

(1) TSR Performance reflects the six-month average to 30 June 2014 at the start of the performance period, to the six-month average to 30 June 2019 at the end of the performance period, based on the rules of the BHP FY15 LTIP.

REPLACEMENT BHP FY15 LTIP AWARDS WAIVED BY AGREEMENT

The Replacement BHP FY15 LTIP, which was granted to Graham and Mike, met the performance thresholds resulting in 75.8 per cent of the rights being eligible to vest.

As outlined previously, over the past four years, South32 has delivered strong financial performance with a TSR of 84 per cent, which has resulted in 100 per cent vesting of the FY16 South32 LTI (see page 60). This coupled with share price growth of 66 per cent over the same period, has resulted in the South32 LTI delivering significant value.

Given this, and following discussions between the Board and Graham, Graham has volunteered to waive 100 per cent of his Replacement Award. Graham also recommended, and Mike agreed, that Mike waive 50 per cent of his Replacement Award. Our Board approved these outcomes and is satisfied that these adjustments result in remuneration at levels that is aligned to the South32 Reward Framework and philosophy.

Graham will therefore waive 1,261,124 rights, with a value of A$4,733,000 (including a dividend equivalent payment of A$721,690). Mike will waive 487,253 rights, with a value of A$1,829,000 (including a dividend equivalent payment of A$278,835). The waived rights will lapse. Dividend equivalent payments will only be paid for shares that vest. The value waived is based on a closing share price on 30 June 2019 of A$3.18.

The number and value of shares that have vested are outlined below:

Table 1.14 Replacement BHP FY15 LTIP Award vested

Executive KMP	Number of rights granted	Eligible to vest based on performance outcome	Rights lapsed based on performance outcome	Rights waived by agreement	Number of rights vested	Value at vesting[1] (A$'000)	Dividend equivalent payment[2] (A$'000)	Total value at vesting[3] (A$'000)
Mr G Kerr	1,664,067	1,261,124	402,943	1,261,124	-	-	-	-
Mr M Fraser	1,285,870	974,505	311,365	487,253	487,252	1,550	279	1,829

(1) 'Value at vesting' is the number of shares that vested, multiplied by the share price at 30 June 2019 of A$3.18.

(2) 'Dividend equivalent payment' for Mike Fraser is based on the number of shares that vested. It is calculated by multiplying BHP dividends of US$1.24 by the proportion of BHP shares that would have vested (34,628), and South32 dividends of US$0.313 multiplied by the number of South32 shares that vested (487,252), using a conversion rate of AUD 1 : USD 0.701. This amount will be paid in September 2019 for Mike.

(3) 'Total value at vesting' is the number of shares that vested, multiplied by the share price at 30 June 2019 of A$3.18, plus the dividend equivalent payment.

NON-EXECUTIVE DIRECTOR REMUNERATION

REMUNERATION POLICY

As a global organisation, it's important that we offer competitive Director fees – to help us bring on the appropriate level of experience from a diverse global pool. These fees reflect the size, complexity and global nature of our company, and acknowledge the responsibilities of serving on our Board.

To ensure the independence of our Non-Executive Directors, their remuneration does not have an 'at risk' element.

We pay committee fees to recognise the additional responsibilities associated with participating on a Board Committee.

We pay a fixed fee to our Board Chair for all responsibilities, including participation on any Board Committees.

FY19 NON-EXECUTIVE DIRECTOR FEES AND FEE POOL

We review fees every year and may get outside advice to help us do so. In FY19, we based our review on data provided by external consultants, which resulted in the Chair, Non-Executive Directors and Committee fees increasing by up to 2.8 per cent (effective 1 September 2018).

The maximum aggregate amount we can pay our Non-Executive Directors is A$3.9 million per annum (Fee Pool). Before making any changes to the Fee Pool, we would seek shareholder approval.

The table below outlines the fee levels for FY19.

Table 1.15 FY19 Board fees (effective 1 September 2018)

Fee	Description	FY19 Fees (A$ per annum)
Board Fees	**Board of Directors**	
	Chair of the Board	565,000
	Other Non-Executive Directors	185,000
Committee Fees	**Risk and Audit, Remuneration, Sustainability Committees**	
	Committee Chair	46,000
	Members	23,000

MINIMUM SHAREHOLDING REQUIREMENTS

Our Board is committed to each Non-Executive Director achieving a minimum shareholding level of one year's base fees to be accumulated over a reasonable period. You can find more details of their current shareholdings in Table 1.22.

TRAVEL ALLOWANCE

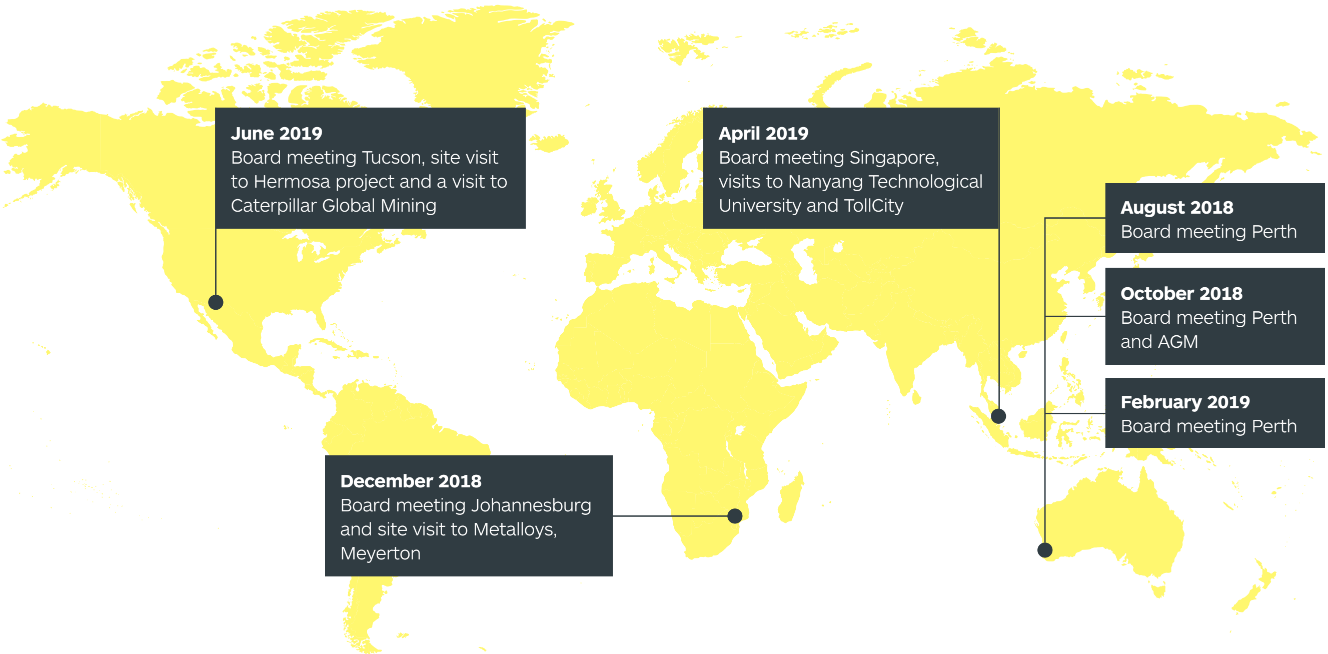
As a global organisation, our Board meetings are held in Australia, South Africa and other locations (see page 72 for more details on this). For our Directors, site visits are an important part of our Board program, giving them:

- A better understanding of workplace culture through interactions with site-based employees;
- An improved understanding of local risks;
- A chance to participate in continuous education; and
- On-the-ground experience.

Required meetings, site visits and other engagements take significant time and commitment – particularly if they're in remote locations. In these cases, we give our Directors an allowance to compensate for this additional commitment.

In FY19, where air travel to a Board commitment was greater than three hours, but less than 10 hours, a one-off allowance of A$7,840 per trip applied. Where air travel was greater than 10 hours, the allowance per trip was A$16,800. See page 67 for details of changes to the Travel Allowance for FY20.

Diagram 1.11 - Director site visits in FY19



FY19 NON-EXECUTIVE DIRECTOR REMUNERATION

In Table 1.16, we've set out the statutory disclosures required under the Corporations Act and in accordance with Australian Accounting Standards, in respect of FY19 remuneration paid to Non-Executive Directors.

Table 1.16 Non-Executive Director remuneration (A$'000)

			Short-term benefits			Post-employment benefits	
Non-Executive Director	**FY19 term**		**Board & Committee fees**	**Non-monetary benefits(1)**	**Other cash allowances & benefits(2)**	**Superannuation benefits**	**Total**
Mr David Crawford AO(3)	to 12 April 2019	**FY19**	**426**	**-**	**48**	**17**	**491**
		FY18	530	-	115	20	665
Ms Karen Wood(3,4)	Full year	**FY19**	**282**	**-**	**73**	**21**	**376**
		FY18	137	-	57	13	207
Mr Frank Cooper AO	Full year	**FY19**	**232**	**-**	**49**	**21**	**302**
		FY18	228	-	66	20	314
Dr Xiaoling Liu(4)	Full year	**FY19**	**209**	**-**	**56**	**21**	**286**
		FY18	137	-	40	13	190
Dr Xolani Mkhwanazi(5)	Full year	**FY19**	**259**	**2**	**84**	**4**	**349**
		FY18	198	2	84	5	289
Dr Ntombifuthi Mtoba	Full year	**FY19**	**204**	**2**	**84**	**4**	**294**
		FY18	198	2	84	5	289
Mr Wayne Osborn	Full year	**FY19**	**232**	**-**	**65**	**21**	**318**
		FY18	227	-	74	20	321
Mr Keith Rumble	Full year	**FY19**	**250**	**2**	**84**	**3**	**339**
		FY18	243	2	84	5	334
TOTAL		**FY19**	**2,094**	**6**	**543**	**112**	**2,755**
		FY18	1,898	6	604	101	2,609

(1) Includes assistance for tax return preparation in FY19.

(2) Includes travel allowance paid in FY19.

(3) David Crawford retired as Director effective 12 April 2019. Karen Wood was elected as Chair, effective 12 April 2019.

(4) Xiaoling Liu and Karen Wood were appointed to the Board on 1 November 2017, FY18 details reflect this appointment date.

(5) Xolani Mkhwanazi received remuneration of ZAR549,858.67 for his role as a Non-Executive Director of South32 SA Coal Holdings (Pty) Ltd during FY19. This figure is included in Board and Committee fees above based on a FX rate of AUD1:ZAR9.93.

LOOKING FORWARD TO FY20

During FY19, our Board commenced a review of our Executive Remuneration strategy and framework. This review will continue into FY20 and any changes will be communicated in our FY20 Remuneration report. As such, we're not making any changes to remuneration arrangements in FY20, except as detailed below.

FIXED REMUNERATION

Fixed Remuneration for Graham Kerr will increase in FY20 by 2.5 per cent to A$1,815,000 – this is first time we've increased Graham's pay since 2015. As Katie Tovich has only recently been appointed to the role of CFO, her remuneration will remain unchanged in FY20. Modest increases for Mike Fraser and Paul Harvey are also outlined below.

Table 1.17 Fixed Remuneration for Executive KMP in FY20, effective 1 September 2019

Executive KMP	FY19 Fixed Remuneration (A$)	FY19 Target Reward[1] (A$)	FY20 Fixed Remuneration (A$)	FY20 Target Reward[1] (A$)	Increase %
Mr G Kerr	1,770,000	6,018,000	**1,815,000**	**6,171,000**	**2.5**
Mrs K Tovich[2]	830,000	2,490,000	**830,000**	**2,490,000**	**-**
Mr M Fraser	988,000	3,162,000	**1,000,000**	**3,200,000**	**1.2**
Mr P Harvey	790,000	2,528,000	**810,000**	**2,592,000**	**2.5**

(1) Target Reward assumes STI paid at 100 per cent of target outcomes, i.e. at 120 per cent of Fixed Remuneration. Target value for the LTI Award takes into account the difficulty of achieving performance hurdles and anticipated share price volatility. Target value for the LTI Award is therefore 40 per cent of the Face Value.

(2) Katie Tovich was appointed as a member of KMP on 1 May 2019.

STI

We are not changing the design of the STI plan for FY20. The key metrics are aligned to the business priorities and Breakthroughs for FY20, including:

SUSTAINABILITY	Safety, health, environment and community	25%
FINANCIAL	Adjusted Return on Invested Capital	25%
	Production, cost and capital expenditure	25%
STRATEGIC ITEMS	Key elements of the FY20 Business Plan	25%
X		
BUSINESS MODIFIER	Applied at the discretion of the Board	
=		
SOUTH32 BUSINESS OUTCOME	This Business Outcome will reflect our performance over the financial year	

LTI

We're not changing the design of the LTI in FY20.

DIRECTOR FEES

Director fees will increase by 2.3 per cent.

Table 1.18 FY20 Annual Board fees (effective 1 September 2019)

Fee	Description	FY19 (A$)	FY20 (A$)	Increase %
Board Fees	**Board of Directors**			
	Chair of the Board	565,000	**578,000**	2.3
	Other Non-Executive Directors	185,000	**189,250**	2.3
Committee Fees	**Risk and Audit, Remuneration, Sustainability Committees**			
	Committee Chair	46,000	**46,000**	-
	Members	23,000	**23,000**	-

From 1 September 2019, the Travel Allowance will no longer be paid for domestic travel to regularly scheduled Board meetings.

STATUTORY DISCLOSURES

STATUTORY REMUNERATION TABLE

In the following table, we've set out the statutory disclosures required under the Corporations Act and in accordance with the Australian Accounting Standards. The amounts shown reflect the remuneration for each Executive that relates to their service as a KMP in FY19.

Table 1.19 Statutory remuneration of Executive KMP in FY19 (A$'000)

		Short-term benefits			Post-employment benefits			Share-based payments(4)			
Executive KMP		Salary	Cash bonus(1)	Non-monetary benefits(2)	Superannuation benefits	Termination benefits	Other long-term benefits(3)	LTI	STI	Total Remuneration	Percentage of Total Remuneration that is Performance Tested
Mr G Kerr	**FY19**	**1,577**	**924**	**29**	**21**	**-**	**164**	**3,386**	**878**	**6,979**	**74%**
	FY18	1,654	1,015	-	27	-	163	2,971	943	6,773	73%
Mr B Harris(5)	**FY19**	**613**	**408**	**18**	**18**	**-**	**65**	**933**	**367**	**2,422**	**71%**
	FY18	753	480	7	23	-	76	986	463	2,789	69%
Mrs K Tovich(6)	**FY19**	**122**	**72**	**1**	**20**	**-**	**12**	**98**	**5**	**330**	**53%**
	FY18	-	-	-	-	-	-	-	-	-	-
Mr M Fraser	**FY19**	**845**	**474**	**31**	**21**	**-**	**91**	**1,476**	**490**	**3,428**	**71%**
	FY18	858	553	18	21	-	89	2,167	523	4,229	77%
Mr P Harvey(7)	**FY19**	**656**	**446**	**38**	**123**	**-**	**68**	**1,279**	**404**	**3,014**	**71%**
	FY18	672	388	14	112	-	66	1,152	394	2,797	69%
TOTAL	**FY19**	**3,813**	**2,324**	**117**	**203**	**-**	**400**	**7,172**	**2,144**	**16,173**	
	FY18	3,937	2,436	39	183	-	394	7,276	2,323	16,588	

(1) STI is provided half in cash (which is included in the cash bonus column of the table) in September following the end of the performance period and half in deferred equity (which is included in the share-based payments column of the table). The value of the deferred equity portion is amortised over the vesting period.

(2) Non-monetary benefits are non-pensionable and include such items as insurances and personal tax assistance.

(3) Other long-term benefits are the accounting expense of annual and long-service leave accrued in FY19.

(4) The amounts were not actually provided to the Executive KMP during FY19. The figures are calculated in accordance with Australian Accounting Standards and are the amortised fair values of equity and equity-related instruments that have been granted to Executive KMP. Refer to Table 1.20 on page 69 in this report for information on awards outstanding during FY19.

(5) Brendan Harris ceased as a member of KMP effective 30 April 2019 and was appointed to the role of Chief Marketing Officer (Elect), a non-KMP role. Details above have been pro-rated for time in the KMP role only.

(6) Katie Tovich was appointed as a member of KMP on 1 May 2019. Previously, Katie was appointed to the role of Vice President Corporate Affairs, a non-KMP role. Details above have been pro-rated for time in the KMP role only.

(7) Paul Harvey is a member of the South32 Defined Benefit Superannuation Plan. The amount disclosed in Table 1.19 reflects the Company contribution as calculated under AASB119. A more detailed explanation is provided below.

SUPERANNUATION ARRANGEMENTS FOR PAUL HARVEY

Paul Harvey is a member of the South32 Superannuation Plan (Defined Benefit plan). The Defined Benefit plan was in place before the Demerger and has been closed to new members since January 2002.

In line with other participants in the Defined Benefit plan, Paul's benefit is calculated as follows:

- 20 per cent x Final Average Salary x Membership Period x Benefit Factor

Here's what this means:

- The Final Average Salary (which excludes any allowances and bonuses) is the average full-time equivalent of Paul's salary over the last three years, which is A$734,451.
- As at 30 June 2019, he has been a member of the plan for 27 years (Membership Period).
- The Benefit Factor depends on your age at the time of leaving South32, and the maximum Benefit Factor for persons aged 55 years and over is 1.00. Paul's Benefit Factor is 1.00 as at 30 June 2019.

Upon retirement (after preservation age), pension payments are determined by the trustee of the South32 Superannuation Plan on advice from the plan actuary, which may be subject to agreement with South32. The pension payments are not indexed. If a participant resigns or retires prior to preservation age there's no entitlement to the pension and the benefit reverts to a lump sum.
The superannuation amount we've disclosed in Table 1.19 above is Paul's FY19 current service cost of A$123,000 - calculated under AASB 119.

DETAILS OF RIGHTS HELD BY EXECUTIVE KMP

In the following table, we've set out more information about the rights over South32 shares held by Executive KMP, including the movements in rights held during FY19. See page 62 for terms and conditions about our Equity Incentive Plans.

Table 1.20 Detail and movement of rights over South32 shares held by Executive KMP during FY19

Award[1]	Opening balance	Grant Date	Granted in FY19[2]	Vested in FY19		Forfeited or other change in FY19		Closing balance	Vesting date
Executive KMP	**Number**		**Number**	**Number[3]**	**%**	**Number**	**%**	**Number**	
Mr G Kerr	**12,183,804**		**1,776,544**	**1,344,220**	**69**	**596,455**	**31**	**12,019,673**	
S32 FY18 Deferred STI (S)	-	7-Dec-18	325,725	-	-	-	-	325,725	Aug-20
S32 FY19 LTI (P)	-	7-Dec-18	1,450,819	-	-	-	-	1,450,819	Aug-22
S32 FY17 Deferred STI (S)	272,055	13-Dec-17	-	-	-	-	-	272,055	Aug-19
S32 FY18 LTI (P)	2,026,717	13-Dec-17	-	-	-	-	-	2,026,717	Aug-21
S32 FY16 Deferred STI (S)	359,190	2-Dec-16	-	357,649	99.6	1,541	0.4	-	Aug-18
S32 FY17 LTI (P)	3,277,777	2-Dec-16	-	-	-	-	-	3,277,777	Aug-20
S32 FY16 LTI (P)	3,002,513	10-Dec-15	-	-	-	-	-	3,002,513	Aug-19
Replacement BHP FY14 LTIP Award (P)	1,581,485	29-Jun-15	-	986,571	62	594,914	38	-	Aug-18
Replacement BHP FY15 LTIP Award (P)	1,664,067	29-Jun-15	-	-	-	-	-	1,664,067	Aug-19
Mr B Harris[4]	**3,410,636**		**618,812**	**682,155**	**99.9**	**917**	**0.1**	**3,346,376**	
S32 FY18 Deferred STI (S)	-	7-Dec-18	154,332	-	-	-	-	154,332	Aug-20
S32 FY19 LTI (P)	-	7-Dec-18	464,480	-	-	-	-	464,480	Aug-22
S32 FY17 Deferred STI (S)	130,648	13-Dec-17	-	-	-	-	-	130,648	Aug-19
S32 FY18 LTI (P)	633,587	13-Dec-17	-	-	-	-	-	633,587	Aug-21
S32 FY16 Deferred STI (S)	213,753	2-Dec-16	-	212,836	99.6	917	0.4	-	Aug-18
S32 FY17 LTI (P)	1,024,691	2-Dec-16	-	-	-	-	-	1,024,691	Aug-20
S32 FY16 LTI (P)	938,638	10-Dec-15	-	-	-	-	-	938,638	Aug-19
FY16 Transitional Performance Award (P)	469,319	10-Dec-15	-	469,319	100	-	-	-	Aug-18
Mrs K Tovich[5]	**1,132,420**		**-**	**-**	**-**	**-**	**-**	**1,132,420**	
FY19 MSP Retention (S)	55,725	7-Dec-18	-	-	-	-	-	55,725	Aug-21
FY19 MSP Performance (P)	139,314	7-Dec-18	-	-	-	-	-	139,314	Aug-22
FY18 MSP Retention (S)	75,725	13-Nov-17	-	-	-	-	-	75,725	Aug-20
FY18 MSP Performance (P)	189,312	13-Nov-17	-	-	-	-	-	189,312	Aug-21
FY17 MSP Retention (S)	120,296	17-Nov-16	-	-	-	-	-	120,296	Aug-19
FY17 MSP Performance (P)	300,740	17-Nov-16	-	-	-	-	-	300,740	Aug-20
FY16 MSP Performance (P)	251,308	16-Nov-15	-	-	-	-	-	251,308	Aug-19
Mr M Fraser[6]	**7,182,091**		**851,508**	**1,391,364**	**72**	**540,520**	**28**	**6,101,715**	
S32 FY18 Deferred STI (S)	-	7-Dec-18	176,645	-	-	-	-	176,645	Aug-20
S32 FY19 LTI (P)	-	7-Dec-18	674,863	-	-	-	-	674,863	Aug-22
S32 FY17 Deferred STI (S)	170,648	13-Dec-17	-	-	-	-	-	170,648	Aug-19
S32 FY18 LTI (P)	925,572	13-Dec-17	-	-	-	-	-	925,572	Aug-21
S32 FY16 Deferred STI (S)	171,079	2-Dec-16	-	171,079	100	-	-	-	Aug-18
S32 FY17 LTI (P)	1,496,913	2-Dec-16	-	-	-	-	-	1,496,913	Aug-20
S32 FY16 LTI (P)	1,371,204	10-Dec-15	-	-	-	-	-	1,371,204	Aug-19
FY15 Transitional Performance Award (P)	538,747	29-Jun-15	-	457,934	85	80,813	15	-	Aug-18
Replacement BHP FY14 LTIP Award	1,222,058	29-Jun-15	-	762,351	62	459,707	38	-	Aug-18
Replacement BHP FY15 LTIP Award (P)	1,285,870	29-Jun-15	-	-	-	-	-	1,285,870	Aug-19

Award(1)	Opening balance	Grant Date	Granted in FY19(2)	Vested in FY19		Forfeited or other change in FY19		Closing balance	Vesting date
Executive KMP	**Number**		**Number**	**Number(3)**	**%**	**Number**	**%**	**Number**	
Mr P Harvey	**3,096,744**		**664,409**	**647,832**	**100**	**789**	**0**	**3,112,532**	
S32 FY18 Deferred STI (S)	-	7-Dec-18	124,792	-	-	-	-	124,792	Aug-20
S32 FY19 LTI (P)	-	7-Dec-18	539,617	-	-	-	-	539,617	Aug-22
S32 FY17 Deferred STI (S)	136,342	13-Dec-17	-	-	-	-	-	136,342	Aug-19
S32 FY18 LTI (P)	739,503	13-Dec-17	-	-	-	-	-	739,503	Aug-21
S32 FY16 Deferred STI (S)	183,969	2-Dec-16	-	183,180	99.6	789	0.4	-	Aug-18
S32 FY17 LTI (P)	956,790	2-Dec-16	-	-	-	-	-	956,790	Aug-20
FY17 Transitional Performance Award (P)	239,197	2-Dec-16	-	-	-	-	-	239,197	Aug-19
FY16 Advance Award (P)	314,136	16-Nov-15	-	314,136	100	-	-	-	Aug-18
FY16 MSP Retention (S)	150,516	16-Nov-15	-	150,516	100	-	-	-	Aug-18
FY16 MSP Performance (P)	376,291	16-Nov-15	-	-	-	-	-	376,291	Aug-19

(1) Replacement Awards refer to the BHP awards that were cancelled and replaced with South32 awards in FY15. At the time of vesting, the quantum of all awards that vest based on performance conditions will automatically convert to ordinary South32 shares for nil consideration in the participant's name. Any rights that do not vest will immediately lapse, hence there is no expiry date associated with the awards. (S) - Service only or (P) - Performance and Service conditions apply. As rights are subject to service and/or performance conditions, the minimum possible total value of rights granted under South32 Equity Plans for future financial years is nil.

(2) The fair value for awards granted in FY19 is the grant date fair value for accounting purposes being A$2.91 for the FY18 Deferred STI, A$2.79 for the FY19 Management Share Plan (Retention) and A$1.51 for the FY19 LTI/FY19 Management Share Plan (Performance).

(3) Rights converted to ordinary South32 shares for nil consideration on 24 August 2018. The South32 closing share price on this date was A$3.39.

(4) Brendan Harris ceased as a member of KMP effective 30 April 2019. Closing balance is as at this date.

(5) Katie Tovich was appointed as a member of KMP on 1 May 2019. Opening balance is as at this date.

(6) Mike Fraser's FY15 Transitional Performance Award was granted in 2015 to bridge the gap between his Target Remuneration as a member of BHP's Group Management Committee and his Target Remuneration at South32, which was of a lesser value. The award had three equal tranches of 538,747 rights vesting in FY16, FY17 and FY18. The level of vesting was dependent on the Board's assessment of (1) TSR performance; (2) Company performance; and (3) Mike's performance in role over the relevant period.

DETAILS OF AWARDS FOR PAUL HARVEY AND KATIE TOVICH

Before becoming a member of KMP, Paul Harvey and Katie Tovich already held a number of awards. The details of these awards are outlined in Table 1.21.

Table 1.21 Key terms and performance conditions of awards

Award	Key Terms and Performance Conditions
Management Share Plan	The Management Share Plan is our long-term incentive plan for eligible management employees below Lead Team level. The Plan has two elements: ■ Retention rights with a three-year vesting period from 1 July to 30 June, vesting in August three years from grant provided employees remain employed by us; and ■ Performance rights with a four-year performance and service period from 1 July to 30 June, vesting in August four years from grant, subject to the same performance and vesting conditions as our LTI for Executive KMP (see page 56) There is no retesting if the performance condition is not met and any rights that do not vest will immediately lapse/be forfeited. Rights won't attract any entitlement to voting, dividends or dividend equivalent payments.
Advance Award	The Advance Award is a one-off grant we made in 2015 to employees who moved from BHP and transitioned from a three-year BHP Management Award Plan to our Management Share Plan. The awards have a three-year performance period from 1 July 2015 to 30 June 2018, with vesting in August 2018. These one-off awards are subject to the same service condition and relative TSR performance and vesting as detailed above for the Management Share Plan Performance rights, but over a three-year vesting period. There is no retesting if the performance condition is not met and any rights that do not vest will immediately lapse/be forfeited. Rights won't attract any entitlement to voting, dividends or dividend equivalent payments.

SHAREHOLDINGS OF KMP

Table 1.22 South32 shares held directly, indirectly or beneficially by each KMP, including their related parties

	Held at 30 June 2018	Received on vesting of rights	Received as remuneration	Other net change[1]	Held at 30 June 2019	% of Fees/ Fixed Remuneration[2]
Non-Executive Directors						
Mr D Crawford AO[3]	370,627	–	–	–	**370,627**	209
Ms K Wood[4]	367,825	–	–	–	**367,825**	207
Mr F Cooper AO	122,866	–	–	5,144	**128,010**	220
Dr X Liu	50,000	–	–	10,000	**60,000**	103
Dr X Mkhwanazi	34,337	–	–	–	**34,337**	59
Dr N Mtoba	37,405	–	–	31,981	**69,386**	119
Mr W Osborn	125,704	–	–	–	**125,704**	216
Mr K Rumble	125,680	–	–	–	**125,680**	216
Executives						
Mr G Kerr	1,278,610	1,344,220	–	(633,872)	**1,988,958**	357
Mr B Harris[5]	375,690	682,155	–	(403,802)	**654,043**	245
Mrs K Tovich[6]	160,167	–	–	–	**160,167**	61
Mr M Fraser	1,402,650	1,391,364	–	(681,771)	**2,112,243**	680
Mr P Harvey	98,319	647,832	–	(304,485)	**441,666**	178

(1) Other net change includes purchases and sales of vested shares to cover tax liabilities. Refer to 28 August 2018 ASX announcement for the CEO.
(2) Based on the closing share price of South32 shares as at 30 June 2019, of A$3.18.
(3) David Crawford retired as Director effective 12 April 2019. Closing balance is as at this date.
(4) Karen Wood was elected as Chair, effective 12 April 2019.
(5) Brendan Harris ceased as a member of KMP effective 30 April 2019. Closing balance is as at this date.
(6) Katie Tovich was appointed as a member of KMP on 1 May 2019. Opening balance is as at this date.

