GLENCORE

Annual Report 2019

Our purpose

Responsibly sourcing the commodities that advance everyday life.

Our strategy

To sustainably grow total shareholder returns while maintaining a strong investment grade rating and acting as a responsible operator.

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Living our values

Our values reflect our purpose, our priorities and the beliefs by which we conduct ourselves. They define what it means to work at Glencore, regardless of location or role.

They are the heart of our culture and the way we do business.

Safety

We never compromise on safety. We look out for one another and stop work if it's not safe

Integrity

We have the courage to do what's right, even when it's hard. We do what we say and treat each other fairly and with respect

Responsibility

We take responsibility for our actions. We talk and listen to others to understand what they expect from us. We work to improve our commercial, social and environmental performance

Openness

We're honest and straightforward when we communicate. We push ourselves to improve by sharing information and encouraging dialogue and feedback

Simplicity

We work efficiently and focus on what's important. We avoid unnecessary complexity and look for simple, pragmatic solutions

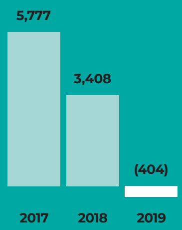
Entrepreneurialism

We encourage new ideas and quickly adapt to change. We're always looking for new opportunities to create value and find better and safer ways of working

Highlights

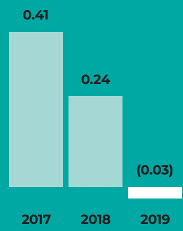
Net (loss)/income attributable to equity holders
(US$ million)

(404)



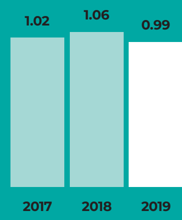
(Loss)/earnings per share (basic)
(US$)

(0.03)



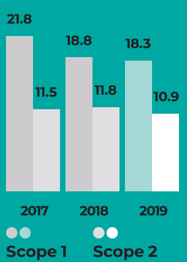
Lost time injury frequency rate
(LTIFR)

0.99



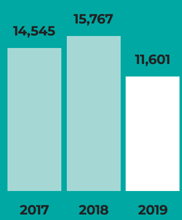
Carbon emissions
(million tonnes CO_2)

29.2



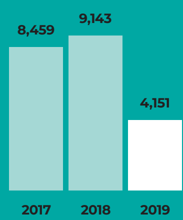
Adjusted EBITDA◊
(US$ million)

11,601



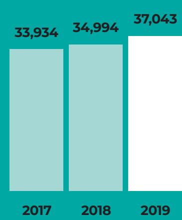
Adjusted EBIT◊
(US$ million)

4,151



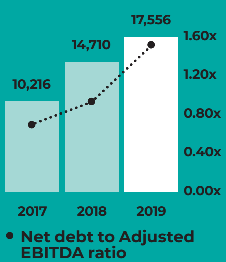
Total borrowings
(US$ million)

37,043



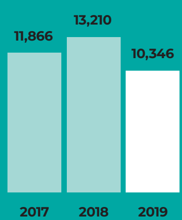
Net debt/Net debt to Adjusted EBITDA ratio◊
(US$ million %)

17,556



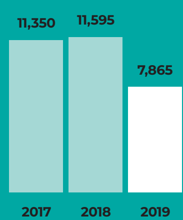
Cash generated by operating activities before working capital changes
(US$ million)

10,346



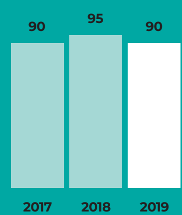
Funds from operations◊
(US$ million)

7,865



Community investment
(US$ million)

90



◊ Alternative performance measures
Adjusted measures referred to as Alternative performance measures (APMs) which are not defined or specified under the requirements of International Financial Reporting Standards; refer to APMs section on page 228 for definition, explanation of use and reconciliations and note 2 of the financial statements for reconciliation of Adjusted EBIT/EBITDA.

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Front cover
Kara Deneka, Mine Engineer in Training, Craig Mine – Onaping Depth Project, Sudbury Integrated Nickel Operations.

glencore.com

Chairman's introduction

Anthony Hayward
Chairman

Dear shareholders

This year, a revised corporate governance code came into force for UK listed companies. At the heart of the revised code is a focus on ensuring a company's purpose, values, strategy and culture are aligned. This has coincided with a considerable debate on both sides of the Atlantic as to whether corporations should focus solely on shareholder returns or whether they should take a broader view of their purpose.

For the modern quoted resources sector there is no such discussion. In order to maximise shareholder returns, a resource company must have a broad licence to operate. The resource corporation is the guest of the countries and communities in which it operates. It can only survive and thrive with the ongoing support of all of its main stakeholders.

Glencore's purpose is to responsibly source the commodities that advance everyday life. We do so through our strategy of sustainably growing total shareholder returns while maintaining a strong investment grade rating and acting as a responsible operator. We fulfil our purpose and deliver on our strategy in a manner that reflects our values of safety, integrity, responsibility, openness, simplicity and entrepreneurialism. Only by actively living and breathing these values are we able to ensure our culture is conducive to fulfilling our purpose and delivering on our strategy.

From our trading roots and through an accumulation of a rich mix of assets, we have become one of the world's largest globally diversified natural resource companies.

During 2019, we have reassessed our culture and the values that define it, ensuring they are as relevant as possible and appropriately provide the correct tone in which the Company engages to fulfil its purpose and deliver on its strategy for the benefit of all stakeholders.

It is clear that in certain areas we need to do better. In safety our statistics do not bear comparison with our peers. Although we mine in more difficult locations and have a far larger workforce, our total number of fatalities for the year of seventeen is simply unacceptable. This report describes the multiple initiatives that are ongoing, particularly in more challenged operations, in order to improve, on a lasting basis, our safety performance. Most frustrating of all, a majority of our fatalities continue to arise as a result of human carelessness. It is our job as leaders of this business to reverse this lack of discipline and thoughtfulness and to embed strong rules and behaviours that can lead our assets in Central Africa, Bolivia and Kazakhstan to mirror the stronger safety records of our assets in other countries such as Australia and Canada.

Safety is not simply about addressing our own known problems. The two tailings dams tragedies in Brazil in the last five years led to a Church of England Pension Board request for detailed information on tailings facilities to some 700 mining companies. We strongly welcomed this disclosure process which we believe can be used to foster improvements across the industry in standards, monitoring and transparency.

The US DoJ, CFTC, SFO and other investigations remain a priority for the Investigations Committee of the Board, and we continue to cooperate with the relevant authorities.

We were delighted to appoint Kalidas Madhavpeddi to the Board as an Independent Non-Executive Director recently. Kalidas has over 30 years of experience in the international mining industry coupled with business experience across all continents, including over 10 years as the CEO of China Moly. His experience and insights will be a great benefit to us.

We also welcomed Peter Freyberg to the position of Head of Industrial Assets in 2019, supported by a newly created central team. His team is assisting in the drive for strengthened operational risk and safety performance across our various operations. I am confident that their rigour and experience will result in an improved overall performance.

Glencore continues to be a unique company in the large resources space. We are more broad-based both as to our commodity and geographic mix in comparison to our mining peers, and notwithstanding the challenges that this gives us, your Board believes that this continues to be the best strategy for the long-term benefit of all our stakeholders.

Anthony Hayward
Chairman
4 March 2020

Chief Executive Officer's review

Solid results in challenging pricing conditions for our key commodities, supported by an excellent oil marketing performance

Ivan Glasenberg
Chief Executive Officer

A challenging market backdrop for commodities

Rising trade barrier tensions and associated uncertainty weighed on sentiment and activity during 2019. In China and elsewhere, this amplified certain cyclical and structural slowdowns already underway, limiting 2019 global economic growth.

While price performances for our key commodities' benchmarks were largely lower year over year, with average copper price down 8%, zinc 13%, cobalt 57%, thermal coals 27% and ferrochrome 14% (nickel and gold were up), underlying fundamental market supply/demand balances for most commodities remained reasonably healthy. In particular, copper, zinc and nickel markets were tightly balanced, with global visible inventories falling to multi-year lows. Cobalt was weak and oversupplied in H1, however conditions improved towards year end, as the market rebalanced, while coal saw continued growth in Asian thermal demand, more than offsetting declining imports into Europe.

Transitioning to a low-carbon economy

In many markets, there continues to be a major drive and efforts underway to significantly reduce carbon emissions in energy supply, which is expected to require substantial growth in mobility electrification and the development of battery-backed energy storage systems to support meaningful renewables' market share. Getting to this point requires a seismic shift in how we power the world and that shift will, in part, only be enabled by the metals and minerals that the mining industry produces.

Our industry needs not only to ensure that the metals and minerals required are produced and sourced responsibly, but also that we are at the forefront of technology and process innovation, supporting further productivity gains and emissions abatement going forward. In this way, we can achieve a reduction in our own environmental footprint.

Glencore is well positioned to play a key role in aiding the various transitions to a low-carbon economy, with our responsible approach to producing and sourcing a diversified portfolio of commodities, some of which, are absolutely critical in enabling the shift to a low-carbon world.

We also believe that high-quality coal will continue to be part of the overall energy mix well into the future. Population growth, urbanisation and rising living standards are expected to contribute to increased global energy requirements in the coming decades. The need for affordable and stable baseload power generation is expected to underpin coal demand growth, primarily in Asia, even as it declines in Europe and the U.S. Our modelling, and indeed that of the International Energy Agency's (IEA) Stated Policies Scenario, indicates that thermal coal demand is expected to continue to grow to 2030, however, naturally given faster growth elsewhere, its share of primary energy demand is expected to fall to c.24% in 2030, from around 27% in 2018.

2019 Financial scorecard

Weaker year-on-year commodity prices were largely responsible for a 26% reduction in Adjusted EBITDA to $11.6 billion. Net income, before significant items, declined 58% to $2.4 billion, while significant items generated a Net loss attributable to equity holders of $0.4 billion, mainly due to $2.8 billion of impairment charges, largely related to our Colombian coal, Chad oil and African copper assets.

Our marketing business reported a steady year-on-year Adjusted EBIT result of $2.4 billion, reflecting a strong performance from oil, partially offset by the previously reported and recorded cobalt losses in relation to inventory writedowns on material sourced from Glencore mines in earlier periods. We maintain our long-term Marketing Adjusted EBIT guidance range of $2.2 to $3.2 billion

Industrial Adjusted EBITDA of $9.0 billion was down 32% compared to 2018, primarily reflecting the lower commodity prices noted above, particularly coal and cobalt. The benefit of a stronger US dollar against many of our key producer currencies provided some price offset. While most of our assets performed within expected ranges during 2019, earnings were also negatively impacted by operational and cost challenges in our African copper business and a poor production performance at our Koniambo ramp-up asset, in conjunction with a change to its accounting categorisation, whereby until the end of 2018, ramp-up development costs were still being capitalised.

Across these copper and nickel ramp-up/development assets, we have implemented detailed action plans targeting material improvement, with the aim of achieving consistent, cost-efficient production at design capacity. Performance at Katanga and Mutanda progressed to plan during the second half of the year, with the latter transitioning to care and maintenance in December.

Corporate governance and sustainability

At Glencore, we are committed to operating in a responsible manner across all aspects of our business.

Glencore upholds the dignity, fundamental freedoms and human rights of our employees, contractors and the communities in which we live and work, as well as others affected by our activities. Glencore is committed to working in line with the United Nations Universal Declaration on Human Rights and the UN Guiding Principles on Business and Human Rights.

The safety and security of our workforce and the communities living around our assets is a priority recognised in all of our operational activities.

We have taken far-reaching action to address the underlying issues that led to the tragic loss of 17 lives at Glencore's managed operations in 2019. This performance is unacceptable and we have implemented an enhanced and sharper focused fatality reduction programme, including safety interventions at our Mopani and Kazzinc operations during 2019. This programme builds on our investment in SafeWork, with the goal of achieving a step-change in performance. We are determined to be a fatality-free business.

Glencore is committed to supplying commodities in a transparent and responsible manner. To improve supply chain traceability, transparency and integrate good practice, with some of our industry partners, we joined the Responsible Sourcing Blockchain Network covering cobalt initially and key battery materials over time.

Climate change

We are pleased to report good progress over the past year against our commitments on the transition to a low-carbon economy.

Firstly, we are on track to exceed our current GHG target of reducing Scope 1 and 2 emissions intensity by at least 5% by 2020 compared to a 2016 base line. We expect to achieve a reduction of close to 10%.

New longer-term Scope 1 and 2 reduction targets that support the Paris Agreement ("Paris Goals") are being finalised and we expect to release these during 2020.

We have also, for the first time, disclosed our absolute Scope 3 emissions projections i.e. those arising from the sale and use of our own production, notably coal and oil. We project an approximately 30% reduction in these emissions by 2035, including the natural depletion of our underlying resource base (oil and coal). In this regard, our Colombian, and to a lesser extent, South African and Australian coal resource bases exhibit depletion profiles. Our high-quality product Australian business, however, is expected to maintain a longer and flatter production profile as a key supplier to Asia's growing steel and energy industries.

In terms of capital priorities, our capital expenditure in 2019 was heavily weighted towards energy transition materials, including copper and cobalt in Africa and nickel in Canada. Our coal capex was mainly aimed at maintaining existing assets.

Shareholder returns

In line with healthy operating cash flow generation in 2019, we completed $4.7 billion of distributions and buybacks, comprising a $0.20 per share ($2.7 billion) base distribution (in respect of 2018 cash flows) and $2 billion of share buy-backs.

We are again recommending to shareholders a 2020 base distribution of $0.20 per share (c.$2.6 billion), payable in two equal instalments in 2020.

The continuing dislocation between our share price and the prospects, strength and embedded optionality in our business means that we continue to favour buybacks as a means of returning excess cash to shareholders. As and when cash flow generation and balance sheet allow, potentially aided by some return of cash margin calls in respect of Marketing's hedging activities and monetisation of select non-core long-term assets, we will seek to implement a new buyback programme. In this regard, we would like to see our Net debt/Adjusted EBITDA ratio moving closer to 1x, and our Net debt reaching the c.$14–15 billion range, excluding Marketing related finance lease liabilities, before considering the same.

Looking ahead

We remain focused on our strategy to sustainably grow total shareholder returns while operating in a responsible manner across all aspects of our business. Clearly in the shorter term, we are closely watching coronavirus developments and potential scenario impacts on global growth and markets and what adjustments, if any, are appropriate in our business planning.

Ivan Glasenberg
Chief Executive Officer
4 March 2020

At a glance

We are one of the world's largest natural resource companies. We fulfil our purpose through our strategy to be active at every stage of the commodity supply chain. Our diversity by geography, product and activity, maximises the value we create for our business and its diverse stakeholders

Map key
- Industrial sites
- Head office
- Marketing office/other
- Grouped assets

One of the world's largest natural resource companies

c.150
sites

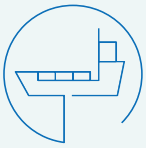
35
countries

c.160,000
employees and contractors

>30
offices

Two business segments

Industrial



Marketing

Focused on sustainability

CO_2e Scope 1
(million tonnes)
18.3
(2018: 18.8)

CO_2 Scope 2
(million tonnes)
10.9
(2018: 11.8)

Lost time injury frequency rate
(per million hours worked)
0.99
(2018: 1.06)

Total recordable injury frequency rate
(per million hours worked)
2.86
(2018: 3.18)

Sustainability
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Business model
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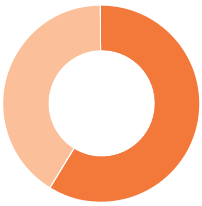
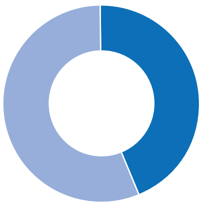
Adjusted EBITDA Industrial 2019



- Metal
- Energy

$9.0bn
(2018: $13.3bn)

Adjusted EBITDA Marketing 2019



- Metal
- Energy

$2.6bn
(2018: $2.5bn)

Total Adjusted EBITDA 2019
$11.6bn
(2018: $15.8bn)

Active at every stage of the commodity supply chain

1 **Exploration, acquisition and development**

2 **Extraction and production**

3 **Processing and refining**

4 **Blending and optimisation**

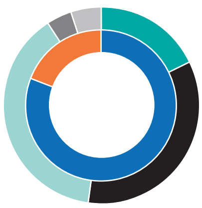
5 **Logistics and delivery**

Non-current assets[1] by region

$75.9bn

(2018: $78.0bn)

Revenue[2] by region and segment 2019



$215bn

(2018: $220bn)

1 Non-current assets are non-current assets excluding other investments, advances and loans and deferred tax assets. The percentage contributions are derived from the information included in note 2 of the financial statements.

2 Revenue by geographic destination is based on the country of incorporation of the sales counterparty. However, this may not necessarily be the country of the counterparty's ultimate parent and/or final destination of the product: see note 2 of the financial statements.

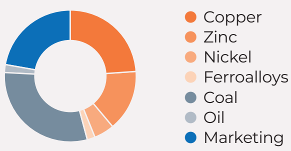
Investment case

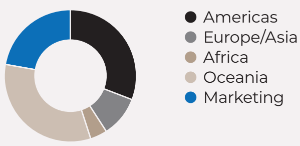
We offer a differentiated value proposition to investors through our focus on our strategy to sustainably grow total shareholder returns in accordance with our purpose

Wide diversification by commodity, geography and activity

- Fully integrated from mine to customer
- Presence in over 35 countries across 150 operating sites
- Responsibly producing and marketing more than 60 commodities that advance everyday life
- Diversified across multiple suppliers and customers

Adjusted EBITDA◊ diversified by commodity and geography (%)





A major supplier of energy and mobility transition materials

- Future demand patterns are likely to favour the commodities that facilitate the accelerating move towards decarbonising energy supply
- We are a major producer of the enabling commodities (copper, cobalt, nickel) that underpin the battery chemistry and infrastructure likely to power electric vehicles and energy storage systems

Additional nickel and cobalt required to enable 11.5M new electric vehicle sales by 2025

+330kt

Nickel compared to 2019E levels

+73kt

Cobalt compared to 2019E levels

Portfolio containing well-capitalised, low-cost, high-return assets

- Since 2009, over $45 billion has been invested in industrial assets
- Many of our assets are low-cost and long-life, supporting sustainable long-term cash flows
- Mine-life extension potential embedded in key commodities

Industrial Adjusted EBITDA mining margins◊

28%

Metals and minerals
(down from 38%)

37%

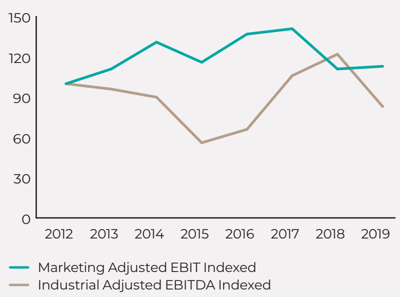
Energy products
(down from 46%)

See page 68 for definition and calculation of mining margins

A unique marketing business that extracts value across the entire supply chain

- As a marketer of commodities, we can extract value from the full-range of physical arbitrage opportunities
- We create value through economies of scale, our extensive (including third parties) supply base, our logistics, risk management and working capital financing capabilities

Resilience of marketing earnings



A conviction to create value

- Capital allocation framework seeks to balance preservation of capital structure with attractive business reinvestment/ growth opportunities and shareholder returns
- Conviction to create value through partnerships, M&A and brownfield investment
- Unique ability to source and structure deals using trading and strategic relationships

2019 shareholder returns[1]

$5.0bn

comprising $2.7bn distribution and $2.3bn of buybacks

Investing in brownfield growth

$1.3bn

Expansionary capital investment principally in African copper, Zhairem (Kazzinc) and Integrated Nickel Operations

1 $2.3bn buybacks includes $0.3bn completion of the programme announced in 2018, and $2.0bn announced and completed in 2019

Significant cash flow generation and distribution potential

- Adjusted EBITDA◊ down 26% to $11.6 billion in 2019
- Net debt/adjust EBITDA◊ of 1.51x
- Minimum distribution policy based on a fixed/ variable payout of prior year cash flow, comprising a fixed $1 billion from marketing and a minimum pay-out ratio of 25% of Industrial assets free cash flow

Loss per share

$0.03

2018: $0.24 earnings per share

2020 distribution recommended

$2.6bn

($0.20/share)

Our market and emerging drivers

We are dependent upon the supply of and demand for our commodities

Key market drivers

Future commodity supply

Timing within the economic cycle is very important when bringing new mine supply online

- The pro-cyclical nature of mining investment means that new mines are usually approved when commodity prices are higher
- Given the long development time frames required to bring new mine supply on line, the timing as to when this becomes available in the economic cycle is difficult to predict and could become available at low points in the economic cycle, creating excess supply in the market

Demand for the commodities we produce

A change in growth of developing economies is generally impactful on commodity demand

- The industrialisation and urbanisation of developing economies over the last decade has driven significant growth in commodity demand
- China's rapid growth over this period now means that it accounts for up to half of global demand for most commodities
- As developing economies mature, the commodities that drive their growth change

China accounts for around

50%

of global demand for most commodities

Impact on our industry

- Over-investment creates oversupply and with it a potentially prolonged period of low commodity prices
- Although commodity prices have increased from the lows seen in early 2016, the experience of the last economic cycle has increased investor pressure on companies to be more cautious about investing in new supply
- Balancing a finite, declining resource base with the need to grow to meet expected future demand is an inherent challenge for companies in the resource sector

$41bn

estimated 2019 sector reinvestment compared to a 10 year average of $51bn (estimated)

- Current levels of industrialisation and urbanisation suggest demand growth rates for commodities may be lower in the future
- Lower or negative demand growth could generate excess supply along with lower commodity prices
- Early-cycle commodities such as iron ore, coking coal and cement may become less important as demand patterns shift in favour of mid and late cycle commodities such as copper, zinc, cobalt, nickel and agricultural products

An extra 1.7 billion people forecast to increase global energy demand

>25%

by 2040 under IEA Stated Policies Scenario

How we are responding

- Our disciplined approach to capital allocation seeks to reflect market supply and demand dynamics
- Given the unpredictability of costs, risks and timing of large-scale greenfield projects, we prefer to add supply via targeted capital efficient/lower risk brownfield expansions when required
- With the expectation that growth drivers in the global economy will remain weighted towards consumer spending, and therefore commodity demand growth will be focused in the higher-end, fast growing consumer sectors, the part of our commodity portfolio which supplies this demand, is well placed to benefit from this transition

- We are a major producer of the commodities that underpin the current battery chemistry and infrastructure growth initiatives that are expected to power electric vehicles and energy storage systems. 2019 capex was weighted towards energy transition metals, including African copper and cobalt and nickel projects in Canada.
- In 2019, we placed Mutanda on temporary care and maintenance for various reasons. Supply discipline in an oversupplied cobalt market was one of these.

Emerging drivers

Energy and emissions transformation

Efforts to minimise a global temperature rise will impact fossil fuel demand

- Momentum to decarbonise the global economy is gathering pace as nations increasingly coordinate efforts aimed at minimising greenhouse gas emissions to achieve the Paris Agreement climate change goals and transition the world to a low-carbon economy

The Paris Agreement aims to keep the global temperature rise this century to well below

2°c

as well as pursue efforts to limit the temperature increase even further to 1.5°c

Substitution

Higher commodity prices and resource scarcity increases the risk of material substitution

- Widespread adoption of renewable energy sources as a means to decarbonise energy supply will create significant new demand for the enabling commodities, including copper, nickel, cobalt and lithium
- The quantum of potential new demand is generally of a size that is especially large relative to current annual production and known defined global resources of that commodity

Impact on our industry

Energy and emissions transformation

- This transition is likely to increase the cost for fossil fuels, impose levies for emissions, increase costs for monitoring and reporting and reduce demand
- Third parties, including potential or actual investors, may introduce policies materially adverse to Glencore due to our interest in fossil fuels, particularly coal
- Technological advances are making renewable energy sources more competitive with fossil fuels, which is likely to increase renewable energy's market share over the longer run. Many analysts believe that demand projections for coal are lower than previously expected

Substitution

- The revenue and earnings of substantial parts of our industrial asset activities, and to a lesser extent, our marketing activities, are dependent on prevailing commodity prices
- Under a rapid decarbonisation scenario, a significant increase in demand for the commodities that currently underpin renewable technologies is likely to generate significantly higher commodity prices
- Higher sustained commodity prices will increase the risk that consumers of these commodities will accelerate efforts to either reduce the quantity of metal needed for a certain application or substitute an alternative material that provides similar technical performance at a lower price. Demand for a commodity such as cobalt could fall if newer battery chemistries can provide the same technical performance with less or no cobalt content

How we are responding

Energy and emissions transformation

- We continue to assess the risks and opportunities presented by decarbonisation of energy and mobility across our product and operational portfolio
- As a major producer and consumer of fossil fuels, we recognise our responsibility to understand and manage our greenhouse gas emissions, and support the global transition to a low-carbon economy
- Following on from our February 2019 commitments to the Climate Action 100+ initiative, we have set ambitious goals for ourselves, including the prioritisation of capital investment into the commodities that support the transition to a low-carbon economy, and publication of our projections long-term Scope 3 reduction

Substitution

- Diversification of our portfolio of commodities, currencies, assets and liabilities is likely to mitigate the financial impact of a negative demand shift in the event of commodity substitution
- Our market research teams continue to assess the underlying demand for our commodities as well as the new materials that could impact current renewable technology solutions

Business model

As a global producer and marketer of commodities, we are uniquely diversified by geography, products and activities. Integrating our marketing and industrial business sets us apart from our competitors to create a unique culture and helps us to generate value

Inputs and resources on which our business model depends

Assets and natural resources

- Our resources and reserves feature many long-life and high quality assets
- We are a disciplined producer, seeking to align supply with demand and value over volume
- Our established marketing operations have global reach and deep understanding of their respective markets

Our people and partners

- We have established long-term relationships with a broad range of suppliers and customers across diverse industries and geographies
- c.160,000 employees and contractors spread across over 35 countries in both established and emerging regions for natural resources

Financial discipline

- We seek to deploy capital in a disciplined manner, seeking to create value for all our stakeholders
- Our hedging strategies protect us against price risks and ensure that our marketing profitability is primarily determined by volume-driven activities and value-added services rather than absolute price

Unique market knowledge

- As an integrated commodity producer and marketer, we are uniquely positioned to generate value at every stage of the commodity chain

Our industrial business

Our industrial business spans the metals and energy markets, producing more than 60 commodities from 150 sites

Exploration, acquisition and development

Our focus on brownfield sites and exploration close to existing assets lowers our risk profile and lets us use existing infrastructure, realise synergies and control costs.

Extraction and production

We mine and beneficiate minerals across a range of commodities, mining techniques and countries, for processing or refining at our own facilities, or for sale.

Processing and refining

Our expertise and technological advancement in processing and refining mean we can optimise our end products to suit a wider customer base and provide security of supply as well as valuable market knowledge.

Our values reflect our purpose, our priorities and the beliefs by which we seek to conduct ourselves and carry out our business activities. They define what it means to work at Glencore, regardless of location or role.

- **Safety**
- **Integrity**
- **Responsibility**
- **Openness**
- **Simplicity**
- **Entrepreneurialism**

Geographic arbitrage

Product arbitrage

Time arbitrage

Our marketing business

We move commodities from where they are plentiful to where they are needed

Our commodities in everyday products

Safety

17 fatalities

10%

Decrease in total recordable injury frequency rate

Minimising our impact on the environment

9.7%

carbon emission intensity reduction by 2019 compared to 2016 (scope 1 and scope 2 – location based)

Adjusted EBITDA◊

$11.6bn

Payments to Governments

$7.7bn

2019 shareholder returns

$5.0bn

Logistics and delivery

Our logistics assets allow us to handle large volumes of commodities, both to fulfil our obligations and to take advantage of demand and supply imbalances. These value added services make us a preferred counterparty for customers without such capabilities.

Blending and optimisation

Our ability to blend and optimise allows us to offer a wide range of product specifications, resulting in a high-quality service and an ability to meet our customer specific requirements.

Our marketing business
Page 54

Our industrial business
Page 64

Sustainability framework
Page 34

Our strategy for a sustainable future
Page 12

Our strategy for a sustainable future

Reflecting our purpose, our ongoing responsibility is to not only deliver financial performance but also to make a positive contribution to society and create lasting benefits for stakeholders in a manner that is responsible, transparent and respectful to the rights of all

Our purpose

Responsibly sourcing the commodities that advance everyday life

Strategic objective

To sustainably grow total shareholder returns while maintaining a strong investment grade rating and acting as a responsible operator

CEO's review
Page 2

Strategic priorities

Integration of sustainability throughout our business

We believe that by being a responsible operator with a reputation for doing things the right way, we will be seen by our stakeholders as a partner of choice. We are achieving this through continuous improvement.

This approach is delivered through our health and safety programmes, advancing our environmental performance, respecting human rights and by developing, maintaining and strengthening our relationships with all of our stakeholders.

17
fatalities

10%
decrease in Total Recordable Injury Frequency Rate in 2019

Maintain a robust and flexible balance sheet

We recognise that a robust and sufficiently flexible balance sheet contributes to the delivery of sustainable, long-term shareholder returns and ensures that Glencore is well placed to withstand the cyclical nature of the natural resource industry.

We aim to increase returns on capital and cash flows while targeting a maximum 2x Net debt/Adjusted EBITDA ratio throughout the cycle. We aim to only deploy capital when strict and clearly defined financial criteria, relating to returns and payback, can be met.

$10–$16bn
Target Net debt◊ range

Focus on cost control and operational efficiencies

Our major industrial assets are mainly long-life and low-cost, reflecting our substantial investment into existing assets as well as our appetite, capabilities and belief in some commodities and geographies where our peers are not materially present. Our industrial assets provide a consistent source of volumes for our marketing operations, which are supplemented by third party production. Our marketing activities use their scale and capabilities to extract additional margin throughout our business model and provide a high-quality service to our customers and a reliable supply of quality product.

We seek to increase the value of our business by improving the competitiveness of our assets through an ongoing focus on cost management and logistical capabilities, including operating safely and efficiently. We take a disciplined approach towards our assets and will divest when another operator places greater value on them, or curtail production in response to oversupply when it makes sense to do so.

28%
Metals EBITDA mining margin◊

37%
Energy EBITDA mining margin◊

Strategic priorities

Performance in 2019

Integration of sustainability throughout our business

Safety
Regrettably, there were seventeen fatalities during the year.

We began the implementation of an enhanced fatality reduction programme, including safety interventions at our Mopani and Kazzinc operations last year.

This programme builds on our investment in SafeWork, with the goal of achieving a step-change in performance.

We continue to work towards the elimination of fatalities from our business. Our TRIFR and LTIFR decreased by 10% and 6% respectively compared to 2018.

Climate change
We expect to exceed our first GHG emissions target of reducing our emissions (Scope 1 and 2) intensity by 5% by 2020. Since 2016, we have reduced our overall group emissions intensity by 9.7%.

As one of the world's largest diversified resource companies, we have a key role to play in enabling transition to a low-carbon economy.

We do this through our well positioned portfolio that includes commodities that underpin energy and mobility transformation that is a key part of the global response to the increasing risks posed by climate change.

Water management
Operations continue to implement our water management guideline which aligns with the International Council for Mining & Metals' (ICMM) position statement on water and its water management framework.

Community engagement
Our community development programmes are an integral part of our community and stakeholder engagement strategies. In 2019, we spent $90 million on these programmes (2018: $95 million).

Maintain a robust and flexible balance sheet

Conservatively positioned
Capital structure and credit profile managed through targeting a maximum 2x Net debt/Adjusted EBITDA throughout the cycle, augmented by an upper Net debt cap of c.$16 billion excluding Marketing-related lease liabilities ($0.6 billion at 31 December 2019).

Year-end Net debt and Net debt to Adjusted EBITDA were $17.6 billion and 1.51x respectively. Net loss attributable to equity holders for 2019 was $0.4 billion.

Conviction to create value
We seek to balance the preservation of our capital structure, with business reinvestment and shareholder distributions. Funds from operations and working capital release more than covered net capex and returns to shareholders

Bonds
We issued $1.7 billion, GBP 500 million, EUR 1.1 billion and CHF 250 million of bonds across a range of maturities from 5 to 10 years. Post-2019 maturities are capped at c.$3 billion in any one year.