ADDITIONAL INFORMATION

TRANSACTIONS WITH KMP

During FY19, there were no transactions between KMP or their close family members and the South32 Group.

There are no amounts payable at 30 June 2019.

There are no loans with KMP.

A number of Directors of the Group have control or joint control of other entities (also known as personal entities). There have been no transactions between those entities and no amounts were owed by or to the South32 Group during the year.

This Remuneration report was approved by our Board on 5 September 2019.

DIRECTORS' REPORT

This report is presented by our Directors, together with the Group's Financial report, for the financial year ended 30 June 2019.

The report is prepared in accordance with the requirements of the Corporations Act, with the following information forming part of the report:

- Operating and financial review on pages 22 to 39;
- Director biographical information on pages 11 to 14 and Company Secretary biographical information on page 15;
- Remuneration report on pages 50 to 71;
- Note 19 (a) Financial risk management objectives and policies on pages 103 to 106;
- Note 20 Share capital on page 112;
- Note 21 Auditor's remuneration on page 113;
- Note 23 Employee share ownership plans on pages 113 to 117;
- Directors' declaration on page 126;
- Auditor's independence declaration on page 127;
- Shareholder information on pages 132 to 134; and
- Corporate directory (inside back cover).

DIRECTORS AND MEETINGS

At the date of this report, the Directors in office were:

Karen Wood	Appointed 1 November 2017
Graham Kerr	Appointed 21 January 2015
Frank Cooper AO	Appointed 7 May 2015
Dr Xiaoling Liu	Appointed 1 November 2017
Dr Xolani Mkhwanazi	Appointed 2 July 2015
Dr Ntombifuthi (Futhi) Mtoba	Appointed 7 May 2015
Wayne Osborn	Appointed 7 May 2015
Keith Rumble	Appointed 27 February 2015

The following person was also a Director and Chairman during FY19:

David Crawford	From 2 February 2015 – 12 April 2019

You can find information about our Directors' qualifications, experience, special responsibilities and other directorships on pages 11 to 14.

BOARD AND COMMITTEE MEETINGS AND DIRECTOR ATTENDANCE

In FY19, we had nine scheduled Board meetings. You will find the number of Board and Committee meetings, as well as the Directors who attended them, in Table 1.1.

In our Board meeting schedule, we have six face-to-face Board and Committee meetings every year. Two days are scheduled for each program and usually include an additional day for a site visit to an operation or a professional development activity.

Because we operate around the world, we held meetings in our main geographic areas. We had three Board meetings in Australia, and one each in Singapore, South Africa and the United States. We also held three meetings by teleconference. In at least one meeting every year, our Directors take part in a strategy session. In FY19 this was in Singapore.

Our Chair sets the agenda for each meeting, with the CEO and the Company Secretary. The meetings typically include:

- Minutes of the previous meeting;
- Matters arising;
- Report from our Chair;
- CEO's report;
- Finance report;
- Marketing report;
- Health, Safety, Environment and Community (HSEC) report;
- Board Committee Chair reports;
- Continuous disclosure checkpoint;
- Reports on major projects and strategic matters; and
- Closed sessions with Directors and closed sessions with Non-Executive Directors only.

Our Board also receives monthly reports from each of the CFO and CSO to keep Directors on top of our performance outcomes and sustainability matters. Our Board also receives periodic reports on operational and other important business matters including global political and market updates, market research and investor relations activities.

Table 1.1 Board and Committee meeting attendance in FY19

Director	Board		Nomination and Governance Committee		Remuneration Committee		Risk and Audit Committee		Sustainability Committee	
	Held[1]	Attended[2]	Held[1]	Attended[2]	Held[1]	Attended[2]	Held[1]	Attended[2]	Held[1]	Attended[2]
D Crawford[3]	8	8	4	4			8	8		
G Kerr (CEO)	9	9								
F Cooper	9	9	5	5	5	5	9	9		
X Liu	9	9	5	5			9	9	6	6
X Mkhwanazi	9	9							6	6
N Mtoba	9	9	5	5			9	9		
W Osborn	9	9	5	5	5	5			6	6
K Rumble	9	9	5	5	5	5			6	6
K Wood[4]	9	9	5	5	5	5			6	6

Member Chair

(1) Indicates the number of meetings held during the period the Director was a member of the Board or Committee.

(2) Indicates the number of meetings attended during the period the Director was a member of the Board or Committee.

(3) Mr Crawford retired as a Director and Chairman, effective 12 April 2019.

(4) Ms Wood was elected as Chair, effective 12 April 2019 and was Chair of the June 2019 Board meeting.

All Non-Executive Directors have a standing invitation to attend Committee meetings, with the consent of the relevant Committee Chair. In practice, all Directors generally attend all meetings. Their attendance is included above only if Directors are a member of the Committee.

From time to time, our Board also creates other committees to address important matters and areas of focus for the business.

PRINCIPAL ACTIVITIES, STATE OF AFFAIRS AND REVIEW OF OPERATIONS

PRINCIPAL ACTIVITIES

In FY19, the principal activities of the Group were mining and metal production, from a portfolio of assets that included alumina, aluminium, bauxite, energy coal, metallurgical coal, manganese ore, manganese alloy, nickel, silver, lead and zinc.

There were no significant changes in the Group's principal activities during the year.

STATE OF AFFAIRS

There were no significant changes in the Group's state of affairs during the year, other than as set out in the Operating and financial review and Shareholder information on pages 22 to 39, and 132 to 134 respectively.

REVIEW OF OPERATIONS

We've set out a review of the Group's FY19 operations in the Operating and financial review on pages 22 to 39. It includes likely developments in the Group's operations in future financial years and expected results.

DIVIDENDS

We paid the following dividends during FY19:

Dividend	Total dividend	Payment date
Final dividend of US 6.2 cents per share (fully franked) for the year ended 30 June 2018	US$316 million	11 October 2018
Interim dividend of US 5.1 cents per share (fully franked) for the half year ended 31 December 2018	US$256 million	4 April 2019
Special dividend of US 1.7 cents per share (fully franked)	US$85 million	4 April 2019

MATTERS SINCE THE END OF THE FINANCIAL YEAR

On 22 August 2019, the Directors resolved to pay a fully franked final dividend of US 2.8 cents per share (US$140 million) in respect of the 2019 financial year, with a payment date of 10 October 2019. The dividend has not been provided for in the consolidated financial statements and will be recognised in the 2020 financial year.

On 22 August 2019, the Group also announced an extension of the existing capital management program, announced on 27 March 2017, by US$250 million to a total of US$1.25 billion along with a 12-month extension to the completion time, expected to be returned by 4 September 2020. This program has US$264 million remaining.

No other matters or circumstances have arisen since the end of the financial year that have significantly affected, or may significantly affect, the operations, results of operations or state of affairs of the Group in subsequent financial years.

REMUNERATION AND SHARE INTERESTS

Table 1.2 Directors' relevant interests in South32 Limited shares

Director	Number of shares in which a relevant interest is held as at the date of this Directors' Report
D Crawford(1)	370,627
K Wood	367,825
G Kerr(2)	10,373,323
F Cooper	128,010
X Liu	60,000
X Mkhwanazi	53,237
N Mtoba	69,386
W Osborn	125,704
K Rumble	161,380

(1) Mr Crawford retired as Director and Chairman effective 12 April 2019. Closing balance is as at this date.

(2) At the date of this Directors' Report, Mr Kerr's total interest includes 3,292,285 South32 Limited ordinary shares and 7,081,038 rights over South32 Limited ordinary shares held under the South32 Equity Incentive Plan.

RIGHTS AND OPTIONS OVER SOUTH32 LIMITED SHARES

No rights or options over South32 Limited ordinary shares are held by any of our Non-Executive Directors.

Our Executive Director and Managing Director, Mr Graham Kerr, holds rights over South32 Limited ordinary shares, granted under the South32 Equity Incentive Plan. You can find more details about this in the Remuneration report on page 62.

The total number of rights over South32 Limited ordinary shares on issue as at 30 June 2019 is set out in note 23 Employee share ownership plans to the financial statements on page 113 to 117.

No options or rights have been granted since the end of FY19.

As of the date of this report, the total number of rights over South32 Limited ordinary shares on issue is 58,580,921. The Remuneration report contains details of rights on issue. No shares have been issued on vesting of rights during or since the end of FY19.

COMPANY SECRETARIES

Nicole Duncan BA (Hons), LLB, MAICD, FGIA, FCIS

Nicole Duncan is the Chief People and Legal Officer of South32 Limited. She was appointed as Company Secretary on 21 January 2015. You can find out more about Nicole on page 15.

Melanie Williams LLB, GCertCorpMgt, MAICD, FGIA

Melanie Williams is our Vice President Legal (Corporate) and Company Secretariat. She was appointed Company Secretary on 9 August 2016. Before working at South32, Melanie was Company Secretary and General Counsel at Tap Oil Limited, worked as Counsel with an international law firm and has held legal and financial roles with Qatar Petroleum and Woodside Petroleum.

She holds a Bachelor of Laws from the University of Western Australia and a Graduate Certificate of Corporate Management from Deakin University and the Finance and Treasury Association.

INDEMNITIES AND INSURANCE

We support and hold harmless Directors and employees, including employees appointed as Directors of a Group company, who incur personal liability to others as a result of working for us (while acting in good faith), to the extent we are able under law.

Rule 10.2 of the South32 Constitution requires that we indemnify each Director and each Company Secretary on a full indemnity basis and to the extent permitted by law against liability incurred by them in their capacity as an officer of any member of the Group. The Directors and the Company Secretaries named in this report have the benefit of this indemnity (as do individuals who formerly held one of these positions).

As permitted by our Constitution, South32 Limited has entered into Deeds of Indemnity, Access and Insurance with each of our Directors, Company Secretaries and the CFO under which we agree to indemnify those persons on a full indemnity basis and to the extent permitted by law. We're insured against amounts that we may be liable to pay to Directors, Company Secretaries and Officers of the Group (as defined by the Corporations Act) by way of indemnity.

Our insurance policy also covers Directors, Company Secretaries and relevant employees against certain liabilities (including legal costs) they may incur in carrying out their duties. Due to confidentiality obligations and undertakings of the insurance policy, we can't disclose any further details about the premium or policy.

From time to time, we engage our External Auditor to conduct non-statutory audit work and provide other services in accordance with our Provision of Non-Audit Services Policy. The terms of engagement typically include an indemnity in favour of the External Auditor:

- Against all liabilities incurred by the External Auditor in respect of third party claims arising from a breach of the engagement terms by the Group; and
- For all liabilities the External Auditor has to the Group or any third party as a result of reliance on information provided by the Group that is false, misleading or incomplete.

During FY19 and as at the date of this Directors' Report, no indemnity in favour of a current or former Director or Officer of the Group, or in favour of the External Auditor, has been called on.

CORPORATE GOVERNANCE

Under ASX Listing Rule 4.10.3, ASX listed entities are required to benchmark their corporate governance practices against the third edition of the ASX Corporate Governance Council's Corporate Governance Principles and Recommendations (ASX Recommendations). We note the release of the fourth edition of the ASX Recommendations on 27 February 2019 (New Recommendations).

As at the date of this report, we comply with all relevant ASX Recommendations. While the New Recommendations aren't effective until the first full financial year commencing 1 July 2020, we're pleased that our practices align with emerging standards in many areas. Where appropriate, we've shared this in our Corporate Governance Statement.

Our Corporate Governance Statement is available at *www.south32.net/about-us/corporate-governance*. It also contains the information required under the UK Financial Conduct Authority's Disclosure Guidance and Transparency Rules (DTR).

AUDITOR

Our External Auditor has provided an independence declaration in accordance with the Corporations Act, which is set out on page 127 and forms part of this report.

The External Auditor also provides our Directors with an independent assurance conclusion. This relates to certain sustainability information, and is in accordance with the International Standards on Assurance Engagements *ISAE 3000 Assurance Engagement other than the Audits and Reviews of Historical Financial Information* and *ISAE 3410 Assurance of Greenhouse Gas Statements.*

We've included a copy of the External Auditor's assurance report in the FY19 GRI Navigator, available at www.south32.net.

NON-AUDIT SERVICES

On page 113, you can find details of the non-audit services undertaken by, and amounts paid to, our External Auditor in note 21 Auditor's remuneration to the financial statements.

All non-audit services provided by our External Auditor were considered and approved in accordance with the process set out in our Provision of Non-Audit Services Policy. No services were conducted in contravention of that policy.

The Directors have formed the view, based on written advice from the Risk and Audit Committee, that the provision of non-audit services during FY19 was compatible with, and did not compromise, the general standard of auditor independence for the following reasons:

- All non-audit services were subject to the corporate governance procedures and Policies we adopted and have been reviewed by the Risk and Audit Committee to ensure they don't affect the integrity or objectivity of the External Auditor; and
- The non-audit services provided don't involve reviewing or auditing the External Auditor's own work or acting in a management or decision-making capacity for us.

POLITICAL DONATIONS AND COMMUNITY INVESTMENT

Our Code of Business Conduct sets out our approach to political donations and community investment.

In FY19, we didn't contribute funds to any politician, elected official or candidate for public office in any country. Our representatives attended political functions that charged an attendance fee, and where attendance was approved beforehand in accordance with our internal approval requirements. We've recorded the details of attendances and the relevant costs at a corporate level.

In FY19, we contributed US$17.3 million for the purposes of supporting community programs that comprised cash, in-kind support and administrative costs. For more information on our community investment, please visit www.south32.net..

PROCEEDINGS ON BEHALF OF SOUTH32

No proceedings have been brought or intervened in on our behalf, nor any application made under section 237 of the Corporations Act.

ENVIRONMENTAL PERFORMANCE

PERFORMANCE IN RELATION TO ENVIRONMENTAL REGULATION

We classify environmental incidents based on actual and potential impact type as defined by our internal material risk management standards.

In FY19, we had one environmental event that resulted in a major impact to the receiving environment which occurred at our Worsley Alumina operation. The event related to detection of dieback infestation (an infection which can impact native plant species in Western Australia) in an area of the site that contains a number of threatened species.

Following the event, we have engaged with the relevant authorities and remain committed to working with them to identify and implement improvements in our dieback management aimed at avoiding similar occurrences. No further significant environmental events were reported in FY19.

FINES AND PROSECUTIONS

In February 2019, our Illawarra Metallurgical Coal operation was fined A$30,000 by the New South Wales Environment Protection Authority. The fine was made up of two A$15,000 amounts for failure to operate/maintain pollution control equipment and alleged pollution/impact to the Georges River against conditions of our Environmental Protection Licence.

No impacts to aquatic fauna were observed, and because we promptly pumped the discharge back to on-site storage dams at Appin East colliery, we reduced the potential environmental impacts.

Tests we did two weeks after the Environmental Protection Authority inspection showed water in the area was clear with no residue detected. Our environment personnel carried out remediation work and have improved our maintenance and monitoring systems with the intention to avoid a similar occurrence in the future.

ROUNDING OF AMOUNTS

We've applied the *Australian Securities and Investments Commission (ASIC) Corporations (Rounding in Financial/Directors' Reports) Instrument 2016/191* to this report. This means the amounts in the financial statements have been rounded to the nearest million US dollars, unless stated otherwise.

RESPONSIBILITY STATEMENT

The Directors state that to the best of their knowledge:

a) The consolidated financial statements and notes on pages 78 to 125 were prepared in accordance with applicable accounting standards, give a true and fair view of the assets, liabilities, financial position and profit and loss of the Group and the undertakings included in the consolidation taken as a whole; and

b) The Directors' Report includes a fair review of the development and performance of the business and the position of the Group and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties they face.

This Directors' Report is made in accordance with a resolution of the Board.

Karen Wood
Chair

Graham Kerr
Chief Executive Officer and Managing Director

Date: 5 September 2019

FINANCIAL REPORT

CONSOLIDATED INCOME STATEMENT

for the year ended 30 June 2019

US$M	Note	FY19	FY18
Revenue:			
Group production	4	6,468	6,682
Third party products and services	4	806	867
		7,274	7,549
Other income		238	226
Expenses excluding net finance cost	5	(7,092)	(6,577)
Share of profit/(loss) of equity accounted investments	27	467	521
Profit/(loss)		887	1,719
Comprising:			
Group production		882	1,694
Third party products and services		5	25
Profit/(loss)		887	1,719
Finance expenses		(151)	(168)
Finance income		67	68
Net finance cost	18	(84)	(100)
Profit/(loss) before tax		803	1,619
Income tax (expense)/benefit	6	(414)	(287)
Profit/(loss) after tax		389	1,332
Attributable to:			
Equity holders of South32 Limited		389	1,332
Profit/(loss) for the year attributable to the equity holders of South32 Limited:			
Basic earnings per share (cents)	8	7.7	25.8
Diluted earnings per share (cents)	8	7.6	25.4

The accompanying notes form part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

for the year ended 30 June 2019

US$M	Note	FY19	FY18
Profit/(loss) for the year		389	1,332
Other Comprehensive Income			
Items that may be reclassified to the Consolidated Income Statement:			
Available for sale investments:			
Net gains/(losses) recognised in equity		-	170
Net (gains)/losses transferred to the Consolidated Income Statement		-	(33)
Tax benefit/(expense) recognised within Other Comprehensive Income		-	(3)
Cash Flow hedges:			
Net gains/(losses) recognised in equity		-	5
Transfer of net (gains)/losses recognised in equity		(5)	-
Total items that may be reclassified to the Consolidated Income Statement		(5)	139
Items not to be reclassified to the Consolidated Income Statement:			
Investments in equity instruments designated as fair value through Other Comprehensive Income (FVOCI):			
Net fair value gains/(losses)		(26)	-
Tax benefit/(expense)		10	-
Equity accounted investments – share of Other Comprehensive Income/(loss), net of tax	27	66	1
Gains/(losses) on pension and medical schemes	15	(3)	4
Tax benefit/(expense) recognised within Other Comprehensive Income		1	(1)
Total items not to be reclassified to the Consolidated Income Statement		48	4
Total Other Comprehensive Income/(loss)		43	143
Total Comprehensive Income/(loss)		432	1,475
Attributable to:			
Equity holders of South32 Limited		432	1,475

The accompanying notes form part of the consolidated financial statements.

CONSOLIDATED BALANCE SHEET

as at 30 June 2019

US$M	Note	FY19	FY18
ASSETS			
Current assets			
Cash and cash equivalents	16	1,408	2,970
Trade and other receivables	9	888	826
Other financial assets	19	108	80
Inventories	10	952	886
Current tax assets		7	8
Other		38	51
Total current assets		3,401	4,821
Non-current assets			
Trade and other receivables	9	290	248
Other financial assets	19	272	613
Inventories	10	68	76
Property, plant and equipment	11	9,596	8,196
Intangible assets	12	233	221
Equity accounted investments	27	688	697
Deferred tax assets	6	155	245
Other		12	16
Total non-current assets		11,314	10,312
Total assets		14,715	15,133
LIABILITIES			
Current liabilities			
Trade and other payables	14	880	830
Interest bearing liabilities	17	313	333
Other financial liabilities	19	-	2
Current tax payables		179	135
Provisions	15	312	360
Deferred income		4	4
Total current liabilities		1,688	1,664
Non-current liabilities			
Trade and other payables	14	1	5
Interest bearing liabilities	17	591	596
Deferred tax liabilities	6	334	445
Provisions	15	1,925	1,705
Deferred income		8	9
Total non-current liabilities		2,859	2,760
Total liabilities		4,547	4,424
Net assets		10,168	10,709
EQUITY			
Share capital	20	14,212	14,493
Treasury shares	20	(105)	(83)
Reserves		(3,490)	(3,333)
Retained earnings/(accumulated losses)		(448)	(367)
Total equity attributable to equity holders of South32 Limited		10,169	10,710
Non-controlling interests		(1)	(1)
Total equity		10,168	10,709

The accompanying notes form part of the consolidated financial statements.

CONSOLIDATED CASH FLOW STATEMENT

for the year ended 30 June 2019

US$M	Note	FY19	FY18
Operating activities			
Profit/(loss) before tax		803	1,619
Adjustments for:			
Non-cash significant items		-	(31)
Depreciation and amortisation expense		757	742
Impairments of property, plant and equipment		504	-
Employee share awards expense		38	40
Net finance cost		84	100
Share of (profit)/loss of equity accounted investments		(467)	(521)
Fair value (gains)/losses on derivative instruments and other investments		35	76
Other non-cash or non-operating items		1	(12)
Changes in assets and liabilities:			
Trade and other receivables		6	(153)
Inventories		(58)	(99)
Trade and other payables		(13)	(22)
Provisions and other liabilities		(64)	(118)
Cash generated from operations		1,626	1,621
Interest received		71	64
Interest paid		(70)	(70)
Income tax (paid)/received		(346)	(306)
Dividends received		-	14
Dividends received from equity accounted investments		536	394
Net cash flows from operating activities		1,817	1,717
Investing activities			
Purchases of property, plant and equipment		(652)	(430)
Exploration expenditure		(74)	(40)
Exploration expenditure expensed and included in operating cash flows		46	38
Purchase of intangibles		(30)	(4)
Investment in financial assets		(411)	(273)
Acquisition of subsidiaries and jointly controlled entities, net of their cash		(1,507)	-
Cash outflows from investing activities		(2,628)	(709)
Proceeds from sale of property, plant and equipment and intangibles		5	1
Proceeds from financial assets		305	407
Distribution from equity accounted investments		6	-
Net cash flows from investing activities		(2,312)	(301)
Financing activities			
Proceeds from interest bearing liabilities		3	4
Repayment of interest bearing liabilities		(37)	(77)
Purchase of shares by ESOP Trusts		(99)	(84)
Share buy-back		(281)	(254)
Dividends paid		(657)	(708)
Net cash flows from financing activities		(1,071)	(1,119)
Net increase/(decrease) in cash and cash equivalents		(1,566)	297
Cash and cash equivalents, net of overdrafts, at the beginning of the financial year		2,970	2,675
Foreign currency exchange rate changes on cash and cash equivalents		2	(2)
Cash and cash equivalents, net of overdrafts, at the end of the financial year	16	1,406	2,970

The accompanying notes form part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

for the year ended 30 June 2019

US$M	Share capital	Treasury shares	Financial assets reserve(1)	Employee share awards reserve(2)	Other reserves(3)	Retained earnings/ (accumulated losses)	Total	Non-controlling interests	Total equity
	Attributable to equity holders of South32 Limited								
Balance as at 1 July 2018	14,493	(83)	164	88	(3,585)	(367)	10,710	(1)	10,709
Adjustments for transition to new accounting standards(4)	-	-	(12)	-	-	10	(2)	-	(2)
Restated balance as at 1 July 2018	14,493	(83)	152	88	(3,585)	(357)	10,708	(1)	10,707
Profit/(loss) for the year	-	-	-	-	-	389	389	-	389
Other Comprehensive Income/(loss)	-	-	(16)	-	(5)	64	43	-	43
Total Comprehensive Income/(loss)	-	-	(16)	-	(5)	453	432	-	432
Transactions with owners:									
Dividends	-	-	-	-	-	(657)	(657)	-	(657)
Shares bought back and cancelled	(281)	-	-	-	-	-	(281)	-	(281)
Accrued employee entitlements for unexercised awards, net of tax	-	-	-	49	-	-	49	-	49
Purchase of shares by ESOP Trusts	-	(99)	-	-	-	-	(99)	-	(99)
Employee share awards exercised following vesting	-	77	-	(28)	-	(49)	-	-	-
Tax recognised for employee awards exercised	-	-	-	-	-	17	17	-	17
Transfer of cumulative fair value gain on equity instruments designated at FVOCI(5)	-	-	(145)	-	-	145	-	-	-
Balance as at 30 June 2019	14,212	(105)	(9)	109	(3,590)	(448)	10,169	(1)	10,168
Balance as at 1 July 2017	14,747	(26)	30	57	(3,590)	(982)	10,236	(1)	10,235
Profit/(loss) for the year	-	-	-	-	-	1,332	1,332	-	1,332
Other Comprehensive Income/(loss)	-	-	134	-	5	4	143	-	143
Total Comprehensive Income/(loss)	-	-	134	-	5	1,336	1,475	-	1,475
Transactions with owners:									
Dividends	-	-	-	-	-	(708)	(708)	-	(708)
Shares bought back and cancelled	(254)	-	-	-	-	-	(254)	-	(254)
Accrued employee entitlements for unexercised awards, net of tax	-	-	-	45	-	-	45	-	45
Purchase of shares by ESOP Trusts	-	(84)	-	-	-	-	(84)	-	(84)
Employee share awards exercised following vesting	-	27	-	(14)	-	(13)	-	-	-
Balance as at 30 June 2018	14,493	(83)	164	88	(3,585)	(367)	10,710	(1)	10,709

(1) Represents the fair value movement in financial assets designated as FVOCI.

(2) Represents the accrued employee entitlements to share awards that have not yet vested.

(3) Primarily consists of the common control transaction reserve of US$3,569 million, which reflects the difference between consideration paid and the carrying value of assets and liabilities acquired, as well as the gains/losses on disposal of entities as part of the Demerger of the Group in 2015.

(4) Refer to note 3 New standards and interpretations.

(5) The Group completed its acquisition of the remaining 83 per cent of issued and outstanding shares of Arizona Mining Inc. and derecognised its existing 17 per cent interest as an investment in equity instruments designated as FVOCI.

The accompanying notes form part of the consolidated financial statements.

NOTES TO FINANCIAL STATEMENTS – BASIS OF PREPARATION

This section sets out the accounting policies that relate to the consolidated financial statements of South32 Limited (referred to as the Company) and its subsidiaries and joint arrangements (collectively, the Group) as a whole. Where an accounting policy, critical accounting estimate, assumption or judgement is specific to a note, these are described within the note to which they relate. These policies have been consistently applied to all periods presented, except as described in note 3 New standards and interpretations.

The consolidated financial statements of the Group for the year ended 30 June 2019 were authorised for issue in accordance with a resolution of the Directors on 5 September 2019.

1. REPORTING ENTITY

South32 Limited is a for-profit company limited by shares incorporated in Australia with a primary listing on the Australian Securities Exchange (ASX), a standard listing on the London Stock Exchange (LSE) and a secondary listing on the Johannesburg Stock Exchange (JSE).

The nature of the operations and principal activities of the Group are described in note 4 Segment information.

2. BASIS OF PREPARATION

The consolidated financial statements are a general purpose financial report which:

- Have been prepared in accordance with the requirements of the Corporations Act, Australian Accounting Standards and other authoritative pronouncements of the Australian Accounting Standards Board (AASB), International Financial Reporting Standards (IFRS) and other authoritative pronouncements of the International Accounting Standards Board (IASB);
- Have been prepared on a historical cost basis, except for derivative financial instruments and certain other financial assets and liabilities which are required to be measured at fair value;
- Are presented in US dollars, which is the functional currency of the majority of the Group's operations, and all values are rounded to the nearest million dollars (US$M or US$ million) unless otherwise stated, in accordance with ASIC Corporations Instrument 2016/191;
- Present reclassified comparative information where required for consistency with the current year's presentation;
- Adopt all new and amended Accounting Standards and Interpretations issued by the AASB that are relevant to the operations of the Group and effective for reporting periods beginning on or after 1 July 2018. Refer to note 3 New standards and interpretations, for further details; and
- Do not early adopt any Accounting Standards and Interpretations that have been issued or amended but are not yet effective except for those described in note 3 New standards and interpretations.

(a) Basis of consolidation

The consolidated financial statements comprise the financial statements of the Group. A list of significant controlled entities (subsidiaries) at year end is contained in note 26 Subsidiaries.

The financial statements of subsidiaries are prepared for the same reporting period as the parent entity, using consistent accounting policies.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

(b) Foreign currency translation

The functional currency of the majority of the Group's operations is the US dollar as this is assessed to be the principal currency of the economic environments in which they operate.

Transactions denominated in foreign currencies are initially recorded in the functional currency using the exchange rate ruling at the date of the underlying transaction. Monetary assets and liabilities denominated in foreign currencies are translated using the rate of exchange at year end. Exchange gains or losses on retranslation are included in the Consolidated Income Statement, with the exception of foreign exchange gains or losses on foreign currency provisions for closure and rehabilitation which are capitalised in property, plant and equipment for operating sites.

3. NEW STANDARDS AND INTERPRETATIONS

(a) New accounting standards and interpretations effective from 1 July 2018

The Group has changed some of its accounting policies as a result of new or revised accounting standards which became effective for the annual reporting period commencing on 1 July 2018. New policies and standards are:

AASB 9 Financial Instruments

The Group has adopted AASB 9 with a date of initial application of 1 July 2018. The nature and impact of the key changes to the Group's accounting policies resulting from the adoption of AASB 9 are summarised below.

(i) Classification and measurement of financial assets and financial liabilities

AASB 9 contains three principal classification categories for financial assets: measured at amortised cost, fair value through Other Comprehensive Income (FVOCI) and fair value through profit or loss (FVTPL). The classification of a financial asset is based on the cash flow characteristics and the business model used for the management of the financial asset. AASB 9 eliminates the previous AASB 139 *Financial Instruments: Recognition and Measurement* financial asset classification of held to maturity, loans and receivables and available for sale. On an instrument by instrument basis, a policy choice has been made to designate financial assets previously classified as available for sale investments (under AASB 139) as financial assets designated as FVOCI. In the absence of this policy choice, the investments will be accounted for as FVTPL.

The adoption of AASB 9 has not had a significant impact on the Group's accounting policies for financial liabilities as AASB 9 largely retains the existing requirements in AASB 139 for the classification and measurement of financial liabilities.

(ii) Impairment of financial assets

AASB 9 replaces the 'incurred loss' model in AASB 139 with an expected credit loss model. The new impairment model applies to financial assets measured at amortised cost, contract assets and debt investments classified as FVOCI, but not to investments in equity instruments. Under AASB 9, credit losses are recognised earlier than under AASB 139.

3. NEW STANDARDS AND INTERPRETATIONS (CONTINUED)

(a) New accounting standards and interpretations effective from 1 July 2018 (continued)

AASB 9 Financial Instruments (continued)

(iii) Transition

For transition, the Group has elected to apply the limited exemption in AASB 9 relating to the classification, measurement and impairment requirements for financial assets and accordingly has not restated comparative periods. Any resulting adjustments to carrying values in the opening balance sheet have been recognised in opening retained earnings as at 1 July 2018.

The following table summarises the impact, net of tax, of transition to AASB 9 on retained earnings at 1 July 2018.

US$M	Impact from adopting AASB 9 on 1 July 2018
Retained earnings/(accumulated losses)	
Closing balance under AASB 139 (30 June 2018)	(367)
Recognition of expected credit losses under AASB 9	(2)
Reclassification of available for sale investments to investments held at FVTPL(1)	17
Tax impact	(5)
Opening balance under AASB 9 (1 July 2018)	(357)

(1) The investment in unit trusts held by the South32 South Africa Energy Coal Rehabilitation Trust Fund does not meet the definition of an equity instrument under AASB 9. These investments are therefore classified as investments held at FVTPL (FY18: Available for sale). Refer to note 19 Financial assets and financial liabilities.

(iv) Classification of financial assets and financial liabilities on the date of initial application of AASB 9

	Classification under AASB 139	Classification under AASB 9	Carrying amount US$M
Financial assets			
Cash and cash equivalents	Loans and receivables	Amortised cost	2,970
Trade and other receivables(1)	Loans and receivables	Amortised cost	575
Trade and other receivables – provisional pricing	Held at FVTPL	Held at FVTPL	87
Derivative contracts	Held at FVTPL	Held at FVTPL	146
Derivative contracts	Cash flow hedges	Cash flow hedges	5
Loans to equity accounted investments(1)	Loans and receivables	Amortised cost	93
Interest bearing loans receivable	Loans and receivables	Amortised cost	38
Investments in equity instruments – FVOCI(2)	Available for sale	Designated as FVOCI – Equity	406
Other investments – held at FVTPL(3)	Available for sale	Held at FVTPL	136
Financial liabilities			
Trade and other payables	Other financial liabilities at amortised cost	Amortised cost	820
Trade and other payables – provisional pricing	Held at FVTPL	Held at FVTPL	2
Derivative contracts	Held at FVTPL	Held at FVTPL	2
Finance leases	Other financial liabilities at amortised cost	Amortised cost	570
Unsecured other	Other financial liabilities at amortised cost	Amortised cost	359

(1) Trade and other receivables and loans to equity accounted investments are reduced by the recognition of an impairment provision as a result of applying the expected credit loss model under AASB 9, US$1 million each. The impact was recognised in opening retained earnings at 1 July 2018 on transition to AASB 9.

(2) Investments in equity instruments designated as FVOCI represent investments that the Group intends to hold for long-term strategic purposes. As permitted by AASB 9, on an instrument by instrument basis, the Group has elected to designate these investments as held at FVOCI at the date of initial application.

(3) Other investments held at FVTPL which were previously classified as available for sale, are not equity instruments and are therefore unable to be designated as investments held at FVOCI.

NOTES TO FINANCIAL STATEMENTS – BASIS OF PREPARATION

3. NEW STANDARDS AND INTERPRETATIONS (CONTINUED)

(a) New accounting standards and interpretations effective from 1 July 2018 (continued)

AASB 15 Revenue from Contracts with Customers

The Group adopted AASB 15 from 1 July 2018 using the modified retrospective approach where transitional adjustments are recognised in retained earnings. Therefore, the comparative information has not been restated and continues to be reported under AASB 118 *Revenue*.

The impact of the change in accounting policy did not have a material impact on the amount of revenue recognised as the transfer of risk and rewards under AASB 118 is equivalent to the fulfilment of the performance obligation to deliver commodities. Any differences arising from freight services for Cost, Insurance and Freight (CIF) contracts are immaterial in the current and comparative periods.

Revenue has been recognised net of treatment and refining charges, previously recognised on a gross basis with treatment and refining charges included as a separate expense.

(b) New standards and interpretations issued but not effective

Certain new accounting standards and interpretations have been published that are not effective for the 30 June 2019 reporting period. The Group has reviewed these standards and interpretations, and with the exception of the item listed below, none of the new or amended standards will significantly affect the Group's accounting policies, financial position or performance. The Group does not intend to early adopt any of the new standards or interpretations.

AASB 16 Leases (effective from 1 July 2019)

AASB 16 will generally result in leases being recognised on the Consolidated Balance Sheet, as the distinction between operating and finance leases is removed. The Group will elect to apply AASB 16 using the modified retrospective approach and will therefore not restate comparative information. The Group will also apply the practical expedient to 'grandfather' previous lease assessments of existing contracts and will apply the AASB 16 lease definition only to new contracts entered into after 1 July 2019.

On transition, the present value of the Group's operating lease commitments excluding low-value and short-term leases, will be shown as right-of-use assets and as right-of-use liabilities on the Consolidated Balance Sheet. Optional renewable periods will be included in the lease term if it is reasonably certain that an extension will occur. In addition, variable lease payments linked to a rate or an index, such as CPI, are now required to be recognised within the lease liability and right-of-use asset when effective. Lessees will be required to separately recognise the interest expense on the lease liability and the depreciation expense on the right-of-use asset. The only exceptions are short-term and low-value leases.

The Group has completed an impact assessment of AASB 16 and the expected impact on the Consolidated Balance Sheet at 1 July 2019 is approximately:

US$M	
Right-of-use assets[(1)]	140
Right-of-use liabilities[(1)]	(140)

(1) Includes US$52 million of variable lease payments based on a rate or an index, such as CPI.

NOTES TO FINANCIAL STATEMENTS – RESULTS FOR THE YEAR

This section focuses on the results and performance of the Group. This covers both profitability and the resultant return to shareholders via earnings per share.

4. SEGMENT INFORMATION

(a) Description of segments

The operating segments (also referred to as operations) are organised and managed separately according to the nature of products produced.

Certain members of the Lead Team (the chief operating decision makers) and the Board of Directors monitor the segment results regularly for the purpose of making decisions about resource allocation and performance assessment. The segment information for the manganese operations are presented on a proportional consolidation basis, which is the measure used by the Group's management to assess their performance.

The principal activities of each operating segment as the Group is currently structured are summarised as follows:

Operating segment	Principal activities
Worsley Alumina	Integrated bauxite mine and alumina refinery in Western Australia, Australia
Hillside Aluminium	Aluminium smelter in South Africa
Mozal Aluminium	Aluminium smelter in Mozambique
Brazil Alumina	Alumina refinery in Brazil
South Africa Energy Coal	Open-cut and underground energy coal mines and processing operations in South Africa
Illawarra Metallurgical Coal	Underground metallurgical coal mines in New South Wales, Australia
Eagle Downs Metallurgical Coal[(1)]	Exploration and development of metallurgical coal deposit in Queensland, Australia
Australia Manganese	Integrated producer of manganese ore in the Northern Territory and alloy in Tasmania, Australia
South Africa Manganese	Integrated producer of manganese ore and alloy in South Africa
Cerro Matoso	Integrated laterite ferronickel mining and smelting complex in Colombia
Cannington	Silver, lead and zinc mine in Queensland, Australia
Hermosa[(2)]	Exploration and development option for zinc, lead and silver sulphide deposit in Tucson, United States

(1) The Eagle Downs Metallurgical Coal operating segment was acquired on 14 September 2018. Refer to note 32(b) Acquisition of the Eagle Downs Metallurgical Coal project.

(2) The Hermosa operating segment was acquired on 10 August 2018. Refer to note 32(a) Acquisition of Arizona Mining Inc.

All operations are operated or jointly operated by the Group except Brazil Alumina, which is operated by Alcoa.

4. SEGMENT INFORMATION (CONTINUED)

(b) Segment results

Segment performance is measured by Underlying EBIT and Underlying EBITDA. Underlying EBIT is profit before net finance cost, tax and other earnings adjustment items including impairments. Underlying EBITDA is Underlying EBIT, before depreciation and amortisation. A reconciliation of Underlying EBIT, Underlying EBITDA and the Group's consolidated profit after tax is set out on the following pages. Segment revenue is measured on the same basis as in the Consolidated Income Statement.

The Group separately discloses sales of group production from sales of third party products because of the significant difference in profit margin earned on these sales.

It is the Group's policy that inter-segment transactions are made on a commercial basis.

Group and unallocated items/eliminations represent group centre functions and consolidation adjustments. Group financing (including finance expense and finance income) and income taxes are managed on a Group basis and are not allocated to operating segments.

Total assets and liabilities for each operating segment represent operating assets and liabilities which predominantly exclude the carrying amount of equity accounted investments, cash, interest bearing liabilities, tax balances and certain other financial assets. The carrying amount of investments accounted for using the equity method represents the balance of the Group's investment in equity accounted investments, with no adjustment for cash, interest bearing liabilities and tax balances of the equity accounted investment.

Revenue recognition policy applicable from 1 July 2018

The Group has applied AASB 15 using the modified retrospective method. The impact of changes in accounting standards are disclosed in note 3 New standards and interpretations.

Revenue is measured based on the consideration specified in the contract with a customer and excludes amounts collected on behalf of third parties. Revenue is not reduced for royalties and other taxes payable from group production.

The following is a description of the principal activities from which the Group generates its revenue.

Revenue from the sale of commodities

The Group primarily sells the following commodities: alumina, aluminium, energy coal, metallurgical coal, manganese ore, manganese alloy, ferronickel, silver, lead and zinc. The sales of these commodities are considered to be performance obligations as they are the contractual promises by the Group, to transfer distinct goods to customers.

The transaction price allocated to each performance obligation is recognised as the performance obligation is satisfied. Satisfaction occurs when control of the promised commodity is transferred to the customer.

For the sale of commodities, revenue is therefore recognised at a point in time, net of treatment and refining charges (where applicable). The majority of the Group's sales agreements specify that title passes on the bill of lading date (the date the commodity is delivered to the shipping agent), and is assessed to be the point of time in which control over the commodity passes to the customer. For these sales, revenue is recognised on the bill of lading date. For certain sales (principally energy coal sales to adjoining power stations), title passes, and revenue is recognised when the goods have been delivered to the customer.

For certain commodities, the sales price is determined on a provisional basis at the date of sale and adjustments to the sales price subsequently occur based on movements in quoted market or contractual prices up to the date of final pricing. The period between provisional invoicing and final pricing is up to 180 days. Revenue on provisionally priced sales is recognised based on the estimated fair value of the total consideration receivable. The revenue adjustment mechanism embedded within provisionally priced sales arrangements has the characteristics of a commodity derivative. Accordingly, the fair value of the final sales price adjustment is re-estimated continuously and changes in fair value are disclosed separately as 'Other' revenue. In all cases, fair value is estimated by reference to forward market prices.

Revenue from the provision of freight services

The Group sells most of its commodities on either FOB or CIF Incoterms. In the case of CIF Incoterms, the Group is responsible for shipping services after the date at which control of the commodities passes to the customer at the port of loading. The provision of shipping services in these types of arrangements are a distinct service (and therefore a separate performance obligation) to which a portion of the transaction price should be allocated and recognised over time as the shipping services are provided. The Group also provides third party freight services which are recognised as the shipping service is provided.

The Group does not disclose sales revenue from freight services separately as it does not consider this necessary in order to understand the impact of economic factors on the Group.

Revenue recognition policy applicable up to 30 June 2018

The revenue recognition policy under AASB 118 is principally aligned with the recognition requirements of AASB 15. Under AASB 118 there was no requirement to disaggregate revenue and separately disclose revenue from customers and provisionally priced contracts ('Other' revenue). For provisionally priced contracts the fair value of the final sales price adjustment is re-estimated continuously and changes in fair value are recognised as an adjustment to total revenue, while under AASB 15 these adjustments are disclosed separately as 'Other' revenue.

4. SEGMENT INFORMATION (CONTINUED)

(b) Segment results (continued)

30 June 2019 US$M	Worsley Alumina	Hillside Aluminium	Mozal Aluminium	Brazil Alumina	South Africa Energy Coal	Illawarra Metallurgical Coal	Eagle Downs Metallurgical Coal	Australia Manganese[(1)]	South Africa Manganese[(1)]	Cerro Matoso	Cannington	Hermosa	Group and unallocated items/ elimination	Statutory adjustment[(1)]	Group
Revenue from customers[(2)]	1,619	1,443	558	565	1,043	1,139	-	1,102	556	498	478	-	(39)	(1,650)	7,312
Other[(3)]	-	(4)	(2)	1	(6)	(4)	-	(7)	(3)	(9)	(11)	-	(3)	10	(38)
Total revenue[(2)]	1,619	1,439	556	566	1,037	1,135	-	1,095	553	489	467	-	(42)	(1,640)	7,274
Group production	797	1,439	556	548	1,037	1,135	-	1,095	536	489	467	-	-	(1,631)	6,468
Third party products and services[(4)]	-	-	-	-	-	-	-	-	-	-	-	-	815	(9)	806
Inter-segment revenue	822	-	-	18	-	-	-	-	17	-	-	-	(857)	-	-
Total revenue[(2)]	1,619	1,439	556	566	1,037	1,135	-	1,095	553	489	467	-	(42)	(1,640)	7,274
Underlying EBITDA	702	(7)	13	219	42	542	-	698	215	127	161	-	(53)	(462)	2,197
Depreciation and amortisation	(161)	(68)	(34)	(59)	(88)	(183)	-	(60)	(27)	(87)	(57)	-	(20)	87	(757)
Underlying EBIT	541	(75)	(21)	160	(46)	359	-	638	188	40	104	-	(73)	(375)	1,440
Comprising:															
Group production excluding exploration expensed	542	(75)	(21)	160	(47)	360	-	639	188	48	107	-	(47)	(823)	1,031
Exploration expensed	(1)	-	-	-	-	(3)	-	(1)	-	(8)	(3)	-	(31)	1	(46)
Third party products and services[(4)]	-	-	-	-	-	-	-	-	-	-	-	-	5	-	5
Share of profit/(loss) of equity accounted investments[(5)]	-	-	-	-	1	2	-	-	-	-	-	-	-	447	450
Underlying EBIT	541	(75)	(21)	160	(46)	359	-	638	188	40	104	-	(73)	(375)	1,440
Net finance cost															(118)
Income tax (expense)/benefit															(330)
Underlying earnings															992
Earnings adjustments[(6)]															(603)
Profit/(loss) after tax															389
Exploration expenditure	1	-	-	-	-	9	1	2	-	10	4	18	31	(2)	74
Capital expenditure[(7)]	57	19	19	26	213	138	6	65	30	32	55	85	2	(95)	652
Equity accounted investments	-	-	-	-	14	3	-	-	-	-	-	-	-	671	688
Total assets[(8)]	3,468	1,304	644	795	736	1,710	172	679	524	697	493	1,777	2,498	(782)	14,715
Total liabilities[(8)]	637	277	110	108	1,109	300	9	363	212	218	250	39	1,656	(741)	4,547

(1) The segment information reflects the Group's interest in the manganese operations and is presented on a proportional consolidation basis, which is the measure used by the Group's management to assess their performance. The manganese operations are equity accounted in the consolidated financial statements. The statutory adjustment column reconciles the proportional consolidation to the equity accounting position.

(2) Revenue from customers is presented net of treatment and refining charges (previously recognised on a gross basis with treatment and refining charges included as a separate expense). Refer to note 3 New standards and interpretations.

(3) Other revenue predominantly relates to fair value movements on provisionally priced contracts. Refer to note 3 New standards and interpretations.

(4) Third party products and services sold comprise of US$57 million for aluminium, US$2 million for alumina, US$392 million for coal, US$239 million for freight services and US$116 million for aluminium raw materials. Underlying EBIT on third party products and services comprise of nil for aluminium, US$2 million for alumina, US$9 million for coal, (US$5) million for freight services and (US$1) million for aluminium raw materials.

(5) Share of profit/(loss) of equity accounted investments includes the impacts of earnings adjustments to Underlying EBIT.

(6) Refer to note 4(b)(i) Earnings adjustments.

(7) Capital expenditure excludes the purchase of intangibles and capitalised exploration expenditure.

(8) Total assets and liabilities for each operating segment represent operating assets and liabilities which predominantly exclude the carrying amount of equity accounted investments, cash, interest bearing liabilities, tax balances and certain other financial assets.

4. SEGMENT INFORMATION (CONTINUED)

(b) Segment results (continued)

30 June 2018 US$M	Worsley Alumina	Hillside Aluminium	Mozal Aluminium	Brazil Alumina	South Africa Energy Coal	Illawarra Metallurgical Coal	Australia Manganese[1]	South Africa Manganese[1]	Cerro Matoso	Cannington	Group and unallocated items/ elimination	Statutory adjustment[1]	Group
Revenue[2]													
Group production	724	1,583	629	551	1,366	686	1,111	489	559	584	-	(1,600)	6,682
Third party products and services[3]	-	-	-	-	-	-	-	-	-	-	870	(3)	867
Inter-segment revenue	749	-	-	-	-	-	-	14	-	-	(749)	(14)	-
Total revenue	1,473	1,583	629	551	1,366	686	1,111	503	559	584	121	(1,617)	7,549
Underlying EBITDA	588	285	133	192	353	103	710	215	209	230	(64)	(438)	2,516
Depreciation and amortisation	(166)	(72)	(34)	(56)	(77)	(165)	(59)	(29)	(89)	(47)	(36)	88	(742)
Underlying EBIT	422	213	99	136	276	(62)	651	186	120	183	(100)	(350)	1,774
Comprising:													
Group production excluding exploration expensed	423	213	99	136	273	(56)	652	186	128	185	(105)	(838)	1,296
Exploration expensed	(1)	-	-	-	-	(7)	(1)	-	(8)	(2)	(20)	1	(38)
Third party products and services[3]	-	-	-	-	-	-	-	-	-	-	25	-	25
Share of profit/(loss) of equity accounted investments[4]	-	-	-	-	3	1	-	-	-	-	-	487	491
Underlying EBIT	422	213	99	136	276	(62)	651	186	120	183	(100)	(350)	1,774
Net finance cost													(123)
Income tax (expense)/benefit													(324)
Underlying earnings													1,327
Earnings adjustments[5]													5
Profit/(loss) after tax													1,332
Exploration expenditure	1	-	-	-	-	7	1	-	9	3	20	(1)	40
Capital expenditure[6]	52	28	10	12	164	89	48	17	22	51	2	(65)	430
Equity accounted investments	-	-	-	-	12	1	-	-	-	-	-	684	697
Total assets[7]	3,516	1,507	685	756	1,036	1,655	596	496	764	450	4,239	(567)	15,133
Total liabilities[7]	488	305	132	112	1,059	247	307	199	213	240	1,669	(547)	4,424

(1) The segment information reflects the Group's interest in the manganese operations and is presented on a proportional consolidation basis, which is the measure used by the Group's management to assess their performance. The manganese operations are equity accounted in the consolidated financial statements. The statutory adjustment column reconciles the proportional consolidation to the equity accounting position.

(2) A portion of Group production may be provisionally priced at the date revenue is recognised. For the year ended 30 June 2018 there was no requirement under AASB 118 to separate out and disclose provisional price movements. Presentation of revenue is gross of treatment and refining charges.

(3) Third party products and services sold comprise of US$206 million for aluminium, US$49 million for alumina, US$290 million for coal, US$198 million for freight services and US$124 million for aluminium raw materials. Underlying EBIT on third party products and services comprise of US$11 million for aluminium, US$2 million for alumina, US$12 million for coal, (US$1) million for freight services and US$1 million for aluminium raw materials.

(4) Share of profit/(loss) of equity accounted investments includes the impacts of earnings adjustments to Underlying EBIT.

(5) Refer to note 4(b)(i) Earnings adjustments.

(6) Capital expenditure excludes the purchase of intangibles and capitalised exploration expenditure.

(7) Total assets and liabilities for each operating segment represent operating assets and liabilities which predominantly exclude the carrying amount of equity accounted investments, cash, interest bearing liabilities, tax balances and certain other financial assets.

NOTES TO FINANCIAL STATEMENTS – RESULTS FOR THE YEAR

4. SEGMENT INFORMATION (CONTINUED)

(b) Segment results (continued)

(i) Earnings adjustments

The following table shows earnings adjustments in determining Underlying earnings:

US$M	FY19	FY18
Adjustments to Underlying EBIT		
Significant items[(1)]	-	(31)
Exchange rate (gains)/losses on restatement of monetary items[(2)]	3	(15)
Impairment losses[(2)(3)]	504	-
Fair value (gains)/losses on non-trading derivative instruments and other investments[(2)(4)(5)]	35	73
Major corporate restructures[(2)(6)]	28	58
Earnings adjustments included in profit/(loss) of equity accounted investments[(7)(8)]	(17)	(30)
Total adjustments to Underlying EBIT	553	55
Adjustments to net finance cost		
Exchange rate variations on net debt	(34)	(23)
Total adjustments to net finance cost	(34)	(23)
Adjustments to income tax expense		
Tax effect of significant items[(1)]	-	1
Tax effect of other earnings adjustments to Underlying EBIT[(9)]	56	(34)
Tax effect of earnings adjustments to net finance cost	10	7
Exchange rate variations on tax balances	18	(11)
Total adjustments to income tax expense	84	(37)
Total earnings adjustments	603	(5)

(1) Refer to note 4(b)(ii) Significant items.
(2) Recognised in expenses excluding net finance cost in the Consolidated Income Statement. Refer to note 5 Expenses.
(3) Relates to impairment on property, plant and equipment included in the South Africa Energy Coal segment. Refer to note 13 Impairment of non-financial assets.
(4) Primarily relates to US$30 million (FY18: US$57 million) included in the Hillside Aluminium segment.
(5) The investment in unit trusts held by the South32 South Africa Energy Coal Rehabilitation Trust Fund does not meet the definition of an equity instrument under AASB 9. These investments are therefore classified as investments held at FVTPL (FY18: Available for sale).
(6) Primarily relates to US$24 million included in the Hillside Aluminium segment (FY18: primarily related to US$12 million included in the Illawarra Metallurgical Coal segment and US$45 million included in Group and unallocated items).
(7) Recognised in share of profit/(loss) of equity accounted investments in the Consolidated Income Statement. Refer to note 27 Equity accounted investments.
(8) Relates to (US$17) million (FY18: (US$6) million) included in the Australia Manganese segment and nil (FY18: (US$24) million) included in the South Africa Manganese segment.
(9) Primarily includes net US$74 million (FY18: nil) relating to impairment losses in the South Africa Energy Coal segment. Deferred tax assets of US$99 million (FY18: nil) were derecognised as utilisation of the future tax benefits is no longer considered probable. Of the US$132 million (FY18: nil) tax effect of the impairment loss, a deferred tax asset of US$25 million has been recognised with the balance of US$107 million not recognised.

(ii) Significant items

Significant items are those items, not separately identified in note (4)(b)(i) Earnings adjustments, where their nature and amount is considered material to the consolidated financial statements. There were no such items included within the Group's (income)/expense for the year ended 30 June 2019.

Year ended 30 June 2018 US$M	Gross	Tax	Net
Unwind of the investment in Dreamvision[(1)(2)]	(31)	1	(30)
Total significant items	(31)	1	(30)

(1) Recognised in other income in the Consolidated Income Statement.
(2) Attributable to Group and unallocated items.

Unwind of the investment in Dreamvision

The Group's investment in Dreamvision Investments 15 (RF) (Pty) Ltd (Dreamvision) originated in 2006 through the formation of a Broad-Based Black Economic Empowerment (B-BBEE) transaction. The transaction contained a lock-in period which expired in November 2016 and the process to unwind the investment was triggered. Consequently, the Group elected to receive shares in Exxaro Resources Limited in exchange for its shareholding in Dreamvision. The net valuation gain on the available for sale investment in Dreamvision was transferred from the financial assets reserve and recognised in the Consolidated Income Statement.

4. SEGMENT INFORMATION (CONTINUED)

(c) Geographical information

The geographical information below analyses Group revenue and non-current assets by location. Revenue is presented by the geographical location of customers and non-current assets are presented by the geographical location of the operations.

	Revenue from external customers		Non-current assets	
US$M	**FY19**	**FY18**	**FY19**	**FY18**
Australia	601	740	5,671	5,454
China	438	373	-	-
India	529	487	-	-
Italy	188	313	-	-
Japan	406	467	-	-
Middle East	182	243	-	-
Netherlands	437	405	-	-
North America	325	354	1,777	-
Other Asia	257	159	-	-
Rest of Europe	549	562	-	-
Singapore	1,090	1,076	91	94
South America	48	26	1,191	1,300
South Korea	199	160	-	-
Southern Africa	1,214	1,248	2,155	2,594
Switzerland	511	648	-	-
United Arab Emirates	300	288	-	-
Unallocated assets(1)	-	-	429	870
Total	7,274	7,549	11,314	10,312

(1) Primarily comprises of other financial assets and deferred tax assets.

5. EXPENSES

US$M	**Note**	**FY19**	**FY18**
Changes in inventories of finished goods and work in progress		(96)	(9)
Raw materials and consumables used		2,297	2,341
Wages, salaries and redundancies(1)		969	1,008
Pension and other post-retirement obligations		77	79
External services (including transportation)		1,274	1,120
Third party commodity purchases		801	842
Depreciation and amortisation	11, 12	757	742
Net foreign exchange (gains)/losses		3	(15)
Fair value (gains)/losses on derivative instruments and other investments(2)		35	76
Government and other royalties paid and payable		181	147
Exploration and evaluation expenditure incurred and expensed		46	38
Impairments of property, plant and equipment	11, 13	504	-
Operating lease rentals		46	47
All other operating expenses		198	161
Total expenses		7,092	6,577

(1) Includes earnings adjustments of US$28 million (FY18: US$58 million). Refer to note 4(b)(i) Earnings adjustments.

(2) Includes fair value (gains)/losses on non-trading derivative instruments and other investments of US$35 million (FY18:US$73 million). Refer to note 4(b)(i) Earnings adjustments.

6. TAX

Income tax expense comprises current and deferred tax and is recognised in the Consolidated Income Statement except to the extent that it relates to items recognised directly in the Consolidated Statement of Comprehensive Income.

(a) Income tax expense

US$M	FY19	FY18
Current income tax expense/(benefit)	313	333
Deferred income tax expense/(benefit)	101	(46)
Total income tax expense/(benefit)	414	287

Income tax expense/(benefit)

Income tax expense/(benefit) for the period is the tax payable on the current period's taxable income/(loss) based on the applicable income tax rate for each jurisdiction adjusted for changes in deferred tax assets and liabilities attributable to temporary differences and to unused tax losses. Current tax is calculated using the tax rates enacted or substantively enacted at period end, and includes any adjustment to tax payable in respect of previous years.

(b) Reconciliation of prima facie tax expense to income tax expense

	FY19		FY18	
	%	US$M	%	US$M
(Profit)/loss before tax		(803)		(1,619)
Deduct: Profit from equity accounted investments		(467)		(521)
(Profit)/loss subject to tax		(336)		(1,098)
Income tax on profit/(loss) at standard rate of 30 per cent	(30.0)	101	(30.0)	329
Tax rate differential on non Australian income	(18.2)	61	0.3	(3)
Exchange variations and other translation adjustments	(5.4)	18	1.0	(11)
Withholding tax on distributed earnings	(2.4)	8	(1.1)	12
Derecognition of future tax benefits	(33.1)	111	(1.3)	14
Future tax benefits not recognised on impairments	(31.8)	107	-	-
Change in tax rates	1.5	(5)	1.4	(15)
Resolution of pre-demerger tax disputes	-	-	4.1	(45)
Foreign exploration	(2.1)	7	(0.5)	5
Other	(1.8)	6	(0.1)	1
Total income tax expense/(benefit)	(123.3)	414	(26.2)	287

When equity accounted investments are included in the profit before tax used to calculate the Group's effective tax rate, the rate drops from (123.3) per cent to (51.6) per cent (FY18: (17.7) per cent).