Credit rating
The Group's credit ratings are currently Baa1 (stable outlook) from Moody's and BBB+ (stable) from Standard & Poor's.

Credit facility
Revolving credit facility refinanced and moderately resized. Committed available liquidity of $10.1 billion at year-end covers more than three years of bond maturities.

Focus on cost control and operational efficiencies

Industrial
$9.0 billion Adjusted EBITDA; mining margins of 28% and 37% respectively in our metals and energy operations, down on 2018, reflecting price declines notably in cobalt and coal, and challenges in the African copper business.

Marketing
Achieved $2.4 billion Adjusted EBIT across our marketing business. The benefits of supportive oil market conditions during the year, were offset by the earlier impact of negative net realisable value adjustments to cobalt inventory.

Supply
In line with our disciplined approach to supply, our potential 2020 cobalt production plans were lowered in response to oversupply in the cobalt market by the idling of capacity at Mutanda.

Key performance indicators
Page 24

Principal risks and uncertainties
Page 74

Priorities going forward

Sustainability
We continue to implement activities that promote integration of sustainability throughout our business to support our commitment to continuously improve our standards of health, safety, environmental and community and human rights performance.

We still believe that a level of high quality coal continues to be part of the overall energy mix, well into the future.

However, as part of our commitment to a low-carbon economy, we have limited our coal production capacity broadly to current levels and will prioritise capital investment into the commodities that support the transition to a low-carbon economy as well as publish our long-term Scope 3 reduction projections.

Transparency
We are committed to operating transparently, responsibly and meeting or exceeding applicable laws.

Responsible sourcing
We have joined the Responsible Sourcing Blockchain Network to help us to deliver improved supply chain traceability and transparency. Blockchain technology also allows us to integrate good practice with our supply chain partners.

KPIs
- Safe and healthy workplace – fatalities, TRIFR, LTIFR and occupational disease cases
- Environmental performance – water withdrawn, greenhouse gas (GHG) emissions, meeting our commitments on climate change
- Long-term value for communities – community investment spend

Principal risks
- Health, safety and environment
- Climate change
- Community relations and human rights

Priorities going forward

Balance sheet strength
We are committed to maintaining our balance sheet strength to ensure it is capable of supporting growth and shareholder returns regardless of the commodity price environment.

Investment grade rating
We will preserve a robust capital structure and business portfolio that reflects our commitment to targeting, receiving and maintaining a strong BBB/Baa investment grade rating. In this regard, we continue to target a maximum 2x Net debt/Adjusted EBITDA through the cycle, augmented by an upper Net debt cap of c.$16 billion, excluding Marketing-related lease liabilities.

In the current uncertain economic cycle backdrop, we aim to target a Net debt/Adjusted EBITDA ratio closer to one times and Net debt reaching the c.$14–15 billion range. This will require targeted management over the next 12 months, including ongoing cost control and working capital management, and some potential monetisation of select non-core long-term assets.

KPIs
- Returns to shareholders – Funds from operations, Net funding and Net debt
- Value for our shareholders – Adjusted EBIT/EBITDA, Net income attributable to equity holders

Principal risks
- Supply, demand and prices for the commodities we produce
- Currency exchange rates
- Liquidity
- Counterparty credit and performance

Priorities going forward

Industrial activities
Our industrial activities will continue to focus on delivering on their production potential, controlling costs and generating sustainable operating and capital efficiencies. Our marketing business supports the creation of incremental value through critical mass, blending, storage and geographical arbitrage.

Positioned to leverage our scale and diversity
Our marketing activities' priorities are to maximise the returns and cash flows from the pool of allocated capital, which, in turn, supports the strengthening of our balance sheet. Our presence at every stage of the value chain means that Glencore is uniquely positioned to leverage our scale and diversity.

KPIs
- Returns to shareholders – Funds from operations, Net funding and net debt
- Value for our shareholders – Adjusted EBIT/EBITDA, Net income attributable to equity holders

Principal risks
- Geopolitical, permits and licence to operate
- Laws and enforcement
- Operating risk
- Cyber risk

Climate change

Glencore is proud of the role we have and play in supporting the transition to a low-carbon economy

Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD)

We support the TCFD's voluntary framework for the reporting of climate-related financial risk disclosures for use by lenders, insurers, investors and other stakeholders.

We welcome the opportunity to engage with our stakeholders on climate change matters and report on our progress.

As one of the world's largest diversified resource companies, Glencore is proud of the role we have and play in supporting the transition to a low-carbon economy. We see this transition as a key part in the global multi-participant response to the risks and challenges created and fuelled by climate change. Our well-positioned portfolio includes commodities that are essential to energy and mobility transformations such as copper, nickel and cobalt.

We recognise the global climate change science as laid out by the Intergovernmental Panel on Climate Change (IPCC). We believe that the global response to climate change should pursue twin objectives: both limiting temperatures in line with the goals of Articles 2.1(a)i[1] and 4.1ii[2] of the Paris Agreement (the Paris Goals) and supporting the United Nations Sustainable Development Goals, including universal access to affordable and clean energy.

Governance

Glencore's Board oversees the development of the Group's strategic direction. It tracks the performance of our strategic priorities, which focus on the delivery of long-term success for our business and the generation of sustainable returns, while maintaining our licence to operate. The Board considers climate change and its related opportunities and challenges for Glencore during its discussions and decisions on the Group's strategy, risk management and investment decisions. During 2019, five Board and HSEC Committee meetings included discussions on climate change-related matters.

The Board's health, safety, environment, and communities (HSEC) Committee (the Committee) deals with sustainability matters, which include climate change. It sets the strategic direction for our sustainability activities and oversees the development and implementation of strategic sustainability programmes. The Committee assesses the Group's ability to comply with relevant regulatory requirements and the impact of our sustainability decisions and actions on our reputation. The Committee meets five times a year.

Climate change working group

In 2016, following discussions with the shareholder-led Aiming for A initiative, Glencore's Board agreed to establish a Climate Change Working Group (the Working Group). The Working Group supports the delivery of our public commitments on climate change in a timely manner through reviewing, developing and progressing the Group's strategic approach to climate change. Its work underpins the identification, mitigation and management of climate-related risks and enables our business to also be alert to developing opportunities.

Glencore's Chairman, Tony Hayward, leads the multi-disciplinary, cross-commodity Working Group and its members include commodity department heads and representatives from relevant corporate functions. The Working Group has formal, face-to-face meetings twice per year, with additional engagement on an ongoing basis, as required to support the advancement of its various work programmes.

The Working Group reports on its work plan and progress to the Committee.

In addition, meetings of our operational senior management team include discussions on Glencore's approach to climate change, as well as progress on implementing management and mitigation measures.

Strategy

Industrial assets – risks and opportunities

Regulatory developments

We believe the measures implemented by national and intra-national governments, as well as public sentiment, will drive public policy developments and programmes that restrict global greenhouse gas emissions (GHGs). This is likely to affect our business and presents both risks and opportunities that we need to manage.

1 Article 2.1(a) of The Paris Agreement states the goal of "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change."
2 Article 4.1 of The Paris Agreement reads: "In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty."

A transition to a low-carbon economy and its associated regulatory developments and public policy may affect the development or maintenance of our assets due to restrictions in operating permits, licenses or similar authorisations. We play an active and constructive role in public policy development on carbon and energy issues.

Carbon pricing

We support a pragmatic and practical global approach that prioritises a least-cost, logical transition towards lower global emissions. Pricing carbon should be part of an informed and considered process, structured to provide market signals to drive behaviours and incentivise investments that deliver the least cost pathway to emissions reductions.

Glencore supports policy mechanisms aimed at achieving cost-efficient emissions reductions without compromising the development goals of nation states.

Our business continues to operate successfully in multiple jurisdictions that have direct and indirect carbon pricing or regulation, including Australia, Canada, Chile and South Africa, as well as our customer markets such as China, India and Europe. We consider carbon price sensitivities as part of our ongoing business planning for existing industrial assets, new investments and as part of our marketing activities.

Energy costs

We are a significant energy consumer and our use of fuel and power is a key input and cost to our business as well as being a material source of our carbon emissions. As global patchwork of energy and climate change regulation evolves, we are closely monitoring international and national developments.

We incorporate energy costs and our carbon footprint into our annual planning process. Commodity departments are required to provide energy and GHG emissions forecasts for each asset over the forward budget/planning period and provide details of mitigation projects that may reduce such emissions.

The Working Group oversees the ongoing integration of carbon emissions and energy into our annual business planning process and the mapping of our forward projected energy and carbon footprint. It includes an assessment of potential mitigation and abatement projects, and underpins the basis of our internal Marginal Abatement Cost Curve.

Physical impacts

Extreme weather events, such as floods, hurricanes and droughts, as well as changes in rainfall patterns, temperature, and storm frequency can affect our industrial assets' operating processes, related infrastructure, and the communities living close to our operations.

Water is an essential input for our industrial activities. Concerns regarding the long-term availability and quality of water, and security of access to water, have increased due to changes to demography and climate. Damage caused by storm surges and strong winds can affect the availability of ports and critical infrastructure required to transport our goods. Changes in temperature can lead to heat stress affecting our workforce and equipment.

We track changing weather conditions and amend operating processes as appropriate. Looking ahead, we will continue to review current mitigating measures in place at our operations and consider opportunities to strengthen these.

Stakeholder perception

Negative stakeholder perception around the role of the extractive sector in contributing to climate change may result in delays or restrictions to permit approvals, divestment of our shares, an increase in the cost of finance or accessibility of insurance. Further, stakeholder opinion can drive regulatory changes.

We are engaging with a broad range of stakeholders on diverse topics including climate change and related areas of concern.

Marketing business – risks and opportunities

Technology

The growth in electric vehicle (EV) uptake is driving demand for the mass production of powerful batteries that require raw materials such as nickel and cobalt. In addition, the growth of renewable energy in the form of wind and solar is a positive opportunity for our business, given both technologies require significant amounts of copper and aluminium for construction.

Glencore has an opportunity to supply this growing demand given its position as a producer and marketer of these materials, particularly with respect to nickel and cobalt for batteries.

The increased deployment of EVs will also result in greater demand for secure and reliable baseload electricity and associated infrastructure required to service the EV fleet – this is likely to also benefit our business through such supporting demand for the commodities we produce and market. As emerging technologies, the policies, standards and incentives for batteries and EVs are liable to change and evolve over time, which may lead to volatility in market demand for these materials.

Market impacts

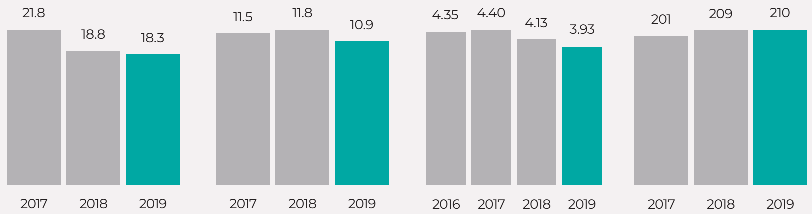
New or increased opportunities for our products from emerging technologies and related policy changes can drive demand for some of our commodities.

Scope 1 (direct emissions)[1] (CO_2e million tonnes)

Scope 2 location-based[2] (indirect emissions) (CO_2 million tonnes)

Carbon Scope 1 and 2 emissions intensity[3] (tonnes of greenhouse gases emitted per tonne of copper equivalent industrial production, tGHG/tCu)

Total global energy use at our operated assets[4]



1 This includes emissions from reductants used in our metallurgical smelters. It also includes CO_2e of methane emissions from our operations, which is around 22% of our Scope 1 emissions.
2 We apply appropriate country-by-country grid emission factors to all of our purchased electricity, regardless of specific renewable electricity contracts.
3 Scope includes industrial assets; the 2016 baseline is amended to reflect acquisitions and divestments; Copper-equivalent production is calculated on the basis of fixed 2016 baseline year average commodity prices.
4 Renewable energy sources deliver 12.5% of our total energy needs (2018: 11.7%). In Australia, we use coal seam gas from our mines to supplement power generation at a number of our assets and have flares installed at those underground coal mines with the necessary supply and concentration of methane.

Conversely, many developed countries are pledging to stop using fossil fuels (specifically coal) in power generation. As the world's largest producer of seaborne thermal coal and a significant marketer of fossil fuels, the loss or significant decline of the market for coal could materially impact our business. However, our Australian operations are expected to maintain a longer and flatter production profile and will continue to produce high quality coal, which will be required to meet expected levels of global steel production and energy demand in Asia.

The scale and diversity of our business across commodities and geographies is a key strength that enhances our existing and future investment optionality. We believe that Glencore has the right commodity mix to meet the changing needs of key maturing economies. We have leading low-cost supply positions in mid- and late-cycle commodities, for example copper, cobalt, zinc and nickel, and significant operational leverage to improving fundamentals in key commodities (additional details on page 20).

As economies transition towards a low carbon economy, we consider Glencore well positioned to service growing demand for many of the raw materials that will be required for decades to come.

Scenario analysis

Our publication 2017 Climate change considerations for our business, evaluated each of our commodity departments against three key scenarios established by the International Energy Agency (IEA) and detailed in its World Outlook 2016 to determine their resilience and assess consequences for the portfolio of commodities we market. Our evaluation took into account price, supply, demand and industry structure, as well as the energy market projections developed by organisations such as the IEA and World Energy Council (WEC), leading climate science projections from the IPCC and likely shifts in policy and other conditions corresponding to scientific technology and economic changes.

As the Paris Agreement requires each signatory country to outline and communicate their post-2020 climate actions, its revised national determined contributions (NDCs) by 2020 and we will provide an updated analysis of Glencore's portfolio resilience in 2021. In the interim, we are continuing to monitor policy developments and review our scenarios on an annual basis, taking into account any material changes to actual or proposed policies.

Risk Management

Assessing climate change-related risk is part of our risk management processes (see Climate change risk, pages 87-88). For instance, our new tailings storage facilities (TSF) protocol, adopted in 2019, requires operations to assess the impact of climate change on the design, operation, maintenance and closure of TSFs.

Assessing and Managing risks

We recognise that the effective and strategic management of climate change-related risks across all aspects of our business is vital to ensure our growth and to provide greater certainty to all stakeholders. We integrate risk management throughout our business through a structured risk management process that establishes a common methodology for identifying, assessing, treating and monitoring risks.

We recognise the importance of disclosing to investors how we are ensuring that our material capital expenditure and investments align with the Paris Goals. This includes each material investment in the exploration, acquisition or development of fossil fuel (including thermal and coking coal) production, resources and reserves, as well as in resources, reserves and technologies associated with the transition to a low carbon economy.

Metrics and targets

We divide CO_2 emissions reporting into three different scopes, in line with the Greenhouse Gas Protocol, and measure both the direct and indirect emissions generated by the industrial activities, entities and facilities where we have operational control.

Our CO_2 emissions reporting is separated into Scope 1 and Scope 2 – location-based emissions. Scope 1 (measured in CO_2e) includes emissions from combustion in owned or controlled boilers, furnaces and vehicles/vessels and coal seam emissions (direct emissions). Scope 2 – location-based emissions (measured in CO_2) applies the grid emission factor to all our purchased electricity, regardless of specific renewable electricity contracts (indirect emissions).

The majority of our Scope 1 emissions include fugitive emissions from the production of coal and consumption of fuel and reductants. Scope 2 emissions principally relate to purchased electricity for our operations, in particular our metals processing assets, which require secure and reliable energy 24 hours a day, 365 days a year.

Reporting by our oil department's shipping activities previously included energy consumption and associated GHG emissions for all of their vessels. For 2019 data onwards, their reporting will exclude vessels not owned by the oil department, i.e. time-chartered vessels. Emissions from these vessels will now be reported as Scope 3, as they stem from activities outside of our operational control.

Renewable energy sources delivered 12.5% of our total energy needs (2018: 11.7%). In Australia, we use coal seam gas from our mines to supplement power generation at a number of our assets and have flares installed at those underground coal mines with the necessary supply and concentration of methane.

Cross-reference table to Task Force on Climate-related Financial Disclosures

Governance Disclose the organisation's governance around climate-related risks and opportunities	
(a) Describe the Board's oversight of climate-related risks and opportunities.	• Climate change section: pages 16–19 • Board Committees: page 98 • Risk – Board leadership: page 100
(b) Describe management's role in assessing and managing climate-related risks and opportunities.	• Climate change section: pages 16–19 • Board activities during 2019: page 99 • HSEC Committee report: page 106

Strategy Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material	
(a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	• Climate change section: pages 16–19 • Principal risks and uncertainties/climate change: pages 87–88
(b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	• Climate change section: pages 16–19 • Principal risks and uncertainties/climate change: pages 87–88
(c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	• Climate change section: pages 16–19 • *2017 Climate Change Considerations for Our Business*: Page 20

Risk management Disclose how the organisation identifies, assesses, and manages climate-related risks	
(a) Describe the organisation's processes for identifying and assessing climate-related risks.	• Climate change section: pages 16–19 • Approach to risk management: page 101 • *2017 Climate Change Considerations for Our Business*: Page 14
(b) Describe the organisation's processes for managing climate-related risks.	• Climate change section: pages 16–19
(c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	• Climate change section: pages 16–19 • Principal risks and uncertainties section: pages 74–89

Metrics and targets Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material	
(a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	• Climate change section: pages 16–19 • Our performance against our 2019 position statement section: pages 20–22
(b) Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	• Climate change section: pages 16–19 • Our performance against our 2019 position statement section: pages 20–22 • Key performance indicators: pages 24–25
(c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	• Climate change section: pages 16–19 • Our performance against our 2019 position statement section: pages 20–22

Our performance against our 2019 position statement

Our position statement sets out our commitment to delivering shareholder value through investing in assets resilient to regulatory, physical and operational risks related to climate change and continued public disclosure of our carbon footprint and progress against our emission reduction targets

In February 2019, Glencore published its climate change position statement (our position statement) Furthering our commitment to the transition to a low-carbon economy, which is available on our website.

Our position statement recognises that to deliver a compelling investment case to our financial stakeholders, we should prioritise our capital investment in assets that, most likely, will be resilient to regulatory, physical and operational risks related to climate change. In addition, we aim to prioritise our capital investment to grow production of commodities essential to the energy and mobility transition and maintain a cap on our coal production.

Performance against our position statement

1. Paris-consistent strategy/ capital discipline

Extract from position statement

As we rebalance our portfolio towards commodities supporting the transition to a low-carbon economy, we expect the intensity of our Scope 3 emissions to decrease. Starting in 2020, we will start disclosing our longer-term projections for the intensity reduction of Scope 3 emissions, including mitigation efforts.

We recognise the importance of disclosing to investors how we ensure our material capital expenditure and investments align with the Paris Goals. This includes each material investment in the exploration, acquisition or development of fossil fuel (including thermal and coking coal) production, resources and reserves, as well as in resources, reserves and technologies associated with the transition to a low carbon economy.

Starting in 2020, we intend to report publicly on the extent to which, in the Board's opinion, this was achieved in the prior year and the methodology and core assumptions for this assessment. These disclosures will commence to be made in our next Annual Report.

Performance during 2019

Our portfolio is well-positioned to support the transition to a low-carbon economy, while also meeting the need for universal access to reliable energy. Our business will continue to evolve over time as we look to deliver on our climate objectives as part of a Paris consistent strategy. At present, our projection indicates a reduction of our Scope 3 emissions – those arising from the sale and use of our own products, notably oil and coal – of approximately 30% by 2035[1].

We expect the depletion of our coal resource base in Colombia, and to a lesser extent South Africa and Australia, to contribute to this reduction. Our Australian operations are expected to maintain a longer and flatter production profile and will continue to produce high quality coal, which will be required to meet expected levels of global steel production and energy demand in Asia.

Our capital expenditure reflects significant current investment towards growth in production of battery and conductive metals required for the transition to a low-carbon economy. During 2019, our capital expenditure was predominantly spent on our key metals' growth projects, including the development of Katanga (copper/cobalt) in the DRC, Mopani (copper) in Zambia, the Zhairem project (zinc) in Kazakhstan and new nickel mines in Canada, one of which will be one of the first fully electric mines in the world. When complete, Katanga is expected to produce approximately 30,000 tonnes of cobalt per annum, helping supply a market that is expected to grow substantially to more than 200,000 tonnes per annum by 2025.

Global energy demand has grown at 1.4%[2] per annum from 2010 to 2018 and scenarios reflecting Stated Policies objectives indicate energy demand shall continue to grow through 2035. We believe that coal, as a reliable and cost competitive form of energy, will continue to have a role in meeting future energy demand, particularly in developing countries, with carbon, capture, utilisation and storage (CCUS) adoption playing an increasingly important role in achieving emissions abatement[3]. In 2019, our capital expenditure on coal-related projects was mainly for maintaining existing assets, including the required accounting for capitalisation of mine development costs (both surface and underground operations), where benefits are expected to be realised beyond 12 months.

1 When assessing the long-term projections for our Scope 3 emissions arising from the use of some of our products, we found an intensity metric is a less useful measure than absolute emissions. On this basis, and to support greater transparency, we report a projection of our absolute Scope 3 emissions.
2 IEA WEO 2019

When identifying, assessing and ranking coal projects for development, we consider a range of indicators including the financial payback period, based on a range of future coal price assumptions. We prioritise shorter payback investment periods.

During the year, the New South Wales state government approved brownfield extensions for Mt Owen and the United Wambo joint venture project.

The Mt Owen and United Wambo approvals will provide continued employment for more than 750 people, additional employment for 370 people, create additional important State and Federal tax and royalty sources, and increase the Gross Regional Product in the respective regions by an estimated A$ 2.4 billion and Gross State Product by an estimated A$ 3.3 billion, through supporting local businesses and employment opportunities.

We remain committed to our annual coal production cap of approximately 150 million tonnes.

2. Scope 1 and 2 targets

Extract from position statement

In 2017, we announced our first target of reducing our greenhouse gas emissions intensity by 5% by 2020 compared to a 2016 baseline. We are currently on track to meet this target.

Glencore recognises the importance of continued reductions of greenhouse gas emissions from our operations. We are developing new, longer-term targets based on policy and technological developments that support the Paris Goals, and intend to make these public in our annual report for 2020. We will report annually on our progress.

Performance during 2019

We are on track to exceed our target. To date, we have reduced our Scope 1 and 2 emissions intensity by 9.7% compared to the 2016 baseline, achieved by a range of measures including abatement, use of renewable energy sources and production changes at our operations.

As our 2020 target ends, we have committed to establish a new, longer-term target that supports the Paris Goals. During 2019, we furthered our work on developing this target by identifying and quantifying our operations' carbon reduction opportunities through marginal abatement cost curves (MACCs).

Through this work, we are identifying opportunities to deliver substantial emissions reductions by sourcing more power from low-carbon sources and delivering operational improvements that enhance efficiency.

We will communicate our longer-term target in 2020.

3 See IPCC SR1.5 sect 2.4. In addition, more information about Glencore's CCUS project is available at http://ctsco.com.au/

3. Review of progress

Extract from position statement

We are committed to transparency and report annually on our progress in meeting our climate change objectives. We include this disclosure in our annual report and provide further details in our sustainability report. In addition, we publish data on our performance on our website, including disclosure of our Scope 3 emissions.

We will give consideration to how our climate change objectives can be reflected in the design of the relevant schemes for executive management.

Every three years, we review changes to the Nationally Determined Contributions (NDCs) in line with the Paris Goals mechanism, and other relevant policy, economic and technology developments to assess societal progress in energy transition and to update our scenario-based portfolio assessment.

Performance during 2019

Details of our approach to climate change are included on our website, and in our annual and sustainability reports. We disclose our performance annually, including data on our Scope 1, 2 and 3[4] emissions . We were pleased to receive the ranking of 4, the top-tier level, by the Transition Pathway Initiative for our approach to the management and disclosure of climate-related risks.

We continuously monitor the policy landscapes and steps countries are taking to support achievement of the goals of the Paris Agreement. We are expecting the Nationally Determined Contributions (NDCs) to be updated in the course of 2020, and will use these to update our own scenarios.

4. Alignment with the Task force on Climate-related Financial Disclosures (TCFD) recommendations

Extract from position statement

We were an early supporter of the voluntary guidance on consistent climate related financial disclosures produced by the TCFD. We are pleased to support the TCFD guidance and have started to implement its recommendations in our annual reporting.

Glencore will continue to disclose the metrics, targets and scenarios we use to assess and manage relevant climate-related risks and opportunities.

Performance during 2019

We continue to implement the recommendations of the TCFD in our annual reporting. Details of our Scope 1 and 2 emissions are available on page 25 and we will publish our Scope 3 emissions in our Sustainability Report 2019, which will be available in April.

We monitor risks and opportunities related to climate change and, going forward, will be taking further steps to roll out site-specific risk assessments. We also continue to incorporate climate change into operational planning: for instance, our new tailings storage facilities (TSF) protocol, adopted in 2019, requires operations to assess the impact of climate change on the design, operation, maintenance and closure of TSFs.

Further details on the risks we have identified in relation to climate change are included in the Principal Risks and Uncertainties section.

Our scenarios regarding global responses to climate change were developed in 2017 and took into account energy market projections developed by organisations such as the IEA and World Energy Council (WEC), leading climate science projections from the IPCC and likely shifts in policy and other conditions corresponding to scientific technology and economic changes.

We believe that national policies play a critical role in shaping the response to climate change. National commitments and climate pledges are required to be updated in 2020 and we will use these to update our scenarios for achieving the goals of the Paris Agreement and test the resilience of our business.

5. Corporate climate change lobbying

Extract from position statement

We believe that it is appropriate that we take an active and constructive role in public policy development and participate in relevant trade associations. We acknowledge the IIGCC Investor Expectations on Corporate Climate Lobbying and recognise the importance of ensuring that our membership in relevant trade associations does not undermine our support for the Paris Goals.

Performance during 2019

During 2019, we undertook our first review of our membership in relevant trade associations to ensure their activities and statements align with those of Glencore and do not undermine our support for the Paris Goals.

We reported on our approach to the review, and its findings, in our report Review of our industry organisations' positions on climate change. We will review annually the activities and positioning of our relevant trade associations on the topic of climate change, acknowledging that trade associations represent industry across multiple policy areas.

Stakeholder engagement

We hold regular meetings with our investors, banks, governments and customers on topics related to climate change. We engage constructively with the Climate Action 100+ initiative and the Transition Pathway Initiative. These conversations help us continue to update our approach to climate change to reflect evolving stakeholder expectations, changing policy landscape and developments in low emission technologies.

4 Our Scope 3 emissions are disclosed in our Sustainability Report, to be published in April 2020

Petunia Mogashwa
Plant Manager – Glencore Coal, South Africa

Mining was something Petunia's father encouraged her to pursue, as a mine worker himself. Petunia studied metallurgical engineering, and chose a career path that would allow her to work with people.

"Glencore will appoint a mentor for you, and guide you throughout your career journey," she says, "I am excited about my future."

Petunia now leads a team of around 240 people. "I am a good motivator, and I love my team so much."

See more stories like this
Visit Glencore.com and follow us on social media

Integrity

Nurturing talent for future leaders

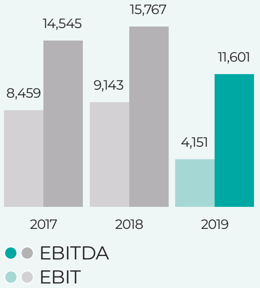
Key performance indicators

Our financial and non-financial key performance indicators (KPIs) provide a measure of our performance against the key drivers of our strategy

Financial key performance indicators

Adjusted EBIT/EBITDA◊
(US$ million)

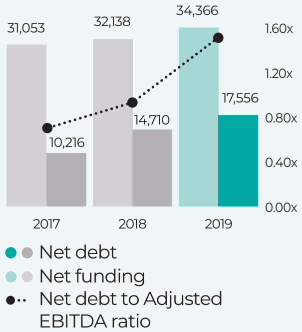
11,601



Links to strategy

Net funding/Net debt◊
(US$ million)

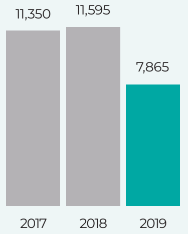
17,556



Links to strategy

Funds from operations (FFO)◊
(US$ million)

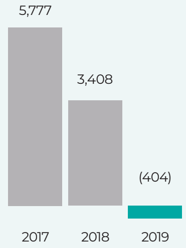
7,865



Links to strategy

Net (loss)/income attributable to equity holders (US$ million)

(404)



Links to strategy

Definition
Adjusted EBIT/EBITDA provide insight into our overall business performance (a combination of cost management, seizing market opportunities and growth), and are the corresponding flow drivers towards our objective of achieving industry-leading returns.

Adjusted EBIT is the net result of revenue less cost of goods sold and selling and administrative expenses, plus share of income from associates and joint ventures, dividend income and the attributable share of Adjusted EBIT of relevant material associates and joint ventures, which are accounted for internally by means of proportionate consolidation, excluding Significant items.

Adjusted EBITDA consists of Adjusted EBIT plus depreciation and amortisation, including the related Proportionate adjustments.

2019 performance
Adjusted EBITDA was $11.6 billion and Adjusted EBIT was $4.1 billion, decreases of 26% and 55% respectively compared to 2018, primarily driven by the average prices in our key commodities being lower year-over-year, with the cobalt market having been in oversupply, and the Atlantic steam coal market impacted by weaker European demand and low gas prices.

Definition
Net funding/Net debt demonstrates how our debt is being managed and is an important factor in ensuring we maintain an investment grade rating status and a competitive cost of capital.

Net debt is defined as total current and non-current borrowings less cash and cash equivalents, readily marketable inventories and related Proportionate adjustments.

The relationship of Net debt to Adjusted EBITDA is an indication of our financial flexibility and strength.

2019 performance
Net funding as at 31 December 2019 increased by $2.2 billion to $34.4 billion, while Net debt (net funding less readily marketable inventories) increased by $2.8 billion over the year to $17.6 billion.

Such increases partially arose from the adoption of the new lease accounting standard, effective 1 January 2019, which resulted in $865 million of new lease liabilities being recognised, while $582 million of additional new leases were booked as capital expenditures and debt in 2019, that previously would have been classified as operating leases.

Definition
Funds from operations (FFO) is a measure that reflects our ability to generate cash for investment, debt servicing and distributions to shareholders.

It comprises cash provided by operating activities before working capital changes, less tax and net interest payments plus dividends received and related Proportionate adjustments, as appropriate.

2019 performance
FFO were down 32% compared to 2018, owing in large part to the reduction in commodity prices and operational challenges in the African copper operations. FFO also impacted by the lag effect of tax paid in 2019 in respect of 2018 profitability (c.$755 million reduction in balance sheet income taxes payable) and $238 million of taxes paid in 2019 that will be offset against future taxes due, or refunded.

Definition
Net income attributable to equity shareholders is a measure of our ability to generate shareholder returns.

2019 performance
Net loss attributable to equity holders was $404 million in 2019 compared to a net income of $3,408 million in 2018, driven largely by lower commodity prices compared to prior year, and various impairments charges across our portfolio, mainly relating to our Colombian coal, Chad oil and African copper portfolios, owing to a lower forecast Atlantic steam coal price environment, the expiration of certain oil exploration licences and revisions to Mutanda's mine plan.

Recommended distribution for 2020 of $0.20 per share ($2.6 billion), in excess of net income attributable to shareholders, reflecting actual FFO generation and confidence in the sustainable underlying cash generation of the business.

◊ Refer to APMs section on page 228 for definition and reconciliations.

Strategic priorities

Integration of sustainability throughout our business

Maintain a robust and flexible balance sheet

Focus on cost control and operational efficiencies

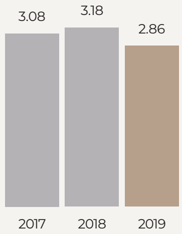
Our strategy for a sustainable future
Page 12

Financial review
Page 46

Non-financial key performance indicators

Safety: Total recordable injury frequency rate (TRIFR) (per million hours worked)

2.86



Link to strategy

Definition

We believe that every work-related incident, illness and injury is preventable and we are committed to providing a safe workplace.

TRIFR is the sum of fatalities, lost time injuries, restricted work injuries and medical treatment injuries per million hours worked. The metric represents all injuries that require medical treatment beyond first aid.