Profit from equity accounted investments has been excluded from effective tax rate calculations for the Group to enable an accurate comparison of accounting profit to income tax expense.

Profit from equity accounted investments has been taxed by companies other than South32 Limited, being the companies whose results are disclosed as equity accounted investments in the consolidated financial statements.

Refer to note 27 Equity accounted investments for further details of the Group's equity accounted investments.

NOTES TO FINANCIAL STATEMENTS – RESULTS FOR THE YEAR

6. TAX (CONTINUED)

(c) Movement in deferred tax balances

The composition of the Group's net deferred tax asset and liability recognised in the Consolidated Balance Sheet and the deferred tax expense charged/(credited) to the Consolidated Income Statement is as follows:

	Deferred tax assets		Deferred tax liabilities		Deferred tax charged/ (credited) to the Consolidated Income Statement	
US$M	FY19	FY18	FY19	FY18	FY19	FY18
Type of temporary difference						
Depreciation	23	200	(354)	(384)	148	-
Employee benefits	35	77	12	14	25	(2)
Closure and rehabilitation	204	107	46	34	(109)	(11)
Other provisions	3	8	23	18	-	41
Deferred charges	(161)	(179)	-	-	(18)	(1)
Non tax-depreciable fair value adjustments, revaluations and mineral rights	(121)	(125)	(36)	(54)	(4)	(77)
Tax-effected losses	6	1	51	67	11	34
Brazil Alumina incentives(1)	-	-	(65)	(113)	30	7
Finance leases	159	168	2	2	10	13
Other	7	(12)	(13)	(29)	8	(50)
Total	155	245	(334)	(445)	101	(46)

(1) Our Brazilian subsidiary has received a 75 per cent corporate income tax deferral due to reinvestment of capital in the North east region. The tax is deferred until earnings are repatriated from Brazil.

Deferred tax is provided using the balance sheet liability method, providing for the tax effect of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for tax assessment or deduction purposes. The tax effect of certain temporary differences is not recognised, principally with respect to:

- Temporary differences arising on the initial recognition of assets or liabilities (other than those arising in a business combination or in a manner that initially impacted accounting or taxable profit);
- Temporary differences relating to investments and undistributed earnings in subsidiaries, joint ventures and associates to the extent that the Group is able to control its reversal and it is probable that it will not reverse in the foreseeable future; and
- Goodwill.

To the extent that an item's tax base is solely derived from the amount deductible under capital gains tax legislation, deferred tax is determined as if such amounts are not deductible in determining future assessable income.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the asset can be utilised. Deferred tax assets are reviewed at each balance sheet date and amended to the extent that it is no longer probable that the related tax benefit will be realised. Deferred tax assets and liabilities are offset when they relate to income taxes levied by the same tax authority and the Group has both the right and the intention to settle its current tax assets and liabilities on a net or simultaneous basis.

(d) Unrecognised deferred tax assets and liabilities

The composition of the Group's unrecognised deferred tax assets and liabilities is as follows:

US$M	FY19	FY18
Unrecognised deferred tax assets		
Tax losses(1)	36	37
Other deductible temporary differences	1,782	1,572
Total unrecognised deferred tax assets	1,818	1,609
Unrecognised deferred tax liabilities		
Taxable temporary differences associated with investments and undistributed earnings in subsidiaries	(42)	(50)
Total unrecognised deferred tax liabilities	(42)	(50)

(1) Represents tax losses that have no expiry.

6. TAX (CONTINUED)

(e) Tax consolidation

South32 Limited and its 100 per cent owned Australian resident subsidiaries have formed a tax consolidated group with effect from 25 May 2015. South32 Limited is the head entity of the tax consolidated group. Members of the group have entered into a tax sharing agreement in order to allocate income tax expense to the wholly owned subsidiaries on a stand-alone basis. The tax sharing arrangement provides for the allocation of income tax liabilities between the entities should the head entity default on its tax payment obligations. The possibility of such a default is considered remote at the date of this report.

Members of the tax consolidated group have also entered into a tax funding agreement. The group has applied its allocation approach in determining the appropriate amount of current taxes to allocate to members of the tax consolidated group. The tax funding agreement provides for each member of the tax consolidated group to pay or receive a tax equivalent amount to or from the head entity in accordance with their notional current tax liability or current tax asset. Such amounts are reflected in amounts receivable from or payable to the head entity in their accounts and are settled as soon as practicable after lodgement of the consolidated return and payment of the tax liability.

Key estimates, assumptions and judgements

Deferred tax

Judgement is required in assessing whether deferred tax assets and certain deferred tax liabilities are recognised in the Consolidated Balance Sheet. Deferred tax assets are recognised only where it is considered more likely than not that they will be recovered, which is dependent on the generation of sufficient future taxable profits. Deferred tax liabilities arising from temporary differences in investments, caused principally by retained earnings held in foreign tax jurisdictions, are recognised unless repatriation of retained earnings can be controlled and are not expected to occur in the foreseeable future.

Assumptions about the generation of future taxable profits and repatriation of retained earnings depend on management's estimates of future cash flows. These depend on estimates of future production and sales volumes, commodity prices, reserves, operating costs, closure and rehabilitation costs, capital expenditure, dividends and other capital management transactions.

Uncertain tax matters

Judgements are required about the application of the inherently complex income tax legislation in Colombia, Brazil and South Africa. These judgements are subject to risk and uncertainty, hence there is a possibility that changes in circumstances will alter expectations, which may impact the amount of deferred tax assets and deferred tax liabilities recognised on the Consolidated Balance Sheet and the amount of other tax losses and temporary differences not yet recognised.

Where the final tax outcomes are different from the amounts that were initially recorded, these differences impact the current and deferred tax balances in the period in which the determination is made. Measurement of uncertain tax and royalty matters considers a range of possible outcomes, including assessments received from tax authorities. Where management is of the view that potential liabilities have a low probability of crystallising, or it is not possible to quantify them reliably, they are disclosed as contingent liabilities.

7. DIVIDENDS

US$M	FY19	FY18
Prior year final dividend(1)	316	333
Interim dividend(2)	256	221
Special dividend(2)	85	154
Total dividends declared and paid during the year	657	708

(1) On 23 August 2018, the Directors resolved to pay a fully franked final dividend of US 6.2 cents per share (US$317 million) in respect of the 2018 financial year. The dividend was paid on 11 October 2018. The ESOP Trusts received dividends from South32 Limited of US$1 million, therefore reducing the dividends paid externally to US$316 million.

(2) On 14 February 2019, the Directors resolved to pay a fully franked interim dividend of US 5.1 cents per share (US$258 million) in respect of the 2019 half year and a fully franked special dividend of US 1.7 cents per share (US$86 million). The dividends were paid on 4 April 2019. The ESOP Trusts received dividends from South32 Limited of US$2 million (comprising of US$1 million for the interim dividend and US$1 million for the special dividend) and a total of 7,486,555 shares were bought back between the declaration and ex-dividend dates, therefore reducing the interim dividend paid externally to US$256 million and special dividend paid externally to US$85 million.

Franking Account

US$M	FY19	FY18
Franking credits at the beginning of the financial year	149	184
Credits arising from tax paid/payable by South32 Limited(1)	237	136
Credits arising from the receipt of franked dividends	152	100
Utilisation of credits arising from the payment of franked dividends	(277)	(271)
Total franking credits available at the end of financial year(2)	261	149

(1) Includes the payment of the Australian FY19 income tax liability of US$98 million due in December 2019.

(2) The payment of the final franked FY19 dividend declared after 30 June 2019 will decrease the franking account balance by US$60 million. Refer to note 33 Subsequent events.

NOTES TO FINANCIAL STATEMENTS – RESULTS FOR THE YEAR

8. EARNINGS PER SHARE

Basic earnings per share (EPS) amounts are calculated based on profit attributable to equity holders of South32 Limited and the weighted average number of shares outstanding during the year.

Dilutive EPS amounts are calculated based on profit attributable to equity holders of South32 Limited and the weighted average number of shares outstanding after adjustment for the effects of all dilutive potential shares.

The following reflects the profit/(loss) and share data used in the basic and diluted EPS computations:

Profit/(loss) attributable to equity holders US$M	FY19	FY18
Profit/(loss) attributable to equity holders of South32 Limited (basic)	389	1,332
Profit/(loss) attributable to equity holders of South32 Limited (diluted)	389	1,332

Weighted average number of shares Million	FY19	FY18
Basic earnings per share denominator[1]	5,048	5,159
Shares contingently issuable under employee share ownership plans[2][3]	57	80
Diluted earnings per share denominator	5,105	5,239

(1) The basic EPS denominator is the aggregate of the weighted average number of shares after deduction of the weighted average number of Treasury shares outstanding and shares permanently cancelled through the on-market share buy-back during the period.

(2) Included in the calculation of diluted EPS are shares contingently issuable under employee share ownership plans.

(3) Diluted EPS calculation excludes 19,011,659 (FY18: 4,512,861) rights which are considered anti-dilutive and are subject to service and performance conditions.

Earnings per share US cents	FY19	FY18
Basic earnings per share	7.7	25.8
Diluted earnings per share	7.6	25.4

NOTES TO FINANCIAL STATEMENTS – OPERATING ASSETS AND LIABILITIES

This section shows the assets used to generate the Group's trading performance and the liabilities incurred. Liabilities relating to the Group's financing activities are addressed in the capital structure and financing section, notes 16 to 20.

9. TRADE AND OTHER RECEIVABLES

US$M	FY19	FY18
Current		
Trade receivables[1]	572	545
Loans to equity accounted investments[1][2]	36	27
Other receivables[1]	280	254
Total current trade and other receivables	888	826
Non-current		
Loans to equity accounted investments[1][2]	136	67
Interest bearing loans receivable from joint operations	33	38
Other receivables	121	143
Total non-current trade and other receivables	290	248

(1) Net of allowances for expected credit losses of US$7 million (FY18: Provision for doubtful debts of US$5 million).

(2) Refer to note 30 Related party transactions.

Trade receivables generally have terms of up to 30 days. Trade and other receivables, with the exception of provisionally priced contracts, are recognised initially at fair value and subsequently at amortised cost using the effective interest rate method, less an allowance for expected credit losses. Provisionally priced contracts included in trade receivables are measured at FVTPL.

10. INVENTORIES

US$M	FY19	FY18
Current		
Raw materials and consumables	366	399
Work in progress	347	320
Finished goods	239	167
Total current inventories	952	886
Non-current		
Raw materials and consumables	41	46
Work in progress	27	30
Total non-current inventories	68	76

Inventories carried at net realisable value as at 30 June 2019 was US$333 million (FY18: US$25 million). Inventory write-downs of US$17 million (FY18: US$20 million) were recognised in the year.

Inventories are valued at the lower of cost and net realisable value. Cost is determined primarily on the basis of average costs. For processed inventories, cost is derived on an absorption costing basis. Cost comprises the cost of purchasing raw materials and the cost of production, including attributable overheads. In respect of minerals inventory, quantities are assessed primarily through surveys and assays.

11. PROPERTY, PLANT AND EQUIPMENT

30 June 2019 US$M	Land and buildings	Plant and equipment	Other mineral assets	Assets under construction	Exploration and evaluation	Total
Cost						
At the beginning of the financial year	2,641	15,468	2,686	335	2	21,132
Additions[1]	2	166	93	595	28	884
Foreign exchange movements in closure and rehabilitation provisions[2]	-	(57)	-	-	-	(57)
Disposals	(4)	(125)	(18)	-	-	(147)
Acquisitions of subsidiaries and jointly controlled entities[3]	6	12	1,738	65	-	1,821
Transfers and other movements	24	379	2	(403)	(2)	-
At the end of the financial year	2,669	15,843	4,501	592	28	23,633
Accumulated depreciation and impairments						
At the beginning of the financial year	1,620	9,820	1,496	-	-	12,936
Depreciation charge for the year	79	532	128	-	-	739
Impairments for the year[4]	-	469	35	-	-	504
Disposals	(4)	(125)	(13)	-	-	(142)
At the end of the financial year	1,695	10,696	1,646	-	-	14,037
Net book value at 30 June 2019[5]	974	5,147	2,855	592	28	9,596

(1) Plant and equipment additions of US$138 million (FY18: US$4 million) relate to capitalised closure and rehabilitation amounts as a result of the change in discount rate, refer to note 15 Provisions.

(2) Refer to note 15 Provisions.

(3) Refer to note 32 Acquisition of subsidiaries and jointly controlled operations.

(4) Refer to note 13 Impairment of non-financial assets.

(5) Plant and equipment includes assets held under finance leases with a net book value of US$612 million (FY18: US$629 million).

30 June 2018 US$M	Land and buildings	Plant and equipment	Other mineral assets	Assets under construction	Exploration and evaluation	Total
Cost						
At the beginning of the financial year	2,611	15,219	2,649	252	2	20,733
Additions	-	163	118	312	2	595
Foreign exchange movements in closure and rehabilitation provisions	-	(55)	-	-	-	(55)
Disposals	(11)	(46)	(83)	-	-	(140)
Transfers and other movements	41	187	2	(229)	(2)	(1)
At the end of the financial year	2,641	15,468	2,686	335	2	21,132
Accumulated depreciation and impairments						
At the beginning of the financial year	1,557	9,319	1,484	-	-	12,360
Depreciation charge for the year	73	539	94	-	-	706
Disposals	(9)	(39)	(82)	-	-	(130)
Transfers and other movements	(1)	1	-	-	-	-
At the end of the financial year	1,620	9,820	1,496	-	-	12,936
Net book value at 30 June 2018	1,021	5,648	1,190	335	2	8,196

11. PROPERTY, PLANT AND EQUIPMENT (CONTINUED)

(a) Property, plant and equipment

Property, plant and equipment is stated at cost less accumulated depreciation and impairment charges. Cost is the fair value of consideration given to acquire the asset at the time of its acquisition or construction and includes the direct cost of bringing the asset to the location and condition necessary for operation and its estimated future cost of closure and rehabilitation.

Finance leases

Assets held under lease, which result in the Group receiving substantially all the risks and rewards of ownership of the asset (finance leases), are capitalised at the lower of the fair value of the property, plant and equipment or the estimated present value of the minimum lease payments.

The corresponding finance lease obligation is included within interest bearing liabilities. The interest component is charged to finance expenses over the lease term to reflect a constant rate of interest on the remaining balance of the obligation.

Leased assets are pledged as security for the related finance lease and hire purchase liabilities.

(b) Assets under construction

All assets included in assets under construction are reclassified to other categories in property, plant and equipment when the asset is available and ready for use in the location and condition necessary for it to be capable of operating in the manner intended.

(c) Exploration and evaluation expenditure

Exploration and evaluation expenditure (including amortisation of capitalised licence and lease costs) is charged to the Consolidated Income Statement as incurred except in the following circumstances, in which case the expenditure may be capitalised:

- The exploration and evaluation activity is within an area of interest which was previously acquired as an asset acquisition or in a business combination and measured at fair value on acquisition or; and
- The existence of a commercially viable mineral deposit has been established.

Capitalised exploration and evaluation expenditure considered to be a tangible asset is recorded as a component of property, plant and equipment at cost less impairment charges. Otherwise, it is recorded as an intangible asset (such as certain licence and lease arrangements). In determining whether the purchase of an exploration licence or lease is an intangible asset or a component of property, plant and equipment, consideration is given to the substance of the item acquired and not its legal form. Licences or leases purchased which allow exploration over an extended period of time meet the definition of an intangible exploration lease asset where they cannot be reasonably associated with a known minerals resource.

(d) Other mineral assets

Other mineral assets comprise:

- Capitalised exploration, evaluation and development expenditure (including development stripping) for properties now in production;
- Mineral rights acquired; and
- Capitalised production stripping (as described below in 'overburden removal costs').

Overburden removal costs

The process of removing overburden and other mine waste materials to access mineral deposits is referred to as stripping. In open-pit mining, stripping costs are accounted for separately for each component of an ore body. A component is a specific section within an ore body that is made more accessible by the stripping activity. The identification of components is dependent on the mine plan and will often comprise a separate pushback or phase identified in the plan.

There are two types of stripping activity:

- Development stripping is the initial overburden removal during the development phase to obtain access to a mineral deposit that will be commercially produced; and
- Production stripping is the interburden removal during the normal course of production activity. Production stripping commences after the first saleable minerals have been extracted from the component.

Development stripping costs are capitalised as a development stripping asset when:

- It is probable that future economic benefits associated with the asset will flow to the entity; and
- The costs can be measured reliably.

Production stripping can give rise to two benefits, being the extraction of ore in the current period and improved access to the ore body component in future periods. To the extent that the benefit is the extraction of ore, the stripping costs are recognised as an inventory cost. To the extent the benefit is improved access to future ore, the stripping costs are recognised as a production stripping asset if the following criteria are met:

- It is probable that the future economic benefit (improved access to ore) will flow to the entity;
- The component of the ore body for which access has been improved can be identified; and
- The costs relating to the stripping activity can be measured reliably.

Production stripping costs are allocated between the inventory produced and the production stripping asset using a life-of-component waste to ore (or mineral contained) strip ratio. When the current strip ratio is greater than the life-of-component ratio a portion of the stripping costs is capitalised to the production stripping asset.

The development and production stripping assets are depreciated on a units of production basis based on the Proved and Probable Ore Reserves of the relevant components.

11. PROPERTY, PLANT AND EQUIPMENT (CONTINUED)

(e) Depreciation and amortisation

The carrying amounts of property, plant and equipment are depreciated to their estimated residual value over the estimated useful lives of the specific assets concerned, or the estimated life of the associated mine or lease, if shorter. Estimates of residual values and useful lives are reassessed annually and any change in estimate is taken into account in the determination of remaining depreciation charges. Depreciation commences on the date of commissioning. The major categories of property, plant and equipment are depreciated on a units of production and/or straight-line basis using estimated lives indicated below. However, where assets are dedicated to a mine or lease and are not readily transferable, the below useful lives are subject to the lesser of the asset category's useful life and the life of the mine or lease:

Buildings	25 to 50 years
Land	not depreciated
Plant and equipment	3 to 30 years straight-line
Mineral rights	based on Ore Reserves on a units of production basis
Capitalised exploration, evaluation and development expenditure	based on Ore Reserves on a units of production basis

12. INTANGIBLE ASSETS

30 June 2019 US$M	Goodwill	Other intangibles	Total
Cost			
At the beginning of the financial year	193	261	454
Additions	-	30	30
At the end of the financial year	193	291	484
Accumulated amortisation and impairments			
At the beginning of the financial year	54	179	233
Amortisation charge for the year	-	18	18
At the end of the financial year	54	197	251
Net book value at 30 June 2019	139	94	233

30 June 2018 US$M	Goodwill	Other intangibles	Total
Cost			
At the beginning of the financial year	193	256	449
Additions	-	4	4
Transfers and other movements	-	1	1
At the end of the financial year	193	261	454
Accumulated amortisation and impairments			
At the beginning of the financial year	54	143	197
Amortisation charge for the year	-	36	36
At the end of the financial year	54	179	233
Net book value at 30 June 2018	139	82	221

(a) Goodwill

Where the fair value of consideration paid for a business combination exceeds the fair value of the Group's share of the identifiable net assets acquired, the difference is treated as purchased goodwill. Where the fair value of the Group's share of the identifiable net assets acquired exceeds the cost of acquisition, the difference is immediately recognised in the Consolidated Income Statement. Goodwill is not amortised, however, its carrying amount is assessed annually against its recoverable amount.

(b) Other intangible assets

Amounts paid for the acquisition of identifiable intangible assets, such as software, licences and contract based intangible assets are capitalised at the fair value of consideration paid and are recorded at cost less accumulated amortisation and impairment charges. Identifiable intangible assets with a finite life are amortised on a straight-line basis over their expected useful life. The useful lives are as follows:

Software and licences	5 years
Contract based intangible assets	up to 35 years

The Group has no identifiable intangible assets for which the expected useful life is indefinite.

13. IMPAIRMENT OF NON-FINANCIAL ASSETS

In testing for indications of impairment and performing impairment calculations, assets are considered as collective groups and referred to as cash generating units (CGUs). CGUs are the smallest identifiable group of assets, liabilities and associated goodwill that generate cash inflows that are largely independent of the cash inflows from other assets or groups of assets. Formal impairment tests are carried out annually for CGUs containing goodwill. In addition, formal impairment tests are performed for all other CGUs when there is an indication of impairment. The Group uses discounted cash flow valuations to assess all of its CGUs for impairment or impairment reversal indicators. For any resultant formal impairment testing, and for CGUs containing goodwill, the Group uses the higher of fair value less cost of disposal (FVLCD) and its value in use to assess the recoverable amount. If the carrying value of the CGU exceeds its recoverable amount, the CGU is impaired, and an impairment loss is charged to the Consolidated Income Statement.

Previously impaired CGUs are reviewed for possible reversal of a previous impairment at each reporting date. Impairment reversals cannot exceed the carrying value that would have been determined (net of depreciation) had no impairment loss been recognised for the CGU. Goodwill is not subject to impairment reversal.

The Group recorded the following impairments for the year ended 30 June:

US$M	Note	FY19	FY18
Property, plant and equipment	11	504	-
Total impairment		504	-

(a) Recognised impairment – 30 June 2019

The Group recognised impairments of property, plant and equipment for the separately identifiable CGUs within South Africa Energy Coal (SAEC) for the year ended 30 June 2019. The Group received external indicative offers for SAEC which, in combination with the market outlook for thermal coal demand and prices, informed the Group's assessment of the recoverable amount for SAEC as a collective group of CGUs. The recoverable amount for SAEC is based on a FVLCD calculation and is categorised as a Level 3 fair value based on the inputs in the valuation technique (refer to note 19 Financial assets and financial liabilities).

The recoverable amount is informed by near term future cash flows that assume forecast thermal coal prices which are comparable to market consensus forecasts, and a forecast South African rand exchange rate which is aligned with forward market rates. It also assumes future production based on management's short-term planning processes.

SAEC consists of the Khutala colliery (Khutala), an underground bord and pillar operation; the Klipspruit colliery (Klipspruit), a single dragline, multi seam open-cut mine that is combined with a truck and shovel mini pit; the Wolvekrans Middelburg Complex (WMC) and other SAEC corporate assets. The WMC consists of the Ifalethu colliery and Wolvekrans colliery, which are open-cut mines with a number of active pits, and are mined using draglines combined with truck and shovel operations.

The Group impairment recognised for the year ended 30 June 2019 has been allocated to property, plant and equipment for the CGUs on a pro-rata basis:

Year ended 30 June 2019 US$M	Impairment recognised	Recoverable amount
WMC	253	(318)
Klipspruit	225	108
Khutala	26	(23)
Other corporate assets	-	71
Total	504	(162)

(b) Impairment test for CGUs containing goodwill

For the purpose of impairment testing, goodwill has been allocated to CGUs that are expected to benefit from the synergies of the business combination and which represent the level at which management will monitor and manage the goodwill.

The carrying amount of goodwill has been allocated to the following CGU:

US$M	Note	FY19	FY18
Hillside Aluminium		139	139
Total goodwill	12	139	139

Hillside Aluminium

The goodwill arose from the acquisition of Alusaf in Hillside Aluminium (Pty) Ltd and has been allocated to the Hillside Aluminium CGU which comprises the Hillside aluminium smelter. The recoverable amount of the Hillside Aluminium CGU was determined based on the FVLCD. The determination of FVLCD was most sensitive to:

- Production volumes;
- Aluminium and alumina prices;
- Foreign exchange rates; and
- Discount rate.

Production volumes - estimated production volumes are based on the life of the smelter as determined by management as part of the long-term planning process. Production volumes are influenced by production input costs such as electricity prices, jurisdiction based carbon pricing, and the selling price of aluminium.

Aluminium and alumina prices, and foreign exchange rates - key assumptions for aluminium and alumina prices are comparable to market consensus forecasts for each of the years of the life of operation. Foreign exchange rates are aligned with forward market rates in the short-run and thereafter are within the range published by market commentators.

The long-run aluminium prices, alumina prices and foreign exchange rates used in the FVLCD determinations are within the range when compared with the following range of mid long-run prices published by market commentators:

Mid long-run range	FY19	FY18
Aluminium price (US$/tonne)	1,900 to 2,865	1,740 to 2,865
Alumina price (US$/tonne)	300 to 400	260 to 400
Foreign exchange rate (South African rand to US$)	12.8 to 15.0	11.4 to 16.1

13. IMPAIRMENT OF NON-FINANCIAL ASSETS (CONTINUED)

(b) Impairment test for CGUs containing goodwill (continued)

Discount rate - in determining the FVLCD, a real post-tax discount rate of 7.5 per cent (FY18: 8 per cent), and a country risk premium of up to 2 per cent (FY18: up to 2 per cent), are applied to the post-tax cash flows expressed in real terms.

The impairment test for the Hillside Aluminium CGU indicated that no impairment was required. At 30 June 2019 the carrying value approximates its recoverable amount. As such any material long-term unfavourable change in the aforementioned key assumptions could lead to the carrying value exceeding the recoverable amount. The relationships between each key assumption are complex, such that a change in one may cause a change in several other inputs.

Key estimates, assumptions and judgements

The impairment assessment requires management to make estimates and assumptions about expected production and sales volumes, commodity prices (considering current and historical prices, price trends and related factors), Ore Reserves, Mineral Resources, operating costs, closure and rehabilitation costs, future capital expenditure, allocation of corporate costs, global carbon pricing and, where relevant, specific jurisdiction based carbon prices. These estimates and assumptions are subject to risk and uncertainty; hence there is a possibility that changes in circumstances will alter these projections, which may impact the recoverable amount of the assets. In such circumstances, some or all of the carrying amount of the assets may be further impaired or the impairment charge reversed with the impact recorded in the Consolidated Income Statement.

The basis of key estimates and assumptions used in the assessment of impairment indicators are as follows:

Future production	Life of operation plans based on Proved and Probable Ore Reserve estimates, Mineral Resource (excluding Inferred Mineral Resources) estimates, economic life of smelters and refineries and, in certain cases, expansion projects, including future cost of production.
Commodity prices	Forward market and contract prices, and longer-term price protocol estimates.
Exchange rates	Observable forward market foreign exchange rates.
Discount rates	Cost of capital risk-adjusted and appropriate to the resource.

Where impairment testing is undertaken, a range of external sources are considered as further input to the above assumptions.

When assessing for impairment and impairment reversal indicators, the fundamental characteristics of previously impaired CGUs are relevant to their sensitivity to key estimates and assumptions. For previously impaired CGUs these include:

- CGUs with higher operating margins and with life of operation plans longer than 10 years which are less sensitive to commodity prices and foreign exchange rates, for example Worsley Alumina;
- CGUs with lower operating margins which are highly sensitive to movements in commodity prices and foreign exchange rates, for example the Wolvekrans Middelburg Complex, the Klipspruit colliery and South Africa Manganese; and
- CGUs with higher operating margins and shorter life of operation plans and exposure to commodities that display greater price volatility, for example Australia Manganese.

The operating assets for previously impaired CGUs are included in note 4(b) Segment results.

Ore Reserve is the economically mineable part of the Measured and/or Indicated Mineral Resource that can be legally extracted, or where there is reasonable expectation that approvals for extraction will be granted, from the Group's properties. In order to estimate Ore Reserves, consideration is required for a range of modifying factors, including mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental. When reporting Ore Reserves, the relevant studies, to at least a pre-feasibility level, must demonstrate that, at the time of reporting, extraction could be reasonably justified. Management will form a view of forecast sales prices, based on current and long-term historical average price trends.

Estimating the quantity and/or grade of Mineral Resources requires the location, quantity, grade (or quality), continuity and other geological characteristics to be known, estimated or interpreted from specific geological evidence and knowledge, including sampling in order to satisfy the requirement that there are reasonable prospects for eventual economic extraction. This process may require complex and difficult geological assessments to interpret the data.

The Group reports Ore Reserves and Mineral Resources in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code 2012 Edition), and the Australian Securities Exchange (ASX) Listing Rules Chapter 5: Additional reporting on mining and oil and gas production and exploration activities.

Because the economic assumptions used to estimate the Ore Reserves change from period to period, and because additional geological data are generated during the course of operations, estimates of the Ore Reserves and Mineral Resources may change from period to period. Changes in reported Ore Reserves may affect the Group's financial results and financial position in a number of ways, including the following:

- Asset recoverable amounts may be affected due to changes in estimated future cash flows;
- Depreciation, depletion and amortisation charged in the Consolidated Income Statement may change on the units of production basis, or where the useful economic lives of assets change;
- Overburden removal costs recorded on the Consolidated Balance Sheet or charged to the Consolidated Income Statement may change with stripping ratios or on a units of production basis of depreciation; and
- Decommissioning, closure and rehabilitation provisions may change where estimated Ore Reserves affect expectations about the timing or cost of these activities.

The carrying amount of associated deferred tax assets may change due to changes in estimates of the likely recovery of the tax benefits.

NOTES TO FINANCIAL STATEMENTS – OPERATING ASSETS AND LIABILITIES

14. TRADE AND OTHER PAYABLES

US$M	FY19	FY18
Current		
Trade creditors	798	743
Other creditors	82	87
Total current trade and other payables	880	830
Non-current		
Other creditors	1	5
Total non-current trade and other payables	1	5

Trade and other payables represent liabilities for goods and services provided to the Group prior to the end of the financial year which were unpaid at the end of the financial year. These amounts are unsecured. Trade and other payables are included in current liabilities, except for those liabilities where payment is not due within 12 months from the reporting date, which are classified as non-current liabilities.

Trade and other payables are stated at their amortised cost and are non-interest bearing. The carrying value of trade and other payables is considered to approximate fair value due to the short-term nature of the payables.

15. PROVISIONS

US$M	Note	FY19	FY18
Current			
Employee benefits		199	205
Closure and rehabilitation		54	80
Other		59	75
Total current provisions		312	360
Non-current			
Employee benefits		4	6
Closure and rehabilitation		1,814	1,592
Post-retirement employee benefits	22	92	90
Other		15	17
Total non-current provisions		1,925	1,705

30 June 2019 US$M	Employee benefits	Closure and rehabilitation	Post-retirement employee benefits	Other	Total
At the beginning of the financial year	211	1,672	90	92	2,065
Charge/(credit) for the year to the Consolidated Income Statement:					
Underlying	191	12	3	30	236
Discounting	-	103	-	-	103
Net interest expense	-	-	9	-	9
Exchange rate variations	(9)	(8)	(4)	-	(21)
Released during the year	(8)	(1)	-	(3)	(12)
Amounts capitalised for change in costs and estimates	-	26	-	-	26
Foreign exchange amounts capitalised	-	(57)	-	-	(57)
Amounts capitalised from change in discount rate[1]	-	138	-	-	138
Amounts taken to retained earnings	-	-	3	-	3
Utilisation	(182)	(32)	(9)	(45)	(268)
Acquisitions of subsidiaries and jointly controlled entities[2]	-	15	-	-	15
At the end of the financial year	203	1,868	92	74	2,237

(1) The Group has reviewed its discount rates applied to closure and rehabilitation provisions resulting in a decrease in one specific country rate. The corresponding increase in the provision is capitalised as an asset or if applicable charged to the Consolidated Income Statement in the case of closed sites. The expected impact for the year ending 30 June 2020 is a decrease in finance expenses of US$1 million.

(2) Refer to note 32 Acquisition of subsidiaries and jointly controlled operations.

15. PROVISIONS (CONTINUED)

30 June 2018 US$M	Employee benefits	Closure and rehabilitation	Post-retirement employee benefits	Other	Total
At the beginning of the financial year	212	1,565	96	87	1,960
Charge/(credit) for the year to the Consolidated Income Statement:					
Underlying	208	3	2	79	292
Discounting	-	105	-	-	105
Change in discount rate	-	3	-	-	3
Net interest expense	-	-	10	-	10
Exchange rate variations	(8)	(15)	(4)	(2)	(29)
Released during the year	(14)	(13)	-	(1)	(28)
Amounts capitalised for change in costs and estimates	-	160	-	-	160
Foreign exchange amounts capitalised	-	(55)	-	-	(55)
Amounts capitalised from change in discount rate	-	4	-	-	4
Amounts taken to retained earnings	-	-	(4)	-	(4)
Utilisation	(187)	(82)	(9)	(73)	(351)
Transfers and other movements	-	(3)	(1)	2	(2)
At the end of the financial year	211	1,672	90	92	2,065

(a) Employee benefits

Liabilities for unpaid wages and salaries are recognised in other creditors. Current entitlements to annual leave and accumulating sick leave accrued for services up to the reporting date are recognised in the provision for employee benefits and are measured at the amounts expected to be paid. Entitlements to non-accumulated sick leave are recognised when the leave is taken.

The current liability for long service leave (for which settlement within 12 months of the reporting date cannot be deferred) is recognised in the current provision for employee benefits and is measured in accordance with annual leave described above. The non-current liability for long service leave is recognised in the non-current provision for employee benefits and measured as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Expected future payments are discounted using corporate bond yields at the reporting date.

(b) Closure and rehabilitation

The mining, extraction and processing activities of the Group normally give rise to obligations for site closure or rehabilitation. Closure and rehabilitation works can include facility decommissioning and dismantling, removal or treatment of waste materials, site and land rehabilitation.

Provisions for the cost of each closure and rehabilitation program are recognised at the time that environmental disturbance occurs. When the extent of disturbance increases over the life of an operation, the provision is increased accordingly. Costs included in the provision encompass all closure and rehabilitation activity expected to occur progressively over the life of the operation and at, or after, the time of closure, for disturbance existing at the reporting date. Routine operating costs that may impact the ultimate closure and rehabilitation activities, such as waste material handling conducted as an integral part of a mining or production process, are not included in the provision. Costs arising from unforeseen circumstances, such as the contamination caused by unplanned discharges, are recognised as an expense and liability when the event gives rise to an obligation which is probable and capable of reliable estimation.

The timing of the actual closure and rehabilitation expenditure is dependent upon a number of factors such as the life and nature of the asset, the operating licence conditions and the environment in which the mine operates. Expenditure may occur before and after closure and can continue for an extended period of time dependent on closure and rehabilitation requirements.

Closure and rehabilitation provisions are measured at the expected value of future cash flows, discounted to their present value and determined according to the probability of alternative estimates of cash flows occurring for each operation. Discount rates used are risk-free interest rates specific to the country in which the operations are located. Material changes in country specific risk-free interest rates may affect the discount rates applied. Significant judgements and estimates are involved in forming expectations of future activities and the amount and timing of the associated cash flows.

When provisions for closure and rehabilitation are initially recognised, the corresponding cost is capitalised as an asset, representing part of the cost of acquiring the future economic benefits of the operation. The capitalised cost of closure and rehabilitation activities is recognised in property, plant and equipment and depreciated accordingly. The value of the provision is progressively increased over time due to the effect of discounting unwind, creating an expense recognised in finance expenses.

NOTES TO FINANCIAL STATEMENTS – OPERATING ASSETS AND LIABILITIES

15. PROVISIONS (CONTINUED)

(b) Closure and rehabilitation (continued)

Closure and rehabilitation provisions are also adjusted for changes in costs and estimates. Those adjustments are accounted for as a change in the corresponding capitalised cost, except where a reduction in the provision is greater than the undepreciated capitalised cost of the related assets, in which case the capitalised cost is reduced to nil and the remaining adjustment is recognised first against other items in property, plant and equipment, and subsequently to the Consolidated Income Statement. In the case of closed sites, changes to estimated costs are recognised immediately in the Consolidated Income Statement. Changes to the capitalised cost result in an adjustment to future depreciation. Adjustments to the estimated amount and timing of future closure and rehabilitation cash flows are a normal occurrence in light of the significant judgements and estimates involved.

(c) Post-retirement employee benefits

This relates to the provision for post-employment defined benefit pension plans and medical plans. Refer to note 22 Pension and other post-retirement obligations.

Key estimates, assumptions and judgements

The recognition of closure and rehabilitation provisions requires significant estimates and assumptions such as: requirements of the relevant legal and regulatory framework; the magnitude of possible contamination; the timing, extent, and cost of required closure and rehabilitation activity; and potential changes in climate conditions. These uncertainties may result in future actual expenditure differing from the amounts currently provided.

The provision recognised for each site is periodically reviewed and updated based on the facts and circumstances available at the time.

In addition to the uncertainties noted above, certain closure and rehabilitation activities may be subject to legal disputes and depending on the ultimate resolution of these issues, the final liability for such matters could vary.

If the risk-free rate was decreased by 0.5 per cent, the provision would increase by US$255 million.

NOTES TO FINANCIAL STATEMENTS – CAPITAL STRUCTURE AND FINANCING

This section outlines how the Group manages its capital and related financing activities.

16. CASH AND CASH EQUIVALENTS

Cash and cash equivalents include cash at bank and on hand as well as short-term deposits.

US$M	FY19	FY18
Cash	497	465
Short-term deposits	911	2,505
Cash and cash equivalents[(1)(2)]	1,408	2,970
Bank overdrafts (unsecured)	(2)	-
Cash and cash equivalents, net of overdrafts	1,406	2,970

(1) Cash and cash equivalents include US$16 million (FY18: US$18 million) which is restricted by legal or contractual arrangements.

(2) Cash and cash equivalents include US$299 million (FY18: US$321 million) consisting of short-term deposits and cash managed by the Group on behalf of its equity accounted investments. The corresponding amount payable is included in note 17 Interest bearing liabilities.

17. INTEREST BEARING LIABILITIES

US$M	FY19	FY18
Current		
Finance leases	12	12
Unsecured loans from equity accounted investments[(1)]	299	321
Unsecured other	2	-
Total current interest bearing liabilities	313	333
Non-current		
Finance leases	531	558
Unsecured other	60	38
Total non-current interest bearing liabilities	591	596

(1) Refer to note 16 Cash and cash equivalents and note 30 Related party transactions.

Bank overdrafts, bank loans and other borrowings are initially recognised at their fair value net of directly attributable transaction costs. Subsequent to initial recognition, interest bearing liabilities are measured at amortised cost using the effective interest rate method. Gains and losses are recognised in the Consolidated Income Statement when the liabilities are derecognised. Interest bearing liabilities are classified as current liabilities, except when the Group has an unconditional right to defer settlement for at least 12 months after the reporting date in which case the liabilities are classified as non-current.

17. INTEREST BEARING LIABILITIES (CONTINUED)

(a) Reconciliation of movements in liabilities to cash flows arising from financing activities

Year ended 30 June 2019 US$M	Finance leases	Interest bearing liabilities
At the beginning of the financial year	570	359
Changes from financing cash flows:		
Net payment of finance lease liabilities	(11)	-
Net receipt/(repayment) of interest bearing liabilities	-	(23)
Total changes from financing cash flows	(11)	(23)
The effect of changes in foreign exchange rates	(28)	(4)
Increase/(decrease) in finance leases and interest bearing liabilities	12	29
Other changes:		
Interest expense	47	23
Interest paid	(47)	(23)
At the end of the financial year	543	361

18. NET FINANCE COST

US$M	FY19	FY18
Finance expenses		
Interest on borrowings	23	18
Finance lease interest	47	52
Discounting on provisions and other liabilities	103	105
Change in discount rate on closure and rehabilitation provisions	-	3
Net interest expense on post-retirement employee benefits	9	10
Fair value change on financial assets	3	3
Exchange rate variations on net debt	(34)	(23)
	151	168
Finance income		
Interest income	67	68
Net finance cost	84	100

Interest income or expense is recognised using the effective interest rate method.

19. FINANCIAL ASSETS AND FINANCIAL LIABILITIES

The Group has adopted AASB 9 with a date of initial application of 1 July 2018. The nature and impact of the key changes to the Group can be found in note 3 New standards and interpretations.

(a) Financial risk management objectives and policies

The Group is exposed to market, liquidity and credit risk. These risks are managed in accordance with the Group's portfolio risk management strategy which supports the delivery of the Group's financial targets while protecting its future financial security and flexibility by taking advantage of the natural diversification of the Group's operations and activities. A Cash Flow at Risk (CFaR) framework is used to capture the benefits of diversification and to measure the aggregate impact of financial risks on those financial targets. CFaR is measured on a portfolio basis and is defined as the expected reduction from projected business plan cash flows over a one-year horizon in a pessimistic case.

Day to day financial risk management is delegated to the Chief Financial Officer.

(i) Market risk

Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises interest rate risk, foreign currency risk and other price risk, such as equity price risk and commodity price risk. Financial instruments affected by market risk include loans and borrowings, deposits, investments in equity instruments designated at FVOCI, other investments held at FVTPL and derivative financial instruments.

Group activities expose it to market risks associated with movements in interest rates, foreign currencies and commodity prices. The Group manages financing costs, currency impacts, input costs and commodity prices on a floating or index basis. This strategy gives rise to a risk of variability in earnings which is measured under the CFaR framework.

In executing the strategy, financial instruments may be employed for risk mitigation purposes with a strict Board approved mandate, or to align the total Group exposure to the relevant index target in the case of commodity sales, operating costs or debt issuances.

Interest rate risk

The Group is exposed to interest rate risk on its cash and cash equivalents, trade and other receivables, embedded derivatives and interest bearing liabilities from the possibility that changes in interest rates will affect future cash flows or the fair value of financial instruments.

The Group had the following exposure to interest rate risk:

US$M	FY19	FY18
Financial assets		
Cash and cash equivalents	1,392	2,902
Trade and other receivables	141	43
Derivative contracts	113	143
Financial liabilities		
Interest bearing liabilities	(332)	(359)
Net exposure	1,314	2,729

19. FINANCIAL ASSETS AND FINANCIAL LIABILITIES (CONTINUED)

(a) Financial risk management objectives and policies (continued)

(i) Market risk (continued)

Interest rate risk (continued)

The following table demonstrates the sensitivity to a reasonably possible change in interest rates on that portion of borrowings and financial assets affected. With all other variables held constant, the Group's profit after tax is affected through the impact on floating rate borrowings and investments, as follows:

Increase/decrease in basis points	Impact on profit after tax US$M FY19	FY18
+100	9	19
−100	(9)	(19)

The sensitivity analysis assumes that the change in interest rates is effective from the beginning of the financial year and the fixed/floating mix and balances are constant over the year. For the purpose of the sensitivity analysis, the decrease of 100 basis points is applied to the extent that the underlying interest rates do not fall below zero per cent. However, interest rates and the net debt profile of the Group may not remain constant over the coming financial year and therefore such sensitivity analysis should be used with care.

Foreign currency risk

Foreign currency risk is the risk that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. The functional currency of the majority of operations of the Group is the US dollar. The Group's potential currency exposures comprise:

- Translational exposure in respect of non-functional currency monetary items; and
- Transactional exposure in respect of non-functional currency expenditure and revenues.

Certain operating and capital expenditure is incurred by operations in currencies other than their functional currency. To a lesser extent, certain sales revenue is earned in currencies other than the functional currency of operations, and certain exchange control restrictions may require funds be maintained in currencies other than the functional currency of the operation. When required the Group may enter into forward exchange contracts.

The principal non-functional currencies to which the Group is exposed to are the Australian dollar, South African rand, Brazilian real, Colombian peso and Canadian dollar. The following table shows the foreign currency risk arising from financial assets and liabilities, which are denominated in currencies other than the US dollar:

Net financial assets/(liabilities) – by currency of denomination US$M	FY19	FY18
Australian dollar	(836)	(721)
Brazilian real	47	119
Colombian peso	(19)	(18)
South African rand	69	14
Canadian dollar	15	255
Other	1	(1)
Total	(723)	(352)

Based on the Group's net financial assets and liabilities as at 30 June, a weakening of the US dollar against these currencies as illustrated in the table below, with all other variables held constant, would increase/(decrease) profit after tax and Other Comprehensive Income, net of tax, as follows:

30 June 2019 Currency movement US$M	Profit after tax	Other Comprehensive Income, net of tax
10% movement in Australian dollar	(59)	-
10% movement in Brazilian real	(3)	8
10% movement in Colombian peso	(2)	-
10% movement in South African rand	7	-
10% movement in Canadian dollar	2	-

30 June 2018 Currency movement US$M	Profit after tax	Other Comprehensive Income, net of tax
10% movement in Australian dollar	(50)	-
10% movement in Brazilian real	(1)	13
10% movement in Colombian peso	(2)	-
10% movement in South African rand	(13)	14
10% movement in Canadian dollar	-	26

Commodity price risk

Contracts for the sale and physical delivery of commodities are executed whenever possible on a pricing basis intended to achieve a relevant index target. Where pricing terms deviate from the index, the Group may choose to use derivative commodity contracts to realise the index price. Contracts for the physical delivery of commodities are not typically financial instruments and are carried in the Consolidated Balance Sheet at cost (typically at nil).

Provisionally priced commodity sales and purchases contracts

Provisionally priced sales or purchases contracts are those for which price finalisation, referenced to the relevant index, is outstanding at the reporting date. Provisional pricing mechanisms embedded within these sales and purchases arrangements have the character of a commodity derivative and are carried at FVTPL as part of trade receivables or trade payables. Fair value movements on provisionally priced sales contracts are disclosed in 'Other' revenue. Refer to note 4(b) Segment results. The Group's exposure at 30 June 2019 to the impact of movements in commodity prices upon provisionally invoiced sales and purchases volumes was predominantly around nickel, silver, lead, zinc and aluminium.

The Group had 3.9kt of nickel, 3.0Moz of silver, 29.2kt of lead, 5.6kt of zinc and 2.0kt of aluminium exposure at 30 June 2019 (FY18: 3.7kt of nickel, 2.2Moz of silver, 18.8kt of lead, 4.9kt of zinc and nil of aluminium) that was provisionally priced. The final price of these sales or purchases will be determined during the first half of FY20. A 10 per cent change in the realised price of these commodities, with all other factors held constant, would increase or decrease profit after tax by US$15 million (FY18: US$10 million). The relationship between commodity prices and foreign currencies is complex and movements in foreign exchange rates can impact commodity prices. The sensitivities should therefore be used with care.

NOTES TO FINANCIAL STATEMENTS – CAPITAL STRUCTURE AND FINANCING

19. FINANCIAL ASSETS AND FINANCIAL LIABILITIES (CONTINUED)

(a) Financial risk management objectives and policies (continued)

(ii) Liquidity risk

The Group's liquidity risk arises from the possibility that it may not be able to settle or meet its obligations as they fall due. Operational, capital and regulatory requirements are considered in the management of liquidity risk, in conjunction with short and long-term forecast information.

The Group's policy on counterparty credit exposure ensures that only counterparties of a high credit standing are used for the investment of any excess cash.

Standby arrangements and unused credit facilities

The entities in the Group are funded by a combination of cash generated by the Group's operations, working capital facilities and intercompany loans provided by the Group. Intercompany loans may be funded by a combination of cash, short and long-term debt and equity market raisings. Details of major standby and support arrangements are as follows:

30 June 2019 US$M	Available	Used	Unused
Commercial paper program(1)	1,500	-	1,500

(1) The Group has an undrawn US$1.5 billion revolving credit facility which is a standby arrangement to the US$1.5 billion US commercial paper program. The size of the multi-currency revolving credit facility is US$1.5 billion until February 2021, and then US$1.4 billion from February 2021 until the facility expires in February 2022.

Maturity profile of financial liabilities

The maturity profiles of financial liabilities, based on the contractual amounts, are as follows:

30 June 2019 US$M	Carrying amount	Total	On demand or less than 1 year	1 to 5 years	More than 5 years
Trade and other payables(1)	872	872	871	1	-
Interest bearing liabilities	361	380	303	45	32
Finance leases	543	1,109	58	232	819
Total	1,776	2,361	1,232	278	851

(1) Excludes input taxes of US$9 million included in other payables. Refer to note 14 Trade and other payables.

30 June 2018 US$M	Carrying amount	Total	On demand or less than 1 year	1 to 5 years	More than 5 years
Trade and other payables(1)	822	822	818	3	1
Interest bearing liabilities	359	386	325	24	37
Finance leases	570	1,202	59	240	903
Derivative contracts	2	2	2	-	-
Total	1,753	2,412	1,204	267	941

(1) Excludes input taxes of US$13 million included in other payables. Refer to note 14 Trade and other payables.

(iii) Credit risk

The Group has credit risk management policies in place covering the credit analysis, approvals and monitoring of counterparty exposures. As part of these processes the ongoing creditworthiness of counterparties is regularly assessed.

Mitigation methods are defined and implemented for higher-risk counterparties to protect revenues, with approximately half of the Group's sales of physical commodities occurring via secured payment terms including prepayments, letters of credit, guarantees and other risk mitigation instruments.

There are no material concentrations of credit risk, either with individual counterparties or groups of counterparties, by industry or geography.

The carrying amounts of financial assets represent the maximum credit exposure.

19. FINANCIAL ASSETS AND FINANCIAL LIABILITIES (CONTINUED)

(a) Financial risk management objectives and policies (continued)

(iii) Credit risk (continued)

Trade and other receivables – held at amortised cost

For trade receivables, the Group uses the simplified approach to recognise impairments based on the lifetime expected credit loss. For other receivables, the Group applies the general approach and recognises impairments based on a 12-month expected credit loss.

The Group's exposure to credit risk is influenced by the individual characteristics of each counterparty or customer. However, management also consider other factors that may influence the credit risk of its counterparty or customer base. The Group has an established credit policy under which each new customer is assessed for creditworthiness before the Group's standard payment and delivery terms and conditions are offered. The Group's review includes external credit ratings, if available, credit agency information, as well as financial institution information and industry information. Sale limits are established for each customer and reviewed annually or with the new release of information materially impacting the customer's creditworthiness.

Expected credit loss assessment as at 1 July 2018 and 30 June 2019

Impairment allowances are based on a forward-looking expected credit loss model. Where there has been a significant increase in credit risk, a loss allowance for lifetime expected credit losses is required.

Exposures are grouped by external credit rating and security options and an expected credit loss rate is calculated accordingly. Where applicable, actual credit loss experience is also taken into account. For all other remaining receivables without an external credit rating or security option, a rating of BB (Standard and Poor's) is used, on the basis that there is no support that it is investment grade, nor is there any evidence of default.

Loans to equity accounted investments

Impairments on loans to equity accounted investments have been measured on the 12-month expected credit loss basis, per the general approach.

(b) Accounting classification and fair value

(i) Recognition and initial measurement

All financial assets (with the exception of trade and other receivables without a significant financing component) or financial liabilities are initially recognised at fair value (for all items except those classified as FVTPL) plus transaction costs directly attributable to its acquisition or issue. Trade and other receivables without a significant financing component are initially measured at the transaction price.

(ii) Financial Assets: Classification and subsequent measurement

On initial recognition, financial assets are measured at: amortised cost; investments in equity instruments, FVOCI; or FVTPL.

On initial recognition of an investment in an equity instrument not held for trading, the Group may irrevocably elect to present subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

On initial recognition, the Group may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortised cost or at FVOCI as FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

Financial assets are not reclassified subsequent to their initial recognition unless the Group changes its business model for managing financial assets in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated as FVTPL:

- It is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- Its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

All financial assets not measured at amortised cost or FVOCI are measured at FVTPL. This includes all derivative financial assets.

Transfers of financial assets to third parties in transactions that do not qualify for derecognition are not considered sales for this purpose, consistent with the Group's continuing recognition of the assets.

Financial assets that are held for trading and whose performance is evaluated on a fair value basis are measured at FVTPL.

Financial assets: Assessment whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, 'principal' is defined as the fair value of the financial asset on initial recognition. 'Interest' is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period and for other basic lending risks and costs (for example, liquidity risk and administrative costs), as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Group considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Group considers:

- Contingent events that would change the amount or timing of cash flows;
- Terms that may adjust the contractual coupon rate, including variable rate features;
- Prepayment and extension features; and
- Terms that limit the Group's claim to cash flows from specified assets (for example, non-recourse features).

19. FINANCIAL ASSETS AND FINANCIAL LIABILITIES (CONTINUED)

(b) Accounting classification and fair value (continued)

(ii) Financial Assets: Classification and subsequent measurement (continued)

Financial assets: Subsequent measurement and gains and losses

Classification	Subsequent measurement
Held at FVTPL	Financial assets held at FVTPL are subsequently measured at fair value. Net gains and losses, including any interest, dividend income or movements in provisionally priced sales agreements, are recognised in the Consolidated Income Statement. Forward exchange contracts and interest rate swaps held for hedging purposes are accounted for as either cash flow or fair value hedges. Any derivative instrument fair value change that does not qualify for hedge accounting is recognised immediately in the Consolidated Income Statement.
Amortised cost	Financial assets at amortised cost are subsequently measured at amortised cost using the effective interest method. The amortised cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairments are recognised in the Consolidated Income Statement. Any gain or loss on derecognition is recognised in the Consolidated Income Statement.
Investments in equity instruments – designated at FVOCI	Investments in equity instruments designated at FVOCI are subsequently measured at fair value. Dividends are recognised as income in the Consolidated Income Statement unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognised in Other Comprehensive Income and are not reclassified to the Consolidated Income Statement.

The measurement of fair value of financial assets is based on quoted market prices in active markets for identical assets or liabilities. Where no price information is available from a quoted market source, alternative market mechanisms or recent comparable transactions, fair value is estimated based on the Group's views on relevant future prices, net of valuation allowances to accommodate liquidity, modelling, credit and other risks implicit in such estimates.

(iii) Financial Liabilities: Classification, subsequent measurement and gains and losses

Financial liabilities are classified as measured at amortised cost or FVTPL. A financial liability is classified as FVTPL if it is classified as held for trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognised in the Consolidated Income Statement. Other financial liabilities are subsequently measured at amortised cost using the effective interest method. Interest expense and foreign exchange gains or losses are recognised in the Consolidated Income Statement. Any gain or loss on derecognition is also recognised in the Consolidated Income Statement.

(iv) Embedded derivatives

A derivative embedded in a hybrid contract, with a financial liability or non-financial host, is separated from the host and accounted for as a separate derivative if: the economic characteristics and risks are not closely related to the host; a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and the hybrid contract is not measured at FVTPL. Embedded derivatives are measured at fair value with changes in fair value recognised in the Consolidated Income Statement.

A derivative embedded within a hybrid contract containing a financial asset host is not accounted for separately. The financial asset host together with the embedded derivative is required to be classified in its entirety as a financial asset at FVTPL.

(v) Derecognition

Financial assets

The Group derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all risks and rewards of ownership of the financial asset are transferred, or it neither transfers nor retains substantially all of the risks and rewards of ownership and does not retain control over the transferred asset. Any interest in such derecognised financial assets that is created or retained by the Group is reported as a separate asset or liability.

Financial liabilities

The Group derecognises a financial liability when its contractual obligations are discharged, cancelled or expire. The Group also derecognises a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognised at fair value.

(vi) Accounting classification – policy applicable up to 30 June 2018

All financial assets were initially recognised at the fair value of consideration paid. Subsequently, financial assets were carried at fair value or amortised cost less impairment. Where non-derivative, equity instrument financial assets were carried at fair value, gains and losses on re-measurement were recognised directly in equity unless the financial assets had been designated as being held at fair value through profit or loss, in which case the gains and losses were recognised directly in the Consolidated Income Statement. Financial assets were designated as being held at fair value through profit or loss where this is necessary to reduce measurement inconsistencies for related assets and liabilities.

All financial liabilities other than derivatives were initially recognised at fair value of consideration received net of transaction costs as appropriate (initial cost) and, with the exception of financial liabilities which had been designated in fair value hedging relationships, were subsequently carried at amortised cost. The Group derecognised a financial liability when its contractual obligations were discharged, cancelled or expired.

Derivatives, including those embedded in other contractual arrangements but separated for accounting purposes because they were not clearly and closely related to the host contract, were initially recognised at fair value on the date the contract was entered into and were subsequently re-measured at their fair value. The method of recognising the resulting gain or loss on re-measurement depends on whether the derivative was designated as a hedging instrument, and, if so, the nature of the item being hedged.

19. FINANCIAL ASSETS AND FINANCIAL LIABILITIES (CONTINUED)

(b) Accounting classification and fair value (continued)

(vi) Accounting classification – policy applicable up to 30 June 2018 (continued)

Movements in the fair value of financial assets and liabilities may have been recognised through the Consolidated Income Statement or in the Consolidated Statement of Comprehensive Income.

Available for sale and trading investments

Available for sale and trading investments were measured at fair value. Gains and losses on the re-measurement of trading investments were recognised directly in the Consolidated Income Statement. Gains and losses on the re-measurement of available for sale investments were recognised directly in equity and subsequently recognised in the Consolidated Income Statement when realised by sale or redemption, or when a reduction in fair value represented an impairment.

The following table presents the financial assets and liabilities by class at their carrying amounts which approximates their fair value.

30 June 2019 US$M	Note	Held at FVTPL	Designated as FVOCI	Amortised cost	Total
Financial assets					
Cash and cash equivalents	16	-	-	1,408	1,408
Trade and other receivables[(1)]	9	103	-	595	698
Loans to equity accounted investments	9	-	-	36	36
Other financial assets:					
Derivative contracts		108	-	-	108
Total current financial assets		211	-	2,039	2,250
Trade and other receivables[(1)(2)]	9	-	-	5	5
Loans to equity accounted investments	9	-	-	136	136
Interest bearing loans receivable	9	-	-	33	33
Other financial assets:					
Derivative contracts		7	-	-	7
Investments in equity instruments – designated as FVOCI		-	124	-	124
Other investments – held at FVTPL		141	-	-	141
Total non-current financial assets		148	124	174	446
Total		359	124	2,213	2,696
Financial liabilities					
Trade and other payables[(3)]	14	1	-	870	871
Finance leases	17	-	-	12	12
Unsecured other	17	-	-	301	301
Total current financial liabilities		1	-	1,183	1,184
Trade and other payables	14	-	-	1	1
Finance leases	17	-	-	531	531
Unsecured other	17	-	-	60	60
Total non-current financial liabilities		-	-	592	592
Total		1	-	1,775	1,776

(1) Excludes current input taxes of US$154 million and non-current input taxes of US$33 million included in other receivables. Refer to note 9 Trade and other receivables.