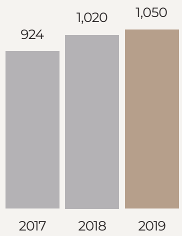
2019 performance

We are saddened to report that in 2019 seventeen people lost their lives at our operations (2018: thirteen people). All loss of life is unacceptable and we are determined to eliminate fatalities across our Group.

Our TRIFR is 2.86 per million hours worked, a decrease of 10% on the 3.18 recorded in 2018.

Water withdrawn (million m^3)

1,050



Link to strategy

Definition

Water withdrawal is a measure of our operational resource efficiency.

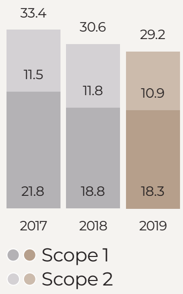
Our operations have an ongoing responsibility to increase the reuse of processed and use of recycled waste water in order to reduce our impact on local water supplies. Recycled water is predominantly used in place of fresh water for processes such as dust suppression.

2019 performance

In 2019, we withdrew 1,050 million m^3 of water (2018: 1,020 million m^3). The modest increase in water withdrawal, which includes rainwater accumulating on site, is due to improved reporting by some assets and significantly increased precipitation at certain operations. We are committed to managing our impact on water resources responsibly. We prioritise efficient water use, water reuse/recycling, responsible waste water disposal and maintaining any equipment that may pose a hazard to water quality.

Carbon emissions (million tonnes CO_2)

29.2



Link to strategy

Definition

Our CO_2 emissions reporting is separated into Scope 1 and Scope 2 – location-based emissions. Scope 1 (measured in CO_2e) includes emissions from combustion in owned or controlled boilers, furnaces and vehicles/vessels and coal seam emissions (direct emissions).

Scope 2 – location-based emissions (measured in CO_2) applies the grid emission factor to all our purchased electricity, regardless of specific renewable electricity contracts (indirect emissions). We monitor and report both the direct and indirect emissions generated by the industrial activities, entities and facilities where we have operational control.

2019 performance

During 2019, we emitted 18.3 million tonnes CO_2e of Scope 1. Additional Scope 1 emissions from Astron Energy were offset by the reclassification of non-controlled vessels' emissions to Scope 3. Coal seam emissions were lower year over year.

We emitted 10.9 million tonnes CO_2 of Scope 2 – location based. The year over year decrease mainly reflected reduced smelter operations in the Ferroalloys business in South Africa.

Community investment (US$ million)

90

Link to strategy

Definition

Community investments are our contributions to, and financial support of, the broader communities in the regions where we operate.

Funds are set aside to support initiatives that benefit communities and local sustainable development. We also make in-kind contributions, such as equipment and management. We support programmes for community development, enterprise and job creation, health, education and the environment.

2019 performance

In 2019, the funds we made available for community investments were $90 million, a decrease on the amount invested in 2018 ($95 million). Our community development programmes are an integral part of our community and stakeholder engagement strategies and our investments supported various initiatives in all of our operating regions.

Non-financial indicators includes information and data from our industrial activities, including only assets where we have operational control, and excluding investment, marketing and holding companies.

Section 172 statement and stakeholder engagement

Statement regarding Section 172 of the UK Companies Act 2006 and our commitment to transparent and constructive dialogue with all of our stakeholders

The UK Corporate Governance Code (the Code) requires the Board to understand the views of the Company's other key stakeholders and report how their interests and the matters set out in section 172 of the UK Companies Act 2006 have been considered in Board discussions and decision-making.

During the year, the Directors consider that they have acted in a way, and have made decision that would, most likely promote the success of the Group for the benefit of its members as a whole, with particular regard for:

- the likely consequences of any decision in the long term: see Investment Case on page 6, Business Model on page 10 and Principal Risks and Uncertainties section from page 74
- the interests of the Group's employees: see Our People section from page 30 and Ethics and Compliance section from page 42
- the need to foster the Company's business relationships with suppliers, customers and others: see section below where we detail our Stakeholder Engagement
- the impact on the Company's operations on the community and environment: see our Sustainability section from page 34 and our *Sustainability Report* to be released in April this year, Climate section from page 16 and Principal Risks and Uncertainties section from page 74
- the desirability of the Company maintaining a reputation for high standards of business conduct see our Ethics and Compliance section from page 42 and Principal Risks and Uncertainties section from page 74
- the need to act fairly between members of the Company: the Corporate Governance section from page 96 outlines the material ways in which the Board and management interact with and communicate to shareholders

When discharging its duty under Section 172, the Directors have focussed on mapping out the Company's key stakeholder groups and reviewing their level of engagement with them as a Board.

The following pages outline our key stakeholders groups, how we interact with them and how the Board considers their interests and opinions during its discussions and decision-making processes.

Going forward, we want to increase our stakeholder awareness, and to do more to strengthen our Directors understanding of the broad range of views expressed by Glencore's stakeholders.

As a global resources business, we recognise that robust, respectful and two-way relationships with stakeholders are essential for our social licence to operate. We operate assets in 35 countries and have around 160,000 colleagues (including contractors). Engaging and responding to all of our stakeholder groups, regardless of their location or opinion, is fundamental to how we operate. Stakeholder scrutiny supports the maintenance of the high standards of business conduct that is vital to our corporate culture and the long-term success of the Group.

A central task of the Board and its Committees is to oversee a strategy that can achieve lasting success and generate sustainable returns for business, while maintaining our licence to operate. The Board recognises the need for transparent and constructive stakeholder engagement and consultation, as well as acting on the needs of stakeholders, in order to achieve this.

To enable this and ensure stakeholder considerations are reflected in our corporate decision-making, we have standing agenda items for Board and Committee meetings that reflect our different stakeholder groups' interests. Following the introduction of the new UK Corporate Governance Code 2018 (Code), the Board has taken the opportunity to review the Group's stakeholder identification and engagement activities, especially with respect to our workforce engagement. The first key step was establishing a new Board committee, the Ethics, Compliance and Culture (ECC) committee, to oversee and report to the Board on key engagement matters. For further details on the work of the ECC committee, see page 105.

Stakeholder engagement

Stakeholder and overview	Key issues for them	How we engage/Engagement during the year
NGOs We engage both globally and locally with NGOs with a wide range of opinions. We welcome the opportunities arising from this engagement to further our understanding of the societal and policy issues and local matters that affect and have the potential to impact our business.	• Operational and environmental management • Public health • Socio-economic development projects • Tax payments and transparency • Human Rights • Compliance with law	Our Sustainable Development function, at corporate, regional and local levels engage with numerous NGOs and civil society representatives with wide-ranging interests. Our engagement activities cover topics specific to an operation such as local environmental concerns or the transition to a lower carbon economy. Mostly, our engagement is constructive; however, when unfairly critical, we seek to provide public responses to increase understanding. The Group Head of Sustainable Development reports on our NGO engagement during the Board HSEC committee meetings. The Board is informed of specific NGOs interests and activities when considering M&A opportunities, expansion projects and life of mine scenarios as well as potential reputational impacts to the Company. During 2019, the key areas of NGO interest in Glencore included responsible supply chain management, transparency in resource payments and security activities in Peru.
Communities We look to minimise any negative impacts from our operations and to support sustainable socio-economic development and growth in our local communities.	• Local employment and procurement opportunities • Socio-economic development projects • Environmental management • Operational impacts • Potential site closure	The local communities living near our assets are part of the ecosystem of our operations. Our engagement with these stakeholders is mainly through our community-relations teams, who report into their asset's General Management team. We recognise that through proactive, strategic stakeholder and community engagement, we can support the advancement of the interests of both our host communities and our assets. The Board, through its HSEC Committee, takes into account community considerations when discussing operational decisions that will affect local communities and the surrounding regions. In 2019, this included placing Mutanda on care and maintenance, security incident reviews in Peru and smelter emissions at Mopani.
Our people Our people are essential to our success and growth. We recognise that we need a skilled and committed workforce, with a diverse range of experience and perspectives.	• Health, safety and wellbeing • Company culture and reputation • Compensation and career opportunities • Asset viability	During the year, the Board and senior management team discussed how to improve the inclusivity of our internal engagement with Glencore's Group-wide workforce. Our Group's geographical and cultural diversity reflects our circa 150 sites, over 30 marketing offices and nearly 160,000 workers, making effective Group-wide engagement a significant task. As such, the Board recognised that establishing the processes to strengthen workforce engagement would take time and require regular refreshing. Supported by designated non-executive directors, this process began with culture surveys carried out in all of our marketing offices and at our Australian industrial operations, including focus groups and town-hall style meetings at a number of assets, offices and our Swiss headquarters. The findings from the surveys, meetings and interviews, while being broadly positive, are currently being consolidated and the Board, with management, will consider how best to implement resulting recommendations.

Stakeholder engagement continued

Stakeholder and overview	Key issues for them	How we engage/Engagement during the year
Governments and regulators We look to develop and maintain constructive relationships with the national, regional and local governments of our host countries, and maintain regular dialogue with them.	• Tax and royalty payments • Climate change • Socio-economic development projects	Executive management, corporate teams and operational management engage with governments and regulators both in country and in multi-national organisations, such as the OECD. Engagement activities are for relationship building and to advance understanding on specific topics, such as fiscal structures, operating licences and workforce expectations. The Board recognises the role that transparency of government revenues can make in empowering civil society and during the year, the Company published its fourth report on economic contribution and payments to governments. This yearly report provides an overview of our approach to tax and transparency and discloses the payments made on a country-by-country and project-by-project basis, in accordance with the reporting requirements of the EU Accounting Directive. Each year, our Sustainable Development and Legal teams engage with external transparency-focused stakeholders to discuss how we can expand and improve our disclosures of these payments. In 2019, this led to additional disclosures in relation to: • the payments that were made in the DRC and South Africa • practical examples on how and why we have subsidiaries in offshore locations • identification of specific governmental entities • oil purchases from state-owned oil enterprises in support of the EITI **glencore.com/sustainability/reports-and-presentations** In addition, the Board discussed engagement strategies concerning particular issues such as the placing of Mutanda into temporary care and maintenance, retrenchments in certain locations and the restart of the smelter in Mopani.
Investors We actively engage with our investors and financial institutions to support a full understanding of our business, progress against our strategic priorities and to address any concerns.	• Sustainable business performance and growth • Return on investment • Operational performance • Financial performance • Climate change • Industrial relations	Investor Relations has the primary responsibility for managing and developing the Group's external relationships with existing and potential institutional equity and debt investors. In addition, the corporate Sustainable Development team often participates in these engagement activities. Investor meetings and roadshows that mostly align with financial results include the CEO and CFO with discussions on strategic progress, financial and operational performance, and other matters relevant to shareholders, including environmental, social and governance. The AGM is an opportunity for shareholders, including non-institutional ones, to hear directly from the Board on the Group's performance and strategic direction and to ask questions. The AGM is available by webcast to those shareholders who cannot attend in person and voting results are released shortly following the AGM. At the 2019 AGM there were no significant votes against or withheld. The Company communicates with its shareholders generally through regular results and strategy announcements and has a comprehensive website on which detailed company information is available. Furthermore, external speeches and presentations by senior management are uploaded to the website to enable all shareholders to have access to the same information. The Chairman and the Senior Independent Director, supported by the Company Secretary, have engaged with various institutional shareholders during the year. Glencore's retail shareholder base is managed by the Company Secretarial team, with support from the Company's registrars, Computershare. During the year, Glencore's Chairman, senior management team and Investor Relations and Sustainable Development representatives actively engaged with investor groups on two key areas: climate change and tailings storage facilities. Such engagement led to increased disclosure by Glencore on these two topics, which is available on the corporate website.

Stakeholder engagement continued

Stakeholder and overview	Key issues for them	How we engage/Engagement during the year
Suppliers and customers Our products are essential to enabling modern life. We work to provide safe and quality-assured materials that meet regulatory requirements and industry standards across the whole supply chain.	• Transparency in the supply chain • Responsible sourcing and human rights • Compliance with laws • Competitive pricing	Our approach to product stewardship helps us to ensure the products we supply to customers are of the right quality and safe for people and the environment. The Sustainable Development team is responsible for the implementation of the Glencore Supply Chain Due Diligence Programme and makes updates to the Board on progress. Senior management, including the CEO, attended a number of meetings with customers throughout the year. Our customers are increasing their focus on responsible supply chains and in 2019 the Board signed off on Group Supplier Standards. These Standards set out our expectations for ethical business practices, health and safety and human rights and environment by our suppliers and procurement partners. We host site visits for our customers and participate in a number of commodity-specific responsible sourcing initiatives. The Board recognises that to meet customer expectations and maintain our access to markets, our products must meet the latest regulatory requirements and industry standards.
Unions We recognise and uphold the rights of our workforce to freedom of association, collective representation, collective bargaining, just compensation, job security and development opportunities.	• Negotiation of workplace agreements • Industrial relations and potential site closures • Occupational health and safety	We uphold our workers' rights to freedom of association, to unionise and collective representation, regardless of their location or role. The majority of our engagement with workers' representatives take place within our operations. Our commodity department management teams keep the Board, via its HSEC Committee, informed of discussions during the negotiations of enterprise agreements and provide regular updates during any period of industrial unrest.

Our people

Our employees and contractors are fundamental to our success. At Glencore, our people are at the heart of everything we do. We foster an environment where our different backgrounds, cultures and beliefs are supported and encouraged

Our people

Our success relies on our ability to attract, develop and retain the best talent at every level. We strive to achieve and maintain a skilled and committed workforce, with diverse experience and perspectives, to achieve our goals. We respect and value every employee and contractor. We create a fair and inclusive working environment where everyone can develop and fulfil their potential.

Our unique advantage

We believe in empowering our leaders and our people to drive the performance of our business. This philosophy results in an operating model which is focused on building deep specialist expertise within each commodity and close integration of both the supply and demand sides of our business. This combination of empowerment and alignment, assisted by strong corporate governance and capital management from the centre, allows us to maximise the opportunities for the business, our staff and our stakeholders.

Maintaining our position as an attractive employer

Our employment branding strategy promotes global career opportunities, while fostering employee engagement and retention of key talent. Our campaigns promote and highlight existing employees as Ambassadors of Glencore from entry-level tradespeople and graduates through to senior technical professionals and management.

Our employment branding initiatives align with Glencore values and adopt real employee “Career Hero” success stories that demonstrate credibility and a track record of developing employee talent pipelines from entry level graduates to senior management careers.

Throughout 2019, we led a proactive and coordinated approach to the deployment of the Glencore Employer Brand across the assets and marketing functions on a global scale. This global approach ensures our narrative, to both the external market and to our employees, and speaks with a consistent and united voice on the value we place on employees’ career development

Our aim is to provide rewarding careers with significant opportunity for advancement and remuneration. We reward our people based on their contribution to the business and in line with our values. This year we continued to evolve our performance management arrangements to ensure they support the performance of the business and our expectations of behaviour consistent with our Values and Code of Conduct.

Providing development, access to representation and support to everyone

Glencore aims to engage and offer opportunities to all workers. Our workforce is multi-generational, with each generation adding value to our business and possessing a different range of needs. The rapid pace with which our business and technology is developing requires Glencore to actively prepare our employees for the future of work.

Glencore Coal Australia "Sustaining Digital Futures" project provides for customised, intensive training in foundation and intermediate digital skills for resource sector employees, urgently needed in an increasingly automated environment. The project should provide a valuable contribution to workforce planning by identifying skills needed to further prepare a workforce that is being disrupted by the rapid advancement of a range of digital technologies. Clermont mine has been nominated to pilot this programme.

Engaging with employee representative bodies

We uphold the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights of Work. We recognise and uphold the rights of our colleagues to a safe workplace, freedom of association, collective representation, collective bargaining, just compensation, job security and development opportunities. We believe in managing union relationships locally, where issues are considered part of the responsibility of our local management teams. However, representatives from Group Human Resources and Group Sustainability have also participated in regional and global meetings of the IndustriALL Global Union.

Supporting our employees wellbeing

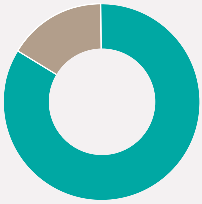
Increased risk, awareness and acceptance of mental health considerations is becoming one of the defining characteristics of the 21st Century workplace. Improving mental health and resilience and spotting the signs of mental health issues is a key management topic and one we are investing in. Glencore Coal Australia and Glencore Zinc Australia have been working with our industry peers and the national charity Mates in Construction to establish the "Mates in Mining" initiative. The initiative offers programmes developed specifically for mineworkers, building on leading international practice in community-based suicide prevention. Currently, Glencore Coal Australia is conducting pilot programmes at our Clermont and Glendell assets to help establish an industry-wide model.

Diversity

89,092
employees at 31 December 2019
2018: 86,621
2017: 83,679

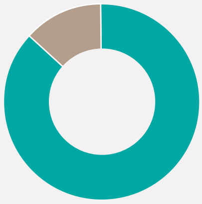
70,253
contractors at 31 December 2019
2018: 71,887
2017: 62,298

Employee diversity in 2019



2018: 15% female – 85% male
2017: 14% female – 86% male

Senior manager* diversity in 2019



2018: 16% female – 84% male
2017: 17% female – 83% male

* a senior manager as defined in section 414C of the UK Companies Act 2006 to include members of the management team and Glencore appointed directors on the boards of subsidiaries. This definition is only relevant to this data and does not apply to other references of "senior management" that are included in this Annual Report.

Increasing the dialogue with our colleagues

We recognise that given the largely decentralised nature of our business, it is critical for us as an employer to engage with and listen to our people. In an effort to understand the extent to which our culture and our values are embedded in our businesses we rolled-out culture surveys across our head office, our marketing offices globally and across our Australian assets. In total, the survey was available to 16,000 people and the results provided the business with valuable feedback on a range of issues and opportunities.

In an increasingly technology-driven world, we recognise the importance and value in maintaining a dialogue between our managers and employees. Town Hall meetings regularly occur across many of our businesses, maintaining visibility and access to leaders across the world.

These forums afforded our employees and communities the opportunity to bring topics to light. In a similar way, our employees and communities are always welcome to bring topics directly to management at site-level. All union representatives have direct access and frequent contact with our management.

Resourcing for performance and for the future

We introduced a Corporate Global Undergraduate Mining Engineering Scholarship programme to provide a future pipeline of talent. The aim of this is to manage the anticipated

Entry-level graduates, apprentices and students in 2019

209
Graduate intake

454
Vacation programmes

214
Scholarships/bursaries

320
Apprenticeships/artisans

Engaging with our people

13,500 employees from our Australian businesses plus a further 2,500 from across our marketing and corporate functions in Head Office in Switzerland and in more than 36 offices around the world were invited to participate in culture surveys in 2019. The surveys were conducted in English, German, Spanish and Russian and covered topics including values, leadership, performance measurement, communications and compliance.

The overall results and employee feedback are positive, with considerable successes being reported on the Company's efforts to cultivate a high-performing organisation underpinned by integrity and ethical behaviour, supported by an effective compliance programme.

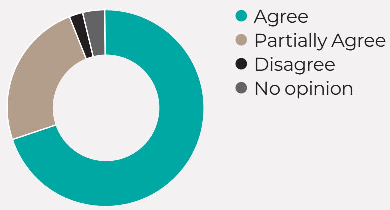
A large majority of our colleagues told us that senior management and direct managers demonstrate both ethical conduct and a willingness to promote ethical conduct across their business. In addition, the majority of staff also believe that our values are promoted and embedded in their daily work.

The vast majority of our employees report that they are aware of and understand our Code of Conduct or have received training on the code and the behaviours it requires. Almost all our colleagues in corporate and marketing roles feel encouraged to report any concerns. Particular effort has gone into communicating and promoting the channels that staff can access to report any concerns, and the results of the surveys, which are above international benchmarks, are very encouraging.

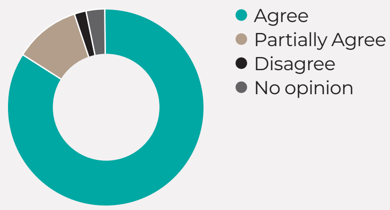
The surveys reported that there is a high degree of confidence in the reporting mechanisms and most people feel that issues will be dealt with appropriately. Compliance bulletins are regularly distributed throughout the business, as appropriate, to communicate, where possible, the actions that the company has taken in response to concerns to further reinforce the company's commitment to resolving issues.

People survey results

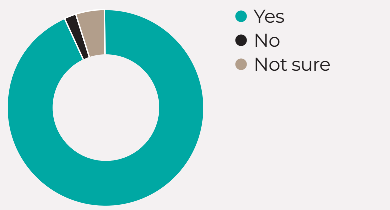
Glencore's values reflect the way we do business



My Direct managers convey the importance of acting ethically



We are encouraged to report potential misconduct



Providing opportunities for Host Communities

Our Diversity and Inclusion agenda also aims to ensure our workforce reflects the local communities we operate in. We are proud that for the third consecutive year, the *Prix Créateurs d'emplois gala* in Québec City honoured Raglan Mine with an award in the "Champion – Nord-du-Québec Region" category.

These awards recognise the major contribution of employment creators to the development of Quebec and its regions. With 1,150 direct jobs, of which 22% are occupied by Nunavimmiut, this is a testament to our involvement in Nunavik's economic growth.

McArthur River Mine, in Northern Territory, Australia, has implemented a strategic initiative that drives greater local workforce participation and delivers on its sustainable development objectives. We have initiated a new partnership and employment programme with "Pandanus Development Group & IE Project", which offers ways to learn skills, build knowledge, gain work experience and win a permanent role. Almost 20% of our McArthur River Mine workforce is Aboriginal and Torres Strait Islanders.

We are a diverse organisation, but have further progress to make.

As a global organisation, diversity and inclusion are integral to our success. We believe that employing people from different cultures, countries, races, ethnicities, genders, abilities, beliefs and backgrounds is essential to our culture. Diversity brings new and innovative ideas which allow us to advance our business and continue to improve.

Like many of our peers, we are trialling a number of approaches to improve gender diversity in our business. Examples include our Australian coal operations' Women's Mentoring Program and the WeLead Circle and #SheRocks campaign in South Africa.

WeLead Circle

The WeLead Circle is a professionally facilitated programme where female leaders are guided through six carefully selected leadership areas focused on the next steps needed to take in their leadership journey. The programme also provides a network of women who can be relied on for advice, insight, experience and skills.

Feedback from the programme has been firmly positive with participants reporting improved leadership skills and indicating that the experience provided them with a platform to make challenging personal and business decisions.

#SheRocks campaign

#SheRocks recognises the women who "rock" our industry in South Africa. This group of phenomenal women mentor and support the next generation of women, encouraging them to enter the mining industry, allowing our industry to grow and become more inclusive. The campaign serves to challenge the myths and gender bias of mining by offering honest insights into the experiences of women at different stages in their careers.

A number of our diversity programmes are starting to yield results. Mopani's Central Training Centre in Kitwe, Zambia, experienced a significant increase in the number of female students this year – rising from a previous average of seven women per intake to 36. We believe this is in part due to the annual Career Days hosted by Mopani for students of public secondary schools in Kitwe and Mufulira. These Career Days encourage and support female students to take up technical courses at tertiary education institutions, which paves the way for their future employment within the mining industry.

Similarly in Australia a further 12 female students have commenced our Coal Australia Mentoring Program, intending to transition into education for careers in the resources sector.

skills shortage in critical engineering roles across our commodities. Our commitment to attraction and development of entry-level graduate engineering talent is part of our wider set of talent initiatives, which includes bursaries, summer vacation placements, internships and apprenticeship programmes.

Investment in talent, skills and accelerating employees' professional and personal development are essential components of Glencore's people agenda. We are committed to strengthening the capability of our workforce and our managers. Our South African operations designed career development programmes for high-potential employees and succession-planning candidates. Amongst others, these programmes include leadership and management development programmes at various levels including but not limited to a Master in Business Leadership.

Investing in Learning and HR technologies

In 2019, Glencore selected Cornerstone as our new learning management system to drive consistent online training across our Group. Additionally, investments in Workday and SAP are increasing our ability to provide a consistent HR service to the business, our employees and the Board. Further investments and innovation are planned in recruitment and performance management in the coming year – enabling further consistency and transparency to be achieved in many of our divisions.

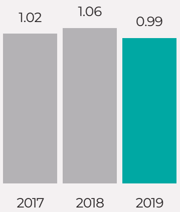
Listening and acting on concerns

We continue to promote our *Raising Concerns* channel across our business, making the hotline available to our entire workforce, and ensuring its accessibility to Glencore permanent employees and contractors alike. Please see page 44 for further information on our *Raising Concerns* programme.

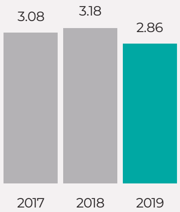
Sustainability

Responsibility is one of Glencore's core values. Our commitment to responsibility drives our approach to sustainability and we put it into practice through prioritising safety, managing and mitigating our environmental footprint and positively contributing to local economies. The success of our business and our creation of financial value relies on our ability to create lasting benefits for all our stakeholders in a manner that is transparent, sustainable and respects the rights of all

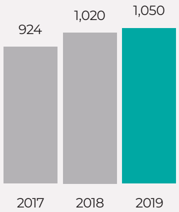
Lost time injury frequency rate (per million hours worked)



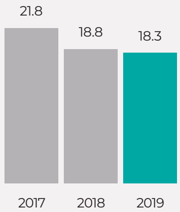
Total recordable injury frequency rate (per million hours worked)



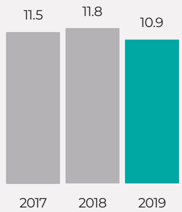
Water withdrawn (million m³)



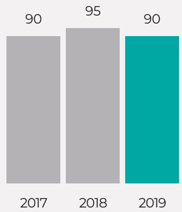
CO_2e Scope 1 – (million tonnes)



CO_2 Scope 2 – location based (million tonnes)



Community investment ($ million)



Our approach

Our approach to sustainability reflects our ambition to integrate sustainability throughout our business. We establish and progress good and consistent business practices and standards through our sustainability strategy, policies and procedures. Through an approach of continuous improvement, we strive to become a better operator with a reputation for doing things the right way.

Our sustainability strategy sets out our ambitions against four core pillars: health; safety; environment; and community and human rights, and drives positive change throughout our business. Each pillar has clearly defined strategic imperatives, objectives, policies, priority areas and targets.

Oversight for our Group sustainability strategy and framework rests with the Board HSEC Committee (the Committee). Our senior management team, including the CEO and commodity business heads, are responsible for implementing our sustainability strategy.

We review our sustainability strategy annually to confirm that it continues to fulfil the needs of our business.

Further details on our sustainability strategy, our approach to its implementation, as well as its performance and ambitions, are available in our sustainability-related publications. These include an annual sustainability report published in accordance with the core requirements of Global Reporting Initiative (GRI), as well as the following:

- Our approach to sustainability
- Sustainability report and highlights
- Environmental, Social and Governance (ESG) data book and GRI references
- Human rights report
- Payments to governments report
- Modern slavery statement

All of our sustainability communications are available on our website: **glencore.com/sustainability**

Sustainability framework

Corporate strategy

- Integration of sustainability throughout our business
- Maintain a robust and flexible balance sheet
- Focus on cost control and operational efficiencies

Values

Safety – Integrity – Responsibility
Openness – Simplicity – Entrepreneurialism

Code of Conduct

Group sustainability strategy

Health
Become a leader in protecting and improving the wellness of our people and communities.

Safety
Become a leader in safety and create a workplace free from fatalities and injuries.

Environment
Become a leader in environmental performance

Community and human rights
Foster socio-economic resilient communities and respect human rights everywhere we operate

Board HSEC Committee has oversight and ultimate responsibility for sustainability matters. It receives regular updates on how our business is performing across all our internally defined, sustainability-related material risk areas.

Sustainability principles, guidance and policies
Integrated throughout the business and give guidance on the standards we expect.

Group HSEC policies

Operational policies
Developed for the specific needs of individual assets

Management, data reporting, risk management and assurance to monitor compliance

Material topics

- Internal and external materiality assessment process to identify material topics
- Material topics are the focus of our sustainability strategy review and reporting
- Operational activities focus on addressing and progressing the material topics

Engaging with our stakeholders

We engage with relevant stakeholder groups to build meaningful relationships and understand their expectations and aspirations.

Key stakeholders include our workforce and their labour unions, host communities, civil society, governments, business partners and suppliers, non-governmental organisations, investors and the media. We engage on a broad variety of topics with a wide range of interested organisations and individuals that hold diverse opinions.

We reach out to our stakeholders at local, national, regional and international levels. Our engagement activities include holding transparent negotiations with union officials, regularly briefing our employees on a range of sustainability-related matters and hosting open days, when local community members can visit our sites and interact with our operational teams.

Where appropriate, we take an informed and constructive role in public policy development processes. For example, in a number of jurisdictions, our regional teams and representatives from our assets undertake direct lobbying activities on climate change-related topics, such as carbon pricing and security of energy supply. We have established robust governance processes to ensure that all our public policy engagement aligns with our climate change commitments and supports appropriate policy measures to mitigate climate risks.

External commitments

We participate in a wide range of external initiatives, supporting our commitment to improve continuously our approach and performance across sustainability topics. Our engagement varies from reporting on our progress to taking a role in driving strategic change.

We recognise the Sustainable Development Goals (SDGs) and their systematic global approach

Performance overview

Achieved · On track · Not achieved · Not applicable

Material topic	2015–2020 strategic priority	Performance indicator	2019	2018	Status
Catastrophic hazard management	• No major or catastrophic environmental incidents	Number of environmental incidents (major and catastrophic)	0	0	Achieved
Workplace health and safety	• No fatalities • 50% reduction of Group LTIFR by the end of 2020, against 2015 figure of 1.34[1] • 50% reduction in TRIFR by the end of 2020 using 2014 figure of 5.02[1] as baseline • Year on year reduction in the number of new cases of occupational disease	Fatalities at managed operations	17	13	Not achieved
		Lost time injury frequency rate	0.99	1.06	On track
		Total recordable injury frequency rate	2.86	3.18	On track
		New occupational disease cases	106	32	Not achieved
		Number of HPRIs reported	576	432	Not applicable
Climate change	• 5% (minimum) carbon emission intensity reduction on 2016 baseline[2] of 4.35 tGHG/tCu by 2020	CO_2e Scope 1 (million tonnes)	18.3	18.8	On track
		CO_2 Scope 2 – Location based (million tonnes)	10.9	11.8	On track
		Total energy use (petajoules)	210	209	Not applicable
		Carbon emissions intensity (tGHG/tCu)	3.93	4.13	On track
Water and effluents	• Complete implementation of water management guideline	Share of sites that have implemented the water management guideline by the end of 2019	80%	n/a	On track
Human rights and grievance mechanisms	• No serious human rights incidents	Serious human rights incidents	0	1	Achieved
Community engagement and social commitment compliance	• Implement our social value creation strategy • Distribute the community leadership Programme Toolkit	Community investment spend ($ million)	90	95	Not applicable
Product stewardship	• Ongoing engagement with organisations and interested stakeholders on responsible sourcing	Continued engagement with a broad range of stakeholders, including customers, regulatory organisations and industry associations	n/a	n/a	Not applicable

1 Baseline figures include Glencore Agriculture
2 The baseline is for operated industrial assets and amended to reflect acquisitions and divestments

Our approach to tailings management

Our assets generate tailings (residues of mineral processing) that are stored in purpose-built tailings storage facilities (TSF). We are committed to align the design, operation and closure of our TSFs with international best practices. We continually review and strengthen our TSF management system. Additionally, an external consultant reviews and monitors progress against recommended improvements.

For a number of years, TSFs have been part of our catastrophic hazard evaluation programme. We have drawn on external expertise through applying leading international standards.

We have published a comprehensive database of all of our TSFs on our website. This microsite includes an interactive TSF register where the information displayed for each TSF shows its location and asset, as well as supporting access to the data by interested stakeholders, including affected communities.

In 2019, as part of our ongoing approach to manage our dams safely from design through to closure, we further strengthened our Group-wide Tailings Storage Facility Management Protocol. The revised Protocol reflects learnings from across the business and consultations with internal and external experts. The Protocol aligns with the recommendations of the ICMM and the Canadian Dam Associations' (CDA) Dam Safety Guidelines. During 2020, we will continue to embed these leading dam design and management requirements across our TSF portfolio.