(2) Excludes a reimbursable right asset in relation to the closure and rehabilitation provision at South Africa Energy Coal of US$83 million included in other receivables. Refer to note 9 Trade and other receivables.

(3) Excludes input taxes of US$9 million included in other payables. Refer to note 14 Trade and other payables.

19. FINANCIAL ASSETS AND FINANCIAL LIABILITIES (CONTINUED)

(b) Accounting classification and fair value (continued)

As shown in note 3 New standards and interpretations the comparative designations are presented under AASB 139.

30 June 2018 US$M	Note	Loans and receivables	Available for sale securities	Held at fair value through profit or loss	Other financial assets and liabilities at amortised cost	Cash flow hedges	Total
Financial assets							
Cash and cash equivalents	16	2,970	-	-	-	-	2,970
Trade and other receivables[1]	9	572	-	87	-	-	659
Loans to equity accounted investments	9	27	-	-	-	-	27
Other financial assets:							
Derivative contracts		-	-	72	-	5	77
Shares		-	3	-	-	-	3
Total current financial assets		3,569	3	159	-	5	3,736
Trade and other receivables[1][2]	9	4	-	-	-	-	4
Loans to equity accounted investments	9	67	-	-	-	-	67
Interest bearing loans receivable	9	38	-	-	-	-	38
Other financial assets:							
Derivative contracts		-	-	74	-	-	74
Shares		-	403	-	-	-	403
Other investments		-	136	-	-	-	136
Total non-current financial assets		109	539	74	-	-	722
Total		3,678	542	233	-	5	4,458
Financial liabilities							
Trade and other payables[3]	14	-	-	2	815	-	817
Finance leases	17	-	-	-	12	-	12
Unsecured other	17	-	-	-	321	-	321
Other financial liabilities:							
Derivative contracts		-	-	2	-	-	2
Total current financial liabilities		-	-	4	1,148	-	1,152
Trade and other payables	14	-	-	-	5	-	5
Finance leases	17	-	-	-	558	-	558
Unsecured other	17	-	-	-	38	-	38
Total non-current financial liabilities		-	-	-	601	-	601
Total		-	-	4	1,749	-	1,753

(1) Excludes current input taxes of US$140 million and non-current input taxes of US$56 million included in other receivables.
(2) Excludes a reimbursable right asset in relation to the closure and rehabilitation provision at South Africa Energy Coal of US$83 million included in other receivables.
(3) Excludes input taxes of US$13 million included in other payables.

19. FINANCIAL ASSETS AND FINANCIAL LIABILITIES (CONTINUED)

(b) Accounting classification and fair value (continued)

Investments in equity instruments – designated as FVOCI

At 1 July 2018, on an instrument by instrument basis, the Group has elected under AASB 9 to designate investments in equity instruments as FVOCI as they represent investments that the Group intends to hold for long-term strategic purposes. In FY18 these investments were classified as available for sale (refer to note 3 New standards and interpretations).

Other investments – held at FVTPL

The investment in unit trusts held by the South32 South Africa Energy Coal Rehabilitation Trust Fund does not meet the definition of an equity instrument under AASB 9. These investments are therefore classified as investments held at FVTPL (FY18: Available for sale). On transition to AASB 9 (1 July 2018), a net gain of US$12 million was transferred from the financial asset reserve to retained earnings.

Measurement of fair value

The following table shows the Group's financial assets and liabilities carried at fair value with reference to the nature of valuation inputs used:

Level 1 Valuation is based on unadjusted quoted prices in active markets for identical financial assets and liabilities.

Level 2 Valuation is based on inputs (other than quoted prices included in Level 1) that are observable for the financial asset or liability, either directly (i.e. as unquoted prices) or indirectly (i.e. derived from prices).

Level 3 Valuation includes inputs that are not based on observable market data.

30 June 2019 US$M	Level 1	Level 2	Level 3	Total
Financial assets and liabilities				
Trade and other receivables	-	103	-	103
Trade and other payables	-	(1)	-	(1)
Derivative contracts	-	2	113	115
Investments in equity instruments – designated at FVOCI	48	-	76	124
Other investments – FVTPL	-	141	-	141
Total	48	245	189	482

30 June 2018 US$M	Level 1	Level 2	Level 3	Total
Financial assets and liabilities				
Trade and other receivables	-	87	-	87
Trade and other payables	-	(2)	-	(2)
Derivative contracts	-	6	143	149
Shares – available for sale	277	-	129	406
Other investments – available for sale	-	136	-	136
Total	277	227	272	776

Level 3 financial assets and liabilities

The following table shows the movements in the Group's Level 3 financial assets and liabilities:

US$M	FY19	FY18
At the beginning of the financial year	272	334
Disposals	(2)	(31)
Realised gains/(losses) recognised in the Consolidated Income Statement(1)	(72)	(98)
Unrealised gains/(losses) recognised in the Consolidated Income Statement(2)	42	41
Unrealised gains/(losses) recognised in the Consolidated Statement of Comprehensive Income(3)	(51)	26
At the end of the financial year	189	272

(1) Realised gains and losses recognised in the Consolidated Income Statement are recorded in expenses excluding net finance cost.

(2) Unrealised gains and losses recognised in the Consolidated Income Statement are recorded in expenses excluding net finance cost.

(3) Unrealised gains and losses recognised in the Consolidated Statement of Comprehensive Income are recorded in the financial assets reserve.

19. FINANCIAL ASSETS AND FINANCIAL LIABILITIES (CONTINUED)

(b) Accounting classification and fair value (continued)

Sensitivity analysis

The carrying amount of financial assets and liabilities that are valued using inputs other than observable market data are calculated using appropriate valuation models, including discounted cash flow modelling, with inputs such as commodity prices, foreign exchange rates and inflation. The potential effect of using reasonably possible alternative assumptions in these models, based on changes in the most significant inputs by 10 per cent while holding all other variables constant, is shown in the following table:

			Profit after tax		Other Comprehensive Income, net of tax	
30 June 2019 US$M	**Carrying amount**	**Significant inputs**	**10% increase in input**	**10% decrease in input**	**10% increase in input**	**10% decrease in input**
Financial assets and liabilities						
Derivative contracts(1)		Aluminium price(2)				
		Foreign exchange rate(2)				
	113	Electricity price(3)	(49)	46	-	-
Investments in equity instruments – designated as FVOCI(1)		Alumina price(2)				
		Aluminium price(2)				
	76	Foreign exchange rate(2)	-	-	52	(78)
Total	189		(49)	46	52	(78)

(1) Sensitivity analysis is performed assuming all inputs are directionally moving unfavourably and favourably.
(2) Aluminium and alumina prices are comparable to market consensus forecasts and foreign exchange rates are aligned with forward market rates.
(3) Electricity prices are determined as a market equivalent price.

			Profit after tax		Other Comprehensive Income, net of tax	
30 June 2018 US$M	**Carrying amount**	**Significant inputs**	**10% increase in input**	**10% decrease in input**	**10% increase in input**	**10% decrease in input**
Financial assets and liabilities						
Derivative contracts(1)		Aluminium price(2)				
		Foreign exchange rate(2)				
	143	Electricity price(3)	(89)	84	-	-
Investments – available for sale(1)		Alumina price(2)				
		Aluminium price(2)				
	129	Foreign exchange rate(2)	-	-	41	(52)
Total	272		(89)	84	41	(52)

(1) Sensitivity analysis is performed assuming all inputs are directionally moving unfavourably and favourably.
(2) Aluminium and alumina prices are comparable to market consensus forecasts and foreign exchange rates are aligned with forward market rates.
(3) Electricity prices are determined as a market equivalent price based on inputs from published data.

(c) Capital management

The Group will invest capital in assets where they fit the strategy. The Group's priorities for cash flow are:

- Maintain safe and reliable operations and an investment grade credit rating through the cycle;
- Distribute a minimum of 40 per cent of Underlying earnings as dividends to shareholders following each six month reporting period; and
- Consistent with the Group's priorities for cash flow and commitment to maximise total shareholder returns, other alternatives including special dividends, share buy-backs and high return investment opportunities will compete for capital.

20. SHARE CAPITAL

	FY19		FY18	
	Shares	US$M	Shares	US$M
Share capital				
At the beginning of the financial year	5,119,913,775	14,493	5,217,919,888	14,747
Shares bought back and cancelled	(114,410,200)	(281)	(98,006,113)	(254)
At the end of the financial year	5,005,503,575	14,212	5,119,913,775	14,493
Treasury shares				
At the beginning of the financial year	(30,891,376)	(83)	(13,161,908)	(26)
Purchase of shares by ESOP Trusts	(33,986,147)	(99)	(31,714,442)	(84)
Employee share awards exercised following vesting	24,394,352	77	13,984,974	27
At the end of the financial year	(40,483,171)	(105)	(30,891,376)	(83)

Shares entitle the holder to participate in dividends and the proceeds on winding up of the Group in proportion to the number of shares held. On a show of hands every holder of shares present at a meeting in person or by proxy, is entitled to one vote, and upon a poll each share is entitled to one vote.

Incremental costs directly attributable to the issue of shares, net of any income tax effects, are recognised as a deduction from equity.

The Group does not have authorised capital or par value in respect of its issued shares.

NOTES TO FINANCIAL STATEMENTS – OTHER NOTES

21. AUDITOR'S REMUNERATION

The auditor of the Group is KPMG.

US$'000	FY19	FY18
Fees payable to the Group's auditor for assurance services		
Audit and review of financial statements	4,726	4,741
Other assurance services(1)	586	717
Fees payable to the Group's auditor for all other services		
All other services(2)	-	158
Total auditor's remuneration	5,312	5,616

(1) Mainly comprises assurance in respect of the Group's sustainability reporting.

(2) Includes a number of consulting services.

22. PENSION AND OTHER POST-RETIREMENT OBLIGATIONS

The Group operates or participates in a number of pension (including superannuation) schemes throughout the world. The funding of the schemes complies with local regulations. The assets of the schemes are generally held separately from those of the Group and are administered by trustees or management boards. The Group operates two post-retirement medical schemes in South Africa. Full actuarial valuations are prepared for the schemes.

Defined contribution pension schemes

The Group contributed US$75 million (FY18: US$77 million) to defined contribution plans and multi-employer defined contribution plans. These contributions are expensed as incurred.

Defined benefit pension schemes (closed schemes)

At 30 June 2019 the Group had defined benefit obligations of US$113 million (FY18: US$116 million) and fair value of defined benefit scheme assets of US$110 million (FY18: US$117 million) with a net liability recognised in the Consolidated Balance Sheet of US$3 million (FY18: nil).

The fair value of scheme assets by major asset class is as follows:

Asset class	Fair value	
US$M	**FY19**	**FY18**
Bonds(1)	46	51
Equities	12	11
Cash and cash equivalents	9	7
Other(2)	43	48
Total	110	117

(1) Comprises Fixed Interest Government bonds of US$8 million (FY18: US$16 million), Index Linked Government bonds of US$31 million (FY18: US$27 million) and Corporate bonds of US$7 million (FY18: US$8 million).

(2) Primarily comprises of insurance contracts in South Africa.

Defined benefit post-retirement medical schemes (closed schemes)

At 30 June 2019 the Group had post-retirement medical scheme obligations of US$89 million (FY18: US$90 million). The post-retirement medical schemes are unfunded.

The principal actuarial assumptions at the reporting date (expressed as weighted averages) for post-retirement medical schemes are as follows:

	South Africa	
%	**FY19**	**FY18**
Discount rate	10.0	9.9
Medical cost trend rate (ultimate)	8.0	8.2

Assumptions regarding future mortality can be material depending upon the size and nature of the post-retirement medical schemes' liabilities. Post-retirement mortality assumptions in South Africa are based on post-retirement mortality tables that are standard in the region.

For the main post-retirement medical schemes, these tables imply the following expected future lifetimes (in years) for employees aged 65 as at the balance sheet date: male employees in South Africa 20.0 (FY18: 19.7), female employees in South Africa 24.5 (FY18: 24.1).

Weighted average maturity profile of schemes

The weighted average duration of the defined benefit obligations are 9 years (FY18: 9 years) and 11 years (FY18: 12 years) for the defined benefit pensions schemes and post-retirement medical schemes respectively.

Risks associated with defined benefit pension and post-retirement medical schemes

The Group's defined benefit pension and post-retirement medical schemes expose the Group to the risks pertaining to asset value volatility, uncertainty in future benefit payments and uncertainty in future contribution requirements.

23. EMPLOYEE SHARE OWNERSHIP PLANS

At 30 June 2019 the Group had the following employee share ownership arrangements:

Awards granted to Lead Team members(1)	
Long-Term Incentive Plan	FY16, FY17, FY18, FY19
Deferred Short-Term Incentive Plan	FY17, FY18
Executive Transitional Award Plan	FY17, FY18, FY19
Sign-on Award Plan	FY19

(1) Awards granted on 4 December 2015, 2 December 2016, 13 December 2017 or 7 December 2018.

Awards granted to eligible employees(1)	
Management Share Plan	FY16, FY17, FY18, FY19
AllShare Plan	2016, 2017, 2018
Management Transitional Award Plan	FY16, FY17, FY18, FY19

(1) Awards granted on 13 May 2016, 17 November 2016, 28 April 2017, 13 November 2017, 7 May 2018, 7 December 2018 or 17 May 2019.

Share ownership plans in existence at 30 June 2015
Replacement BHP Long-Term Incentive Plan

23. EMPLOYEE SHARE OWNERSHIP PLANS (CONTINUED)

All awards take the form of rights to receive one share in South32 Limited for each right granted, subject to performance and/or service conditions being met. A portion of the 2016, 2017 and 2018 AllShare Plan awards (participants located in Colombia and Mozambique) take the form of rights to receive a cash payment equivalent to the value of South32 Limited shares at the time of payment. Employees in Africa are granted rights on the JSE and all other employees are granted rights on the ASX.

Performance conditions are based on the Group's Total Shareholder Return (TSR) measured separately against two comparator indicies over the performance period as follows:

- One third of performance rights are measured against the Morgan Stanley Capital International (MSCI) World Index; and
- Two thirds of performance rights are measured against the IHS Markit (formerly Euromoney) Global Mining Index.

Performance rights vest when the Group's TSR equals or outperforms the comparator index. Full vesting of performance rights occur if the Group's TSR outperforms both indicies by at least 5.5 per cent per annum (cumulative) or 23.9 per cent over four years. To the extent that the performance conditions are not met, awards are forfeited and no retesting is performed.

Awards do not confer any dividend or voting rights until they convert into shares at vesting. In addition, the awards do not confer any rights to participate in a share issue, however, there is discretion under the plans to adjust the awards in response to a variation in South32 Limited's share capital.

The Replacement BHP Long-Term Incentive Plan and AllShare JSE plans are eligible to receive a payment equal to the dividend amount that would have been earned on the underlying shares awarded to those participants (Dividend Equivalent Payment). The Dividend Equivalent Payment is made to participants once the underlying shares are issued or transferred to them. No Dividend Equivalent Payment is made in respect of awards that lapse. No other awards are eligible for a Dividend Equivalent Payment.

(a) Description of share-based payment arrangements

(i) Recurring share-based payment plans

The awards listed below are subject to the general conditions noted above and may be granted annually subject to approval by shareholders at the annual general meeting for awards to the CEO and by the Board of Directors for all other awards.

FY16, FY17, FY18 and FY19 Long-Term Incentive Plan

The Long-Term Incentive Plan is the Group's long-term incentive plan for Lead Team members. Awards have a four year performance period from 1 July 2015 to 30 June 2019, 1 July 2016 to 30 June 2020, 1 July 2017 to 30 June 2021 and 1 July 2018 to 30 June 2022 respectively.

FY17 and FY18 Deferred Short-Term Incentive Plan

The FY17 and FY18 Deferred Short-Term Incentive Plan is the Group's short-term incentive plan for Lead Team members. Awards vest in August 2019 and August 2020 respectively, provided participants remain employed by the Group.

FY16, FY17, FY18 and FY19 Management Share Plan

The FY16, FY17, FY18 and FY19 Management Share Plan is the Group's long-term incentive plan for eligible employees below the Lead Team. The Management Share Plan comprises two elements:

- Retention Rights vesting in August 2019, August 2020 and August 2021 provided participants remain employed by the Group; and
- Performance Rights vesting in August 2019, August 2020, August 2021 and August 2022 subject to performance conditions.

2016, 2017 and 2018 AllShare Plan

The 2016, 2017 and 2018 AllShare Plan is the Group's employee share plan for employees not eligible to participate in the other employee share plans. Awards to the value of at least US$1,250 per employee are granted annually. Awards will vest provided participants remain employed by the Group. The vesting period depends on the participants' location at the grant date:

- Participants in Africa including Mozambique: August 2019, August 2020 and August 2021; and
- Participants elsewhere: August 2019 and August 2020.

(ii) Transitional share-based payment plans

The awards listed below are subject to the general conditions noted above and are either one-off or will not be granted on an ongoing basis.

FY19 Sign-on Award Plan

The FY19 Sign-on Award Plan is a one-off grant made to one Lead Team member to replace the equity awards forfeited by the participant when commencing employment with the Group. The Award has two tranches, vesting in August 2019 and August 2020 respectively, provided the participant remains employed by Group.

FY17, FY18 and FY19 Executive Transitional Award Plan

The FY17 Executive Transitional Award Plan is a one-off grant made to one Lead Team member in recognition of their adjustment from the Management Share Plan (three year retention rights and four year performance rights) to the four year plan at the Group. Awards have a three year performance period from 1 July 2016 to 30 June 2019. The FY18 Executive Transitional Award Plan is a one-off grant made to two Lead Team members in recognition of their adjustment from the Management Share Plan (three year retention rights and four year performance rights) to the four year plan at the Group. Awards have a three year performance period from 1 July 2017 to 30 June 2020. The FY19 Executive Transitional Award Plan is a one-off grant made to one Lead Team member in recognition of their adjustment from the Management Share Plan (three year retention rights and four year performance rights) to the four year plan at the Group. Awards have a three year performance period from 1 July 2018 to 30 June 2021.

FY16, FY17, FY18 and FY19 Management Transitional Award Plan

The FY16, FY17, FY18 and FY19 Management Transitional Award Plan is a grant made to certain eligible employees to bridge the gap between their total target reward at BHP and their total target reward at the Group. Transitional awards will be made for a maximum of five years until FY20. The FY16, FY17, FY18 and FY19 Management Transitional Award Plans have the same conditions as the FY16, FY17, FY18 and FY19 Management Share Plan and comprises both service and performance conditions.

23. EMPLOYEE SHARE OWNERSHIP PLANS (CONTINUED)

(a) Description of share-based payment arrangements (continued)

(ii) Transitional share-based payment plans (continued)

Replacement BHP Long-Term Incentive Plan

The Replacement BHP Long-Term Incentive Plan awards have a five year performance period from grant of the original BHP award. The performance hurdle testing for the awards is split into two periods: the BHP period (from grant up to 24 May 2015) and the Group period (from 25 May 2015 to the date of vesting). During the BHP period, performance was based on BHP's TSR relative to a combination of the Peer Group TSR (a specified group of peer companies) for two thirds of the award and the MSCI World Index for one third.

(b) Employee Share Ownership Plan Trusts

The South32 Limited Employee Incentive Plans Trust (the Australian Trust) and the South32 South African AllShare Trust (the South African Trust) are discretionary trusts for the benefit of employees of South32 Limited and its subsidiaries.

The trustee for the Australian Trust (CPU Share Plans Pty Ltd) is an independent company, resident in Australia. The trustee for the South African Trust is made up of employer and employee representatives per the B-BBEE requirements under South African law. The Trusts use funds provided by South32 Limited and/or its subsidiaries to acquire shares to enable awards to be made or satisfied under the Group employee share ownership plans.

The shares may be acquired by purchase in the market or by subscription at not less than nominal value.

(c) Measurement of fair values

The fair value at grant date of equity-settled share awards is charged to the Consolidated Income Statement, net of tax, over the period for which the benefits of employee services are expected to be derived. The corresponding accrued employee entitlement is recorded in the employee share awards reserve.

Where awards are forfeited because non-market based vesting conditions are not satisfied, the expense previously recognised is proportionately reversed. Where shares in South32 Limited are acquired by on-market purchases prior to settling the vested entitlement, the cost of the acquired shares is carried as treasury shares and deducted from equity. Where awards are satisfied by delivery of acquired shares, any difference between their acquisition cost and the expected cumulative remuneration expense recognised is charged directly to retained earnings, net of tax.

The fair value of performance rights is measured using a Monte Carlo methodology. This model considers the following:

- Expected life of the award;
- Current market price of the underlying shares;
- Expected volatility (of the individual company and of each peer group);
- Expected dividends;
- Risk-free interest rate; and
- Market based performance hurdles.

The fair value of retention rights is measured using a Black Scholes methodology. This model considers the following:

- Expected life of the award;
- Current market price of the underlying shares;
- Expected volatility;
- Expected dividends; and
- Risk-free interest rate.

23. EMPLOYEE SHARE OWNERSHIP PLANS (CONTINUED)

(c) Measurement of fair values (continued)

The inputs used in the measurement of the fair values at grant date of the equity-settled share-based payments plans were as follows:

Year ended 30 June 2019	Fair value at grant date (US$)[1]	Share price at grant date (US$)	Expected volatility (%)[2]	Expected life (in years)[1]	Risk-free interest rate based on government bonds (%)[1]
Recurring plans					
FY19 Long-Term Incentive Plan[3]	1.09	2.24	32.50	4.00	2.01
FY18 Deferred Short-Term Incentive Plan[3]	2.11	2.24	32.50	2.00	1.88
FY19 Management Share Plan - Retention Rights[4]	1.97 – 2.02	2.24 – 2.25	32.50	3.00	1.92 – 7.63
FY19 Management Share Plan - Performance Rights[4]	1.09	2.24 – 2.25	32.50	4.00	2.01 – 7.98
2018 AllShare Plan[4]	2.11 – 2.28	2.24 – 2.25	32.50	2.00 – 3.00	1.88 – 7.63
Transitional plans					
FY19 Sign-on Award Plan[3]	2.11 – 2.23	2.24	32.50	1.00 – 2.00	1.87 – 1.88
FY19 Executive Transitional Award Plan[3]	1.14	2.24	32.50	3.00	1.92
FY19 Management Transitional Award Plan[4][5]	1.09 – 2.02	2.24 – 2.25	32.50	3.00 – 4.00	1.92 – 7.98

(1) Represents the range of grant date fair values, expected life, and risk-free interest rates based on the amount of rights granted on the ASX or the JSE during the year, and the variations in offer terms and grant dates of each plan where applicable. The risk-free rate and expected volatility does not materially impact service based awards.

(2) Expected volatility is based on the historical South32 Limited share price volatility at the grant date.

(3) Grant date 7 December 2018.

(4) Grant date 7 December 2018 and 17 May 2019.

(5) The Management Transitional Award Plan comprises both retention rights and performance rights. The range of risk-free rates for the performance based awards are 2.01 to 7.98 per cent.

Year ended 30 June 2018	Fair value at grant date (US$)[1]	Share price at grant date (US$)	Expected volatility (%)[2]	Expected life (in years)[1]	Risk-free interest rate based on government bonds (%)[1]
Recurring plans					
FY18 Long-Term Incentive Plan[3]	1.33	2.39	35.00	4.00	2.07
FY17 Deferred Short-Term Incentive Plan[3]	2.27	2.39	35.00	2.00	1.91
FY18 Management Share Plan - Retention Rights[4]	2.35 – 2.40	2.54 – 2.57	35.00	3.00	1.94 – 8.40
FY18 Management Share Plan - Performance Rights[4]	1.53 – 2.02	2.54 – 2.57	35.00	4.00	2.04 – 8.60
2017 AllShare Plan[4]	2.47 – 2.58	2.54 – 2.57	35.00	2.00 – 3.00	1.73 – 8.40
Transitional plans					
FY18 Executive Transitional Award Plan[3]	1.34	2.39	35.00	3.00	1.98
FY18 Management Transitional Award Plan[4][5]	1.53 – 2.40	2.54 – 2.57	35.00	3.00 – 4.00	1.94 – 8.60

(1) Represents the range of grant date fair values, expected life, and risk-free interest rates based on the amount of rights granted on the ASX or the JSE during the year, and the variations in offer terms and grant dates of each plan where applicable. The risk-free rate and expected volatility does not materially impact service based awards.

(2) Expected volatility is based on the historical South32 Limited share price volatility at the grant date.

(3) Grant date 13 December 2017.

(4) Grant date 13 November 2017 or 7 May 2018.

(5) The Management Transitional Award Plan comprises both retention rights and performance rights. The range of risk-free rates for the performance based awards are 2.04 to 8.60 percent.

23. EMPLOYEE SHARE OWNERSHIP PLANS (CONTINUED)

(d) Reconciliation of outstanding share awards

None of the awards listed below have an exercise price or are exercisable at 30 June 2019.

Year ended 30 June 2019 Number of Rights	Rights at beginning of period	Granted during the period	Vested during the period	Forfeited during the period	Rights at end of the period
Recurring plans					
FY16 Long-Term Incentive Plan	6,632,568	-	-	-	6,632,568
FY17 Long-Term Incentive Plan	7,845,617	-	-	-	7,845,617
FY18 Long-Term Incentive Plan	5,766,758	-	-	-	5,766,758
FY19 Long-Term Incentive Plan	-	4,906,971	-	-	4,906,971
FY16 Deferred Short-Term Incentive Plan	1,058,549	-	(1,054,742)	(3,807)	-
FY17 Deferred Short-Term Incentive Plan	796,267	-	-	-	796,267
FY18 Deferred Short-Term Incentive Plan	-	1,131,116	-	-	1,131,116
FY16 Management Share Plan - Retention Rights	3,440,899	-	(3,392,208)	(48,691)	-
FY16 Management Share Plan - Performance Rights	10,339,584	-	-	(421,770)	9,917,814
FY17 Management Share Plan - Retention Rights	4,503,592	-	(517,953)	(284,940)	3,700,699
FY17 Management Share Plan - Performance Rights	11,656,714	-	-	(1,048,816)	10,607,898
FY18 Management Share Plan - Retention Rights	2,962,223	19,453(1)	(162,273)	(343,523)	2,475,880
FY18 Management Share Plan - Performance Rights	7,470,991	48,632(1)	-	(973,470)	6,546,153
FY19 Management Share Plan - Retention Rights	-	2,652,001	(2,618)	(27,951)	2,621,432
FY19 Management Share Plan - Performance Rights	-	5,842,608	-	(71,514)	5,771,094
2015 AllShare Plan	8,851,800	(20,400)	(8,766,600)	(64,800)	-
2016 AllShare Plan	8,808,480	10,080(1)	(3,641,040)	(233,280)	4,944,240
2017 AllShare Plan	6,552,480	6,630(1)	(357,000)	(239,190)	5,962,920
2018 AllShare Plan	-	6,534,100	(236,550)	(154,375)	6,143,175
Transitional plans					
FY16 Executive Transitional Award Plan	1,245,689	-	(1,238,958)	(6,731)	-
FY16 Advance Award Plan	10,231,569	-	(10,109,842)	(121,727)	-
FY16 Management Transitional Award Plan	3,615,474	-	(890,901)	(77,401)	2,647,172
Replacement BHP Long-Term Incentive Plan	5,753,480	-	(1,748,922)	(1,054,621)	2,949,937
FY15 Transitional Award Plan	538,747	-	(457,934)	(80,813)	-
FY17 Executive Transitional Award Plan	239,197	-	-	-	239,197
FY17 Management Transitional Award Plan	2,442,581	-	(74,539)	(154,459)	2,213,583
FY18 Executive Transitional Award Plan	245,840	-	-	-	245,840
FY18 Management Transitional Award Plan	1,140,473	-	(23,045)	(145,777)	971,651
FY19 Executive Transitional Award Plan	-	81,967	-	-	81,967
FY19 Management Transitional Award Plan	-	530,059	(1,082)	(44,310)	484,667
FY19 Sign-on Award Plan	-	437,000	-	-	437,000
Total awards	112,139,572	22,180,217	(32,676,207)	(5,601,966)	96,041,616

(1) Retrospective grants related to prior year plans.

NOTES TO FINANCIAL STATEMENTS – OTHER NOTES

24. CONTINGENT LIABILITIES

Contingent liabilities not otherwise provided for in the consolidated financial statements are categorised as arising from:

US$M	FY19	FY18
Subsidiaries and joint operations		
Actual or potential litigation	456	522
Total contingent liabilities	456	522

Prior to the Demerger, the Group entered into a Separation Deed with the BHP Group, which deals with matters arising in connection with the Demerger. The Separation Deed principally covers the following key terms: assumption of liabilities, limitations and exclusions from indemnities and claims, contracts, financial support, Demerger costs and litigation. Actual or potential litigation excludes amounts indemnified by the BHP Group, as per the Separation Deed.

Actual or potential litigations primarily relate to numerous tax assessments or matters relating to transactions in prior years in Colombia and Brazil. Additionally, there are a number of legal claims or potential claims against the Group, the outcome of which cannot be foreseen at present, and for which no amounts have been disclosed.

25. COMMITMENTS

US$M	FY19	FY18
Capital expenditure commitments	221	193
Lease expenditure commitments		
Finance leases:		
Within one year	58	59
After one year but not more than five years	232	240
More than five years	819	903
Total minimum lease payments under finance leases	1,109	1,202
Less amounts representing finance charges	(566)	(632)
Finance lease liability	543	570
Operating leases:		
Within one year	48	48
After one year but not more than five years	54	94
More than five years	21	26
Total commitments for operating leases	123	168

Operating lease assets are not capitalised and rental payments are included in the Consolidated Income Statement on a straight-line basis over the lease term.

26. SUBSIDIARIES

Significant subsidiaries of the Group, which are those with the most significant contribution to the Group's net profit/(loss) or net assets, are as follows:

Significant subsidiaries	Country of incorporation	Principal activity	Effective interest FY19 %	Effective interest FY18 %
Arizona Minerals Inc.(1)	United States	Exploration and development	100	-
Cerro Matoso SA	Colombia	Ferronickel mining and smelting	99.9	99.9
Dendrobium Coal Pty Ltd	Australia	Coal mining	100	100
Endeavour Coal Pty Ltd	Australia	Coal mining	100	100
Hillside Aluminium (Pty) Ltd	South Africa	Aluminium smelting	100	100
Illawarra Services Pty Ltd	Australia	Coal preparation plant	100	100
South32 Aluminium (Holdings) Pty Ltd	Australia	Investment holding company	100	100
South32 Aluminium (RAA) Pty Ltd	Australia	Bauxite mining and alumina refining	100	100
South32 Aluminium (Worsley) Pty Ltd	Australia	Bauxite mining and alumina refining	100	100
South32 Cannington Pty Ltd	Australia	Silver, lead and zinc mining	100	100
South32 Group Operations Pty Ltd	Australia	Administrative services	100	100
African Metals (Pty) Ltd	South Africa	Investment holding company	100	100
South32 Investment 12 B.V.	Netherlands	Investment holding company	100	100
South32 Marketing Pte Ltd	Singapore	Commodity marketing and trading	100	100
South32 Minerals SA	Brazil	Alumina refining	100	100
South32 SA Coal Holdings (Pty) Ltd(2)	South Africa	Coal mining	100	100
South32 SA Investments Limited	United Kingdom	Investment holding company	100	100
South32 SA Limited	South Africa	Administrative services	100	100
South32 Treasury Limited	Australia	Financing company	100	100

(1) Arizona Minerals Inc. was acquired on 10 August 2018. Refer to note 32(a) Acquisition of Arizona Mining Inc.

(2) The Group's effective interest in South32 SA Coal Holdings (Pty) Ltd will reduce to 92 per cent pursuant to B-BBEE transactions in South Africa. The Group's voting rights in South32 SA Coal Holdings (Pty) Ltd is 92 per cent.

Subsidiaries are entities controlled by the parent entity. Control exists where the parent entity is exposed, or has rights to variable returns from its involvement with the subsidiary and has the ability to affect those returns through its power over the subsidiary. A parent entity has power over the subsidiary, when it has existing rights to direct the relevant activities of the subsidiary which are those which significantly affect the subsidiary's returns. The financial statements of subsidiaries are included in the consolidated financial statements for the period they are controlled.

27. EQUITY ACCOUNTED INVESTMENTS

The Group's interests in equity accounted investments with the most significant contribution to the Group's net profit/(loss) or net assets are as follows:

Significant joint ventures	Country of incorporation/ principal place of business	Principal activity	Reporting date	Acquisition date	Ownership interest FY19 %	Ownership interest FY18 %
Australia Manganese[1][2]	Australia	Integrated producer of manganese ore and alloy	30 June 2019	8 May 2015	60	60
South Africa Manganese[1][3]	South Africa	Integrated producer of manganese ore and alloy	30 June 2019	3 February 2015	60	60

(1) While the Group holds a greater than 50 per cent interest in the joint ventures, joint control is contractually achieved as joint venture parties unanimously consent on decisions over the joint venture's relevant activities.

(2) Australia Manganese consists of an investment in Groote Eylandt Mining Company Pty Ltd.

(3) South Africa Manganese consists of an investment in Samancor Holdings (Pty) Ltd.

A reconciliation of the carrying amount of the equity accounted investments is set out below:

Investment in equity accounted investments US$M	FY19	FY18
At the beginning of the financial year	697	569
Distribution from equity accounted investments	(6)	-
Share of profit/(loss)	467	521
Other Comprehensive Income/(loss), net of tax	66	1
Dividends received from equity accounted investments	(536)	(394)
At the end of the financial year	688	697

Share of profit/(loss) of equity accounted investments US$M	FY19	FY18
Australia Manganese and South Africa Manganese	448	503
Individually immaterial[1]	19	18
Total[2]	467	521

(1) Individually immaterial consists of investments in Samancor AG (60 per cent), Samancor Marketing Pte Ltd (60 per cent), Richards Bay Coal Terminal Proprietary Limited (21.1 per cent) and Port Kembla Coal Terminal Limited (16.7 per cent).

(2) Includes earnings adjustment of (US$17) million (FY18: (US$30) million). Refer to note 4(b)(i) Earnings adjustments.

Carrying amount of equity accounted investments US$M	FY19	FY18
Australia Manganese and South Africa Manganese	582	583
Individually immaterial[1]	106	114
Total	688	697

(1) Individually immaterial consists of investments in Samancor AG (60 per cent), Samancor Marketing Pte Ltd (60 per cent), Richards Bay Coal Terminal Proprietary Limited (21.1 per cent) and Port Kembla Coal Terminal Limited (16.7 per cent).

NOTES TO FINANCIAL STATEMENTS – OTHER NOTES

27. EQUITY ACCOUNTED INVESTMENTS (CONTINUED)

The following table summarises the financial information relating to each significant equity accounted investment:

	Joint ventures			
	Australia Manganese	South Africa Manganese[1]	Australia Manganese	South Africa Manganese[1]
US$M	FY19		FY18	
Reconciliation of carrying amount of equity accounted investments				
Current assets	432	261	339	349
Non-current assets	811	799	742	664
Current liabilities	(268)	(101)	(295)	(132)
Non-current liabilities	(569)	(301)	(336)	(288)
Net assets – 100%	406	658	450	593
Net assets – the Group's share	244	345	270	318
Elimination of gains/(losses) on intragroup sales	(1)	(6)	(1)	(4)
Carrying amount of equity accounted investments	243	339	269	314
Reconciliation of share of profit/(loss) of equity accounted investments				
Revenue – 100%	1,704	850	1,730	771
Profit/(loss) after tax – 100%	565	183	603	235
Profit/(loss) after tax – the Group's share	339	111	362	142
Elimination of gains/(losses) on intragroup sales	-	(2)	1	(2)
Share of profit/(loss) of equity accounted investments	339	109	363	140
Other balances of equity accounted investments presented on a 100% basis				
Cash and cash equivalents	-	17	-	13
Current financial liabilities (excluding trade and other payables and provisions)	-	-	-	(1)
Non-current financial liabilities (excluding trade and other payables and provisions)	(140)	(47)	-	(76)
Depreciation and amortisation	(97)	(39)	(94)	(42)
Interest income	3	7	2	6
Interest expense	(24)	(16)	(24)	(18)
Income tax (expense)/benefit (excluding royalty related tax)	(309)	(88)	(295)	(41)

(1) South Africa Manganese includes a 60 per cent interest in Samancor Manganese (Pty) Ltd and 54.6 per cent interest in Hotazel Manganese Mines (Pty) Ltd.

The Group's share of contingent liabilities and commitments of significant equity accounted investments as at 30 June 2019 was US$13 million (FY18: US$5 million) and US$29 million (FY18: US$24 million) respectively.

The Group uses the term 'equity accounted investments' to refer to associates and joint ventures collectively.

Associates are entities in which the Group holds significant influence. If the Group holds 20 per cent or more of the voting power of an entity, it is presumed that the Group has significant influence, unless it can be clearly demonstrated that this is not the case. Significant influence can also arise when the Group has less than 20 per cent of voting power but it can be demonstrated that the Group has the power to participate in the financial and operating policy decisions of the associate. Investments in associates are accounted for using the equity method.

Joint ventures are joint arrangements in which the parties with joint control of the arrangement have rights to the net assets of the arrangement. Joint arrangements exist when two or more parties have joint control. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control. A separate vehicle, not the parties, will have the rights to the assets and obligations to the liabilities, relating to the arrangement. If more than an insignificant share of output from a joint venture is sold to third parties, this indicates that the joint venture is not dependent on the parties to the arrangement for funding and that the parties to the arrangement have no obligation for the liabilities of the arrangement. Joint ventures are accounted for using the equity method.

Equity accounted investments are initially recorded at cost, including the value of any goodwill on acquisition. In subsequent periods, the carrying amount of the investment is adjusted to reflect the share of post-acquisition profit or loss and Other Comprehensive Income. After application of the equity method, including recognising the Group's share of the joint ventures' results, the value of the investment will be assessed for impairment if there is objective evidence that an impairment of the investment may have occurred. Where the carrying value of an equity accounted investment is reduced to nil after having applied equity accounting principles (and the Group has no legal or constructive obligation to make further payments, nor has made payments on behalf of the associate or joint venture), dividends received from the associate or joint venture will be recognised as a 'Share of profit/(loss) of equity accounted investments'.

NOTES TO FINANCIAL STATEMENTS – OTHER NOTES

28. INTERESTS IN JOINT OPERATIONS

Significant joint operations of the Group, which are those with the most significant contributions to the Group's net profit/(loss) or net assets, are as follows:

Significant joint operations	Country of operation	Principal activity	Acquisition date	Effective interest FY19 %	FY18 %
Brazil Alumina	Brazil	Alumina refining	3 July 2014	36	36
Eagle Downs Metallurgical Coal[1]	Australia	Metallurgical coal exploration and development	14 September 2018	50	-
Mozal Aluminium SARL[2]	Mozambique	Aluminium smelting	27 March 2015	47.1	47.1
Worsley Alumina[3]	Australia	Bauxite mining and alumina refining	8 May 2015	86	86

(1) Refer to note 32(b) Acquisition of the Eagle Downs Metallurgical Coal project.

(2) This joint arrangement is an incorporated entity. It is classified as a joint operation as the participants are entitled to receive output, not dividends, from the arrangement.

(3) While the Group holds a greater than 50 per cent interest in Worsley Alumina, participants are entitled to receive their share of output from the arrangement.

Joint operations are joint arrangements in which the parties with joint control have rights to the assets and obligations for the liabilities relating to the arrangement. The activities of a joint operation are primarily designed for the provision of output to the parties to the arrangement, indicating that:

- The parties have the rights to substantially all the economic benefits of the assets of the arrangement; and
- All liabilities are satisfied by the joint participants through their purchases of that output. This indicates that, in substance, the joint participants have an obligation for the liabilities of the arrangement.

The consolidated financial statements of the Group include its share of the assets and liabilities, revenues and expenses arising jointly or otherwise from those operations and its revenue derived from the sale of its share of output from the joint operation. All such amounts are measured in accordance with the terms of each arrangement, which are usually in proportion to the Group's interest in the joint operation.

29. KEY MANAGEMENT PERSONNEL

(a) Key management personnel compensation

US$'000	FY19	FY18
Short-term employee benefits	6,504	6,806
Post-employment benefits	224	219
Other long-term benefits	285	305
Share-based payments	6,154	6,961
Total	13,167	14,291

(b) Transactions with key management personnel

There were no transactions with key management personnel during the year ended 30 June 2019 (FY18: nil).

(c) Loans to key management personnel

There were no loans with key management personnel during the financial year and as at 30 June 2019 (FY18: nil).

(d) Transactions with key management personnel related entities

There were no transactions with entities controlled or jointly controlled by key management personnel and there were no outstanding amounts with those entities as at 30 June 2019 (FY18: nil).

30. RELATED PARTY TRANSACTIONS

(a) Parent entity

The ultimate parent entity of the Group is South32 Limited, which is domiciled and incorporated in Australia.

(b) Subsidiaries, joint ventures, joint operations and associates

The interests in subsidiaries, joint ventures, joint operations and associates are disclosed in notes 26 to 28.

(c) Key management personnel

The compensation of key management personnel is disclosed in note 29.

(d) Transactions with related parties

Transactions with related parties

	Joint ventures		Associates	
US$'000	**FY19**	**FY18**	**FY19**	**FY18**
Sales of goods and services	232,472	207,560	2,711	2,851
Purchases of goods and services	154	-	91,071	54,101
Interest income	7,544	4,864	-	-
Dividend income	535,505	393,635	-	-
Interest expense	11,404	8,585	-	-
Short-term financing arrangements to/(from) related parties	22,368	58,250	-	-
Loans made to/(from) related parties	84,027	(168,817)	(9,490)	15,866

Outstanding balances with related parties

	Joint ventures		Associates	
US$'000	**FY19**	**FY18**	**FY19**	**FY18**
Trade amounts owing to related parties	77	-	940	607
Other amounts owing to related parties(1)	298,855	321,223	-	-
Trade amounts owing from related parties	46,428	61,980	-	-
Other amounts owing from related parties	-	-	223	4,453
Loan amounts owing from related parties(2)	84,035	8	88,279	93,539

(1) Amount owing relates to short-term deposits and cash managed by the Group on behalf of its equity accounted investments. Interest is paid based on the three month London Inter-Bank Offer Rate and the one month Johannesburg Inter-Bank Agreed Rate.

(2) Amounts owing from associates include loans to Port Kembla Coal Terminal Limited. An interest free loan repayable by 30 June 2030 and an interest bearing loan repayable by 30 June 2020. Interest is paid based on the Bank Bill Swap Bid Rate and is secured against other shareholders of the associate.

Terms and conditions

Sales to, and purchases from, related parties of goods and services are transactions at market prices and on commercial terms.

Outstanding balances at year end are unsecured and settlement mostly occurs in cash.

No guarantees are provided or received for any related party receivables or payables.

No provision for expected credit losses has been recognised in relation to any outstanding balances with the exception of US$1 million on initial application of AASB 9 on 1 July 2018. No expense has been recognised in respect of expected credit losses from related parties in FY19.

NOTES TO FINANCIAL STATEMENTS – OTHER NOTES

31. PARENT ENTITY INFORMATION

(a) Summary financial information

The individual financial statements for the parent entity, South32 Limited, show the following aggregate amounts:

US$M	FY19	FY18
Result of parent entity		
Profit/(loss) after tax for the year	382	1,302
Total Comprehensive Income	382	1,302
Financial position of parent entity at year end		
Current assets	437	1,231
Total assets	11,976	11,764
Current liabilities	875	108
Total liabilities	885	113
Net assets	11,091	11,651
Total equity of the parent entity comprising:		
Share capital	14,212	14,493
Treasury shares	(82)	(83)
Other reserves	88	68
Profit reserve(1)	1,451	1,726
Retained earnings/(accumulated losses)	(4,578)	(4,553)
Total equity	11,091	11,651

(1) Current and prior year profits, net of dividends paid, have been appropriated to a profits reserve for future dividend payments.

(b) Parent company guarantees

The parent entity has guaranteed a US commercial paper program of US$1,500 million. The parent entity has also guaranteed a Group revolving credit facility of US$1,500 million, which backs the US commercial paper program and remains undrawn as at 30 June 2019.

The parent entity is party to a Deed of Support with the effect that the Company guarantees debts in respect of South32 Group Operations Pty Ltd.

32. ACQUISITION OF SUBSIDIARIES AND JOINTLY CONTROLLED OPERATIONS

(a) Acquisition of Arizona Mining Inc.

On 10 August 2018, the Group completed its acquisition of the remaining 83 per cent of issued and outstanding shares of Arizona Mining Inc. that it did not already own via a plan of arrangement. The transaction was completed for a total consideration of US$1,351 million via a fully funded, all cash offer. The Group's existing 17 per cent interest was derecognised as an investment in equity instruments designated as FVOCI and US$253 million was transferred to form part of the consolidated investment in Arizona Mining Inc. The acquisition was treated as an acquisition of assets including mineral rights, exploration licences and exploration surface facilities.

US$M	FY19
Cash outflow on acquisition	
Net cash acquired	10
Direct costs relating to the acquisition(1)	(1,392)
Net consolidated cash outflow	(1,382)
Net assets	
Cash and cash equivalents	10
Other assets	1
Property, plant and equipment(2)	1,661
Other liabilities	(27)
Net assets	1,645

(1) Inclusive of acquisition related transaction costs and other directly attributable costs.

(2) Includes mineral rights of US$1,629 million.

(b) Acquisition of the Eagle Downs Metallurgical Coal project

On 14 September 2018, the Group completed its acquisition of a 50 per cent interest in the Eagle Downs Metallurgical Coal project in Queensland's Bowen Basin. The remaining 50 per cent interest continues to be held by Aquila Resources Pty Ltd, a subsidiary of China BaoWu Steel Group. The transaction was completed for a total upfront payment of US$106 million, a deferred payment of US$27 million and a coal price-linked production royalty capped at US$80 million. The acquisition was treated as an acquisition of assets including mineral rights, site infrastructure and dual drifts which are approximately 40 per cent complete. The joint arrangement is an unincorporated entity and is classified as a joint operation as activities are primarily designed for the provision of output to the parties of the arrangement.

US$M	FY19
Cash outflow on acquisition	
Direct costs relating to the acquisition(1)	(112)
Net consolidated cash outflow	(112)
Net assets	
Property, plant and equipment(2)	160
Interest bearing liabilities(3)	(35)
Other liabilities	(13)
Net assets	112

(1) Inclusive of acquisition related transaction costs.

(2) Includes mineral rights of US$107 million.

(3) Includes the deferred payment obligation of US$27 million. The coal price-linked production royalty capped at US$80 million will be expensed as incurred.

33. SUBSEQUENT EVENTS

On 22 August 2019, the Directors resolved to pay a fully franked final dividend of US 2.8 cents per share (US$140 million) in respect of the 2019 financial year. The dividend will be paid on 10 October 2019. The dividend has not been provided for in the consolidated financial statements and will be recognised in the 2020 financial year.

On 22 August 2019, the Group also announced an extension of the existing capital management program, announced on 27 March 2017, by US$250 million to a total of US$1.25 billion along with a 12-month extension to the completion time, expected to be returned by 4 September 2020. This program has US$264 million remaining.

No other matters or circumstances have arisen since the end of the financial year that have significantly affected, or may significantly affect, the operations, results of operations or state of affairs of the Group in subsequent accounting periods.

DIRECTORS' DECLARATION

In accordance with a resolution of the Directors of the Group, we state that:

1. In the opinion of the Directors:
   (a) The consolidated financial statements and notes that are set out on pages 78 to 125 of the Annual Report are in accordance with the Corporations Act, including:
      (i) Giving a true and fair view of the Group's financial position as at 30 June 2019 and of its performance for the year ended on that date; and
      (ii) Complying with Australian Accounting Standards and Corporations Regulations 2001.
   (b) There are reasonable grounds to believe that the Group will be able to pay its debts as and when they become due and payable.
2. The Directors have been given the declarations required by Section 295A of the Corporations Act from the Chief Executive Officer and Chief Financial Officer for the financial year ended 30 June 2019.
3. The Directors draw attention to note 2 to the financial statements on page 83, which includes a statement of compliance with International Financial Reporting Standards.

Signed in accordance with a resolution of the Board of Directors.

Karen Wood
Chair

Graham Kerr
Chief Executive Officer and Managing Director

Dated 5 September 2019

LEAD AUDITOR'S INDEPENDENCE DECLARATION UNDER SECTION 307C OF THE CORPORATIONS ACT 2001

To the Directors of South32 Limited

I declare that, to the best of my knowledge and belief, in relation to the audit of South32 Limited for the financial year ended 30 June 2019 there have been:

i. no contraventions of the auditor independence requirements as set out in the *Corporations Act 2001* in relation to the audit; and

ii. no contraventions of any applicable code of professional conduct in relation to the audit.

KPMG

KPMG

DMcComish

Denise McComish
Partner

Perth
5 September 2019

KPMG, an Australian partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.

Liability limited by a scheme approved under Professional Standards Legislation.

KPMG

INDEPENDENT AUDITOR'S REPORT

To the shareholders of South32 Limited

REPORT ON THE AUDIT OF THE FINANCIAL REPORT

Opinion

We have audited the ***Financial report*** of South32 Limited (the Company).

In our opinion, the accompanying Financial report of the Company is in accordance with the *Corporations Act 2001*, including:

- giving a true and fair view of the ***Group***'s financial position as at 30 June 2019 and of its financial performance for the year ended on that date; and
- complying with *Australian Accounting Standards* and the *Corporations Regulations 2001*.

The ***Financial report*** comprises:

- Consolidated Balance Sheet as at 30 June 2019
- Consolidated Income Statement, Consolidated Statement of Comprehensive Income, Consolidated Statement of Changes in Equity and Consolidated Cash Flow Statement for the year then ended
- Notes including a summary of significant accounting policies
- Directors' Declaration.

The ***Group*** consists of the Company and the entities it controlled at the year-end or from time to time during the financial year

Basis for opinion

We conducted our audit in accordance with *Australian Auditing Standards.* We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the Financial Report* section of our report.

We are independent of the Group in accordance with the *Corporations Act 2001* and the ethical requirements of the *Accounting Professional and Ethical Standards Board's APES 110 Code of Ethics for Professional Accountants* (the Code) that are relevant to our audit of the Financial report in Australia. We have fulfilled our other ethical responsibilities in accordance with the Code.

Key Audit Matters

The ***Key Audit Matters*** we identified are:

- Asset valuation
- Closure and rehabilitation provision

Key Audit Matters are those matters that, in our professional judgement, were of most significance in our audit of the Financial report of the current period.

These matters were addressed in the context of our audit of the Financial report as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

KPMG

INDEPENDENT AUDITOR'S REPORT

Asset valuation

Refer to Note 13 Impairment of non-financial assets to the Financial report. As at 30 June 2019 the Group's balance sheet includes property, plant and equipment of US$9,596m, intangible assets of US$233m, and equity accounted investments of US$688m, assessed for impairment purposes as part of their respective cash generating units (CGUs).

The key audit matter

The assessment of the existence of impairment or reversal indicators and impairment testing, where required, of CGUs was a key audit matter given the size of property, plant and equipment, intangible assets and equity accounted investments, and the sensitivity of valuations to certain assumptions.

Historically the Group has impaired the carrying value of some CGUs to recoverable amount. Combined with the volatility in both commodity and foreign exchange markets, this increases the sensitivity of the carrying value of the Group's CGUs to potential impairment and reversal.

The Group received indicative offers for the sale of South Africa Energy Coal, which incorporates three CGUs. These offers informed the Group's assessment of the recoverable amounts of these CGUs. A pre-tax impairment expense of US$504m was recorded, necessitating additional audit effort in this key audit area.

The Group uses sophisticated models to perform their assessment of impairment or reversal indicators and impairment testing, where required. This testing included the one CGU which contains goodwill (Hillside Aluminium). The models are largely developed in-house, and use life of operation and development plans, approved budgets, and a range of external sources as inputs to the assumptions. Complex modelling using forward-looking assumptions tends to be prone to greater risk for potential bias, error and inconsistent application. These conditions necessitate additional scrutiny by us, in particular to address the objectivity of inputs, and their consistent application.

We focused on the significant forward-looking assumptions the Group applied in their models, including:

- forecast commodity prices and foreign exchange rates – certain sectors in which the Group operates have experienced significant volatility in forecast commodity prices, particularly manganese, thermal coal, aluminium and alumina. The Group's models are sensitive to small changes in these price assumptions, as well as changes to foreign exchange rates, particularly the South African Rand and the Australian Dollar, increasing forecasting risk
- forecast operating cash flows, production volumes, capital expenditure and reserve and resource estimates – these are determined by the Group based on historical performance adjusted for expected changes or development plans. This drives additional audit effort specific to the feasibility of the forecasts and consistency with the Group's strategy
- discount rates - these are complicated in nature and vary according to the conditions and environment the CGUs are subject to from time to time.

The Group uses fair value less cost of disposal models to assess recoverable amount when testing for impairment.

We involved valuation specialists to supplement our senior audit team members in assessing this key audit matter.

How the matter was addressed in our audit

Our procedures included:

We considered the appropriateness of the fair value less cost of disposal method applied by the Group for impairment testing purposes against the requirements of the accounting standards.

We assessed the integrity and consistency of the models used on a sample basis, including the accuracy of the underlying calculation formulas.

We assessed the scope, objectivity and competence of the Group's experts responsible for preparation of the resource and reserve estimates and compared these estimates to those incorporated in the life of operation and development plans where applicable.

We compared the forecast operating cash flows, production volumes, capital expenditure and reserve and resource estimates contained in the models to the life of operation and development plans incorporating the approved budgets. We also assessed the accuracy of the Group's previous forecasts to assist with this assessment.

Using our knowledge of the Group and our industry experience, and considering the Group's strategy and past performance, we assessed the feasibility of the forecast operating cash flows, capital expenditure and production volumes.

Working with our valuation specialists, and considering the risk factors specific to the Group, we compared the discount rates to publicly available market data for comparable entities. We also compared foreign exchange rates to published views of market commentators.

We compared forecast commodity prices to published views of market commentators on future trends.

We considered the sensitivity of the models by varying key assumptions, such as forecast commodity prices, foreign exchange rates and discount rates, within a reasonably possible range, to identify those CGUs at higher risk of impairment or reversal and to focus our further procedures.

We assessed the disclosures in the Financial report using our understanding obtained from our testing and against the requirements of the accounting standards.

We recalculated the impairment charge to the South Africa Energy Coal group of CGUs, with reference to the indicative offers received, and compared to the impairment expense recorded.

KPMG

INDEPENDENT AUDITOR'S REPORT

Closure and rehabilitation provision

Refer to Note 15 Provisions to the Financial report. As at 30 June 2019 the Group's balance sheet includes current and non-current closure and rehabilitation provisions of US$1,868m.

The key audit matter

Closure and rehabilitation provisioning was a key audit matter due to the size of the provision and the judgement we used to audit the provision estimates across the multiple sites the Group operates.

Closure and rehabilitation activities are governed by Group policies based on legal and regulatory requirements, which differ across multiple jurisdictions.

We focused on the following assumptions the Group applied in determining the provisions in accordance with the closure and rehabilitation plans:

- nature and extent of activities required across the multiple sites, including the magnitude of possible contamination, which are inherently challenging to assess
- timing of when closure and rehabilitation will take place, which increases estimation uncertainty given the unique nature of each site and long timeframes involved
- forecast cost estimates incorporating historical experience, which may not be a reliable predictor of such costs, and risk adjustments. The Group engages external experts periodically to assist in their determination of these estimates
- economic assumptions, including country specific discount rates, which are complicated in nature.

How the matter was addressed in our audit

Our procedures included:

We tested key controls in the provision estimation process. These include management review and authorisation controls on activities such as:

- plans for closure and rehabilitation in accordance with legal and regulatory requirements and Group policies; and
- sourcing inputs to the estimation models.

We assessed the scope, objectivity and competence of the Group's external experts to provide rehabilitation cost estimates, where engaged.

We evaluated key assumptions used in the closure and rehabilitation provision, relevant to the jurisdictions of the Group's sites, by:

- comparing the nature and extent of activities costed to the Group's closure and rehabilitation plans and relevant regulatory requirements
- comparing the timing of closure and rehabilitation activities to the Group's resources and reserve estimates and the expected production profile contained in the life of operation plans
- comparing a sample of cost estimates of the activities, incorporating risk adjustments, to historical experience and underlying documentation, the Group's external expert estimates, and against our knowledge of the Group and its industry
- working with our valuation specialists, comparing country specific discount rate assumptions to market observable data, including risk free rates.

Other Information

Other Information is financial and non-financial information in South32 Limited's annual reporting which is provided in addition to the Financial report and the Auditor's Report. The Directors are responsible for the Other Information.

Our opinion on the Financial report does not cover the Other Information and, accordingly, we do not express an audit opinion or any form of assurance conclusion thereon, with the exception of the Remuneration report and our related assurance opinion.

In connection with our audit of the Financial report, our responsibility is to read the Other Information. In doing so, we consider whether the Other Information is materially inconsistent with the Financial report or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

We are required to report if we conclude that there is a material misstatement of this Other Information, and based on the work we have performed on the Other Information that we obtained prior to the date of this Auditor's Report we have nothing to report.