During our catastrophic hazard assurance process, we identified 17 TSFs with potential stability issues during extreme weather or seismic events. We are actively progressing our work programme to upgrade these facilities to meet CDA guidelines and leading practices.

During 2019, we completed buttresses at two Kazzinc dams and are on track to finalise extreme flood mitigation works at our Volcan zinc operations in Peru. In South Africa, our ferroalloys team have commenced buttressing at Kroondaal, which we will complete during 2020. Engineering works for buttressing are also underway at Rhovan. In Zambia, engineering work is ongoing at Mopani, which will improve the dam's stability during extreme earthquake events. We continue our active participation in ICMM's working group to eliminate and reduce tailings.

to society's overall development. We believe that we can play a role in supporting our host governments to meet the SDGs.

We are signatories to the United Nations (UN) Global Compact, aligning our strategies and operations with its principles, which cover human rights, labour, environment and anti-corruption.

In addition, we uphold the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work and the UN Universal Declaration of Human Rights. We work in accordance with a number of specific international frameworks, including the Core Conventions of the ILO and the UN Guiding Principles on Business and Human Rights.

We are members of the Plenary of the Voluntary Principles on Security and Human Rights.

We have been a member of the International Council on Mining & Metals since 2014. We endorse its sustainable development framework principles and are an active member of its working groups.

We strongly support transparency in the redistribution and reinvestment of the payments we make to local and national governments. We are active participants, both in our operating countries and at a global level, in the Extractive Industries Transparency Initiative (EITI). We comply with the EU Accounting and Transparency Directives; in line with those provisions, we publish separate annual reports detailing material payments made to governments, broken down by country and project.

As part of our commitment to responsible product stewardship, we follow the UN globally harmonised system for classification and labelling of chemicals (GHS), the EU REACH regulations on the registration, evaluation, authorisation and restriction of chemicals, and the London Bullion Market Association (LBMA) Responsible Gold guidance. Where appropriate, we participate in the REACH consortia related to the materials we produce; these include the consortia for zinc, cobalt, cadmium, sulphuric acid, lead and precious metals.

Risk management and assurance

Our management of sustainability-related risks aligns with Glencore's approach to the identification, assessment and mitigation of risk. Group-wide, we seek to manage our risks proactively to create and protect value, encourage ongoing improvement and support business decision-making; all of our assets apply our risk management framework and its supporting guidelines.

We align our risk management framework with international standards.

Our assets use the framework to identify hazards, including those with potentially major or catastrophic consequences, and to develop plans to address and eliminate, or mitigate, the related risks. For each of the identified catastrophic hazards we have implemented a standardised approach to identifying and understanding their causes and controls.

Our internal HSEC assurance programme primarily focuses on our systematic management of the catastrophic hazards and their relevant controls and critical controls. Internal and external senior subject matter experts participate in this programme.

Multi-disciplinary assessments allow us to audit complex issues from a range of viewpoints for a more robust appraisal. We use the assessments to review operations and activities with different risk factors, such as underground operations (where subjects may include strata control, fire and explosion, inrush and outburst, infrastructure, power), open pit mines and metal processing plants.

The Committee reviews the results of all the audits, together with their key findings, observations and good practice.

Implementing our Fatality Reduction Programme at Kazzinc

The operations of Kazzinc, a major, fully-integrated polymetallic producer, are located in the eastern region of Kazakhstan and consist of six mines and four smelters producing zinc, lead, copper, gold and silver. Kazzinc engages approximately 20,000 employees. Tragically, during 2016 to 2019, nine people lost their lives at Kazzinc's operations.

At the end of 2019, the corporate HSEC team initiated a new approach to address our safety performance – a multi-disciplinary, cross-commodity fatality intervention at Kazzinc. The intervention team visited every operating area in every operation while accompanied by site general managers, with the objective of reviewing operating processes and, if necessary, closing operations with unsafe conditions.

The fatality intervention team populated a dashboard every day with its findings, High Potential Risk Incidents (HPRIs) and best practice observations. The real-time collection and consolidation of findings, supported the identification of emerging patterns, which resulted in an early understanding of the nature and scale of actions required to address the findings.

The Kazzinc fatality intervention has revealed these organisational traits, which are critical for success:

- **Leadership**: bold, decisive and determined leadership at multiple levels, prepared to try new and different approaches
- **Organisational agility**: collaboration and focus to deliver an intervention that involved the deployment of 30+ operational leaders from across the Group using new, purpose-built digital tools for real time data collection
- **Resilience**: strong internal relationships delivering a respectful manner throughout the large and highly-intrusive intervention
- **Competence and commitment**: an obvious commitment to achieving safer operations evidenced through the professional, mature and skilful manner in which operational leaders stopped operations with unsafe conditions and acts and raised HPRIs

Going forward, the Kazzinc management team are focussing on closing out findings, verifying corrective actions, addressing the HPRIs and preparing for the second phase starting in early 2020. The fatality intervention has already resulted in safer plant, equipment and behaviours and has created a shared understanding of how to deliver safe and stable operations and a clear action plan to take forward.

Materiality assessment

We undertake a sustainability-related materiality assessment every two years that considers input from within our business and from other stakeholders. We use this assessment to inform the sustainability strategy and our reporting. Our approach determines topics identified as being material to our development, performance and current position as well as for our future prospects. The materiality assessment also establishes the material topics for our sustainability strategic review and publications.

We align our materiality assessments with GRI requirements and consider topics at global and local levels, as well as considering information relating to our business and the natural resources sector, our regulatory requirements and the topics raised during engagement with our people and external stakeholders, including local communities, investors, the media, governments and NGOs. In 2018, we undertook our biannual sustainability-related materiality assessment and identified the following topics for the 2019–20 period:

- Catastrophic hazards
- Safety and health
- Climate change and energy (see page 16)
- Water
- Responsible sourcing
- Human rights
- Land stewardship
- Responsible citizenship
- Our people

Our material topics

Catastrophic hazard

Catastrophic hazards are those that could result in a catastrophic event and include those relating to safety, process safety, human rights, environment and tailings. Catastrophic events that take place in the natural resource sector can have disastrous impacts on workers, communities, the environment and corporate reputation, as well as having substantial financial cost.

We recognise the exceptional nature of catastrophic events. Our Catastrophic and Fatal Hazard Management Policy requires the control of these hazards at all times. We ensure that those who might be directly exposed have appropriate awareness of such hazards, along with other legitimate stakeholders.

We review our catastrophic risks to understand whether they are adequately controlled. We require our assets to put in place appropriate management and mitigation measures. Our assurance on catastrophic hazards is developed in line with our Group-wide catastrophic hazard programme. The Board receives and reviews all assurance findings.

We target zero major or catastrophic environmental incidents, which we achieved during 2019.

Tailings, the fine waste materials left over after the processing of ore, are stored in tailings storage facilities (TSFs). In recent years, a small number of high-profile TSFs failures at the operations of large mining companies have resulted in catastrophic consequences.

We seek to actively manage and monitor our TSFs (see page 37).

During 2019, we welcomed the opportunity to participate in the Investor Mining & Tailings Safety Initiative and have responded to the Initiative's request for information concerning TSFs through launching a microsite on our corporate website that provides detailed information on our TSFs, including their location, type and size.

We recognise the need to establish standards and guidelines that address our stakeholder concerns relating to TSFs. Through our membership of ICMM, we are participating in its development of an international standard for TSFs.

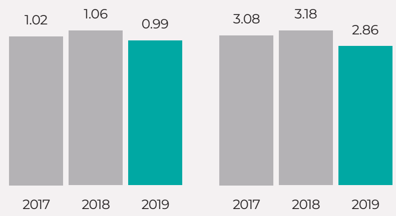
Safety and health

The success of our business is dependent on a safe and healthy workforce and achieving this is our top priority. We take a proactive, preventative approach towards health and safety. We believe that all fatalities, injuries and occupational diseases are preventable. A large number of our assets have been fatality free for multiple years.

However, our safety performance over the last two years has been unacceptable. We are saddened that during 2019, seventeen people lost their lives at our operations, compared to thirteen during 2018. All loss of life is unacceptable and we are determined to eliminate fatalities across our business.

Lost time injury frequency rate[1] (per million hours worked)

Total recordable injury frequency rate[2] (per million hours worked)



1 LTIFR reflects the total number of lost time injuries per million hours worked and does not include restricted work injuries or fatalities. Our LTIFR is recorded when an employee or contractor is unable to work following an incident; days recorded begin on the first rostered shift that the worker is absent after the day of the injury.
2 TRIFR is the sum of fatalities, lost time injuries, restricted work injuries and medical treatment injuries per million hours worked. The metric represents all injuries that require medical treatment beyond first aid.

We are taking a number of immediate actions, including:

- Major fatality reduction interventions at Mopani Copper Mines in Zambia and Kazzinc in Kazakhstan (see page 38) to establish a performance baseline and to identify and address opportunities to improve processes and behaviour
- A corporate-led deep dive on SafeWork, our initiative to change attitudes towards safety across the Group, at our ten worst performing assets
- The preparation of safety cases for the Board's HSEC Committee by our zinc and copper departments. Each safety case describes the new safety management system being implemented to identify and understand hazards, and to apply controls effectively and consistently.

In addition to the immediate actions, we are developing an enhanced Group-wide Fatality Reduction Programme to deliver a step-change in safety performance. The programme comprises six key elements:

- Acceleration of SafeWork's implementation
- Strengthening leadership through a high-impact safety and operations leaders' development programme, which will also support the strengthening of management processes and accountability frameworks

- Presentation to the HSEC Committee of safety cases by poor performing commodity departments; if required, the corporate HSEC team will lead interventions
- Quarterly safety reviews
- Enhanced assessment of safety and catastrophic risk for the due diligence and integration processes for acquired assets to increase the speed at which the asset and its management processes reach Glencore standards
- Improved reporting to the HSEC Committee on fatal and catastrophic risk assurance

We will continue to drive the changes necessary for the progressive improvement required to achieve our long-term goal of a fatality and injury free workplace.

Water

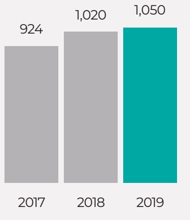
We recognise access to safe and clean water and sanitation as a human right. Water is also an essential input into many of our industrial activities and we ship our products over marine and inland water ways. Some of our assets are located in areas that are water stressed and others need to manage surplus water.

We work on improving our understanding of our water footprint and minimise our water-related impacts. We prioritise efficient water use, water reuse/recycling, responsible waste water disposal and maintaining any equipment that may pose a hazard to water quality. We engage with local water users to avoid material adverse impacts on the quality and quantity of water sources or compromising their access to water.

Our assets have implemented our water management guideline, which applies a risk-based approach. The guideline covers the minimum requirements for water governance, the identification and evaluation of water-related risks and opportunities, the mitigation of identified risks and impacts, the management of water in terms of quality and quantity and engagement with relevant stakeholders.

In 2019, we withdrew 1,050 million m^3 of water (2018: 1,020 million m^3). The increase is mainly due to improved reporting at some assets and significantly increased precipitation at two operations.

Water withdrawn
(million m^3)



Responsible sourcing

Some of our products are vital to today's society through their use in devices that are part of everyday activities. We recognise that our relationships with our customers is dependent on being a responsible supplier that delivers and markets competitively priced commodities in a timely manner while incorporating health, safety, environmental and human rights considerations throughout our supply chain.

Our suppliers are critical partners in our commitment to operate in a manner that is responsible, transparent and respects the human rights of all. We undertake due diligence of current and potential suppliers to understand their business practices using a risk based approach. If we identify unacceptable risks, we agree a set of corrective actions with the supplier.

During 2019, we finalised our revised Supplier Standards, which align with the OECD's responsible sourcing guidance. These set out our expectations for ethical business practices, safety and health, human rights and environment. When appropriate, we consider ways to support our suppliers in capacity building and improving their adherence to the expectations of the Supplier Standards.

In 2019, Glencore did not produce, process or market any "conflict minerals" originating from the conflict areas as defined under the Dodd-Frank Act (tin, tungsten, tantalum and gold from the DRC and adjoining countries).

Human rights

We recognise that mining can have an impact, both positive and negative, on the rights of workers and communities. We are also aware of the need to ensure unencumbered fair and transparent access to remedy for any stakeholder affected by our operations.

We prioritise respect for human rights everywhere that we operate. We uphold the human rights of our people and our local communities, including vulnerable groups such as women, children, indigenous people and victims of conflict.

Respect for human rights is enshrined in our Code of Conduct, which lays out the essential requirements for our people. Our Group Human Rights Policy reinforces this commitment. We also endorse and align our security procedures to the Voluntary Principles on Security and Human Rights (Voluntary Principles).

Our Group Human Rights Policy applies to all Glencore operations and offices over which we have operational control. The policy requires our operations to identify and assess risks of human rights breaches as part of our general risk assessment processes, which include baseline and impact studies at existing operations and due diligence on new operations and business partners.

Assets conduct regular human rights training for their workforce. This covers general human rights awareness during day-to-day activities for our wider workforce, as well as focused Voluntary Principles training for our security employees and contractors.

During 2019, training was undertaken with external experts with our security teams from countries we consider to have a high risk of security-related human rights incidents. The training set out the expectations of our Security Protocol and our commitments to the Voluntary Principles.

All our operations are required to have in place grievance mechanisms that are accessible, accountable and fair, and that enable our stakeholders to raise concerns without fear of recrimination. We align our grievance mechanisms with the requirements of the UN Guiding Principles on Business and Human Rights.

During the year, we improved our approach to human rights-related incident reporting, setting out clear definitions of what constitutes a human rights incident. We also rolled out human rights training programmes that covered leadership, functional and technical skills.

In 2019, we identified no serious human rights incidents (2018: one serious incident). In 2018, we recorded a security incident at Glencore's Antapaccay copper mine in the Espinar Province of Peru. This related to a confrontation that took place between a local family group, Antapaccay's security personnel and the employees of its private security contractor.

We engaged external human rights experts to undertake an independent human rights review to build an understanding of stakeholder perceptions and concerns about Antapaccay. In the spirit of transparent engagement and reflecting Glencore's and Antapaccay's commitment to operate responsibly in line with the Guiding Principles, we published a summary of the results of the human rights experts' review on our website.

In 2019, we published our first, standalone human rights report. The report details our approach to human rights and the key activities we undertook in this area during 2018. It provides an overview of the human rights risks that are salient to Glencore and the actions we are taking to manage and mitigate those risks. Our human rights report is available at: **glencore.com/sustainability/reports-and-presentations**.

Land stewardship

We are a significant land manager, with around two million hectares under our stewardship. We work to minimise our potential impact, complying with or exceeding relevant regulations.

Our assets undertake responsible land stewardship throughout their lifecycles; this not only reduces operational risks, but also minimises our liabilities when our mines close and influences our legal and societal licence to operate. We continuously look for ways to improve our land stewardship performance, including our use of resources, preserving protected areas and biodiversity, undertaking closure planning and rehabilitation.

Our assets incorporate biodiversity considerations into their environmental impact assessments, along with any risks that our biodiversity impact may have for local communities. Our approach aims to avoid net losses or degradation of natural habitats, biodiversity and landscape functions.

We require each asset to have a closure plan that includes appropriate financial provisions to support a responsible exit. Closure plans align with good practices, such as the ICMM's Good Practice Guide. Assets develop the plans in collaboration with local communities and reflect the societal risks and opportunities associated with closure.

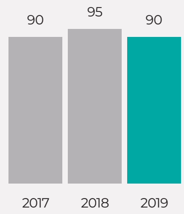
In addition, our mining assets continually rehabilitate the areas they disturb, restoring the land to a state that is suitable for the final land use agreed in the mining permit.

Responsible citizenship

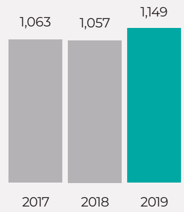
We believe that our global presence and economic strength have a predominantly positive impact on our host communities. Our activities contribute to national and regional economies, through the taxes and royalties we pay and the socio-economic initiatives we support, as well as by our prioritisation of local employment and procurement.

We require our assets to develop transparent, constructive and inclusive relationships with their host communities. Each asset's stakeholder engagement strategy identifies the societal impact of its activities, community concerns, needs and societal risks to its operations.

Community investment
(US$ million)



Community complaints



Our community development programmes are an integral part of our community and stakeholder engagement strategies and support various initiatives to deliver socio-economic benefits to those living around our operations.

We provide our local communities with information in a wide range of different ways, tailored to the local context and culturally appropriate. These include radio broadcasts, site publications, regular town hall meetings, and individual meetings with the community.

We also have mechanisms to receive grievances and concerns. Senior operational and departmental management, as well as the Committee receive regular reports on grievances and concerns. All complaints and grievances are registered and investigated; we let complainants know results and any follow-up actions in a culturally and locally appropriate manner.

In 2019, we spent $90 million on community development programmes (2018: $95 million).

Ethics and compliance

Glencore's success is dependent on being an honest and reliable business partner. We meet our long-term objectives and remain a business partner of choice by upholding our commitment to ethical business practices

Our approach

We are committed to maintaining a culture of ethics throughout the Group, rather than simply performing the minimum required by laws and regulations. We do not knowingly assist any third party in breaching the law, or participate in any criminal, fraudulent or corrupt practice in any country. To support this, we have a Group Ethics and Compliance programme that includes risk assessments, policies, standards, procedures and guidelines, training and awareness, monitoring and investigations. We work with leading advisers to ensure that our programme aligns with international best practices, including guidance from relevant authorities. Our permanent and temporary employees, directors and officers (as well as contractors, where they are under a relevant contractual obligation) must comply with our relevant policies and procedures, as well as applicable laws and regulations. When we enter into joint ventures where we are not the operator, we seek to influence our partners to adopt similar policies and procedures to ours wherever possible.

Board oversight and governance

We provide training to the Board of Directors emphasising the role of the Board in the oversight and implementation of an effective Ethics and Compliance programme. Furthermore, the Board receives regular updates on the programme through the relevant committees, highlighted below. These updates cover all focus areas (including anti-corruption and sanctions) and topics such as the compliance team structure, status of risk assessments, policies, standards, procedures or guidelines under development, updates on training and awareness activities, overview of monitoring visits and key findings, and material investigations and reports that have come into our Raising Concerns programme.

The following Group committees report to the Board on ethics and compliance matters:

- The *Ethics, Compliance and Culture Committee (ECC) of the Board*, which comprises at least two Non-Executive Directors. The ECC oversees key ethics, compliance and culture-related matters within the Group.
- The *Business Ethics Committee (BEC)*, which comprises Glencore's CEO, CFO, General Counsel and Head of Compliance and senior management. The BEC considers compliance issues relevant to the Group and reviews and approves our policies, standards and procedures.
- The *Business Approval Committee (BAC)*, which comprises Glencore's CEO, CFO, General Counsel and Head of Compliance, Head of Sustainable Development and business heads. The BAC, a sub-committee of the BEC, determines, sets guidance and criteria, and reviews business relationships, transactions or counterparties that give rise to ethical or reputational concerns.

Compliance function structure

We employ full-time, skilled Compliance Officers in our Corporate Compliance team. Our Compliance Officers determine the Group Ethics and Compliance programme and provide dedicated compliance support to the business. Our Regional Compliance Officers implement the programme in specific geographical jurisdictions and provide guidance to the business and to their local Compliance Coordinators. Our Compliance Coordinators (sitting in offices and assets across the globe) support our employees seeking advice on ethical and lawful behaviour or policy implementation. To be nominated and appointed as Compliance Coordinator, the individual must fulfil certain established criteria. This structure of qualified Compliance Officers, Regional Compliance Officers and local Compliance Coordinators ensures the effective implementation of our Ethics and Compliance programme worldwide.

Risk assessments

We identify, assess and evaluate compliance risks in line with our Glencore Risk Management Framework. Corporate Compliance maintains the Compliance Risk Register and reviews it annually. To support our understanding of ethics and compliance risks relevant to each of our offices and assets globally, we aim to conduct a compliance risk assessment at appropriate intervals. These risk assessments help us understand and document the specific compliance risks faced by the particular business, as well as identify and document the mitigating controls in place. These risk assessments also form the basis for the drafting of Group policies, standards, procedures and guidelines.

Group policy framework

Our Group policy framework encompasses our values, Code of Conduct, policies, standards, procedures and guidelines on various compliance topics, including bribery and corruption, conflicts of interest, sanctions, anti-money laundering, market conduct, the prevention of the facilitation of tax evasion, competition law and data protection. This framework reflects our commitment to uphold ethical business practices and to meet or exceed applicable laws and external requirements. We emphasise their importance in our business activities, including recruitment and induction.

Employees can access our compliance policies, standards, procedures and guidelines through various channels, including the Group intranet, or their local intranet of the specific office or asset at which they work. Our managers and supervisors are responsible for ensuring employees understand and comply with the policies, standards and procedures. We monitor and test their implementation on a regular basis. Employees who have access to a work computer must confirm their awareness and understanding of our compliance requirements when they begin working at Glencore and annually thereafter. Certain offices and assets implement their own policies, procedures and guidelines in addition to those of the Group. These are designed to address specific local requirements, while being consistent with our Group policies. Key Group policies addressing two of our biggest risks are:

Glencore's Anti-Corruption Policy

Our Anti-Corruption Policy, available on the Group website, clearly documents our position on bribery and corruption, i.e. the offering, providing, authorising, requesting or receiving of bribes is unacceptable. We conduct analysis for corruption risks within our businesses and work towards addressing these risks through policies, standards, procedures, guidelines, training and awareness and monitoring.

As per our Anti-Corruption Policy, we do not engage in corruption or bribery, including facilitation payments. We do not permit the use of any of our funds or resources as contributions to any political campaign, political party, political candidate or any such affiliated organisations. Although we do not directly participate in party politics, we do on occasion engage in policy debate on subjects of legitimate concern to our business, employees, customers, end users and the communities in which we operate.

All officers, employees and associated persons who lobby on our behalf must comply with all applicable laws and regulations (including but not limited to complying with the laws and regulations relating to registration and reporting).

We may only give and receive appropriate, lawful business gifts and entertainment in connection with our work, provided such gifts and entertainment satisfy the general principles in our Anti-Corruption Policy and are not given or received with the intent or prospect of influencing the recipient's decision-making or other conduct. Furthermore, we have local approval procedures, which provide specific requirements for gifts and entertainment in certain offices and assets, which can include value thresholds and specific requirements for public officials.

With regards to our third parties, in addition to our standard "Know Your Counterparty" programme, our Third Party Due Diligence Procedure seeks to ensure that our high-risk third party engagements are conducted in accordance with our Anti-Corruption Policy, applicable laws and regulations. The procedure sets out a detailed risk-based assessment process whereby we identify, assess and mitigate the corruption risk exposure of high-risk third party relationships, particularly intermediaries, joint ventures and service providers. The procedure also requires, where necessary, ongoing monitoring and review of the relationships to ensure compliance with our Anti-Corruption Policy.

With regards to governments, we annually report on our total payments to governments, and provide country-by-country and project-by-project information in this regard. Additionally, and where applicable, we have aligned our reporting on such payments with the requirements of Chapter 10 of the EU accounting directive.

Glencore's Sanctions Policy

Our Sanctions Policy sets out our commitment to complying with all applicable sanctions, appropriately managing sanctions risk and not participating in transactions designed or intended to evade applicable sanctions. Our Sanctions Procedure outlines the steps we take to ensure compliance with our Sanctions Policy.

Training and awareness

Training on and awareness of our policies, procedures and guidelines, as well as strong leadership, are critical components of our Ethics and Compliance programme. They ensure our employees understand the behaviour expected of them and provide guidance on how they can identify and practically approach ethics and compliance dilemmas in their daily work.

Our new joiners receive new employee compliance training sessions and ongoing training on a range of compliance issues. In 2019, 38,523 employees and contractors (2018: 33,944) completed our Code of Conduct e-Learning. In addition, 29,481 employees and contractors (2018: 27,510) completed e-Learning training on our Anti-Corruption Policy, which includes guidance on important topics such as facilitation payments, the giving and receiving of gifts and entertainment and dealings with public officials. The target audience of the Code of Conduct e-Learning is employees and contractors with regular access to a work computer. The Anti-Corruption e-Learning targets those whose function may require them to interact with third parties. For those employees and contractors who do not have regular access to a work computer, we provide training in other ways, including induction sessions, pre-shift training and toolbox talks. In addition, Compliance conducts face-to-face training to raise awareness about compliance risks related to their functions and to train them on Glencore's compliance policies, standards, procedures and guidelines.

We tailor our training and awareness materials and make them relevant by including hypothetical scenarios illustrating how ethics and compliance dilemmas might manifest themselves in employees' daily work activities.

We also train and develop our own compliance personnel to increase their understanding of key compliance risks and important developments. In May, we hosted a Compliance Summit at our offices in Switzerland for over 70 of our Compliance Coordinators, Regional Compliance Officers and Corporate Compliance team members. Over two days, participants engaged in training and interactive workshops, providing them with the opportunity to share knowledge and learn best practice. Attendees enhanced their skills to support the advancement of the Ethics and Compliance programme at a local level. Ivan Glasenberg, Glencore CEO, addressed the Summit with a clear message: Ethics and compliance are vital to Glencore's success.

Raising awareness activities and initiatives, in addition to online and classroom training, are key to reminding employees of the importance of ethics and compliance. This year, we held Glencore Ethics and Compliance Days, a two-day event at our offices in Switzerland. The focus of these two days was how we all, and particularly how our leaders, play a critical role in promoting and ensuring a culture of ethics and compliance. The event was very well-attended by members of the Board, senior management and employees from the business and support functions. The event gave employees the opportunity to engage with and ask questions of our senior leadership in panel discussions, participate in interactive workshops, as well as take part in engaging ethics and compliance activities, games and competitions.

To further raise awareness, we launched the Glencore Ethics and Compliance App in January, which supports employees in making choices in line with our values, our Code of Conduct and the law. It provides easy, user-friendly mobile access to key ethics and compliance principles, our Raising Concerns platform as well as our Conflicts of Interest declaration platform.

Monitoring

We review the effectiveness of Glencore's compliance programme through monitoring and testing the implementation and execution of our compliance policies, standards, procedures and guidelines. We achieve this through a combination of desktop and onsite reviews, which we perform in line with our monitoring plan. The Corporate Compliance team discusses and reviews the results and decides on the most appropriate course of action. Through our Regional Compliance Officer network, any actions arising from our monitoring activities are tracked and closed upon completion.

Raising Concerns

Everybody working for Glencore (including suppliers) must promptly raise with a supervisor or manager locally any situations in which our Code of Conduct, policies, procedures or the law appear to be breached. Everybody should feel comfortable raising concerns without fear of retaliation. We have a strict policy against retaliation that we reinforce in all of our communications in relation to the Raising Concerns programme.

Where a concern remains unresolved through these local channels, or should an employee, contractor, supplier or other stakeholder, for whatever reason and at any time, feel uncomfortable utilising the local channels in resolution of their concerns, they can raise the concern via our "Raising Concerns" web platform at glencore.raisingconcerns.org. The website allows individuals to raise concerns on an anonymous basis. Additionally, there are telephone numbers for raising concerns, which are published on the Raising Concerns website.

Concerns received through the Raising Concerns web platform are taken seriously and handled promptly, using an objective, fact-based rationale and prohibiting any form of retaliation.

In 2019, we received a total of 500 reports (2018: 215 and 2017: 183) regarding situations in which Group policies appeared to be breached and which were brought to the attention of the Raising Concerns programme. Of these, 37% related to Human Resources concerns, 42% to business integrity concerns (of which 78 matters were related to potential conflicts of interest) and 9% to health, safety or environmental matters. The substantial increase in the number of concerns received by the Raising Concerns programme year-on-year are attributable to increased awareness of the programme and the roll-out of new reporting platforms for both web and phone submissions.

Discipline

In accordance with our Code of Conduct, anybody working for Glencore who breaches our Code of Conduct, policies, standards or procedures or the law may face disciplinary action including dismissal.

Participation in external anti-corruption organisations

We are a member of the Partnering Against Corruption Initiative (PACI). Members collaborate on collective action and share leading practice in organisational compliance. The initiative has a commitment of zero tolerance on bribery and the requirement to implement practical and effective anti-corruption programmes. We are also an associate member of the Maritime Anti-Corruption Network (MACN).

We actively participate in PACI and MACN's annual events. We have incorporated guidelines from both organisations into our procedures.

Non-Financial Information Statement

We aim to comply with the Non-Financial Reporting Directive requirements from sections 414CA and 414CB of the UK Companies Act 2006. The table below sets out where relevant information is located in this report

Reporting requirement	Policies	Reference in 2019 annual report
1. Environmental Matters	• Sustainability Policy • Code of Conduct	• Climate change, **page 16** • Climate change risk, **pages 87–88** • Health, safety, environment risk, **pages 86–87** • Sustainability, **page 34**
2. Employees	• Code of Conduct • SafeWork programme • Conflict of Interest Programme • Sustainability Policy • Diversity Policy • Corporate Anti-Discrimination and Harassment Policy • Corporate Recruiting Policy	• Operating risk, **pages 83–84** • Our people, **page 30**
3. Human Rights	• Human Rights Policy • Annual Modern Slavery Statement • Sustainability Policy • Code of Conduct	• Community relations and human rights risk **page 89** • Sustainability, **page 34**
4. Social Matters	• Code of Conduct • Sustainability Policy	• Community relations and human rights risk, **page 89** • Sustainability, **page 34** • Our people, **page 30**
5. Anti-corruption and anti-bribery	• Code of Conduct • Global Anti-Corruption Policy	• Laws and enforcement risk, **pages 80–81** • Ethics and Compliance, **page 42**
6. Business model		• Business model, **page 10**
7. Principal Risk and Uncertainties		• Principal risk and uncertainties, **pages 74–89**
8. Non-financial key performance indicators		• Non-financial key performance indicators, **page 25**

Financial review

Lower commodity prices and production along with cost challenges in the African copper business, impacted earnings and cash flows, but Marketing proved its counter-cyclical nature

Steven Kalmin
Chief Financial Officer

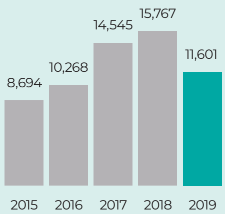
Robust financial performance

Adjusted EBITDA was $11.6 billion, down 26% compared to 2018 as consistent year-over-year Marketing earnings tempered the lower contribution from the Industrial segment, the results of which are more exposed to movements in commodity prices. Lower Atlantic steam coal price forecasts contributed to impairments of $2.8 billion being recognised, resulting in a net loss of $404 million for the year. Cash generation remains healthy, supporting $2.6 billion of shareholder returns announced for 2020.

Group Adjusted EBITDA

$11.6bn

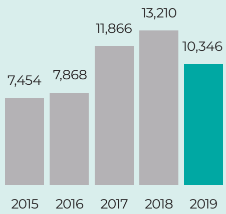
2018: $15.8bn



Cash generated by operating activities before working capital changes

$10.3bn

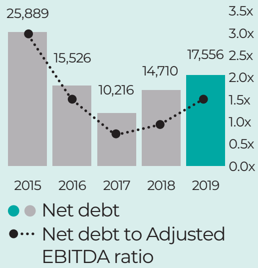
2018: $13.2bn



Net debt/Adjusted EBITDA

1.51x

targeted for reduction in 2020



Figures in charts are shown in US$ million.

Financial results

Net income attributable to equity holders decreased from $3,408 million in 2018 to a loss of $404 million in 2019 and EPS reduced from $0.24 per share to negative $0.03 per share, driven largely by lower commodity prices compared to prior year, and various impairment charges across our portfolio, mainly relating to our Colombian coal, Chad oil and African copper portfolios, owing, respectively, to a lower forecasted Atlantic steam coal price environment, the expiration of certain oil exploration licenses and revisions to the Mutanda mine plan. At the total comprehensive income level, the net 2019 loss reduces to $118 million, due mainly to positive mark-to-market valuation adjustments on various Group investments.