KPMG

INDEPENDENT AUDITOR'S REPORT

Responsibilities of the Directors for the Financial report

The Directors are responsible for:

- preparing the Financial report that gives a true and fair view in accordance with *Australian Accounting Standards* and the *Corporations Act 2001*
- implementing necessary internal control to enable the preparation of a Financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error
- assessing the Group and Company's ability to continue as a going concern and whether the use of the going concern basis of accounting is appropriate. This includes disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless they either intend to liquidate the Group and Company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the Financial report

Our objective is:

- to obtain reasonable assurance about whether the Financial report as a whole is free from material misstatement, whether due to fraud or error; and
- to issue an Auditor's Report that includes our opinion

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with *Australian Auditing Standards* will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error. They are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the Financial report.

A further description of our responsibilities for the audit of the Financial report is located at the *Auditing and Assurance Standards Board* website at: *http://www.auasb.gov.au/auditors_responsibilities/ar1.pdf*. This description forms part of our Auditor's Report.

REPORT ON THE REMUNERATION REPORT

Opinion

In our opinion, the Remuneration report of South32 Limited for the year ended 30 June 2019, complies with *Section 300A* of the *Corporations Act 2001*.

Directors' responsibilities

The Directors of the Company are responsible for the preparation and presentation of the Remuneration report in accordance with *Section 300A* of the *Corporations Act 2001*.

Our responsibilities

We have audited the Remuneration report included in pages 55 to 71 of the Directors' report for the year ended 30 June 2019.

Our responsibility is to express an opinion on the Remuneration report, based on our audit conducted in accordance with *Australian Auditing Standards*.

KPMG

KPMG

Denise McComish

Denise McComish
Partner

Perth
5 September 2019

SHAREHOLDER INFORMATION

VOTING RIGHTS

South32 Limited ordinary shares carry voting rights of one vote per share.

Shareholders may hold a beneficial entitlement to dematerialised ordinary shares in South32 Limited, UK Depositary Interests and American Depositary Shares (ADS) through the Central Securities Depositories of Strate (Strate), CREST and Depository Trust Company respectively. Each share held dematerialised in Strate, or as a Depositary Interest held in CREST, entitles the holder to one vote. Each ADS is represented by five ordinary shares, with ADS voting managed by South32 Limited's ADS Depositary.

SUBSTANTIAL SHAREHOLDERS

As at 26 July 2019, South32 Limited has three substantial shareholders who, together with their associates, hold five per cent or more of the voting rights in South32 Limited, as notified to South32 under the Australian Corporations Act and the UK Disclosure Guidance and Transparency Rules (DTR).

Name	Date notice received	Number of shares	Percentage of capital
BlackRock Group	29 August 2018	357,382,337	6.98%
Schroder Investment Management Australia Limited	10 July 2019	432,674,873	8.57%
The Vanguard Group	5 June 2018	256,669,781	5.01%

DISTRIBUTION OF SHAREHOLDINGS AND NUMBER OF SHAREHOLDERS

The following table shows the distribution of South32 Limited shareholders by size of shareholding and number of shareholders and shares as at 26 July 2019.

Size of holding	Number of shareholders	Number of shares	Percentage of capital
1 – 1,000	138,256	67,550,229	1.35
1,001 – 5,000	89,026	207,887,059	4.15
5,001 – 10,000	20,388	147,942,241	2.96
10,001 – 100,000	17,458	394,886,379	7.89
100,001 and over	567	4,187,237,667	83.65
Total	265,695	5,005,503,575	100.00

DISTRIBUTION OF RIGHTS HOLDINGS AND NUMBER OF RIGHTS HOLDERS

The following table shows the distribution of rights holders in South32 Limited by size of rights holding and number of rights holders and rights as at 26 July 2019.

Size of holding	Number of rights holders	Number of rights
1 – 1,000	6,026	5,291,530
1,001 – 5,000	6,807	11,624,134
5,001 – 10,000	8	69,272
10,001 – 100,000	117	5,456,060
100,001 and over	131	73,451,480
Total	13,089	95,892,476

20 LARGEST SHAREHOLDERS IN SOUTH32 LIMITED

The following table sets out the 20 largest shareholders of fully paid ordinary shares listed on our shareholder register and the details of their shareholding as at 26 July 2019.

	Name	Number of fully paid shares	Percentage of capital
1	HSBC Custody Nominees (Australia) Limited	1,342,709,306	26.82
2	J P Morgan Nominees Australia Pty Limited	1,021,804,134	20.41
3	Computershare Clearing Pty Ltd <Ccnl Di A/C>	449,715,767	8.98
4	Citicorp Nominees Pty Ltd	404,260,374	8.08
5	South Africa Control A/C\C	167,141,098	3.34
6	National Nominees Limited	122,701,325	2.45
7	BNP Paribas Nominees Pty Ltd <Agency Lending DRP A/C>	106,282,745	2.12
8	HSBC Custody Nominees (Australia) Limited – A/C 2	75,833,803	1.52
9	Citicorp Nominees Pty Limited <Citibank NY ADR Dep A/C>	66,017,055	1.32
10	HSBC Custody Nominees (Australia) Limited <GSCO ECA>	38,043,342	0.76
11	BNP Paribas Noms Pty Ltd <DRP>	35,392,918	0.71
12	HSBC Custody Nominees (Australia) Limited <NT-Comnwlth Super Corp A/C>	33,711,185	0.67
13	CPU Share Plans Pty Ltd <S32 ASP Unallocated A/C>	32,655,466	0.65
14	HSBC Custody Nominees (Australia) Limited	15,475,062	0.31
15	Citicorp Nominees Pty Limited <Colonial First State Inv A/C>	15,104,804	0.30
16	AMP Life Limited	14,171,351	0.28
17	Australian Foundation Investment Company Limited	13,990,941	0.28
18	BNP Paribas Nominees Pty Ltd <Agency Lending Collateral>	13,294,000	0.27
19	National Nominees Limited <N A/C>	12,176,052	0.24
20	CPU Share Plans Pty Ltd <S32 SPA Control A/C>	8,885,510	0.18
	Total	3,989,366,238	79.70

RESTRICTED AND ESCROWED SECURITIES

As at 26 July 2019, South32 Limited does not have any restricted securities or securities subject to voluntary escrow on issue.

SHAREHOLDERS WITH LESS THAN A MARKETABLE PARCEL

As at 26 July 2019, there were 12,337 shareholders on the Australian South32 Limited register holding less than a marketable parcel (A$500) based on the closing market price of A$3.16.

ON-MARKET PURCHASES OF SOUTH32 LIMITED SECURITIES FOR EMPLOYEE INCENTIVE PLANS

The Group purchases South32 Limited ordinary shares on-market through the ESOP Trusts for the purposes of the South32 Equity Incentive Plans. During FY19, 29,914,758 shares were purchased on-market for the Australian ESOP Trust. The average price at which the shares were purchased was A$3.51.

A further 5,895,851 shares were purchased on-market for the South African ESOP Trust. The average price for which the shares were purchased was ZAR35.29.

DIVIDEND POLICY

Our dividend policy is determined by the Board at its discretion. Our priorities for cash flow are to maintain safe and reliable operations and an investment grade credit rating through the cycle.

South32 Limited intends to distribute a minimum 40 per cent of Underlying earnings as dividends to its shareholders following each six-month reporting period. South32 Limited intends to distribute dividends with the maximum practicable franking credits for the purposes of the Australian dividend imputation system.

DIVIDEND DETERMINATION AND PAYMENT

Our dividends are determined in US dollars.

Dividends for shareholders of South32 Limited on the Australian register are paid by direct credit into their nominated bank account in Australian dollars, UK pounds sterling, New Zealand dollars or US dollars, provided direct credit details and currency election information are submitted no later than close of business on the dividend record date.

Dividends for shareholders of South32 Limited on the South African branch register and UK Depositary Interest holders are paid by direct credit in South African rand and UK pounds sterling respectively. For further information about dividends visit *www.south32.net/investors-media/investor-centre/dividends*.

CAPITAL MANAGEMENT PROGRAM

In February 2018 we expanded our capital management program to US$1 billion, comprising a US$761 million on-market share buy-back and special dividends of US$154 million paid in 2018 and US$85 million paid in April 2019. As at 30 June 2019, we have returned to shareholders a total value of US$986 million of the capital management program. Subsequent to 30 June 2019, the Board increased and extended our program by US$250 million to US$1.25 billion, leaving US$264 million to be returned by 4 September 2020.

The on-market share buy-back was initially announced on 27 March 2017 and purchasing commenced on 19 April 2017. During the year ended 30 June 2019, South32 Limited purchased 114 million shares under the on-market share buy-back, which represented 2.23 per cent of share capital at the beginning of the financial year. Total consideration paid for these shares was US$281 million.

Between the commencement of purchasing under the on-market share buy-back on 19 April 2017 and 30 June 2019, South32 Limited purchased a total of 318 million shares under the on-market share buy-back, which represented 5.98 per cent of share capital at the commencement of the program. The total consideration paid for the shares bought back up to 30 June 2019 was US$747 million.

All of the shares purchased by South32 Limited under the on-market buy-back have been cancelled. From 30 June 2019, South32 has observed a blackout period in accordance with its Securities Dealing Policy. As at 26 July 2019 the blackout remained in place and no further shares had been purchased.

ANNUAL GENERAL MEETING (AGM)

Our AGM will be held on Thursday 24 October 2019 at 10.30am Australian Western Standard Time (AWST) in the Golden Ballroom at the Pan Pacific Hotel, 207 Adelaide Terrace, Perth, Western Australia 6000, Australia. If there is a change to the date, time or location of the AGM, then all relevant stock exchanges will be notified.

Presentations delivered at the AGM and the results of voting will be provided to all stock exchanges and will be available on our website.

STOCK EXCHANGES

As at 26 July 2019, South32 Limited has a primary listing on the Australian Securities Exchange, a secondary listing on the Johannesburg Stock Exchange, is admitted to the standard segment of the Official List of the UK Listing Authority and its ordinary shares are traded on the London Stock Exchange.

South32 Limited also has a Level 1 American Depositary Receipts program, which trades in the United States over-the-counter market.

SHAREHOLDER ENQUIRIES

Shareholders can access their current holding details as well as their transaction history, view dividend statements and payments made, download statements and documents, change their address, update their communication preferences and banking details, and check their tax details online via Computershare Investor Centre at *www.computershare.com*.

Alternatively, refer to the following contacts:

SHARE REGISTRIES

AUSTRALIA

Computershare Investor Services Pty Limited
Yarra Falls 452 Johnston Street
Abbotsford Victoria 3067
Australia

Telephone (Australia):	1800 019 953
Telephone (International):	+61 (3) 9415 4169
Facsimile:	+61 (3) 9473 2500

SOUTH AFRICA

Computershare Investor Services (Pty) Limited
Rosebank Towers, 15 Biermann Avenue
Rosebank, 2196
South Africa

Telephone:	+27 (0) 11 373 0033
Facsimile:	+27 (0) 11 688 5217
Email enquiries:	web.queries@computershare.co.za

Holders of shares dematerialised into Strate should contact their Central Securities Depository Participant or stockbroker.

UNITED KINGDOM

Computershare Investor Services PLC
The Pavilions, Bridgwater Road
Bristol BS99 6ZZ
United Kingdom

Telephone:	+44 (0) 370 873 5884
Facsimile:	+44 (0) 370 703 6101
Email enquiries:	web.queries@computershare.co.uk

AMERICAN DEPOSITARY RECEIPTS (ADR)

ADR holders should deal directly with Citibank Shareholder Services.

Citibank Shareholder Services
PO Box 43077 Providence,
Rhode Island 02940-3077

Telephone:	+1 877 248 4237 (+1-877-CITIADR) (toll-free within US) +1 781 575 4555 (outside of US)
Facsimile:	+1 201 324 3284
Email enquiries:	citibank@shareholders-online.com
Website:	*www.citi.com/dr*

BRANCHES

In accordance with DTR 4.1.11R(5), South32, through various subsidiaries, has established branches in a number of different jurisdictions in which the business operates.

REGISTERED OFFICE

Information regarding the South32 Limited Registered Office is included in the Corporate directory on the inside back cover.

Shareholders are encouraged to access all South32 communications electronically at *www.south32.net*. Shareholders that wish to receive electronic communications can update their preferences online or telephone the relevant Computershare Investor Centre.

GLOSSARY OF TERMS AND ABBREVIATIONS

MINING RELATED TERMS

Alumina

Aluminium oxide (Al_2O_3). Alumina is produced from bauxite in the Bayer refining process. It's then converted (reduced) in an electrolysis cell to produce aluminium metal.

Ash

Inorganic material remaining after combustion of coal.

ASX Listing Rules (Chapter 5): Additional reporting on mining and oil and gas production and exploration activities

This chapter of the ASX Listing Rules sets out additional reporting and disclosure requirements for mining entities, oil and gas entities, as well as other entities reporting on mining and oil and gas activities.

AusIMM

The Australasian Institute of Mining and Metallurgy.

Bauxite

Principal commercial ore of aluminium.

Beneficiation

The process of physically separating ore from gangue to produce a mineral concentrate prior to subsequent processing.

Brownfield

An exploration or development project located within an existing mineral province, which can share infrastructure and management with an existing operation.

Coal Reserve

The same meaning as Ore Reserve, but specifically concerning coal.

Coal Resource

The same meaning as Mineral Resource, but specifically concerning coal.

Coking coal

Used in the manufacture of coke, which is used in the steelmaking process by virtue of its carbonisation properties. Coking coal is a form of, and may also be referred to as, Metallurgical Coal.

Competent Person

A minerals industry professional who is a Member or Fellow of The Australasian Institute of Mining and Metallurgy, or of the Australian Institute of Geoscientists, or of a 'Recognised Professional Organisation', as included in a list available on the JORC and ASX websites. These organisations have enforceable disciplinary processes, including the powers to suspend or expel a member.

A Competent Person must have a minimum of five years' relevant experience in the style of mineralisation or type of deposit under consideration and in the activity that the person is undertaking (JORC Code).

Cut-off grade

The lowest grade, or quality, of mineralised material that qualifies as economically mineable and available in a given deposit. It may be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product specification (JORC Code).

Energy coal

Used as a fuel source in electrical power generation, cement manufacture and various industrial applications. Energy coal may also be referred to as steaming or thermal coal.

Flotation

A method of selectively recovering minerals from finely ground ore using a froth created in water by specific reagents. In the flotation process, certain mineral particles are induced to float by becoming attached to bubbles of froth and the unwanted mineral particles sink.

Grade

Any physical or chemical measurement of the characteristics of the material of interest in samples or product (JORC Code).

Greenfield

An exploration or development project located outside the area of influence of our existing mine operations/ infrastructure.

Indicated Mineral Resource

That part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence. This allows the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit (JORC Code).

Inferred Mineral Resource

That part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity (JORC Code).

JORC

Joint Ore Reserves Committee comprising representatives of The Australasian Institute of Mining and Metallurgy (AusIMM), Australian Institute of Geoscientists (AIG) and Minerals Council of Australia (MCA) as well as the Australian Securities Exchange (ASX), the Financial Services Institute of Australasia (FinSIA) and the accounting profession.

JORC Code

The Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition prepared by the JORC.

Leaching

The process by which a soluble metal can be economically recovered from minerals in ore by dissolution.

Marketable Coal Reserves

Represents beneficiated or otherwise enhanced coal product where modifications due to mining, dilution and processing have been considered (JORC Code).

MAusIMM

Member of The Australasian Institute of Mining and Metallurgy.

MAusIMM (CP)

Accredited Chartered Professional status of members of The Australasian Institute of Mining and Metallurgy. These members have undergone an assessment of their competencies, which are maintained through continuing professional development activities.

Measured Mineral Resource

That part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit (JORC Code).

Metallurgical Coal

A broader term than coking coal, which includes all coals used in steelmaking, such as coal used for the pulverised coal injection process.

Mineral Resource

A concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories (JORC Code).

Mineralisation

Any single mineral or combination of minerals occurring in a mass, or deposit, of economic interest (JORC Code).

Modifying Factors

Considerations used to convert Mineral Resources to Ore Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors (JORC Code).

MSAIMM

Member of the Southern African Institute of Mining and Metallurgy.

Net Smelter Return (NSR)

An estimate of revenue derived from the sale of products and concentrates following the application of metallurgical recoveries and deducting transport costs, treatment and refining charges, penalties and royalties.

OC/OP (Open-cut/open-pit/open-cast)

Surface working in which the working area is kept open to the sky.

Ore Reserves

The economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at pre-feasibility or feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified (JORC Code).

Probable Ore Reserves

The economically mineable part of an Indicated and, in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve (JORC Code).

Proved Ore Reserves

The economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the Modifying Factors (JORC Code).

Pr.Sci.Nat.

Professional Natural Scientist of the South African Council for Natural Scientific Professions.

Reserve Life

The scheduled extraction period in years for the Total Ore Reserves in the approved Life of Operation Plan reported to two significant figures.

ROM (Run of Mine product)

Product mined in the course of regular mining activities.

SACNASP

South African Council for Natural Scientific Professions.

SAIMM

Southern African Institute of Mining and Metallurgy.

Sands

Tailings produced as a by-product during beneficiation of ore.

SP (Stockpile)

An accumulation of ore or mineral built up when demand slackens or when the treatment plant or beneficiation equipment is incomplete or temporarily unable to process the mine output; any heap of material formed to create a buffer for loading or other purposes, or material dug and piled for future use.

Tailings

Those portions of washed or milled ore that are too poor to be treated further or remain after the required metals and minerals have been extracted.

Total Mineral Resources

The sum of Inferred Mineral Resources, Indicated Mineral Resources and Measured Mineral Resources.

Total Ore Reserves

Proved Ore Reserves plus Probable Ore Reserves.

Yield

The percentage of material of interest that is extracted during mining and/or processing. A measure of mining or processing efficiency (JORC Code).

FINANCE, MARKETING AND GENERAL TERMS

AASB

Australian Accounting Standards Board.

Adjusted ROIC (Adjusted Return On Invested Capital)

Calculated as Underlying EBIT, adjusted for uncontrollable and one-off impacts in the current financial year, divided by the sum of fixed assets (excluding any rehabilitation asset and unproductive capital associated with our major projects) and inventories. Underlying EBIT is adjusted by excluding the current period impacts of foreign currency on revenue and cost, and commodity prices on revenue and associated price-linked costs, less the discount on rehabilitation provisions included in net finance cost, and tax effected by the Group's prior period Underlying effective tax rate.

AGM

Annual General Meeting.

AO

Officer of the Order of Australia.

ASIC (Australian Securities and Investments Commission)

The independent Australian Government body that is Australia's integrated corporate, markets, financial services and consumer credit regulator.

ASX

ASX Limited or Australian Securities Exchange.

ASX Listing Rules

The rules governing the listing of an entity and the quotation of its securities on the ASX.

B-BBEE

Broad-Based Black Economic Empowerment.

BHP

The group of companies headed by, and including, BHP Billiton Ltd and BHP Billiton plc.

Black People

Refers to Africans, Coloureds and Indians who are citizens of the Republic of South Africa by birth or descent (as more fully defined in the Broad-Based Black Economic Empowerment Amendment Act 2013 (South Africa)).

Board

The Board of Directors of South32 Limited.

CEO

Chief Executive Officer.

CFO

Chief Financial Officer.

CIF

Cost, insurance and freight.

CO_2 -e
Carbon dioxide equivalent.

Community investment
Contributions made to support communities that we operate in, or have an interest in. Our contributions to community programs comprise cash, in-kind support and administration costs.

COO
Chief Operating Officer.

Corporations Act
Corporations Act 2001 (Cth).

CPP (Commodity Price Protocol)
Refers to the process whereby price forecasts and updates are governed internally within South32 to ensure that a consistent set of macroeconomic inputs and assumptions are used to develop the commodity prices to be applied across South32.

CSO
Chief Sustainability Officer

Demerger
The separation of assets from BHP effected in May 2015 to create a separate entity South32 Limited, listed on the ASX, LSE and JSE.

DTR
UK Financial Conduct Authority's Disclosure Guidance and Transparency Rules. A reference to DTR followed by a number is a specific rule under the DTR.

EBIT
Earnings before interest and tax.

EBITDA
Earnings before interest, tax, depreciation and amortisation.

Effective tax rate (ETR)
Income tax expense divided by profit before tax; both the numerator and denominator exclude equity accounted investments.

ESOP Trusts
The trusts which purchase and hold South32 Limited shares for the purpose of the South32 Equity Incentive Plans. South32 has an Australian ESOP Trust and South African ESOP Trust for employees located in the respective countries.

Executive KMP
Lead Team members who are classified as KMP.

External Auditor
KPMG.

FOB (Free On Board)
The seller delivers when the goods pass the ship's rail at the named port of shipment. This means that the buyer has to bear all costs and risks of loss of, or damage to, the goods from that point. The FOB term requires the seller to clear the goods for export. This term can be used only for sea or inland waterway transport.

Free cash flow
Free cash flow before interest and tax represents operating cash flows including dividends received from equity accounted investments, before financing activities and tax, and after capital expenditure.

FX
Foreign exchange.

FYXX
Refers to the financial year ending 30 June 20XX, where XX is the two-digit number for the year.

Gearing
The ratio of net debt to net debt plus net assets.

GHG (Greenhouse Gas)
For our reporting purposes, these are the aggregate anthropogenic carbon dioxide equivalent (CO_2 -e) emissions of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). These are measured according to the World Resources Institute/ World Business Council for Sustainable Development Greenhouse Gas Protocol.

GRI (Global Reporting Initiative)
This is the world's most widely used sustainability reporting framework, consisting of principles, guidelines and indicators to measure and report on an organisation's economic, environmental and social performance. The G4 Guidelines is the fourth and current generation of this framework. The GRI Navigator and Sustainability data tables are available on our website at *www.south32.net*.

Group
Refers to South32 Limited and its subsidiaries and joint arrangements.

HSEC
Health, safety and environment and community.

International Council on Mining and Metals (ICMM)
A membership organisation led by the Chief Executive Officers of 23 mining and metals companies, along with national and regional mining associations and global commodity associations. ICMM is an international organisation dedicated to improving the social and environmental performance of the mining and metals industry.

IFRS (International Financial Reporting Standards)
Accounting standards as issued by the IASB (International Accounting Standards Board).

JSE
Johannesburg Stock Exchange.

KMP
Key management personnel are people who have authority and responsibility for planning, directing and controlling the activities of South32 either directly or indirectly.

LBMA
London Bullion Market Association.

Lead Team
All Chief positions within South32.

LME
London Metal Exchange.

LSE
London Stock Exchange.

LTI
Long-term incentive.

Margin on third party products
Comprises Underlying EBIT on third party products, divided by third party product revenue.

MRN
Mineração Rio do Norte.

Net cash
Comprises cash and cash equivalents less interest bearing liabilities, including finance leases.

Net debt
Comprises interest bearing liabilities, including finance leases, less cash and cash equivalents.

Net operating assets
Represents operating assets net of operating liabilities which predominantly excludes the carrying value of equity accounted investments, cash, interest bearing liabilities, tax balances and certain other financial assets.

Occupational illness
An illness that occurs as a consequence of work-related activities or exposure. It includes acute or chronic illnesses or diseases, which may be caused by inhalation, absorption, ingestion or direct contact.

Occupational Exposure Limit (OEL)
The concentration of a substance or agent, exposure to which, according to current knowledge, should not cause adverse health effects nor cause undue discomfort to nearly all workers.

OSHA

The Occupational Safety and Health Administration (OSHA) of the United States Department of Labor. We adopt these guidelines for the recording and reporting of occupational injuries and illnesses to ensure that classifications are applied uniformly across our workforce.

Post-demerger

The period from 25 May 2015 when South32 Limited began as an independent entity.

Pre-demerger

The period from 1 July 2014 to 24 May 2015 when South32 Limited and its controlled entities were subsidiaries of BHP.

ROIC (Return On Invested Capital)

Calculated as Underlying EBIT less the discount on rehabilitation provisions included in net finance costs, tax effected by the Group's Underlying effective tax rate, divided by the sum of fixed assets (excluding any rehabilitation asset and unproductive capital associated with our major projects) and inventories.

Senior Leadership

The Senior Leadership Team are our leaders who report directly to the South32 Lead Team.

Shared value

The identification of opportunities that create economic value while also advancing the environmental and social outcomes of the communities and regions in which we operate.

South32 Equity Incentive Plan

An equity incentive plan that allows the Board to make offers to employees to acquire securities in South32 Limited and to otherwise incentivise employees.

STI

Short-term incentive.

Transformation

A national strategy in South Africa aimed at attaining national unity, promoting reconciliation through negotiated settlement and non-racism.

Total Recordable Injury Frequency (TRIF)

The sum of (fatalities + lost-time cases + restricted work cases + medical treatment cases) x 1,000,000 ÷ actual hours worked. This is stated in units of per million hours worked for employees and contractors. We adopt the United States Government Occupational Safety and Health Administration guidelines for the recording and reporting of occupational injury and illnesses.

Total Recordable Illness Frequency (TRILF)

The sum of total occupational illness x 1,000,000 ÷ actual hours worked, for employees and contractors. This is stated in units of per million hours worked.

Total Shareholder Return (TSR)

TSR measures the return delivered to shareholders over a certain period through the change in share price and any dividends paid. It is the measure used to compare our performance to that of relevant peer groups under the LTI.

TSX

Toronto Stock Exchange.

Underlying earnings

Underlying earnings is profit after tax and earnings adjustment items. Earnings adjustments represent items that don't reflect our underlying operations. We believe that Underlying earnings provides useful information, but shouldn't be considered as an indication of, or an alternative to, profit or attributable profit as an indicator of operating performance.

Underlying EBIT

Underlying EBIT is profit before net finance costs, tax and after any earnings adjustment items, including impairments, impacting profit. It's reported inclusive of our share of net finance costs and tax of equity accounted investments. It isn't an IFRS measure of profitability, financial performance or liquidity and may be defined and used in differing ways by different entities. We believe that Underlying EBIT provides useful information, but shouldn't be considered as an indication of, or alternative to, profit or attributable profit as an indicator of operating performance.

Underlying EBIT margin

Comprises Underlying EBIT excluding third party product EBIT, divided by revenue excluding third party product revenue.

Underlying EBITDA

Underlying EBIT before depreciation and amortisation.

Underlying EBITDA margin

Comprises Underlying EBITDA excluding third party product EBITDA, divided by revenue excluding third party product revenue.

Underlying Effective Tax Rate (ETR)

Comprises Underlying income tax expense divided by underlying profit before tax; both the numerator and denominator exclude equity accounted investments.

TERMS USED IN RESOURCES AND RESERVES

A.Al_2O_3

available alumina

Ag

silver

Al_2O_3

alumina

CV

calorific value

Fe

iron

HCFeMn

high-carbon ferromanganese

Met

metallurgical coal

Mn

manganese

Ni

nickel

Pb

lead

R.SiO_2

reactive silica

S

sulphur

SiO_2

silica

SiMn

silica manganese

Th

thermal coal

VM

Volatile Matter

Zn

zinc

UNITS OF MEASURE

%
percentage or per cent

dmt
dry metric tonne

dmtu
dry metric tonne unit

g/t
grams per tonne

ha
hectare

KCal/Kg
Kilo calories per kilogram

Kdmt
thousand dry metric tonne

kL
kilolitre

km
kilometre

koz
thousand ounces

kt
kilotonnes

$ktCO_2$ -e
kilotonnes of carbon dioxide equivalent

ktpa
kilotonnes per annum

kW
kilowatt

kwmt
thousand wet metric tonnes

m
metre

ML
megalitre

Moz
million ounces

Mt
million tonnes

Mtpa
million tonnes per annum

oz
ounce

t
tonnes

tpa
tonnes per annum

tpd
tonnes per day

tph
tonnes per hour

US$/lb
US dollars per pound

US$/oz
US dollars per ounce

US$/t
US dollars per tonne

US$/toz
US dollars per troy ounce

This page is intentionally left blank.

CORPORATE DIRECTORY

GROUP HEADQUARTERS (REGISTERED OFFICE)

Level 35
108 St Georges Terrace
Perth 6000
Western Australia

Phone: +61 8 9324 9000
Facsimile: +61 8 9324 9200

SOUTH AFRICA OFFICE

39 Melrose Boulevard
Melrose Arch
Johannesburg 2076

PO Box 61820
Marshalltown 2107

Phone: +27 11 376 2000

SINGAPORE MARKETING OFFICE

South32 Marketing Pte Ltd
138 Market Street
#26-01 CapitaGreen
Singapore 048946

Phone: +65 6679 2600
Facsimile: +65 6826 4143

LONDON MARKETING OFFICE

South32 SA Investments Limited
4th Floor, 62 Buckingham Gate
London SW1E 6AJ
United Kingdom

Phone: +44 20 7798 1700
Facsimile: +44 20 7798 1701

FSC
www.fsc.org
MIX
Paper from responsible sources
FSC® C018183

This Annual Report is printed on paper that is FSC (Forest Stewardship Council) certified and manufactured from plantation-grown timber. Both the paper manufacturer and printer are certified to the highest possible internationally recognised standard for environmental management.

SOUTH32

SOUTH32.NET