Adjusted EBITDA was $11,601 million and Adjusted EBIT was $4,151 million in 2019, down 26% and 55% respectively compared to 2018, as the average price benchmarks for most of our key commodities were lower year-over-year, namely cobalt (57%), coal (GC Newc 27%), copper (8%), ferrochrome (14%) and zinc (13%), as noted in the table on page 56. Particularly weak were cobalt, which experienced material oversupply, and the Atlantic steam coal market, heavily impacted by low competing gas prices. In addition to these negative price factors, Adjusted EBITDA/EBIT were impacted by the operational challenges in our African copper portfolio and the slow ramp-up of our Koniambo nickel operation. Noting these variables, Adjusted EBITDA mining margins were 28% (37%, excluding African Copper and Koniambo) in our metal operations and 37% in our energy operations, compared to 38% (41%, excluding African Copper and Koniambo) and 46% respectively during 2018.

Highlights

US$ million	2019	2018	Change %
Key statement of income and cash flows highlights[1]:			
Net (loss)/income attributable to equity holders	(404)	3,408	(112)
Adjusted EBITDA◊	11,601	15,767	(26)
Adjusted EBIT◊	4,151	9,143	(55)
(Loss)/earnings per share (Basic) (US$)	(0.03)	0.24	(112)
Funds from operations (FFO)[2◊]	7,865	11,595	(32)
Cash generated by operating activities before working capital changes	10,346	13,210	(22)
Net purchase and sale of property, plant and equipment[2◊]	4,966	4,899	1

US$ million	31.12.2019	31.12.2018	Change %
Key financial position highlights:			
Total assets	124,076	128,672	(4)
Net funding[2,3◊]	34,366	32,138	7
Net debt[2,3◊]	17,556	14,710	19
Ratios:			
FFO to Net debt[2◊]	44.8%	78.8%	(43)
Net debt to Adjusted EBITDA◊	1.51x	0.93x	62

Adjusted EBITDA/EBIT◊

Adjusted EBITDA by business segment is as follows:

	2019			2018			
US$ million	Marketing activities	Industrial activities	Adjusted EBITDA	Marketing activities	Industrial activities	Adjusted EBITDA	Change %
Metals and minerals	1,169	5,555	6,724	1,767	8,478	10,245	(34)
Energy products	1,515	3,854	5,369	795	5,312	6,107	(12)
Corporate and other[4]	(47)	(445)	(492)	(70)	(515)	(585)	(16)
Total	**2,637**	**8,964**	**11,601**	**2,492**	**13,275**	**15,767**	**(26)**

Adjusted EBIT by business segment is as follows:

	2019			2018			
US$ million	Marketing activities	Industrial activities	Adjusted EBIT	Marketing activities	Industrial activities	Adjusted EBIT	Change %
Metals and minerals	1,089	1,016	2,105	1,742	4,053	5,795	(64)
Energy products	1,324	1,274	2,598	742	3,209	3,951	(34)
Corporate and other[4]	(47)	(505)	(552)	(70)	(533)	(603)	(8)
Total	**2,366**	**1,785**	**4,151**	**2,414**	**6,729**	**9,143**	**(55)**

1 Refer to basis of presentation below.
2 Refer to page 50, also noting that 2019 FFO materially impacted by the lag of income taxes paid in 2019, in respect of 2018 profitability (reduction in balance sheet income tax payable of $755 million), as well as $238 million of taxes paid in 2019, expected to be offset against future taxes due or refunded.
3 Adoption of the new lease accounting standard, effective 1 January 2019, resulted in $865 million (non-cash) of new lease liabilities being recognised (see note 1), while $582 million of additional new leases (non-cash) were booked as capital expenditures and debt in 2019, that previously would have been classified as operating leases.
4 Corporate and other Marketing activities includes $58 million pre-significant items (2018: $21 million) of Glencore's equity accounted share of Glencore Agri.
◊ Adjusted measures referred to as Alternative performance measures (APMs) which are not defined or specified under the requirements of International Financial Reporting Standards; refer to APMs section on page 228 for definition and reconciliations and note 2 of the financial statements for reconciliation of Adjusted EBIT/EBITDA and to page 68 for reconciliations of Mining Margins.

Marketing activities

Marketing Adjusted EBITDA increased by 6% to $2,637 million and Adjusted EBIT decreased by 2% to $2,366 million, the former benefiting from the new lease accounting standard, requiring the capitalisation of various previously reported operating lease expenses, including many of our chartering and storage commitments (see note 1). Such previously reported lease expenses are now split over time between depreciation and interest expense. Marketing Adjusted EBIT was broadly in-line with 2018 as lower contributions from Metals and minerals were offset by increased contributions in Energy products. Metals and minerals Adjusted Marketing EBIT was down 37% primarily on account of the challenging cobalt markets in H1 and resulting inventory write down on material sourced from Glencore mines in earlier periods, as discussed previously, and some overall softening in end-user demand due to global trade tensions, which prevailed through most of 2019. Energy products Adjusted EBIT was up 78%, owing to oil, which delivered particularly strong results on the back of supportive physical commodity marketing conditions.

Industrial activities

Industrial Adjusted EBITDA decreased by 32% to $8,964 million (Adjusted EBIT was $1,785 million, compared to $6,729 million in 2018). As noted above, the decrease was primarily driven by lower average year-over-year commodity prices and, to a lesser extent, some production/operational/cost challenges in our African copper portfolio (Mutanda's copper production was 49% lower than 2018, as it scaled down operations, Katanga, although recording higher cobalt production, had limited sales as it manages through a period of excess uranium content and delays in required drying capacity commissioning, while Mopani's copper metal production was 64% lower as, in June, it accelerated its major triennial smelter shut down (from the 2020 schedule) and brought forward various planned other maintenance activities to address safety-related issues).

Earnings

A summary of the differences between reported Adjusted EBIT and income attributable to equity holders, including significant items, is set out in the following table:

US$ million	**2019**	2018
Adjusted EBIT◊	4,151	9,143
Net finance and income tax expense in relevant material associates and joint ventures[1]	(337)	(529)
Proportionate adjustment Volcan[1]	(106)	(72)
Net finance costs	(1,713)	(1,514)
Income tax expense[2]	(369)	(1,761)
Non-controlling interests	816	498
Income attributable to equity holders of the Parent pre-significant items	**2,442**	**5,765**
Earnings per share (Basic) pre-significant items (US$)◊	0.18	0.41
Significant items◊		
Share of Associates' significant items[3]	(292)	(40)
Movement in unrealised inter-segment profit elimination[4]	468	237
(Loss)/gain on disposals of non-current assets[5]	(43)	(139)
Other expense – net[6]	(173)	(764)
Impairments[7]	(2,843)	(1,643)
Income tax expense[2]	(249)	(302)
Non-controlling interests' share of significant items[8]	286	294
Total significant items	**(2,846)**	**(2,357)**
(Loss)/income attributable to equity holders of the Parent	**(404)**	**3,408**
(Loss)/earnings per share (Basic) (US$)	(0.03)	0.24

1 Refer to note 2 of the financial statements and to APMs section for reconciliations.
2 Refer to other reconciliations section for the allocation of the total income tax expense between pre-significant and significant items.
3 Recognised within share of income from associates and joint ventures, see note 2 of the financial statements.
4 Recognised within cost of goods sold, see note 2 of the financial statements.
5 Refer to note 4 of the financial statements and to APMs section for reconciliations.
6 Recognised within other expense – net, see note 5 of the financial statements and to APMs section for reconciliations.
7 Refer to note 6 and 10 of the financial statements and to APMs section for reconciliations.
8 Recognised within non-controlling interests, refer to APMs section.

Significant items

Significant items are items of income and expense, which, due to their nature and variable financial impact or the expected infrequency of the events giving rise to them, are separated for internal reporting, and analysis of Glencore's results to provide a better understanding and comparative basis of the underlying financial performance.

In 2019, Glencore recognised a net expense of $2,846 million (2018: $2,357 million) in significant items comprised primarily of:

- Expenses of $292 million (2018: $40 million) relating to Glencore's share of significant expenses recognised directly by our associates, notably impairments and gains on revaluations of investments in Glencore Agri (net $73 million), impairments in Trevali ($65 million) and Oil vessels' entities ($62 million)
- Net loss on disposals of non-current assets of $43 million (2018: $139 million) see note 4. In 2019, the loss primarily relates to the revaluation of our existing interest in Polymet, prior to acquisition of a controlling stake. In 2018, the loss primarily related to the disposal of our interest in the Mototolo PGM joint venture in South Africa, mainly on account of recycling foreign currency translation reserves to the statement of income
- Income tax expense of $249 million (2018: $302 million) – see income taxes below
- Other expenses – net expenses of $173 million (2018: $764 million) see note 5. Balance primarily comprises:
  - $47 million (2018: $139 million) of mark-to-market gains on equity investments/derivative positions accounted for as held for trading
  - $70 million net loss (2018: $58 million) on foreign exchange movements
  - $159 million (2018: $86 million) relating to certain legal matters
  - $117 million (2018: $24 million) in respect of various investigations (legal, expert and compliance) related costs (see note 31) and $42 million (2018: $62 million) of costs related to ongoing dispute with the Strategic Fuel Fund Association of South Africa
  - $173 million (2018: $Nil) of closure and severance costs related to transition of the Mutanda operation to temporary care and maintenance, ongoing mine optimisation review at Katanga and closure of the Brunswick lead smelter

– $325 million gain (2018: loss of $325 million) relating to settlement of an outstanding claim, through the effective sale of previously recognised liabilities that the Group assumed in 2018, following termination of a 50:50 consortium with Qatar Investment Authority and its associated investment in OSJC Rosneft
– $Nil (2018: $270 million) relating to the costs incurred in settling Katanga's capital deficiency and various historical commercial disputes with Gécamines ($248 million) and settlement with the Ontario Securities Commission ($22 million). Also see note 33
– $6 million (2018: $142 million) of acquisition related expenses incurred in connection with the acquisition of HVO and Hail Creek (see note 25). The expenses are primarily stamp duty/property transfer related taxes

- Impairments of $2,843 million (2018: $1,643 million), see note 6 and 10. The 2019 charge primarily relates to the:
  – Prodeco coal operations ($514 million) owing to global LNG oversupply with resultant low spot gas prices, and to a lesser extent, higher carbon prices, which placed considerable pressure on the API2 European coal market, the primary price reference market for Colombian coal. In addition, a $435 million impairment was recognised within share of income from associates relating to our investment in Cerrejón, our 33.3% interest in a Colombian coal operation (see note 10)
  – Chad oil operations ($538 million) resulting from the expensing of historical cost allocation to certain oil exploration licences acquired via Caracal in 2014. In advance of the expiry date of these Chad East licences, Glencore held discussions with the Government with the aim of extending them on terms acceptable to both parties, however no agreements were reached
  – Mutanda copper operations ($300 million) owing to the decline in cobalt prices and the transition to temporary care and maintenance in November
  – Oxidos and Cerro de Pasco operations (separately identifiable zinc and silver processing areas within the Volcan group – $378 million), following reclassification of these operations to "held for sale" pending their expected disposal during 2020
  – $162 million of VAT impairments in respect of long overdue claims, predominantly in Zambia

Net finance costs
Net finance costs were $1,713 million during 2019, a 13% increase compared to $1,514 million in the comparable reporting period, primarily attributable to moderately higher average gross debt balances, along with additional lease interest costs ($73 million), following the introduction of the new lease accounting standard on 1 January 2019. Interest expense for 2019 was $1,940 million, up 11% over 2018 and interest income was $227 million, consistent with prior year.

Income taxes
An income tax expense of $618 million was recognised during 2019, compared to $2,063 million in 2018. Adjusting for $249 million (2018: $302 million) of net income tax expense related to significant items (primarily impairments and tax losses not recognised), the 2019 pre-significant items income tax expense was $369 million (2018: $1,761 million). The 2019 effective tax rate, pre-significant items, was 30.5%, consistent with the 30.3% in 2018.

Statement of financial position
Current and non-current assets
Total assets were $124,076 million as at 31 December 2019, compared to $128,672 million as at 31 December 2018. Current assets decreased from $44,268 million to $41,552 million, due to a reduction in fair values of our derivatives/hedging instruments (other financial assets), on account of movements in commodity prices and foreign exchange rates, as well as settlement of the Astron exchangeable loan (2018: $1,044 million), following the closing of this acquisition in April 2019. Non-current assets decreased from $84,404 million to $82,238 million, primarily due to impairments to property, plant and equipment of $1,885 million. This decrease was partially offset by capitalisation of lease assets as a result of the adoption of IFRS 16 (see note 1) and mark-to-market adjustments with respect to our investments carried at fair value through other comprehensive income (see below).

Current and non-current liabilities
Total liabilities were $84,840 million as at 31 December 2019, compared to $83,289 million as at 31 December 2018. Current liabilities decreased from $40,372 million to $39,448 million, primarily due to a reduction in income tax payable of $755 million and current borrowings of $594 million, offset by an increase in fair values of our derivatives/hedging instruments (other financial liabilities), on account of movements in commodity prices and foreign exchange rates. Non-current liabilities increased from $42,917 million to $45,392 million, primarily due to increases in non-current borrowings of $2,643 million (including $1,158 million of lease liabilities under IFRS 16), an increase in provisions of $478 million, mainly due to the updated rehabilitation estimates (primarily due to lower risk-free discount rates), offset by a decrease in deferred tax liabilities of $865 million, primarily due to the tax-effect of impairments noted above.

Movements relating to current and non-current borrowings are set out below in the net funding and net debt movement reconciliation.

Equity
Total equity was $39,236 million as at 31 December 2019, compared to $45,383 million as at 31 December 2018, owing primarily to share buybacks of $2,318 million and shareholder distributions of $3,015 million (of which $2,710 million was to Glencore shareholders and $305 million to non-controlling interests).

Cash flow and net funding/debt

Net funding

US$ million	31.12.2019	31.12.2018
Total borrowings as per financial statements	37,043	34,994
Proportionate adjustment – net funding[1]	(778)	(810)
Cash and cash equivalents	(1,899)	(2,046)
Net funding◊	**34,366**	**32,138**

Cash and non-cash movements in net funding

US$ million	31.12.2019	31.12.2018
Cash generated by operating activities before working capital changes	10,346	13,210
Proportionate adjustment – Adjusted EBITDA[1]	1,522	1,893
Other non-cash adjustments included within EBITDA	13	(6)
Net interest paid[1]	(1,368)	(1,200)
Tax paid[1]	(2,814)	(2,406)
Dividends received from associates[1]	166	104
Funds from operations◊	**7,865**	**11,595**
Net working capital changes[2]	2,175	1,526
Acquisition and disposal of subsidiaries – net[2]	(117)	(2,834)
Exchangeable loan provided for a conditional acquisition of an oil refinery/downstream business	–	(1,044)
Purchase and sale of investments – net[2]	(6)	(3)
Purchase and sale of property, plant and equipment – net[2]	(4,966)	(4,899)
Net margin receipts/(calls) in respect of financing related hedging activities	529	(507)
Acquisition of non-controlling interests in subsidiaries	(24)	(58)
Distributions paid and transactions of own shares – net	(5,327)	(5,144)
Cash movement in net funding	**129**	**(1,368)**
Net funding acquired in business combinations	(225)	(138)
Impact of adoption of IFRS 16	(865)	–
Change in lease obligations	(582)	(90)
Foreign currency revaluation of borrowings and other non-cash items	(685)	511
Total movement in net funding	**(2,228)**	**(1,085)**
Net funding◊, beginning of the year	(32,138)	(31,053)
Net funding◊, end of year	**(34,366)**	**(32,138)**
Less: Readily marketable inventories[2]	16,810	17,428
Net debt◊, end of year	**(17,556)**	**(14,710)**

1 Refer to APMs section for definition and reconciliations.
2 Refer to Other reconciliations section.

Other comprehensive income/(expense)

A gain of $285 million was recognised during 2019, compared to a loss of $1,518 million in 2018 primarily relating to mark-to-market adjustments with respect to our investment in EN+ and Russneft (see note 10) and exchange gains on translation of foreign operations.

The reconciliation in the table above is the method by which management reviews movements in net funding and net debt and comprises key movements in cash and any significant non-cash movements on net funding items.

Net funding as at 31 December 2019 increased by $2,228 million to $34,366 million and net debt (net funding less readily marketable inventories) increased by $2,846 million over the period to $17,556 million. A major contributor to the increase in both metrics was the adoption of the new lease accounting standard, effective 1 January 2019, which resulted in $865 million (non-cash) of new lease liabilities being recognised (see note 1), while $582 million of additional new leases (non-cash) were booked as capital expenditures and debt in 2019, that previously would have been classified as operating leases. Funds from operations were down 32% compared to 2018, owing in large part to the reduction in commodity prices (particularly coal and cobalt) and cashflow underperformance from the African copper portfolio as noted above. Funds from operations was also materially impacted by the lag of income taxes paid in 2019, in respect of 2018 profitability (note the reduction in balance sheet income tax payable of $755 million, mainly attributable to the Australian operations and Mutanda), as well as $238 million of taxes paid in 2019, expected to be offset against future taxes due or refunded. Despite such impacts, funds from operations along with a net release of working capital, more than covered the $4,966 million of net capital expenditure, $147 million of net acquisitions of subsidiaries and investments and $5,327 million of distributions to shareholders and non-controlling interests.

Business and investment acquisitions and disposals

Net outflows on acquisitions/investments were $147 million (2018: $2,895 million) over the year, comprising primarily minority buy-outs within existing operations (additional 10% in Ulan and 2.7% in Hail Creek). The net outflow in 2018 was primarily due to the acquisition of a 49% interest in the HVO coal mine, an operation neighbouring many of our existing New South Wales operations, and an 82% interest in the Hail Creek coking coal mine in Queensland. In October 2018, Glencore advanced $1,044 million to acquire the Astron Energy in South Africa.

Liquidity and funding activities

In 2019, the following significant financing activities took place:

- In March 2019 (effective May 2019), Glencore signed new one-year revolving credit facilities of $9,775 million, refinancing the $9,085 million one-year revolving facilities signed in March 2018. Funds drawn under the facilities bear interest at US$LIBOR plus a margin of 40 basis points. Glencore also voluntarily reduced the medium term facility size from $5,115 million to $4,650 million, extended the facility to five years, and replaced the two one-year extension options. As at 31 December 2019, the facilities comprise:
  - a $9,775 million one-year revolving credit facility with a 12-month borrower's term-out option (to May 2021) and a one-year extension option; and
  - a $4,650 million medium-term revolving credit facility (to May 2024), with two one-year extension options

- In March 2019, issued a 5-year $1,000 million, 4.125% coupon bond
- In March 2019, issued a 10-year $750 million, 4.875% coupon bond
- In March 2019, issued a 7-year GBP 500 million 3.125% coupon bond
- In April 2019, issued a 7-year EUR 500 million 1.50% coupon bond
- In September 2019, issued a 6-year CHF 250 million 0.35% coupon bond
- In September 2019, issued a 5-year EUR 600 million 0.625% coupon bond

As at 31 December 2019, Glencore had available committed undrawn credit facilities and cash amounting to $10.1 billion.

Credit ratings

In light of the Group's extensive funding activities, maintaining investment grade credit rating status is a financial priority. The Group's credit ratings are currently Baa1 (stable outlook) from Moody's and BBB+ (stable) from Standard & Poor's. Glencore's publicly stated objective, as part of its overall financial policy package, is to seek and maintain strong Baa/BBB credit ratings from Moody's and Standard & Poor's respectively. In support thereof, Glencore targets a maximum 2x Net debt/Adjusted EBITDA ratio through the cycle, augmented by an upper Net debt cap of c.$16 billion, excluding Marketing related finance lease liabilities ($0.6 billion as at 31 December 2019, representing primarily charted vessels and various storage facilities, where the majority of such commitments expire within 2 years). As noted earlier in 2019, in the current uncertain economic cycle backdrop, Glencore aims to limit the Net debt/Adjusted EBITDA ratio to closer to 1x, which will require some targeted management over the next 12 months.

Value at risk

One of the tools used by Glencore to monitor and limit its primary market risk exposure, namely commodity price risk related to its physical marketing activities, is the use of a value at risk (VaR) computation. VaR is a risk measurement technique, which estimates the potential loss that could occur on risk positions as a result of movements in risk factors over a specified time horizon, given a specific level of confidence. The VaR methodology is a statistically defined, probability based approach that takes into account market volatilities, as well as risk diversification by recognising offsetting positions and correlations between commodities and markets. In this way, risks can be measured consistently across all markets and commodities and risk measures can be aggregated to derive a single risk value. Glencore has set a consolidated VaR limit (1 day 95%) of $100 million representing some 0.2% of equity, which was not exceeded during the period. Glencore uses a one-day VaR approach based on a Monte Carlo simulation with a weighted data history computed at a 95% confidence level.

Average market risk VaR (1 day 95%) during 2019 was $27 million, representing less than 0.1% of equity. Average equivalent VaR during 2018 was $34 million.

Recommended distribution

The Directors have recommended a 2019 financial year cash distribution of $0.20 per share amounting to $2.6 billion, accounting for own shares held as at 31 December 2019. Payment will be effected as a $0.10 per share distribution in May 2020 and a $0.10 per share distribution in September 2020 (in accordance with the Company's announcement of the 2020 Distribution timetable also made on 18 February 2020).

The distribution is to be effected as a reduction of the capital contribution reserves of the Company. As such, this distribution would be exempt from Swiss withholding tax. As at 31 December 2019, Glencore plc had CHF 27 billion of such capital contribution reserves in its statutory accounts. The distribution is subject to shareholders' approval at its AGM on 6 May 2020.

The distribution is ordinarily paid in US dollars. Shareholders on the Jersey register may elect to receive the distribution in sterling, euros or Swiss francs, the exchange rates of which will be determined by reference to the rates applicable to the US dollar around this time. Shareholders on the Johannesburg register will receive their distribution in South African rand. Further details on distribution payments, together with currency election and distribution mandate forms, are available from the Group's website **glencore.com** or from the Company's Registrars.

Basis of presentation

The financial information in the Financial and Operational Review is on a segmental measurement basis, including all references to revenue (see note 2) and has been prepared on the basis as outlined in note 1 of the financial statements, with the exception of the accounting treatment applied to relevant material associates and joint ventures for which Glencore's attributable share of revenues and expenses are presented. In addition, the Peruvian listed Volcan, while a subsidiary of the Group, is accounted for under the equity method for internal reporting and analysis due to the relatively low economic interest (23%) held by the Group.

During the period, key members of the Group's Metals and minerals and Energy products segments retired and a new position with oversight and responsibility for all of Glencore's industrial assets (Head of Industrial Assets) was created. Internal reporting lines and organisational structures were amended such that Glencore's industrial activities report to the Head of Industrial Assets and all of its marketing activities report to the Head of Marketing (being the Group CEO). The change in oversight and responsibility for the two differing parts of our business (marketing and industrial) and associated remuneration has resulted in a change in the "chief operating decision makers" reporting and accountability structures and, with it, our reportable segments. Aligning with the new executive structure and respective operational oversight and responsibility, the new reportable segments are – "Industrial" and "Marketing" activities.

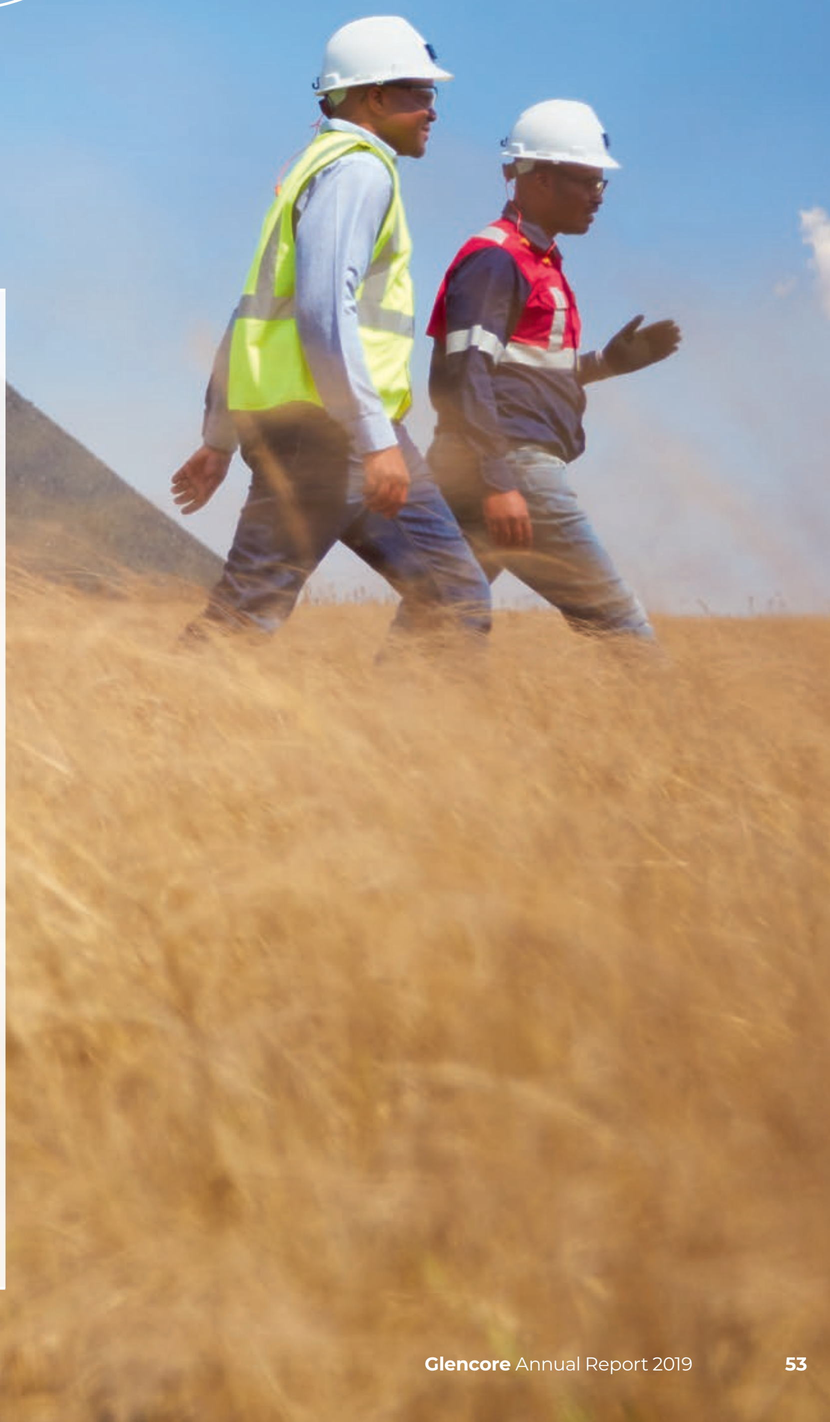
Comparative 2018 information has been restated for the change in reportable segments.

The Group's results are presented on an "adjusted" basis, using alternative performance measures (APMs) which are not defined or specified under the requirements of IFRS, but are derived from the financial statements, prepared in accordance with IFRS, reflecting how Glencore's management assess the performance of the Group. The APMs are provided in addition to IFRS measures to aid in the comparability of information between reporting periods and segments and to aid in the understanding of the activities taking place across the Group by adjusting for Significant items and by aggregating or disaggregating (notably in the case of relevant material Associates accounted for on an equity basis) certain IFRS measures. APMs are also used to approximate the underlying operating cash flow generation of the operations (Adjusted EBITDA). Significant items (see reconciliation on page 48) are items of income and expense, which, due to their nature and variable financial impact or the expected infrequency of the events giving rise to them, are separated for internal reporting, and analysis of Glencore's results.

Alternative performance measures are denoted by the symbol ◊ and are further defined and reconciled to the underlying IFRS measures in the APMs section on page 228.

Responsibility

Managing our impact where we operate



Innocent Mtshweni
Environmental Officer –
Glencore Coal, South Africa

Innocent's role as an environmental officer is to implement Glencore's Environmental Management Programme (EMPR), managing land rehabilitation, water and air quality.

"It takes someone who is dedicated, hardworking, driven, and who really cares about the environment. What encourages me is playing my part to ensure we conduct our mining activities in line with best-practice."

See more stories like this
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Our Marketing business

We responsibly source the commodities that advance everyday life – this means moving them from where they are plentiful to where they are needed

Market insight and customer understanding
Our global scale and presence in more than 60 commodities across 35 countries gives us extensive market knowledge and insight to help us fully understand the needs of our customers.

Anticipating supply and demand
Our strategy seeks to maximise value through our integrated marketing and industrial businesses working side-by-side to give us presence across the entire supply chain, delivering in-depth knowledge of physical market supply and demand dynamics and an ability to rapidly adjust to market conditions.

Creating opportunities
The significant scale of both our own production and the volumes secured from third parties allows us to create margin opportunities from our ability to supply the exact commodities the market needs through processing and/or blending and optimisation of qualities.

Generating revenue
We generate revenues as a fee-like income from physical asset handling and arbitrage, as well as blending and optimisation opportunities. Our use of hedging instruments results in profitability being largely determined by these activities rather than by absolute price movements.

Ivan Glasenberg
Chief Executive Officer

Marketed volumes (mt/bbl)

Copper 4.1m	**Zinc** 3.1m
Nickel 181k	**Ferroalloys** 9.5m
Lead 1.1m	**Coal** 93.5m
Alumina/ aluminium 11.0m	**Crude oil** 973m

Arbitrage opportunities

Many of the physical commodity markets in which we operate are fragmented or periodically volatile. This can result in arbitrage: price discrepancies between the prices for the same commodities in different geographic locations or time periods.

Other factors with arbitrage opportunities include freight and product quality.

Geographic arbitrage

Disparity
Different prices for the same product in different geographic regions, taking into account transportation and transaction costs.

Execution
Leverage global relationships and production, processing and logistical capabilities to source product in one location and deliver in another.

Product arbitrage

Disparity
Pricing differences between blends, grades or types of commodity, taking into account processing and substitution costs.

Execution
Ensure optionality with commodity supply contracts, and look to lock-in profitable price differentials through blending, processing or end-product substitution.

Time arbitrage

Disparity
Different prices for a commodity depending on whether delivery is immediate or at a future date, taking into account storage and financing costs.

Execution
Book "carry trades" that benefit from competitive sources of storage, insurance and financing.

Highlights

Marketing Adjusted EBITDA increased by 6% to $2,637 million and Adjusted EBIT decreased by 2% to $2,366 million, the former benefiting from the new lease accounting standard, requiring the capitalisation of various previously reported operating lease expenses, including many of our chartering and storage commitments (see note 1). Such previously reported lease expenses are now split over time between depreciation and interest expense.

Marketing Adjusted EBIT was in-line with 2018, as lower contributions from Metals and minerals were offset by increased contributions in Energy products.

Metals and minerals Adjusted Marketing EBIT was down 37%, primarily on account of the challenging cobalt markets in H1 and resulting inventory writedown on material sourced from Glencore mines in earlier periods, as discussed previously, and some overall softening in end-user demand due to global trade tensions, which prevailed through most of 2019.

Energy products Adjusted EBIT was up 78%, owing to oil, which delivered particularly strong results on the back of supportive physical commodity marketing conditions.

Financial overview

US$ million	**Metals and minerals**	**Energy products**	**Corporate and other[1]**	**2019**	Metals and minerals	Energy products	Corporate and other[1]	2018 Restated[2]
Revenue◊	73,561	120,627	–	194,188	72,744	129,930	–	202,674
Adjusted EBITDA◊	1,169	1,515	(47)	2,637	1,767	795	(70)	2,492
Adjusted EBIT◊	1,089	1,324	(47)	2,366	1,742	742	(70)	2,414
Adjusted EBITDA margin	1.6%	1.3%	n.m.	1.4%	2.4%	0.6%	n.m.	1.2%

1 Corporate and other Marketing activities includes $58 million (2018: $21 million) of Glencore's equity accounted share of Glencore Agri.
2 Adjusted to present mark-to-market movements on forward physical sales contracts within revenue (see note 1)

Market variables

Selected average commodity prices

	2019	2018	Change %
S&P GSCI Industrial Metals Index	326	362	(10)
S&P GSCI Energy Index	199	224	(11)
LME (cash) copper price ($/t)	6,005	6,527	(8)
LME (cash) zinc price ($/t)	2,548	2,919	(13)
LME (cash) lead price ($/t)	1,999	2,239	(11)
LME (cash) nickel price ($/t)	13,944	13,118	6
Gold price ($/oz)	1,393	1,269	10
Silver price ($/oz)	16	16	–
Metal Bulletin cobalt price 99.3% ($/lb)	16	37	(57)
Ferro-chrome 50% Cr import, CIF main Chinese ports, contained Cr (¢/lb)	77	90	(14)
Iron ore (Platts 62% CFR North China) price ($/DMT)	90	66	36
Coal API4 ($/t)	72	100	(28)
Coal Newcastle (6,000) ($/t)	78	107	(27)
Oil price – Brent ($/bbl)	64	72	(11)

Currency table

	Spot 31 Dec 2019	Spot 31 Dec 2018	**Average 2019**	Average 2018	Change in average %
AUD : USD	0.70	0.70	0.69	0.75	(7)
USD : CAD	1.30	1.36	1.33	1.30	2
USD : COP	3,287	3,254	3,283	2,956	11
EUR : USD	1.12	1.15	1.12	1.18	(5)
GBP : USD	1.33	1.28	1.28	1.33	(4)
USD : CHF	0.97	0.98	0.99	0.98	1
USD : KZT	383	381	383	345	11
USD : ZAR	14.00	14.35	14.45	13.25	9

Market highlights

Copper

2019E global refined copper production[1]

+0.4%

Global visible copper inventory end-2019

c.10 days'

consumption[1]

Incremental copper demand from wind power in 2029[2]

1Mt pa

22Mt

Additional cumulative copper needed by 2030 to meet government CO_2 emission targets[2]

Zinc

2019 Chinese zinc mine supply[3]

-1%

keeping production at 2015 levels[4]

2019E global refined zinc supply[4]

+1.9%

2019 forecast one year ago: +6.4%[5]

4th

Consecutive year of zinc metal market deficits[4]

Global visible zinc exchange inventory end-2019

c.2 days'

consumption[4]

Nickel

2016-2019E cumulative nickel market deficit[6]

395kt

Global visible nickel inventory end-2019

c.22 days'

consumption[6]

+23%

2019E global nickel demand growth in batteries, to around 184kt[7]

>400kt

New electric vehicle nickel demand by 2025[8]

Coal

2019E Pacific share of global seaborne thermal coal demand[7]

86%

2019E Pacific seaborne thermal coal demand growth[7]

+5.9%

Required for new coal fired generation capacity build in Asia/Middle East by 2030[9]

>150Mt

Coal share of 2018 world electricity generation[10]

38.1%

1 Wood Mackenzie Copper long-term outlook Q4 2019 update, visible inventories comprise LME, SHFE, Comex and estimated Chinese bonded warehouse stock
2 Bernstein, Metals & Mining: Copper and the Green economy – Thoughts from our decarbonisation conference, European Commission Joined Research Centre EDGAR, International Energy Agency (IEA), U.S. Department of Energy, "Government Targets 2030" gradual reduction in emissions – Mid level scenario
3 National Bureau of Statistics of China
4 Wood Mackenzie Zinc long-term outlook Q4 2019 update, exchange inventories comprise LME and SHFE
5 Wood Mackenzie Zinc long-term outlook Q4 2018 update
6 Glencore estimates, visible inventories comprise LME and SHFE
7 Glencore estimates
8 Glencore estimates and B3 Corp, based on 11.5m new passenger EV sales by 2025, c.10% penetration rate
9 Glencore estimates excluding China
10 IEA World Energy Outlook 2019

Selected marketing volumes sold

	Units	2019	2018	Change %
Copper metal and concentrates[1]	mt	4.1	4.5	(9)
Zinc metal and concentrates[1]	mt	3.1	3.2	(3)
Lead metal and concentrates[1]	mt	1.1	0.9	22
Gold	moz	2.1	2.0	5
Silver	moz	68.3	81.4	(16)
Nickel	kt	181	199	(9)
Ferroalloys (incl. agency)	mt	9.5	9.0	6
Alumina/aluminium	mt	11.0	10.2	8
Iron ore	mt	65.5	79.6	(18)
Thermal coal[2]	mt	86.7	94.4	(8)
Metallurgical coal[2]	mt	6.5	3.6	81
Coke[2]	mt	0.3	0.6	(50)
Crude oil	mbbl	973	944	3
Oil products	mbbl	779	760	3

1 Estimated metal unit contained.
2 Includes agency volumes.

Market review and outlook

Despite subdued 2019 demand, commodity markets remained tightly balanced through the year. With inventory levels drawn down to multi-year lows by year-end, our markets are well positioned to benefit from key future demand growth trends

Copper

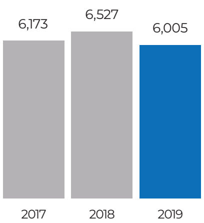
During 2019, the copper price averaged $6,005/t, 8% lower than 2018. Throughout much of 2019, demand growth and sentiment was negatively impacted by uncertainty on trade and tariffs. Mine supply contraction, including production disruptions appeared to have had little meaningful impact on copper market sentiment. Demand in China, which accounts for approximately 50% of global refined copper consumption, improved markedly towards the end of the year on prospects of a trade agreement between China and the U.S. and targeted monetary policy easing, resulting in world refined copper demand increasing in 2019, albeit at a lower rate than seen in recent years.

Refined copper inventories progressively reduced, reaching multiyear lows in H2, while competition for concentrates was driven by smelting capacity growth in China. China imported record volumes of concentrates which more than offset an anticipated decline in refined copper imports. As a result, spot treatment/refining charges in H1 reached the lowest level since 2013 which, supported by stricter Chinese scrap import regulations, remained at low levels through H2. Cathode premiums also improved during H2, although decreased towards year-end, given seasonal lower demand ahead of Chinese New Year.

For 2020, annual treatment/refining charges settled at their lowest levels in nearly 10 years and benchmark annual cathode premiums were rolled over at 2019 levels, signalling a positive demand outlook and anticipated restocking through the supply chain.

In the longer term, we expect copper markets to grow at solid rates, driven by population growth and rising living standards in emerging economies. In addition, climate change policies are likely to be a driver for key copper growth sectors going forward, from renewable power generation and distribution, to energy storage and electric vehicles. Longer term, mine supply growth is likely to be constrained by ageing assets, declining ore grades and a diminished project pipeline.

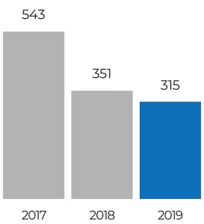
Average LME (cash) copper price ($/t)



-8%

The copper price decreased during 2019 with market sentiment negatively impacted by uncertainty on trade and tariffs

Copper exchange inventory (kt) (LME, SHFE, Comex)



-10%

Refined copper inventories progressively reduced during 2019, reaching multiyear lows in H2

Cobalt

During 2019, the cobalt price averaged $16/lb, 57% lower than 2018. The price decline in H2 2018 continued into 2019, with continuation of destocking across the supply chain. Prices fell from $27/lb in January to a low of $12/lb in late July. The resultant pressure on margins across the cobalt mining and refining complex prompted supply responses, with a reduction seen in artisanal sourced cobalt and a number of industrial projects being delayed. Within our own operations, we announced the transition to care and maintenance of Mutanda due to various factors including the weak cobalt price. The supply response saw prices recover to $18/lb. Prices gave up some gains into year-end, with sentiment negatively impacted by weaker than anticipated Chinese electric vehicle sales. Nevertheless, the market found price support at c.$15/lb, given lower stock levels across the cobalt supply chain and expectations of improved demand conditions in 2020.

2020 marks the start of significant electric vehicle model releases by global automakers, which should underpin electric vehicle (EV) sales growth in key markets including Europe. While Chinese EV sales were lower in H2 2019, the scale of continued investment, the strategic status of the industry within China and the continued roll-out of models, points to strong future demand. Sentiment in the mobile phone market, a major cobalt demand segment, has also improved with the onset of 5G handset sales.

Nickel

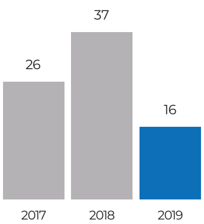
In 2019, primary nickel consumption exceeded supply for a fourth consecutive year, showing a deficit of around 25kt, with a resultant 4-year cumulative deficit of approximately 395kt. A significant deficit developed in H1 2019, which was partially reversed in H2, basis weaker demand growth and a significant increase in Nickel Pig Iron (NPI) production in both China and Indonesia.

Nickel demand from stainless steel manufacturing in China was strong all year, driven by increased production of high nickel content 300-series steel. Stainless production across other regions was relatively weak. Nickel usage in specialist steels and alloys was below expectations, mainly due to ongoing weakness in the automotive sector, and to a lesser extent, oil and gas. Growth of primary nickel demand in batteries remained strong, albeit slower in H2 after China substantially cut subsidies for New Energy Vehicles. Overall, we estimate primary nickel demand in 2019 of 2.45Mt, representing a 2.7% increase on 2018.

Meanwhile, Chinese and Indonesian NPI increased by 23% and 50% respectively on the prior year, driving a significant increase in overall supply, despite the continued underperformance from non-NPI suppliers. Overall, global nickel output in 2019 is estimated at 2.425Mt, marking a 10% increase on 2018.

A critical development during 2019 was Indonesia's decision to advance the ban on nickel ore exports to the beginning of 2020 rather than 2022, as originally scheduled, which should result in a reduction of NPI production in China. Nevertheless, we forecast such decline to be offset by the continued ramp up of NPI capacity in Indonesia. Overall, we project a balanced market in 2020.

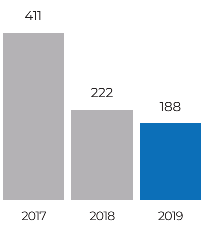
Average MB cobalt price 99.3% ($/lb)



-56%

The cobalt price decline in H2 2018 progressed into 2019, as destocking continued across the supply chain

Nickel exchange inventory (kt) (LME, SHFE)



-15%

Nickel exchange stocks decreased in 2019 as primary nickel consumption exceeded supply for a fourth consecutive year

Zinc

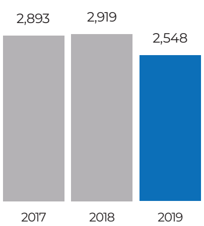
The anticipation of large increases in both zinc concentrate and metal supply, plus the global macroeconomic uncertainty, weighed negatively on zinc market sentiment during 2019. Despite recording another metal deficit year in 2019, resulting in historically low visible zinc metal stocks, the zinc price averaged \$2,549/t, 13% lower than 2018. Concentrates supply, ex China, grew YoY, but the effect was considerably lower than initially expected, increasing by only 150–200kt. Delays in project ramp-ups, operational issues and labour strikes were the primary drivers of such underperformance. In China, per the National Bureau of Statistics (NBS), 2019 mine production decreased 1% on the prior year.

Metal production in China (per NBS) did respond in H2 2019. Smelters resumed partially idled production, following additional environmental controls imposed in 2018, with such capacity filled with imported concentrates. Chinese metal production is reported to have grown by 526kt (9.2%). In the rest of the world however, negative growth of 130k (-1.7% year on year) has been reported. Despite the increase in reported global metal production, visible zinc metal stocks continued to be drawn. Compared to December 2018, LME and SHFE stocks dropped by 60% and 40% respectively to 51kt and 28kt at December 2019, signalling that zinc demand was sufficient to absorb the additional units.

Looking ahead, zinc mine supply is expected to continue growing, given the current project pipeline. However, the current combination of low prices and high treatment charges is pressuring mining profitability, which may result in supply disruption in the short to medium term. We believe that metal production increases are necessary for the market to restock from the current multi-year lows.

Lead recorded an average price of \$1,998 in 2019 (down by 11% vs 2018). The metal price has been under pressure throughout the year as demand growth has been soft, while metal production in China, as well as from secondary sources, has continued to grow.

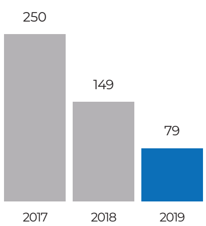
Average LME (cash) zinc price (\$/t)



-13%

The anticipation of large increases in zinc supply and macroeconomic uncertainty weighed on the zinc price in 2019

Zinc exchange inventory (kt)
(LME, SHFE)



-47%

2019 marked another zinc metal deficit year, reducing visible exchange stocks to historically low levels

Alumina/Aluminium

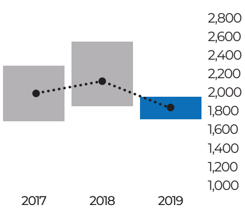
2019 saw an easing of nearly all the tensions that drove the market during 2018, including Rusal sanctions being lifted in January and the Alunorte production embargo ending in May.

The aluminium price in 2019 traded in its narrowest range since 2002, between $1,704/t and $1,952/t. This contrasts sharply with the price volatility seen in 2018, which saw the widest price range (~$700/t) since the 2008/09 Global Financial Crisis.

In the U.S., the delivered Midwest premium declined throughout the year from 19c/lb at the beginning of the year to 14.5c/lb at the end of the year, following the relaxation of tariffs on Canadian imports.

Alumina prices declined over the year, finding a floor in H2 at just below $280/t (FOB Australia), supported by Chinese buying interest. The decline in alumina prices provided some relief for aluminium smelters after a challenging alumina/aluminium price ratio prevailing during the preceding 2 years.

LME (cash) aluminium price ($/t)



Range
Average

-4%

The aluminium price decreased in 2019, trading in its narrowest range since 2002

Ferroalloys

Chinese stainless steel production grew 13% during 2019, contrasting a 5% decline in ROW melt rates. Ferrochrome production in China increased 13% year-on-year, supported by a 20% increase in chrome ore exports from South Africa. On the other hand, South African smelted ferrochrome exports declined 4% during 2019, owing to the relatively high costs of smelting in South Africa (versus China) exacerbated by power shortages in H2 2019. Ferrochrome demand ex China was weak. The environment for ferrochrome producers in South Africa is expected to remain challenging, with further capacity additions expected in China.

Vanadium prices continued to decline throughout 2019 as a result of weaker demand from Western steel markets and continued substitution from niobium. In China, increased output from vanadium-bearing slag was met by stronger domestic demand from the construction sector (rebar).

Iron ore

Supply disruptions, primarily the Brumadinho dam failure, affected the market throughout 2019. From around $70/t at the start of 2019, prices peaked around $120/t in July, before a sharp sell-off in August, as the market reassessed the extent of disruptions. After a volatile few months, prices settled in the high 80's. High grade premiums reduced significantly in H1 as steel margins decreased, basis the higher iron ore prices, however once prices began to fall, and with the Chinese steelmaking market in good health, high grade premiums then stabilised and improved.

Coal

In 2019, global seaborne thermal coal demand was characterised by continuation of the strong growth trend in Pacific markets and demand decline in the Atlantic, principally Europe. This trend was accelerated by surplus global LNG supply, resulting in enhanced competition from low spot gas prices in European markets. Together with higher EU CO_2 prices and increased renewables power generation, some thermal coal supply was displaced from the Atlantic market into the Pacific and sub-continent.

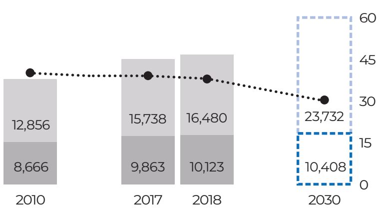
Global 2019 seaborne thermal coal demand is estimated to have grown some 1.5% versus 2018, with strong Pacific demand growth of 5.9% or 47Mt, more than offsetting an 18% or 30Mt demand decline in the smaller Atlantic market. Seaborne thermal coal supply growth came principally from Indonesia and Russia, with Australia being almost flat YoY. Supply declined from Colombia and the U.S., where prices fell below costs and from South Africa where strong domestic demand reduced export availability.

In 2019, Vietnamese imported thermal coal volumes increased 95% or 15Mt YoY, India was up 5.3% or 9Mt, while China was up 13% or 24Mt. The Asia Pacific (excluding China) market is expected to see 29GW of coal fired generation capacity enter service through 2020/2021, which will continue to support coal demand growth across the region.

The various coal indices/qualities responded in distinct ways to changing market dynamics over 2019. High European CO_2 prices and low LNG prices resulted in the API2 coal price index declining 34% from the January 2019 high to December. While prices for high-quality South African thermal coal declined substantially through to mid-year, Indian demand strength in Q4 saw API4 prices recover strongly to end 2019 only 8% below January levels. The Newcastle globalCoal index ended the year 33% below January levels, while prices for Australian high ash coals declined 16% over the course of 2019.

Global pig iron production was up 2.4% YoY, with China and India up 5.3% and 3.6% respectively. Metallurgical coal import countries, excluding China, reported a 2.1% reduction in pig iron production with declines in Europe (-4.3%), South America (-8.0%) and Japan (-4.8%) being most significant. Reflecting such, global seaborne coking coal demand is estimated to have declined just over 1% in 2019. The weaker coal demand saw spot HCC prices fall during H2 2019, to end 32% below January's price levels.

Coal % of global electricity demand

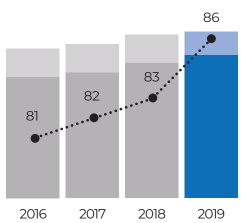


Coal
Global electricity generation ex Coal
Coal (%)
Source: IEA

38.1%

While coal's share of global electricity demand declined in 2018, coal demand increased in volume terms

Seaborne thermal coal demand



Pacific
ROW
Pacific share (%)
Source: IEA

86%

The thermal coal demand swing to Asia continued in 2019, reflecting the start up of new coal-fired power generation capacity

Oil

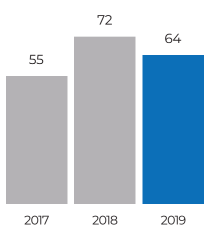
Most commodity and capital markets, including oil, responded through 2019 to the U.S.-China trade tensions and the perceived impact it may have on global growth expectations and oil demand. Initial optimism on the trade front, coupled with signs of tightening supply, saw oil prices stage a strong recovery at the start of 2019 from $50/bbl for Brent in late December 2018 to almost $75/bbl by April. However, markets subsequently sold off as trade tensions intensified, with Brent dropping below $60/bbl. It was only towards the end 2019, where renewed optimism on trade issues and OPEC+ signalling deeper production cuts, that oil prices rose to close the year above $65/bbl.

During the year, geopolitical tensions in the Middle East escalated with sporadic attacks on vessels and infrastructure, causing oil price and volatility spikes, none more so, than the drone strikes on Saudi Arabia's oil producing facilities in September, which interrupted equivalent to 5% of the world's oil production. Brent surged almost 20% and implied volatility jumped to over 45%, however swift action to restore production in the following weeks, calmed markets and oil sold off again.

The oil curve structure flipped from contango into backwardation at the start of 2019, signalling tightening markets. Refining margins recovered from the lows registered in late 2018. With the advent of the IMO 2020 international fuel standard for shipping, it was a year with significant changes in refinery configurations, resulting in large divergences of realised margins for those refineries able to upgrade or adapt to produce lower sulphur fuels. Towards the end the year, refining margins weakened across most regions, owing to various factors, including milder weather, lower demand and a surge in freight rates.

The rally in freight rates in H2 was driven by multiple forces. One important factor was U.S. sanctions being imposed on two subsidiaries of China's state-owned Cosco Shipping in September, placing nearly 300 oil carriers off-limits for traders. Although rates stabilised somewhat since then, it remains a relatively tight tanker freight market.

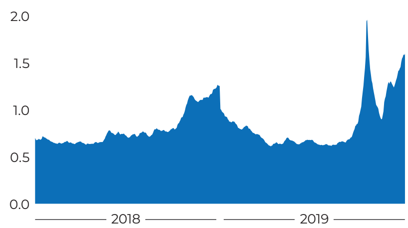
Average oil price – Brent ($/bbl)



-11%

While oil prices staged a strong recovery at the start of 2019, markets subsequently sold off as trade tensions intensified

Shipping rates (BIDY index)
('000 points)



The Baltic Dirty Tanker Index is made up of 12 routes taken from the Baltic International Tanker Routes.

Source: Bloomberg

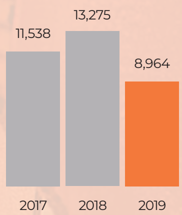
Our Industrial business

We are a major producer of commodities that support the energy and mobility transition, including copper, cobalt, nickel and zinc, while our high-quality coal provides affordable and reliable energy

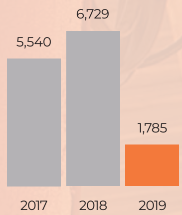
Although most of our assets performed as planned during 2019, our African copper business faced operational and cost challenges. We are implementing targeted strategies to achieve consistent, cost-effective production in the coming years

Peter Freyberg
Head of Industrial Assets

Adjusted EBITDA
(US$ million)



Adjusted EBIT
(US$ million)



Metals and minerals mining margin
28%
2018: 38%
Short-term impact of African Copper cash flow challenges, including the impact of lower cobalt sales

Energy products mining margin
37%
2018: 46%
Lower coal earnings, particularly in the Atlantic market

Equity coal production
139.5mt
Comfortably inside our c.150mt production cap

Katanga copper production
235kt
2018: 152kt
Delivering on its ramp-up

Capex
$5.3bn
2018: $5.1bn

Expansion capex
$1.3bn
Projects in Africa (copper/cobalt), Kazakhstan (zinc) and Canada (nickel)

Headcount

c.157,000
Employees & contractors

Own mineral resources
Reserve Life (approx. years)

Copper	Zinc	Nickel	Coal
22	17	24	14

In-house smelting/refining capability (ktpy)

Copper metal	Zinc metal	Lead metal
1,560	1,390	360

Ferrochrome	Nickel metal
2,339	139

Own sourced production in 2019

Copper (kt)	Cobalt (kt)	Zinc (kt)	Coal (mt)
1,371	46	1,078	139.5

Lead (kt)	Nickel (kt)	Ferrochrome (kt)	Oil (mbbl)
280	121	1,438	5.5

Safe working

Fatalities
17
2018: 13

TRIFR
2.86
2018: 3.18

LTIFR
0.99
2018: 1.06

Socio-economic contribution

Community support initiatives
$90m

Financial overview

US$ million	**Metals and minerals**	**Energy products**	**Corporate and other**	**2019**	Metals and minerals	Energy products	Corporate and other	2018
Revenue◊	27,672	15,067	4	42,743	31,385	12,660	24	44,069
Adjusted EBITDA◊	5,555	3,854	(445)	8,964	8,478	5,312	(515)	13,275
Adjusted EBIT◊	1,016	1,274	(505)	1,785	4,053	3,209	(533)	6,729
Adjusted EBITDA mining margin	28%	37%			38%	46%		

Highlights

Industrial Adjusted EBITDA decreased by 32% to $8,964 million compared to $13,275 million in 2018. The decrease was primarily driven by lower commodity prices, notably various coal markets, primarily impacted by weaker European demand/low gas price competition and ferrochrome and cobalt, where these markets were in oversupply throughout much of the year. Further to these negative price factors, Adjusted EBITDA/EBIT was impacted by the operational challenges in our African copper portfolio, which recorded an Adjusted EBITDA of negative $349 million, a significant drop from the $1,323 million contribution in 2018 (57% cobalt price reduction was the key driver; however material negative volume and cost variances also prevailed). Mutanda's copper production was 49% lower than 2018, as it scaled down operations, Katanga, although reporting higher cobalt production, had limited sales as it manages through a period of excess uranium content and delays in required drying capacity commissioning, while Mopani's copper metal production was 64% lower as, in June, it accelerated its major triennial smelter shut down (from 2020 schedule) and brought forward various other planned maintenance activities to address safety related issues. Adjusted EBITDA from Coal assets was $1,535 million lower than 2018, as lower coal prices (Benchmarks GC Newc down 26%, API4 down 28% and API2 down 38%) compared to 2018, outweighed the increased production contribution from the interests in the HVO and Hail Creek, acquired in late H1 2018 and H2 2018, respectively.

Reflecting the above challenges, Adjusted EBITDA mining margins were 28% in our metals operations (37% excluding African Copper and Koniambo) and 37% in our energy operations, down from 38% (41% excluding African Copper and Koniambo) and 46% respectively, in 2018. See page 68.

Reported capex at $5.3 billion was up 5% over the comparable period reflecting the impact of the new leasing standard ($295 million) and incremental capex from the HVO, Hail Creek and Astron acquisitions ($213 million). Two key ongoing projects advanced through the year (Kazzinc's Zhairem and INO Nickel), offsetting the reported decline at Koniambo, as it ceased capitalizing its development costs at the end of 2018.

Financial information

US$ million	2019	2018	Change %
Revenue◊			
Copper assets			
Collahuasi[1]	1,385	1,426	(3)
Antamina[1]	1,025	1,179	(13)
Other South America (Alumbrera, Lomas Bayas, Antapaccay)	1,709	2,113	(19)
Australia (Mount Isa, Ernest Henry, Townsville, Cobar)	1,836	1,941	(5)
Custom metallurgical (Altonorte, Pasar, Horne, CCR)	7,107	7,190	(1)
Africa (Katanga, Mutanda, Mopani)	2,829	4,493	(37)
Intergroup revenue elimination	(212)	(142)	n.m.
Copper	**15,679**	**18,200**	**(14)**
Zinc assets			
Kazzinc	2,906	3,163	(8)
Australia (Mount Isa, McArthur River)	1,292	1,481	(13)
European custom metallurgical (Portovesme, San Juan de Nieva, Nordenham, Northfleet)	922	1,189	(22)
North America (Matagami, Kidd, CEZ Refinery)	2,226	2,474	(10)
Other Zinc (Argentina, Bolivia, Peru)	400	468	(15)
Zinc	**7,746**	**8,775**	**(12)**
Nickel assets			
Integrated Nickel Operations (Sudbury, Raglan, Nikkelverk)	1,551	1,462	6
Australia (Murrin Murrin)	664	748	(11)
Koniambo	315	–	n.m.
Nickel	**2,530**	**2,210**	**14**
Ferroalloys	**1,716**	**2,197**	**(22)**
Aluminium/Alumina	**1**	**3**	**(67)**
Metals and minerals revenue◊	**27,672**	**31,385**	**(12)**
Coking Australia	1,544	1,286	20
Thermal Australia	5,951	6,309	(6)
Thermal South Africa	1,279	1,629	(21)
Prodeco	793	1,112	(29)
Cerrejòn[1]	494	838	(41)
Coal revenue (own production)	**10,061**	**11,174**	**(10)**
Coal other revenue (buy-in coal)	768	1,160	(34)
Oil E&P assets	350	326	7
Oil refining assets	3,888	–	n.m.
Energy products revenue◊	**15,067**	**12,660**	**19**
Corporate and other revenue	4	24	(83)
Total Industrial Activities revenue◊	**42,743**	**44,069**	**(3)**

1 Represents the Group's share of these JVs.

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US$ million	Adjusted EBITDA◊ 2019	2018	Change %	Adjusted EBIT◊ 2019	2018	Change %
Copper assets						
Collahuasi[1]	885	902	(2)	603	633	(5)
Antamina[1]	737	923	(20)	462	656	(30)
Other South America	859	936	(8)	264	234	13
Australia	449	424	6	121	92	32
Polymet	(7)	(5)	n.m.	(7)	(5)	n.m.
Custom metallurgical	377	227	66	227	46	n.m.
Copper, excluding African assets	**3,300**	**3,407**	**(3)**	**1,670**	**1,656**	**1**
Adjusted EBITDA mining margin[2]	49%	48%				
Africa	(349)	1,323	n.m.	(1,279)	296	n.m.
Copper	**2,951**	**4,730**	**(38)**	**391**	**1,952**	**(80)**
Adjusted EBITDA mining margin[2]	29%	40%				
Zinc assets						
Kazzinc	1,097	1,160	(5)	641	747	(14)
Australia	406	667	(39)	6	387	(98)
European custom metallurgical	166	196	(15)	50	91	(45)
North America	155	249	(38)	(59)	138	n.m.
Volcan	(44)	(36)	n.m.	(44)	(36)	n.m.
Other Zinc	(5)	81	n.m.	(109)	(42)	n.m.
Zinc	**1,775**	**2,317**	**(23)**	**485**	**1,285**	**(62)**
Adjusted EBITDA mining margin[2]	33%	37%				
Nickel assets						
Integrated Nickel Operations	657	592	11	235	158	49
Australia	105	206	(49)	81	157	(48)
Koniambo	(136)	–	n.m.	(249)	–	n.m.
Nickel	**626**	**798**	**(22)**	**67**	**315**	**(79)**
Adjusted EBITDA margin	25%	36%				
Adjusted EBITDA margin excl. Koniambo	34%	36%				
Ferroalloys	**246**	**670**	**(63)**	**116**	**542**	**(79)**
Aluminium/Alumina	**(40)**	**(38)**	**n.m.**	**(40)**	**(42)**	**n.m.**
Iron ore	**(3)**	**1**	**n.m.**	**(3)**	**1**	**n.m.**
Metals and minerals Adjusted EBITDA/EBIT◊	**5,555**	**8,478**	**(34)**	**1,016**	**4,053**	**(75)**
Adjusted EBITDA mining margin[2]	28%	38%				
Adjusted EBITDA mining margin excl. African Copper and Koniambo[2]	37%	41%				
Coking Australia	793	673	18	546	529	3
Thermal Australia	2,332	3,206	(27)	1,018	2,043	(50)
Thermal South Africa	324	685	(53)	23	389	(94)
Prodeco	43	208	(79)	(180)	32	n.m.
Cerrejòn[1]	132	387	(66)	(56)	197	n.m.
Coal	**3,624**	**5,159**	**(30)**	**1,351**	**3,190**	**(58)**
Adjusted EBITDA margin[3]	36%	46%				
Oil E&P assets	215	153	41	–	19	(100)
Oil refining assets	15	–	n.m.	(77)	–	n.m.
Energy products Adjusted EBITDA/EBIT◊	**3,854**	**5,312**		**1,274**	**3,209**	**(60)**
Adjusted EBITDA margin[3]	37%	46%				
Corporate and other	(445)	(515)	n.m.	(505)	(533)	n.m.
Industrial activities Adjusted EBITDA/EBIT◊	**8,964**	**13,275**	**(32)**	**1,785**	**6,729**	**(73)**

1 Represents the Group's share of these JVs.
2 Adjusted EBITDA mining margin for Metals and Minerals is Adjusted EBITDA excluding non-mining assets as described below ($4,941 million (2018: $7,880 million)) divided by Revenue excluding non-mining assets and intergroup revenue elimination ($ 17,628 million (2018: $20,671 million) i.e. the weighted average EBITDA margin of the mining assets. Non-mining assets are the Copper custom metallurgical assets, Zinc European custom metallurgical assets, Zinc North America (principally smelting/ processing), the Aluminium/Alumina group and Volcan (equity accounted with no relevant revenue) as noted in the table above.
3 Energy products EBITDA margin is Adjusted EBITDA for coal and Oil E&P (but excluding Oil refining) ($3,839 million (2018: $5,312 million)), divided by the sum of coal revenue from own production and Oil E&P revenue ($10,411 million (2018: $11,500 million)).

US$ million	2019 Sustaining	2019 Expansion	2019 Total	2018 Sustaining	2018 Expansion	2018 Total
Capital expenditure◊						
Copper assets						
Collahuasi[1]	298	25	323	263	25	288
Antamina[1]	228	5	233	201	7	208
Other South America	403	21	424	397	31	428
Australia	203	–	203	233	7	240
Polymet	–	9	9	–	–	–
Custom metallurgical	234	–	234	204	–	204
Africa	381	477	858	510	422	932
Copper	**1,747**	**537**	**2,284**	**1,808**	**492**	**2,300**
Zinc assets						
Kazzinc	209	236	445	165	171	336
Australia	293	–	293	279	–	279
European custom metallurgical	106	–	106	114	–	114
North America	68	6	74	100	11	111
Other Zinc	104	–	104	116	–	116
Zinc	**780**	**242**	**1,022**	**774**	**182**	**956**
Nickel assets						
Integrated Nickel Operations	164	289	453	160	182	342
Australia	16	–	16	22	1	23
Koniambo	39	–	39	–	215	215
Nickel	**219**	**289**	**508**	**182**	**398**	**580**
Ferroalloys	**141**	**8**	**149**	**159**	**1**	**160**
Aluminium/Alumina	**–**	**–**	**–**	–	–	–
Metals and minerals capital expenditure◊	**2,887**	**1,076**	**3,963**	**2,923**	**1,073**	**3,996**
Australia (thermal and coking)	358	121	479	240	103	343
Thermal South Africa	200	29	229	176	31	207
Prodeco	229	–	229	254	1	255
Cerrejòn	53	–	53	81	–	81
Coal	**840**	**150**	**990**	**751**	**135**	**886**
Oil E&P assets	201	–	201	157	–	157
Oil refining assets	121	–	121	–	–	–
Energy products capital expenditure◊	**1,162**	**150**	**1,312**	**908**	**135**	**1,043**
Corporate and other	–	74	74	–	38	38
Industrial activities capital expenditure◊	**4,049**	**1,300**	**5,349**	**3,831**	**1,246**	**5,077**

1 Represents the Group's share of these JVs.

Operating highlights

Copper assets

Own sourced copper production of 1,371,200 tonnes was 82,500 tonnes (6%) lower than in 2018. Approximately half of this (40,800 tonnes) related to the African Copper assets, with Katanga's ramp-up (+82,100 tonnes) partially offsetting Mutanda scaling down and placement into temporary care and maintenance and Mopani's extensive smelter refurbishment shutdown. The remainder primarily comprised relatively minor portfolio changes and maintenance.

Own sourced cobalt production of 46,300 tonnes was 4,100 tonnes (10%) higher than the comparable prior period, primarily reflecting Katanga's ramp-up.

Collahuasi

Attributable copper production of 248,800 tonnes was in line with 2018.

Antamina

Attributable copper production of 151,400 tonnes was in line with 2018. Attributable zinc production of 102,400 tonnes was 35,700 tonnes (26%) lower than in 2018, reflecting the expected progression of the mine plan.

Other South America

The 2018 base included 20,500 tonnes of copper and 124,000 ounces of gold relating to Alumbrera (open pit mining completed in Q3 2018) and Punitaqui (sold Q4 2018). After adjusting for such, 2019 copper production of 276,500 tonnes was in line with 2018 and gold production of 85,000 ounces was down 47,000 ounces (36%) due to expected lower grades at Antapaccay.

Australia

Own sourced copper production of 194,600 tonnes was 15,800 tonnes (8%) lower than in 2018, mainly relating to weather-related disruptions in Q1, the impact of which has been progressively caught up over the following quarters.

Custom metallurgical assets

Copper metal production of 432,900 tonnes was in line with 2018. Copper anode production of 510,700 tonnes was 31,400 tonnes (7%) higher than in 2018, mainly reflecting Altonorte's plant turnaround in the base period.

Africa

Own sourced copper production of 369,900 tonnes was 40,800 tonnes (10%) lower than in 2018, reflecting Mutanda scaling down before entering temporary care and maintenance (from November) and Mopani's comprehensive smelter refurbishment during H2, partially offset by Katanga's continued ramp-up to 235,000 tonnes (from 152,400 tonnes).

Reflecting Mopani's lengthy smelter maintenance shutdown in H2 2019, African copper production includes 10,600 tonnes of copper contained in concentrate that will either be sold or processed into cathode once the smelter restarts.

Own sourced cobalt production of 42,200 tonnes was 3,800 tonnes (10%) higher than in 2018, reflecting Katanga's ramp-up, partly offset by Mutanda scaling down as it entered care and maintenance in Q4 2019.

Zinc assets

Own sourced zinc production of 1,077,500 tonnes was in line with 2018, reflecting the effects of stronger production (mine restarts) in Australia and Peru, largely offset by reduced own sourced production at Kazzinc for safety reasons and expected lower zinc production from Antamina due to mine scheduling.

Kazzinc

Own sourced zinc production of 172,500 tonnes was 28,700 tonnes (14%) lower than in 2018, mainly reflecting slower than expected mining at Tishinsky mine, due to safety considerations. A mechanical failure at the Ridder concentrator in Q4 resulted in ore being stockpiled in front of the concentrator, in advance of its processing in 2020.

Own sourced lead production of 34,400 tonnes was 21,200 tonnes (38%) lower than in 2018, reflecting completion of one of the older Zhairem pits. Workers and equipment have moved to the new Zhairem zinc mine currently being developed.

Own sourced copper production of 44,000 tonnes was 8,400 tonnes (16%) lower than in 2018, mainly due to rebricking of the Isa furnace in H1 2019.

Own sourced gold production of 634,000 ounces was in line with 2018.

Australia

Zinc production of 597,600 tonnes was 65,100 tonnes (12%) higher than in 2018, reflecting the full-year contribution from Lady Loretta mine (Mount Isa), following its 2018 restart, and improved processing rates at McArthur River.

Lead production of 213,300 tonnes was 37,500 tonnes (21%) higher than in 2018, mainly relating to Lady Loretta.

North America

Zinc production of 111,400 tonnes was 10,300 tonnes (10%) higher than in 2018, mainly reflecting higher throughput at Matagami as it accesses a wider section of the deposit.

Copper production of 39,100 tonnes was in line with 2018.

South America

Own sourced zinc production of 93,600 tonnes was in line with 2018, reflecting the recent restart of the Iscaycruz mine in Peru, offset by challenging mining conditions at Aguilar in Argentina.

Own sourced lead production of 32,300 tonnes was 9,600 tonnes (23%) lower than in 2018, mainly relating to Aguilar.

European custom metallurgical assets

Zinc metal production of 805,700 tonnes and lead metal production of 190,500 tonnes were in line with 2018.

Nickel assets

Own sourced nickel production of 120,600 tonnes was 3,200 tonnes (3%) lower than in 2018, mainly reflecting a number of maintenance stoppages at Koniambo.

Integrated Nickel Operations (INO)

Own sourced nickel production of 60,300 tonnes was in line with 2018. Own sourced copper production of 44,200 tonnes was 2,800 tonnes (7%) higher; however copper production is expected to reduce over the medium term as the existing Sudbury mines deplete, pending transition to the new Sudbury projects, currently under construction.

Murrin Murrin

Murrin's own sourced nickel production of 36,600 tonnes was 1,100 tonnes (3%) higher than in 2018. Own sourced cobalt production of 3,400 tonnes was 500 tonnes (17%) higher, reflecting strong plant performance and higher year-over-year grades.

Koniambo

Nickel production of 23,700 tonnes was 4,600 tonnes (16%) lower than in 2018, mainly reflecting a number of maintenance stoppages. These were primarily in H1 (production of 10,200 tonnes) with H2 up 32% half on half at 13,500 tonnes.

Ferroalloys assets

Attributable ferrochrome production of 1,438,000 tonnes was 142,000 tonnes (9%) lower than in 2018, mainly reflecting additional maintenance days taken opportunistically in Q3 2019 during a period of high energy costs and low selling prices.

Vanadium pentoxide production of 20.2 million pounds was in line with 2018.

Coal assets

Coal production of 139.5 million tonnes was 10.1 million tonnes (8%) higher than in 2018, mainly reflecting the full-year effects of the acquisitions of HVO (acquired in May 2018) and Hail Creek (August 2018). Prodeco's year-over-year contribution reflected a period of additional mine development in the base period, while Cerrejòn's 2019 production was constrained by dust emissions control requirements.

Australian coking

Production of 9.2 million tonnes was 1.7 million tonnes (23%) higher than in 2018, mainly reflecting the full-year contribution of Hail Creek.

Australian thermal and semi-soft

Production of 79.2 million tonnes was 6.5 million tonnes (9%) higher than in 2018, reflecting the full-year contributions from HVO and Hail Creek.

South African thermal

Production of 26.9 million tonnes was broadly in line with 2018.

Prodeco

Production of 15.6 million tonnes was 3.9 million tonnes (33%) higher than in 2018, reflecting additional mine development activities carried out in the base period.

Cerrejòn

Attributable production of 8.6 million tonnes was 1.6 million tonnes (16%) lower than in 2018, primarily reflecting constraints on production to limit dust emissions.

Oil assets

Exploration and production

Entitlement interest production of 5.5 million barrels was 0.9 million barrels (19%) higher than in 2018, reflecting the benefits of the drilling campaign in Chad and first oil from the Bolongo field in Cameroon.

Production data

Production from own sources – Total[1]

		2019	2018	Change %
Copper	kt	1,371.2	1,453.7	(6)
Cobalt	kt	46.3	42.2	10
Zinc	kt	1,077.5	1,068.1	1
Lead	kt	280.0	273.3	2
Nickel	kt	120.6	123.8	(3)
Gold	koz	848	1,003	(15)
Silver	koz	32,018	34,879	(8)
Ferrochrome	kt	1,438	1,580	(9)

Production from own sources – Copper assets[1]

		2019	2018	Change %
African Copper (Katanga, Mutanda, Mopani)				
Copper metal	kt	359.3	410.7	(13)
Copper in concentrates	kt	10.6	–	n.m.
Cobalt[2]	kt	42.2	38.4	10
Collahuasi[3]				
Copper in concentrates	kt	248.8	246.0	1
Silver in concentrates	koz	2,878	3,244	(11)
Antamina[4]				
Copper in concentrates	kt	151.4	150.6	1
Zinc in concentrates	kt	102.4	138.1	(26)
Silver in concentrates	koz	5,051	5,550	(9)
Other South America (Alumbrera, Lomas Bayas, Antapaccay)				
Copper metal	kt	78.9	72.8	8
Copper in concentrates	kt	197.6	225.9	(13)
Gold in concentrates and in doré	koz	85	256	(67)
Silver in concentrates and in doré	koz	1,576	1,722	(8)
Australia (Mount Isa, Ernest Henry, Townsville, Cobar)				
Copper metal	kt	151.1	151.5	–
Copper in concentrates	kt	43.5	58.9	(26)
Gold	koz	100	74	35
Silver	koz	1.615	1,399	15
Total Copper department				
Copper	**kt**	**1,241.2**	**1,316.4**	**(6)**
Cobalt	**kt**	**42.2**	**38.4**	**10**
Zinc	**kt**	**102.4**	**138.1**	**(26)**
Gold	**koz**	**185**	**330**	**(44)**
Silver	**koz**	**11,120**	**11,915**	**(7)**

Production from own sources – Zinc assets[1]

		2019	2018	Change %
Kazzinc				
Zinc metal	kt	172.5	201.2	(14)
Lead metal	kt	31.6	46.9	(33)
Lead in concentrates	kt	2.8	8.7	(68)
Copper metal[5]	kt	44.0	52.4	(16)
Gold	koz	634	643	(1)
Silver	koz	4,546	6,210	(27)
Silver in concentrates	koz	92	303	(70)
Australia (Mount Isa, McArthur River)				
Zinc in concentrates	kt	597.6	532.5	12
Lead in concentrates	kt	213.3	175.8	21
Silver in concentrates	koz	7,193	6,362	13
North America (Matagami, Kidd)				
Zinc in concentrates	kt	111.4	101.1	10
Copper in concentrates	kt	39.1	39.0	–
Silver in concentrates	koz	1,654	1,893	(13)
Other Zinc: South America (Argentina, Bolivia, Peru)[6]				
Zinc in concentrates	kt	93.6	95.2	(2)
Lead metal	kt	–	13.9	(100)
Lead in concentrates	kt	32.3	28.0	15
Copper in concentrates	kt	2.7	4.5	(40)
Silver metal	koz	–	744	(100)
Silver in concentrates	koz	6,906	6,989	(1)
Total Zinc department				
Zinc	**kt**	**975.1**	**930.0**	**5**
Lead	**kt**	**280.0**	**273.3**	**2**
Copper	**kt**	**85.8**	**95.9**	**(11)**
Gold	**koz**	**634**	**643**	**(1)**
Silver	**koz**	**20,391**	**22,501**	**(9)**

Production from own sources – Nickel assets[1]

		2019	2018	Change %
Integrated Nickel Operations (INO) (Sudbury, Raglan, Nikkelverk)				
Nickel metal	kt	59.8	59.5	1
Nickel in concentrates	kt	0.5	0.5	–
Copper metal	kt	15.8	14.4	10
Copper in concentrates	kt	28.4	27.0	5
Cobalt metal	kt	0.7	0.9	(22)
Gold	koz	29	29	–
Silver	koz	507	464	9
Platinum	koz	51	58	(12)
Palladium	koz	112	119	(6)
Rhodium	koz	4	4	–
Murrin Murrin				
Nickel metal	kt	36.6	35.5	3
Cobalt metal	kt	3.4	2.9	17
Koniambo				
Nickel in ferronickel	kt	23.7	28.3	(16)
Total Nickel department				
Nickel	**kt**	**120.6**	**123.8**	**(3)**
Copper	**kt**	**44.2**	**41.4**	**7**
Cobalt	**kt**	**4.1**	**3.8**	**8**
Gold	**koz**	**29**	**29**	**–**
Silver	**koz**	**507**	**464**	**9**
Platinum	**koz**	**51**	**58**	**(12)**
Palladium	**koz**	**112**	**119**	**(6)**
Rhodium	**koz**	**4**	**4**	**–**

Production from own sources – Ferroalloys assets[1]

		2019	2018	Change %
Ferrochrome[7]	kt	1,438	1,580	(9)
Vanadium Pentoxide	mlb	20.2	20.2	–

Total production – Custom metallurgical assets[1]

		2019	2018	Change %
Copper (Altonorte, Pasar, Horne, CCR)				
Copper metal	kt	432.9	438.8	(1)
Copper anode	kt	510.7	479.3	7
Zinc (Portovesme, San Juan de Nieva, Nordenham, Northfleet)				
Zinc metal	kt	805.7	799.6	1
Lead metal	kt	190.5	186.3	2

Coal assets[1]

		2019	2018	Change %
Australian coking coal	mt	9.2	7.5	23
Australian semi-soft coal	mt	6.4	3.9	64
Australian thermal coal (export)	mt	64.2	59.4	8
Australian thermal coal (domestic)	mt	8.6	9.4	(9)
South African thermal coal (export)	mt	13.0	17.3	(25)
South African thermal coal (domestic)	mt	13.9	10.0	39
Prodeco	mt	15.6	11.7	33
Cerrejòn[8]	mt	8.6	10.2	(16)
Total Coal department	mt	**139.5**	**129.4**	**8**

Oil assets

		2019	2018	Change %
Glencore entitlement interest basis				
Equatorial Guinea	kbbl	1,895	1,827	4
Chad	kbbl	3,371	2,799	20
Cameroon	kbbl	252	–	n.m.
Total Oil department	kbbl	**5,518**	**4,626**	**19**
Gross basis				
Equatorial Guinea	kbbl	9,236	8,818	5
Chad	kbbl	4,608	3,827	20
Cameroon	kbbl	730	–	n.m.
Total Oil department	kbbl	**14,574**	**12,645**	**15**

1 Controlled industrial assets and joint ventures only. Production is on a 100% basis, except for joint ventures, where the Group's attributable share of production is included.
2 Cobalt contained in concentrates and hydroxides.
3 The Group's pro-rata share of Collahuasi production (44%).
4 The Group's pro-rata share of Antamina production (33.75%).
5 Copper metal includes copper contained in copper concentrates and blister.
6 South American production excludes Volcan Companie Minera.
7 The Group's attributable 79.5% share of the Glencore-Merafe Chrome Venture.
8 The Group's pro-rata share of Cerrejòn production (33.3%).

Principal risks and uncertainties

Glencore is exposed to a variety of risks that can have an impact on our business and prospects, future performance, financial position, liquidity, asset values, growth potential, sustainable development and reputation. Our principal risks and uncertainties are highly dynamic and our assessment and our responses to them are critical to our future business and prospects

Risk management is one of the core responsibilities of the Board and its Committees, and it is central to the decision-making process. The Board's fundamental duties as to management are:

- making a robust assessment of emerging and principal risks
- monitoring risk management and internal controls
- promoting a risk aware culture

The Board also assesses and approves our overall risk appetite, monitors our risk exposure and sets the Group-wide financial limits, which are reviewed on an ongoing basis. This process is supported by the Audit, HSEC and ECC Committees, whose roles include evaluating and monitoring the risks inherent in their respective areas as described on pages 101–108. Established in 2019, the ECC is responsible in particular for monitoring that the Group's risk culture is appropriately promoted, lived and linked to the Group's purpose, values and strategy.

In accordance with UK Financial Reporting Council guidance, we define a principal risk as a risk or combination of risks that could seriously affect the performance, future prospects or reputation of Glencore. These include those risks which would threaten the business model, future performance, solvency or liquidity of the Group.

We define an emerging risk as a risk that has not yet occurred but is at an early stage of becoming known and/or coming into being and expected to grow greatly in significance in the longer term. The Board seeks to identify and assess emerging risks using the regular reports it receives from Management and its Committees and by staying abreast of the issues and concerns arising in the industry. This identification and assessment follows the same processes as for principal risks.

Our risk management framework sets out to identify and manage risk in a way that is supportive of our strategic objectives, while protecting our future financial security and flexibility. Our approach towards risk management is determined by our ongoing understanding of the risks that we are exposed to, our risk appetite and how these risks change over time. We look at risk appetite from the context of severity of the consequences should the risk materialise, factors influencing the risk and the Company's ability to mitigate it. In compiling this assessment we have indicated the impact and likelihood of these risks in comparison with a year ago in the chart opposite.

The natural diversification of our portfolio of commodities, geographies, currencies, assets and liabilities is a source of mitigation for some of the risks we face. In addition, through our governance processes and our proactive management approach we seek to mitigate, where possible, the impacts of certain risks should they materialise. In particular:

- Our liquidity risk management policy requires us to maintain (via a $3 billion minimum prescribed level) sufficient cash and cash equivalents and other sources of committed funding available to meet anticipated and unanticipated funding needs, including ensuring that the quantum of bonds maturing in any one year does not exceed some $3 billion
- Our making use of credit enhancement products, such as letters of credit, insurance policies and bank guarantees and imposing limits on open accounts extended
- Our management of marketing risk, including daily analysis of Group value at risk (VaR) – see page 104

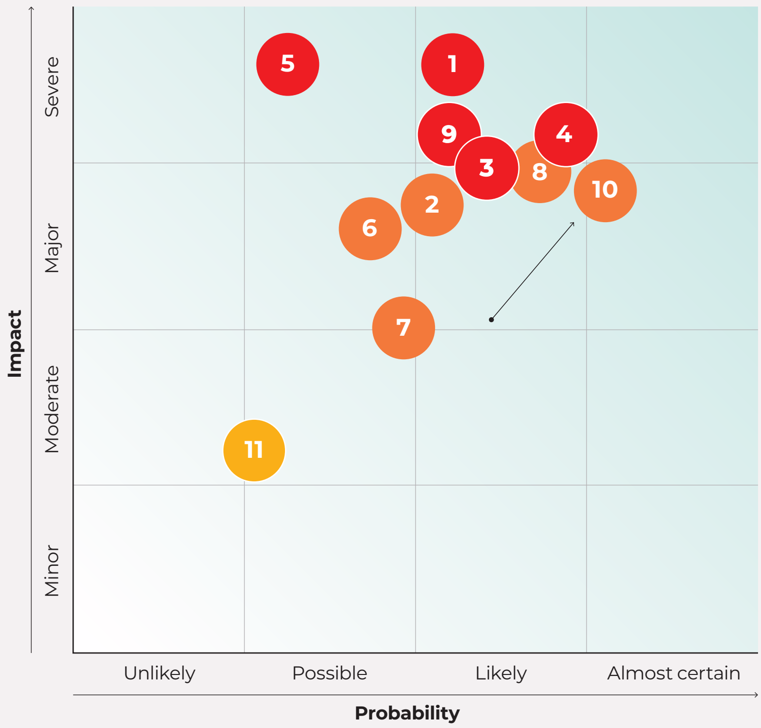
The assessment of our principal risks, according to exposure and impact, is detailed on the following pages.

The commentary on the risks in this section should be read in conjunction with the explanatory text under *Understanding the information on risks* which is set out on page 76.

Evolution in principal risks

We believe that our principal risks, our assessment of their possible negative effect and the scale of impact have remained the same, except for climate change related risks. We believe that the probability and severity of impact for this category of risk has increased, including the ongoing pressure for divestment from, and or reducing support for, coal and the broader hydrocarbon industry.

2019 developments and overview of principal risks and uncertainties



Key

External risks
- 1 ● Supply, demand and prices of commodities
- 2 ● Currency exchange rates
- 3 ● Geopolitical, permits and licences to operate
- 4 ● Laws and enforcement
- 5 ● Liquidity

Business risks
- 6 ● Counterparty credit and performance
- 7 ● Operating
- 8 ● Cyber

Sustainability risks
- 9 ● Health, Safety, Environment
- 10 ● Climate change
- 11 ● Community relations and human rights

Risk impact
● Moderate ● Major ● Severe

Indicates change in 2019

Longer-term viability

In accordance with the requirements of the UK Corporate Governance Code, the Board has assessed the prospects of the Group's viability over the four-year period from 1 January 2020. This period is consistent with the Group's established annual business planning and forecasting processes and cycle, which is subject to review and approval each year by the Board. The four-year plan considers Glencore's adjusted EBITDA, capital expenditure, funds from operations (FFO) and net debt, and the key financial ratios of net debt to adjusted EBITDA and FFO to net debt over the forecast years and incorporates stress tests to simulate the potential impacts of exposure to the Group's principal risks and uncertainties.

These scenarios included:

- A prolonged downturn in the price and demand of commodities most impacting Glencore's operations
- Foreign exchange movements to which the Group is exposed as a result of its global operations
- An increase in costs associated with open investigations by regulatory and enforcement authorities and adverse geopolitical developments
- Consideration of the potential impact of adverse movements in macro-economic assumptions and their effect on certain key financial KPIs and ratios which could increase the Group's access to or cost of funding

The scenarios were assessed taking into account current risk appetite and any mitigating actions Glencore could take, as required, in response to the potential realisation of any of the stressed scenarios.

Based on the results of the related analysis, the Directors have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the four-year period of this assessment. They also believe that the review period of four years is appropriate having regard to the Group's business model, strategy, principal risks and uncertainties, and viability.

Understanding the information on risks

There are many risks and uncertainties which have the potential to significantly impact our business, including competitive, economic, political, legal, regulatory, sustainability and financial risk. The order in which these risks and uncertainties appear does not necessarily reflect the likelihood of their occurrence or the relative magnitude of their potential material adverse effect on our business.

We have sought to provide examples of specific risks. However, in every case these do not attempt to be an exhaustive list. These principal risks and uncertainties should be considered in connection with any forward looking statements in this document as explained on page 251.

Identifying, quantifying and managing risk is complex and challenging. Although it is our policy to identify and, where appropriate and practical, actively manage risk, our policies and procedures may not adequately identify, monitor and quantify all risks.

This section describes our attempts to manage, balance or offset risk. Risk is, however, by its very nature uncertain and inevitably events may lead to our policies and procedures not having a material mitigating effect on the negative impacts of the occurrence of a particular event. Our scenario planning and stress testing may accordingly prove to be optimistic, particularly in situations where material negative events occur in close proximity. Since many risks are connected, our analysis should be read against all risks to which it may be relevant.

In this section, we have sought to update our explanations, reflecting our current outlook. Mostly this entails emphasising certain risks more strongly than other risks rather than the elimination of, or creation of, risks. Certain investors may also be familiar with the risk factors that are published in the Group debt or equity prospectuses or listing documents. These provide in part some differing descriptions of our principal risks.

A recent example is available on our website at: **glencore.com/who-we-are/governance**

In addition, more information on our risks is available in the relevant sections of our website.

To provide for concise text:

- Where we hold minority interests in certain businesses, although these entities are not generally subsidiaries and would not be subject to the Group's operational control, these interests should be assumed to be subject to these risks ."Business" refers to these and any business of the Group
- Where we refer to natural hazards, events of nature or similar phraseology we are referring to matters such as earthquake, flood, severe weather and other natural phenomena
- Where we refer to "mitigation" we do not intend to suggest that we eliminate the risk, but rather it shows the Group's attempt to reduce or manage the risk. Our mitigation of risks will usually include the taking out of insurance where it is customary and economic to do so
- This section should be read as a whole – often commentary in one section is relevant to other risks
- "commodity/ies" will usually refer to those commodities which the Group produces or sells
- "law" includes regulation of any type
- "risk" includes uncertainty and hazard and together with "material adverse effect on the business" should be understood as a negative change which can seriously affect the performance, future prospects or reputation of the Group. These include those risks which would threaten the business model, future performance, reputation, solvency or liquidity of the Group
- A reference to a note is a note to the 2019 financial statements
- A reference to the sustainability report is our 2019 sustainability report to be published in April 2020

Strategic priorities

Integration of sustainability throughout our business

Maintain a robust and flexible balance sheet

Focus on cost control and operational efficiencies

External risks

1 Supply, demand and prices of commodities	Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Low. Outside of the inherent risk of commodity prices on unmined reserves/resources, flat price exposure on extracted or trading related positions is usually hedged, when possible. Additionally, we seek to ensure this risk is minimised through scale of operations and diversity of product.

Risk description and potential impact
The revenue and earnings of substantial parts of our industrial asset activities and, to a lesser extent, our marketing activities, are dependent upon prevailing commodity prices. Commodity prices are influenced by a number of external factors, including the supply of and demand for commodities, speculative activities by market participants, global political and economic conditions, related industry cycles and production costs in major producing countries.

We are dependent on the expected volumes of supply or demand for commodities which can vary for many reasons, such as competitor supply policies, changes in resource availability, government policies and regulation, costs of production, global and regional economic conditions and demand in end markets for products in which the commodities are used. Supply and demand volumes can also be impacted by technological developments, e.g. commodity substitutions, fluctuations in global production capacity, global and regional weather conditions, natural disasters and diseases, all of which impact global markets and demand for commodities.

Future demand for certain commodities might decline (e.g. fossil fuels), whereas others might increase (such as copper, cobalt, and nickel for their use in electric vehicles and batteries), taking into consideration the transition to a low carbon economy.

Furthermore, changes in expected supply and demand conditions impact the expected future prices (and thus the price curve) of each commodity and significant falls in the prices of certain commodities (e.g. copper, coal and cobalt) can have a severe drag on our financial performance, impede shareholder returns and could lead to concerns by external stakeholders as to the strength of the Group's balance sheet.

Government policy decisions can be very important, e.g. in reducing the demand for coal or increasing its pricing (via carbon taxes) – see Climate change risk on page 87. This risk is more prevalent in certain commodities, such as steel, coal and oil. In particular, many analysts believe that demand for coal will reduce sooner than previously expected due to political pressures, cost reductions for alternatives (renewables and LNG) and possible carbon taxes.

The dependence of the Group (especially our industrial business) on commodity prices, supply and demand of commodities, make this the Group's foremost risk.

Developments
Divergence has been observed across different commodities over the past 12 months, with increasing levels of volatility seen, driven by global shifts in the supply-demand balance. Given the volatility of commodity prices over the past year and historically, we continue to focus on the partially controllable element of the margin equation – production and costs.

The recent emergence of the novel coronavirus could lead to substantial disruptions in China which could impact the demand for the commodities supplied by the Group in this and other markets. Although, the risk of a large scale spreading of the virus remains uncertain in 2020, near term weakness is a reality, and it could have additional longer-term material adverse effects on commodity markets.

New or improved energy production or technologies can also reduce the demand for some commodities such as coal. Major decisions by governments can also lead to lower growth of some countries or regions, such as U.S./China trade decisions and Brexit. Any adverse economic developments, particularly impacting China and fast growing developing countries, could lead to reductions in demand for, and consequently price reductions of, commodities.

See the Chief Executive Officer's review on page 2, our market and emerging drivers on page 8 and the financial review on page 46.

Mitigating factors
We continue to maintain focus on cost discipline and achieving greater operational efficiency.

We maintain both a diverse portfolio of commodities, geographies, currencies, assets and liabilities and a global portfolio of customers and contracts.

We prepare for anticipated shifts in commodity demand, for example by putting a special focus on the parts of the business that will potentially grow with increases in usage of electric vehicles and battery production, and by closely monitoring fossil fuel (particularly thermal coal) demands. We can also reduce the production of any commodity within our portfolio in response to changing market conditions.

External risks continued

2 Currency exchange rates	Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Low. Where possible foreign exchange (FX) exposure to non-operating FX risks is hedged. FX risk inherent in the operating costs of industrial activities is assumed to be naturally hedged through movements in commodity prices.

Risk description and potential impact
FX changes are usual but are often difficult to predict.

Producer country currencies tend to increase in correlation with relevant higher commodity prices. Similarly, decreases in commodity prices are generally associated with increases in the US dollar relative to local producer currencies.

The vast majority of our transactions are denominated in US dollars, while operating costs are spread across many different countries, the currencies of which fluctuate against the US dollar. A depreciation in the value of the US dollar against one or more of these currencies will result in an increase in the cost base of the relevant operations in US dollar terms.

The main currency exchange rate exposure is through our industrial assets, as a large proportion of the costs incurred by these operations is denominated in the currency of the country in which each asset is located.

The largest of these exposures are to the currencies listed on page 56.

Developments
During 2019, relevant FX movements reflected, in general, US dollar appreciation. Among our most important producer currencies, against the US dollar, the Australian dollar depreciated by 7% (average 2019 versus average 2018), the South African rand by 9%, the Kazakhstan tenge by 11% and the Canadian dollar by 2%.

Near term confidence in stability of global demand (and thus indirectly FX rates for relevant producer countries) hinges on many factors, particularly those that relate to the prospects of global economic growth, such as the U.S./China trade tensions, political/economic stability in the Middle East and the impact of the coronavirus disruption.

Mitigating factors
The inverse FX correlation usually provides a partial natural FX hedge for the industrial business. In respect of commodity purchase and sale transactions denominated in currencies other than US dollars, the Group's policy is usually to hedge the specific future commitment through a forward exchange contract. From time to time, the Group may hedge a portion of its currency exposures and requirements in an attempt to limit any adverse effect of exchange rate fluctuations.

External risks continued

3 Geopolitical, permits and licences to operate	Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
High. We operate in countries with less developed political and regulatory regimes. To be considered a truly diversified commodities group, operations in these jurisdictions are required.

Risk description and potential impact
We operate and own assets in a large number of geographic regions and countries, some of which are categorised as developing, complex or having unstable political or social climates. As a result, we are exposed to a wide range of political, economic, regulatory, social and tax environments. The Group transacts business in locations where it is exposed to a risk of overt or effective expropriation or nationalisation. Our operations may also be affected by political and economic instability, including terrorism, civil disorder, violent crime, war and social unrest.

Increased scrutiny by governments and tax authorities in pursuit of perceived aggressive tax structuring by multinational companies has elevated potential tax exposures for the Group. Additionally, governments have sought additional sources of revenue by increasing rates of taxation, royalties or resource rent taxes or may increase sustainability obligations.

The terms attaching to any permit or licence to operate may be onerous and obtaining these and other approvals, which may be revoked, can be particularly difficult. Furthermore, in certain countries title to land and rights and permits in respect of resources are not always clear or may be challenged.

Adverse actions by governments and others can result in operational/project delays or loss of permits or licences to operate. Policies or laws in the countries in which we do business may change in a manner that may negatively affect the Group.

The suspension or loss of our permits or licences to operate could have a material adverse effect on the Group and could also preclude Glencore from participating in bids and tenders for future business and projects, therefore affecting the Group's long-term viability.

Our licences to operate through mining rights are dependent on a number of factors, including compliance with regulations. It also depends on constructive relationships with a wide and diverse range of stakeholders.

The continued operation of our existing assets and future plans are in part dependent upon broad support, our "social licence to operate", and a healthy relationship with the respective local communities – see further Community Relations and Operating risks concerning workforce disputes.

The New DRC Mining Code came into effect in 2018, introducing different measures and requirements that, depending how they are enforced more restrictive procurement requirements may have a significant impact on the Group's investments in the DRC and their value.

Developments
Resource nationalism continues to be a challenging issue in many countries.

Ongoing scrutiny by governments and tax authorities has increased potential tax exposures for the Group, with some tax authorities taking a tougher approach to engaging with the Group, which has in some cases led to litigation.

Mitigating factors
See map on pages 4–5 which sets out our global operational footprint.

The Group's industrial assets are diversified across various countries. The Group also continues to actively engage with governmental authorities in light of upcoming changes and developments in legislation and enforcement policies.

We endeavour to design and execute our projects according to high legal, ethical, social, and human rights standards, and to ensure that our presence in host countries leaves a positive lasting legacy (see sustainability risks later in this section). This commitment is essential to effectively manage these risks and to maintain our permits and licences to operate.

The Group has an active engagement strategy with the governments, regulators and other stakeholders within the countries in which it operates or intends to operate. Through strong relationships with stakeholders we endeavour to secure and maintain our licences to operate.

In 2019, we also published our Payments to Governments report. This detailed total government contributions in 2018 of over $5.7 billion. It also set out details of payments on a project by project basis. We also continue to be an active member of the Extractive Industries Transparency Initiative (EITI).

External risks continued

4 **Laws and enforcement**	Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Medium. The Group maintains programmes which seek to ensure that we comply with the laws and external requirements applicable to our operations and products, and has invested significant resources in enhancing these compliance programmes in recent years. This investment reflects the fact that the Group has a low risk appetite when considering entering into transactions or business activities that present compliance risk. Nevertheless, some of our existing industrial and marketing activities are located in countries that are categorised as developing or as having complex political or social climates, and/or where corruption is generally understood to exist, and therefore there will always be residual risk in relation to our compliance with laws and external requirements.

Risk description and potential impact
We are exposed to extensive laws, including those relating to bribery and corruption, sanctions, taxation, anti-trust, financial markets regulation, environmental protection, use of hazardous substances, product safety and dangerous goods regulations, development of natural resources, licences over resources, exploration, production and post-closure reclamation, employment of labour and occupational health and safety standards. The legal system and dispute resolution mechanisms in some countries in which we operate may be uncertain, meaning that we may be unable to enforce our understanding of our rights and obligations under these laws.

The costs associated with compliance with these laws and regulations, including the costs of regulatory permits, are substantial and increasing. Any changes to these laws or their more stringent enforcement or restrictive interpretation could cause additional significant expenditure to be incurred and/or cause suspensions of operations and delays in the development of industrial assets. Failure to obtain or renew a necessary permit or the occurrence of other disputes could mean that we would be unable to proceed with the development or continued operation of an asset and/or impede our ability to develop new industrial properties.

As a diversified sourcing, marketing and distribution company conducting complex transactions globally, we are particularly exposed to the risks of fraud, corruption, sanctions breaches and other unlawful activities both internally and externally. Our marketing operations are large in scale, which may make fraudulent, corrupt or other unlawful transactions difficult to detect. In addition, some of our industrial activities are located in countries where corruption is more commonly seen; and some of our counterparties have in the past, and may in the future, become the targets of economic sanctions. Corruption and sanctions risks remain highly relevant for businesses operating in international markets, as shown by recent regulatory enforcement actions both inside and outside the resources sector.

Governmental and other authorities have commenced, and may in the future commence, investigations against the Group (including those listed under "Developments") in relation to alleged non-compliance with these laws, and/or may bring proceedings against the Group in relation to alleged non-compliance. The cost of cooperating with investigations and/or defending proceedings can be substantial. Investigations or proceedings could lead to reputational damage, the imposition of material fines, penalties, redress or other restitution requirements, or other civil or criminal sanctions on the Group (and/or on individual employees of the Group), the curtailment or cessation of operations, orders to pay compensation, orders to remedy the effects of violations and/or orders to take preventative steps against possible future violations. The impact of any monetary fines, penalties, redress or other restitution requirements, and the reputational damage that could be associated with them as a result of proceedings that are decided adversely to the Group, could be material.

In addition, the Group may be the subject of legal claims brought by private parties in connection with alleged non-compliance with these laws, including class action suits in connection with governmental and other investigations and proceedings, and lawsuits based upon damage resulting from operations. Any successful claims brought against the Group could result in material damages being awarded against the Group, the cessation of operations, compensation and remedial and/or preventative orders.

Developments

During the year, the Group has become subject to further investigations by certain authorities:

1. In April 2019, the Group was informed that the United States Commodity Futures Trading Commission (CFTC) had begun investigating whether Glencore and its subsidiaries may have violated certain provisions of the Commodity Exchange Act and/or CFTC Regulations including through corrupt practices in connection with commodities trading
2. In December 2019, the Group was notified that the United Kingdom Serious Fraud Office had opened an investigation into suspicions of bribery in the conduct of business of the Group

In addition to the investigations commenced in 2019, the Group remains subject to investigation by other authorities, including the following:

a. The United States Department of Justice is investigating the Group with respect to compliance with the Foreign Corrupt Practices Act and United States money laundering statutes related to the Group's business in certain overseas jurisdictions, from 2007

b. The Brazilian authorities are investigating the Group in relation to "Operation car wash", which relates to bribery allegations concerning Petrobras

It is also possible that other authorities may open investigations into the Group and the final scope and outcome of the investigations listed above is not possible to predict and estimate.

The Group is cooperating with each of the authorities listed above. The Investigations Committee of the Board manages the Group's responses to these investigations.

The Group is named in a securities class action suit in the United States District Court of New Jersey in connection with the above investigations and various other class action and securities laws suits have been threatened against the Group.

Mitigating factors

We seek to ensure compliance through our commitment to complying with or exceeding the laws and regulations applicable to our operations and products and through monitoring of legislative requirements, engagement with government and regulators, and compliance with the terms of permits and licences.

We seek to mitigate the risk of breaching applicable laws and external requirements through our risk management framework which is described on page 101.

We have implemented a Group compliance programme that includes a range of policies, standards, procedures, guidelines, training and awareness, monitoring and investigations.

We have increased in recent years our focus on, and resources dedicated to, the Group compliance programme, including through increasing the number of dedicated compliance professionals, enhancing our compliance policies and procedures and controls and strengthening the Group's Raising Concerns programme and investigations function.

However, there can be no assurance that such policies, standards, procedures and controls will adequately protect the Group against fraud, corruption, sanctions breaches or other unlawful activities.

The Board has established an Ethics, Compliance and Culture Committee, which focuses on monitoring ethics and compliance, and seeking to ensure that business practices are aligned with the Group's culture, see page 105.

External risks continued

5 **Liquidity**	Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Low. It is the Group's policy to operate a BBB rating or above balance sheet and to ensure that a minimum level of cash and/or committed funding is available at any given time.

Risk description and potential impact
Liquidity risk is the risk that we are unable to meet our payment obligations when due, or are unable, on an ongoing basis, to borrow funds in the market at an acceptable price to fund our commitments. While we adjust our minimum internal liquidity threshold from time to time in response to changes in market conditions, this minimum internal liquidity target may be breached due to circumstances we are unable to control, such as general market disruptions, sharp movements in commodity prices or an operational problem that affects our suppliers, customers or ourselves.

Our failure to access funds (liquidity) would severely limit our ability to engage in desired activities.

A lack of liquidity may mean that we will not have sufficient funds available for our marketing and industrial activities, both of which employ substantial amounts of capital. If we do not have funds available for these activities then they will decrease.

Developments
The Group's Net debt has increased from $14.7 billion at 31 December 2018 to $17.6 billion at 31 December 2019, including the c.$1.3 billion net impact of the new IFRS leasing standard.

Our net funding at 31 December 2019 was $34.4 billion (31 December 2018: $32.1 billion). The Group's business model relies on ready access to substantial borrowings at reasonable cost.

We remain cognisant that access to credit is vital and that market conditions could deteriorate rapidly.

Note 27 details the fair value of our financial assets and liabilities.

Note 26 details our financial and capital risk management including liquidity risk.

Mitigating factors
Diversification of our funding sources (bank borrowings, bonds and trade finance, further diversified by currency, interest rate and maturity).

In light of the Group's extensive funding activities, maintaining investment grade credit rating status is a financial priority. The Group's credit ratings are currently Baa1 (positive outlook) from Moody's and BBB+ (stable outlook) from Standard & Poor's. Glencore's publicly stated objective, as part of its overall financial policy package, is to seek and maintain strong Baa/BBB credit ratings from Moody's and Standard & Poor's respectively. In support of this, Glencore targets a maximum 2x Net debt/Adjusted EBITDA ratio through the cycle, augmented by an upper Net debt cap of ~$16 billion, excluding marketing related lease liabilities (c.$0.6 billion as at 31 December 2019). This financial policy facilitates access to funds, even in periods of market volatility. The major contributor to the increase in Net debt in 2019, to a level over the $16 billion target cap, was the adoption of the new lease accounting standard on 1 January 2019, which resulted in approximately $1.3 billion of lease liabilities being recognised as at 31 December 2019, which previously would have been accounted for as operating leases. The resulting net debt balance will be subject to targeted management to reduce to levels back within the target cap.

The Financial Review on page 46 sets out the Group's Net Funding and Net Debt in 2019. However, it should be noted that the credit ratings agencies make certain adjustments, including a discount to the value of our Readily Marketable Inventory, such that their calculated net debt is higher.

We have, since 2016, reduced our bond portfolio significantly, although in a given year (including in 2019) we may issue more than we repay, depending on cost of funding. We have optimised our bond debt maturity profile to no more than c. $3 billion of bonds maturing per annum.

Business risks

6 Counterparty credit and performance | Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Medium. Where desirable and possible, credit exposure is covered through credit mitigation products.

Risk description and potential impact
Financial assets consisting principally of receivables and advances, derivative instruments and long-term advances and loans can expose us to concentrations of credit risk.

Furthermore, we are subject to non-performance risk by our suppliers, customers and hedging counterparties, in particular via our marketing activities.

Non-performance by suppliers, customers and hedging counterparties may occur and cause losses in a range of situations, such as:

- a significant increase in commodity prices resulting in suppliers being unwilling to honour their contractual commitments to sell commodities at pre-agreed prices
- a significant reduction in commodity prices resulting in customers being unwilling or unable to honour their contractual commitments to purchase commodities at pre-agreed prices
- suppliers subject to prepayment may find themselves unable to honour their contractual obligations due to financial distress or other reasons

Open account risk is taken but this is generally guided by the Group-wide Credit Risk Policy for higher levels of credit risk exposure, with an established threshold for referral of credit decisions by department heads to CFO/CEO, relating to unsecured amounts in excess of $75 million with BBB or lower rated counterparts, which occurs from time to time, in relation to various key strategic relationships.

Developments
The Group is alert to counterparty performance risk, especially when prepayments have been entered into and the price of the relevant commodity has fallen.

Mitigating factors
We seek to diversify our counterparties.

We try to ensure adherence to open account limits.

The Group continues to make extensive use of credit enhancement tools, seeking letters of credit, insurance cover, discounting and other means of reducing credit risk with counterparts.

We monitor the credit quality of our physical and hedge counterparties and seek to reduce the risk of customer default or non-performance by requiring credit support from creditworthy financial institutions.

Specific credit risk policy rules apply to open account risk with an established threshold for referral of credit positions by departments to central management. In addition, note 26 details our financial and capital risk management approach.

7 Operating | Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Low. It is the Company's strategic objective to focus on its people and to conduct safe, reliable and efficient operations.

Risk description and potential impact
Our industrial activities are subject to numerous risks and hazards normally associated with the initiation, development, operation and/or expansion of natural resource projects, many of which are beyond our control. These include unanticipated variations in grade and other geological problems (so that anticipated or stated reserves, may not conform to expectations). Other examples include natural hazards, processing problems, technical malfunctions, unavailability of materials and equipment, unreliability and/or constraints of infrastructure, industrial accidents, labour force challenges, disasters, protests, force majeure factors, cost overruns, delays in permitting or other regulatory matters, vandalism and crime.

The maintenance of positive employee and union relations and engagement, and the ability to attract and retain skilled workers, including senior management, are key to our success. This attraction and retention of highly qualified and skilled personnel can be challenging, especially, but not only, in locations experiencing political or civil unrest, or in which employees may be exposed to other hazardous conditions.

Business risks continued

Risk description and potential impact continued

Many employees, especially at the Group's industrial activities, are represented by labour unions under various collective labour agreements. Their employing company may not be able to satisfactorily renegotiate its collective labour agreements when they expire and may face tougher negotiations or higher wage demands than would be the case for non-unionised labour. In addition, existing labour agreements may not prevent a strike or work stoppage.

The development and operating of assets may lead to future upward revisions in estimated costs, delays or other operational difficulties or damage to properties or facilities. This may cause production to be reduced or to cease and may further result in personal injury or death, third party damage or loss or require greater infrastructure spending. Also, the realisation of these risks could require significant additional capital and operating expenditures.

Some of the Group's interests in industrial assets do not constitute controlling stakes. Although the Group has various structures in place which seek to protect its position where it does not exercise control, these other shareholders may have interests or goals that are inconsistent with ours. They may take action contrary to the Group's interests or be unable or unwilling to fulfil their obligations.

Severe operating or market difficulties may result in impairments, details of which are recorded in note 6.

Developments

This year we continued to see material examples of operating challenges, particularly at our identified transition assets. Equipment rebuilds and maintenance were required at Katanga (cobalt dryers and electrowinning) and Mopani (smelter refurbishment) in order to support their higher production ramp-up profiles as the benefits of our multi-year investments in both projects are expected to flow through in due course.

At the other end of the cycle, Mutanda was placed on temporary care and maintenance to preserve its copper and cobalt resources while a long-term processing solution for its copper sulphides is developed. An orderly ramp-down was conducted. Furthermore, following an extensive review, it was determined to permanently close the 53-year-old Brunswick lead smelter, which had been "stranded" following closure of the Brunswick mine in 2013.

Both Colombian coal operations were under margin pressure this year due to substantially lower API2 coal prices (a proxy for the European market), but also increased risk around obtaining certain additional mining/environmental licences and related approvals. This resulted in downward revision to future production and revenue estimates in our life of mine models.

Cost control and reduction remains a significant area of management focus, noting that in the context of mineral resources, absolute costs will tend to increase over time as incremental resources are likely further from the processing plant and/or deeper, and dilution factors may be higher. A number of operations have adopted structured programmes to analyse their costs, identify marginal savings and implement these. Maintenance and, where possible, reduction of unit costs is regularly reviewed by management.

Infrastructure availability remains a key risk, though this has been mitigated by certain long-term measures taken. Katanga's metallurgical plant received sufficient continuous high-voltage power to deliver on its ramp-up on schedule, though we are not complacent and continue to monitor the situation.

This year, we have launched several engagement campaigns with employees to receive direct feedback on the Group's culture and practices. These campaigns will continue to be rolled out to different operations in 2020.

Mitigating factors

Development and operating risks and hazards are managed through our continuous project status evaluation and reporting processes and ongoing assessment, reporting and communication of the risks that affect our operations along with updates to the risk register.

We publish our production results quarterly and our assessment of reserves and resources based on available drilling and other data sources annually. Conversion of resources to reserves and, eventually, reserves to production is an ongoing process that takes into account technical and operational factors, economics of the particular commodities concerned and the impact on the communities in which we operate.

The creation of a new role – Head of Industrial Assets – one of the objectives of which, is to ensure an efficient and consistent approach to managing Industrial Assets.

Local cost control measures are complemented by global procurement that leverages our scale to seek to achieve favourable terms on high-consumption materials such as fuel, explosives and tyres.

One of the key factors in our success is a good and trustworthy relationship with our people and developing a direct engagement with them. This priority is reflected in the principles of our sustainability programme and related guidance, which require regular, open, fair and respectful communication, zero tolerance for human rights violations, fair remuneration and, above all, a safe working environment, as outlined on our website at: **glencore.com/careers/our-culture** and in the Our people section on page 30.

Business risks continued

8 Cyber	Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Low. Where possible, cyber exposure risks are mitigated through layered cyber security, proactive monitoring and routine penetration testing to confirm security of systems.

Risk description and potential impact
Cyber risks for firms have increased significantly in recent years owing in part to the proliferation of new digital technologies, increasing degree of connectivity and a material increase in monetisation of cybercrime.

A cybersecurity breach, incident or failure of Glencore's IT systems could disrupt our businesses, put employees at risk, result in the disclosure of confidential information, damage our reputation and create significant financial and legal exposure for the Group.

Our activities depend on technology for industrial production, efficient operations, environmental management, health and safety, communications, transaction processing and risk management. We recognise that the increasing convergence of IT and Operational Technology (OT) networks will create new risks and demand additional management time and focus. We also depend on third parties in long supply chains that are exposed to the same cyber risks but which are largely outside our control.

Although Glencore invests heavily to monitor, maintain and regularly upgrade its systems, processes and networks, absolute security is not possible.

Developments
Our IT security monitoring platforms frequently detect attempts to breach our networks and systems. During 2019, none of these events resulted in a material breach of our IT environment nor resulted in a material business impact.

Whilst not a new risk, the security of long interconnected commodity supply chains is an area of increasing concern that we monitor closely to reduce the impact on the Group.

We believe the emergence of machine learning and artificial intelligence will increase the volume and sophistication of fraud attempts. The rise of "Deepfake" technology using machine learning will make it easier to manipulate audio content that could be used in phishing or fraud attacks by impersonating senior executives.

Mitigating factors
We have implemented a training and awareness programme, which is designed to increase awareness of cyber risk and ensure that employees take the appropriate care.

We have invested in global IT security platforms in order to proactively monitor and manage our cyber risks. We conduct routine third party penetration tests to independently confirm the security of our IT systems and we seek to enhance monitoring of our Operational Technology (OT) platforms.

We publish security standards and educate our employees in order to raise awareness of cybersecurity threats.

We have started a programme to evaluate the cybersecurity posture of third parties that hold materially sensitive information about Glencore.

Our designated IT Security Council sets the global cybersecurity strategy, conducts regular risk assessments and designs cybersecurity solutions that seek to defend against emerging malware, virus, vulnerabilities and other cyber threats.

Our Cyber Defence Centre is responsible for day-to-day monitoring of cyber vulnerabilities across the world and driving remediation of threats.

We have an incident response team that is responsible for coordinating the response in the event of a major cyber incident.

Sustainability risks

9 Health, safety, environment	Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Medium. We strive to comply with our own health, safety and environmental policies and relevant external laws and requirements.

Risk description and potential impact
We are committed to ensuring the safety and wellbeing of our people and the communities and environment around us. Catastrophic events that take place in the natural resource sector can have disastrous impacts on workers, communities, the environment and corporate reputation, as well as a substantial financial cost.

The success of our business is dependent on a safe and healthy workforce. Managing risks to the safety and health of our people is essential for their long-term wellbeing. It also helps us to maintain our productivity and reduce the likelihood of workplace compensation claims.

A number of our assets are in regions with poor approaches towards personal safety, little or no access to health facilities, and poor working conditions, and organisational cultures.

Our operations around the world can have direct and indirect impacts on the environment. Our ability to manage and mitigate these may impact maintenance of our operating licences as well as affecting future projects and acquisitions.

Our operations are often located close to communities with limited healthcare. Local health services might be in the early stages of development, or local authorities may not have the resources to cope with the scale of need.

Our diversity, in terms of geographical locations, working conditions, organisational cultures and workforce, means that we need to take a local approach to transforming attitudes towards catastrophic hazard management, including safety and health practices as well as resolving environmental challenges.

Environmental, safety and health regulations may result in increased costs or, in the event of non-compliance or incidents causing injury or death or other damage at or to our facilities or surrounding areas, may result in significant losses. These include, those arising from (1) interruptions in production, litigation and imposition of penalties and sanctions and (2) having licences and permits withdrawn or suspended while being forced to undertake extensive remedial clean-up action or to pay for government-ordered remedial clean-up actions.

Liability may also arise from the actions of any previous or subsequent owners or operators of the property, by any past or present owners of adjacent properties, or by third parties.

Developments
We remain focused on the significant risks facing our industry arising from operational catastrophes such as the examples of mining dam collapses in Brazil in the last five years. During 2019, the HSEC Committee continued to sponsor and monitor the Group's sustainability risks assurance process. Its focus continues to be on the Group's catastrophic hazards.

We continued to take a flexible local approach to transforming our workforces' safety and health attitudes and culture. Although we seek to improve our policies and their implementation over time, we continue to experience shortcomings, which result in health and safety and environmental issues.

We regret that we recorded 17 fatalities at our operations in 2019 (2018: 13). There is full commitment from senior management and the Board to improve our performance.

During the year, no major or catastrophic environmental (category 4-5 and above) incidents occurred.

Mitigating factors
Our approach to sustainability and our expectations of our workers and our business partners are outlined in our sustainability framework. This underpins our approach towards social, environmental, safety and compliance indicators, providing clear guidance on the standards we expect all our operations to achieve. Through the reporting function within the programme, our Board and senior management receive regular updates and have a detailed oversight on how our business is performing across all of the sustainability indicators.

The creation of a new role – Head of Industrial Assets together with supporting central team – one of the objectives of which, is to ensure an efficient and consistent approach to managing Industrial Assets. Considerable ongoing investment continues in the Group's SafeWork health and safety programme. Our commitment to complying with or exceeding the health, safety and environmental laws, regulations and best practice guidelines applicable to our operations and products through our sustainability framework.

We remain focused on the significant risks facing our industry arising from operational catastrophes. For example, the considerable verification work undertaken and enhanced monitoring of tailings storage facilities is assisting in greater visibility and control of these risks, and we continue to undertake work to improve the safety and stability of these facilities.

We monitor catastrophic risks, in particular, across our portfolio and operate emergency response programmes. We are working towards creating a workplace without fatalities, injuries or occupational diseases through establishing a positive safety culture.

We aim to minimise any potential water-related impacts as it is a vital resource to our operations and the communities in which we operate.

We recognise the contribution a healthy community makes towards the robustness of our production processes. Community members are often our employees, contractors, procurement partners and service providers. We work with local authorities, local community representatives and other partners, such as NGOs, to help to overcome major public health issues in the regions where we work, such as HIV/AIDS, malaria and tuberculosis. See also the Sustainability review on page 34 and the HSEC Committee report on page 106. Further details will also be published in our 2019 sustainability report.

10 Climate change

Risk movement in 2019: Increase

Link to strategic priorities

Risk appetite
High. Our business involves producing and consuming fossil fuels along with processing minerals, all of which inevitably entails emitting a level of greenhouse gases.

Risk description and potential impact
Climate change is a material issue that can affect our business. As a significant producer, marketer and consumer of energy products, energy is a key output, input, cost and revenue driver for our business, and a material source of our greenhouse gas emissions.
A number of governments have already introduced, or are contemplating the introduction of regulatory responses to greenhouse gas emissions to support the achievement of the goals of the Paris Agreement and the transition to a low-carbon economy. This includes countries where we have assets such as Australia, Canada, Chile and South Africa, as well as our customer markets such as China, India and Europe.

A transition to a low-carbon economy and its associated public policy and regulatory developments may lead to:
- the imposition of new regulations, and climate change related policies adverse to our interests in fossil fuels by actual or potential investors, customers and banks, potentially impacting Glencore's reputation, access to capital and financial performance
- increased costs for energy and for other resources, which may impact the productivity of our assets and associated costs the imposition of levies related to greenhouse gas emissions
- increased costs for monitoring and reporting related to our carbon footprint
- reduced demand for our fossil fuel products
- impacts on the development or maintenance of our assets due to restrictions in operating permits, licences or similar authorisations
- closing of coal assets and consequent loss of investment

Climate change may increase physical risks to our assets and related infrastructure, largely driven from extreme weather events and water related risks such as flooding or water scarcity.

We are one of the major producers of key metals (including copper, cobalt, nickel) that are currently essential for electric vehicles and the transition to a low carbon economy, although technological change may over time reduce their requirement.

There has been a significant increase in litigation (including class action), in which climate change and its impacts are a contributing or key consideration, including administrative law cases, tortious cases and claims brought by investors. In particular, a number of lawsuits have been brought against fossil fuel companies in various jurisdictions seeking damages related to climate change.

Sustainability risks continued

Developments
In 2019, the Group wrote down the value of its Colombian coal assets by c.$1.0 billion (see note 6 and 10).

Many developed countries are pledging to stop using fossil fuels (specifically coal) in power generation. The European coal market has seen reduced demand affecting our Colombian coal production in particular, also impacted by the low competing gas prices, which resulted in impairments in the year. In December 2018, global investors collectively representing $11.5tn have set out their requirements to investee power companies to set out transition plans consistent with the goal of the Paris Agreement. They also expect explicit time lines and commitments for the rapid elimination of coal use by utilities in EU and OECD countries by 2030.

This is particularly relevant for us as a large producer of seaborne thermal coal and a significant marketer of fossil fuels.

As a result of these factors, some market participants and analysts have a more bearish view (some strongly so) in relation to coal and oil. Some investors may not invest in our shares or divest their holdings due to our significant operations in fossil fuels. To date, the Norwegian sovereign fund is the only previous large investor that can no longer invest in Glencore shares due to the absolute size of our thermal coal production levels, rather than coal's relative contribution. However, a number of other investors may make various commitments in the future, which would cause them to reduce or divest their holdings in Glencore securities.

Mitigating factors
Through our focused climate change programme, we strive to ensure emissions and climate change issues are identified, understood and monitored in order to meet international best practice standards, ensure regulatory compliance and meet the commitments we have made in support of the goals of the Paris Agreement.

We disclose our energy and greenhouse gas emissions footprint, including our annual Scope 3 emissions. This supports our identification, understanding and monitoring of emissions, the setting of targets and reporting of projections.

We seek to manage our coal business tightly around cash generation, including ensuring that ongoing/further investment has shorter cost pay-backs so as to mitigate "stranded-assets" risk.

Climate change also creates opportunities for our business. We are one of the major producers of key metals (including copper, cobalt and nickel) that are currently essential for electric vehicles and the transition to a low carbon economy, although technological change may over time reduce their requirement.

To understand better and plan for the effects of climate change on our business, we have a framework for identifying, understanding, quantifying and, ultimately, managing climate-related challenges and opportunities facing our portfolio:

- Government policy: we take an active and constructive role in public policy development of carbon and energy issues and seek to ensure that there is a balanced debate with regard to the ongoing use of fossil fuels
- Lobbying activities: we acknowledge IIGCC Investor Expectations on Corporate Climate Lobbying and recognise the importance of ensuring our membership in relevant trade associations does not undermine our support for the Paris Agreement and the Paris Goals
- Energy costs: projected price changes within our operating regions may affect our assets' operating cost sensitivities. We review the potential energy cost impacts on our operating costs
- Physical impacts: changes in weather patterns: floods; droughts; and storm frequency as well as storm surge have the potential to impact on ports and critical infrastructure and on local communities. We review risk registers and conduct risk assessments at our assets for projected impacts
- Stakeholder perceptions: negative perception may result in impacts to permit approvals, divestiture or cost of finance and affect our operating policy environments. We consider policy and financial consequences for our business and operations
- Market impacts: potential impacts on existing commodity markets through new or increased opportunities for our products from emerging technologies and policy changes. We determine how significant the potential impacts are (both positive and negative) and act accordingly

Last year, following engagement with investor signatories of the Climate Action 100+ initiative, we furthered our commitment to a low-carbon economy, amongst others by limiting our coal production broadly to approximately 150 million tonnes. In addition, we undertook to ensure that our material capital expenditure and investments align with the Paris Goals, and to report publicly on how this is achieved. At present, we project a c. 30% reduction in Scope 3 emissions by 2035. Please refer to pages 16-23 for further details.

Our internal, cross-function and multi-commodity working group, led by our Chairman, co-ordinates our understanding and planning for the effects of climate change on our business, as well as the steps we have put in place to meet our Group-wide carbon emission intensity reduction target of 5% on 2016 levels by 2020. We are comfortably on track to exceed our target. We are continuing to invest in a range of emission reduction projects.

We participate in a wide range of public policy discussions on carbon and energy issues and seek to ensure that there is a balanced debate with regard to the ongoing use of fossil fuels. We review our membership of trade associations to ensure that these do not undermine our support for the goals of the Paris Agreement.

Further information is available at: **glencore.com/sustainability/climate-change**

Sustainability risks continued

11 Community relations and human rights	Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Low. It is our policy to ensure we proactively engage with local communities to maintain our social licence to operate.

Risk description and potential impact
Community relations, in particular in developing countries such as Colombia, Zambia, DRC and Peru, are important for the Group's local operations.

Our operations have a significant effect on our workforce, and surrounding communities and on society as a whole. We recognise the contribution our business activities make to the national and local economies in which we operate. As a result, the continued success of our existing operations and our future projects are in part dependent on broad support and a healthy relationship with the communities surrounding our operations as well as our ability to promote diversified and resilient local economies.

A perception that we are not respecting human rights or generating local sustainable benefits could have a negative impact on our "social licence to operate", our ability to secure access to new resources and our financial performance. The consequences of adverse community reaction or allegations of human rights incidents could also have a material adverse impact on the cost, profitability, ability to finance or even the viability of an operation and the safety and security of our workforce and assets. Locally based events could escalate to disputes with regional and national governments as well as with other stakeholders and potentially result in reputational damage and social instability that may affect the perceived and real value of our assets.

Some of our mine sites are in remote locations where they are a – or the – key employer in the region. Inevitably, every mine will reach a point of depletion where it is no longer economic to operate and must be closed in an orderly fashion.

Developments
We have faced community unrest at a number of our operations, most notably in South Africa, largely driven by lack of economic opportunities and poverty. The unrest has resulted in protests and blockades, leading to operational shutdowns and putting our workforce at risk of injury.

Illegal artisanal mining continues to be a challenge at certain operations, most notably in the DRC. In 2019, an incident resulted in multiple fatalities and injuries of illegal miners at our Kamoto Copper Company (KCC) industrial operations. The illegal miners were working two galleries (underground tunnels) in benches overlooking the extraction area. Two of these galleries caved in, resulting in thirty fatalities. These incidents were not linked to KCC operations or activities. Further details on this incident and our response are available on our website at: **glencore.com/media-and-insights/updates-regarding-illegal-mining-at-KCC**

Mitigating factors
We take a proactive and strategic approach to our stakeholder and community engagement. We support the advancement of the interests of both our host communities and our assets. Through our sustainability programme, we seek to manage these vital relationships by adhering to the principles of open dialogue and cooperation. In doing so, we engage with local communities to demonstrate our operations' contribution to socio-economic development and seek to ensure that appropriate measures are taken to prevent or mitigate possible adverse impacts on the community. We aim for continuous monitoring and reporting of community initiatives and complaints. In the DRC, we operate a number of programmes to offer alternative livelihoods to people engaged in illegal artisanal mining.

We uphold and respect the human rights of our people and our local communities. Where we may cause adverse impacts on our stakeholders, we seek to apply relevant international standards to understand, control and mitigate the impact. We also seek to apply the Voluntary Principles on Security and Human Rights in regions where there is a high risk to human rights. At Antapaccay, we have engaged external human rights experts to undertake an independent human rights review to build an understanding of stakeholder perceptions and concerns about the operation.

We are working with all stakeholders at our mine sites to operate for as long as it is economically viable to do so, and to prepare long-term plans that provide for a gradual transition to the end of mine life.

We seek to make our grievance mechanisms available to the community members impacted by our operations. We review all complaints received and take actions when necessary to address the issues raised.

Further information is available on our website at: **glencore.com/sustainability/community-and-human-rights**

Entrepre-
neurialism

Opportunities to learn, grow and deliver

Kapil Reddy Kunta
Nickel Trader – Glencore Head Office, Switzerland

Kapil joined Glencore in 2011 and quickly noticed the company was different; he could walk into the head of department's office and talk like any other colleague.

"For a 26-year-old who had just joined, being able to access the boss – and for them to give me their time – was a huge positive. Your responsibilities grow, and it's very entrepreneurial.

"If you have the ambition to learn, grow and deliver, you'll be really successful."

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Corporate Governance

Chairman’s Governance statement

Anthony Hayward
Chairman

> In this Annual Report the Board has sought to ensure that our reporting reflects our mission to ensure that the Group fulfils its purpose and that it has the culture and strategy to do so.
>
> Although there are difficult challenges ahead, your Board is determined to guide this remarkable Company to the next stage of its journey.

Glencore is a company in transition. Up until the end of 2018, the management team that built the Company and led it through the IPO in 2011 and subsequent merger with Xstrata in 2013, remained largely in place.

Succession planning

One of the Board’s central objectives has been to oversee an orderly management succession. Over the past 15 months we have seen the retirement of the marketing heads of copper, oil, ferroalloys, and agriculture. This process will continue this year.

The quality and capability of the new generation is impressive and considerable credit to the development plans overseen by Ivan and his colleagues.

The 2018 UK Corporate Governance Code (the Code) introduced a new provision that a chairman should also be subject to a nine year term limit from first appointment as a director. However, the Board has recommended to shareholders that I remain as Chairman while the senior management succession is concluded and for the ongoing investigations. This will be reviewed at the end of the year.

The replacement of Mr Fischer (who has also served for nine years) as Chair of the Audit Committee will occur in the second half of 2020. Both of these Code issues have been pre-discussed with our largest institutional shareholders.

We continue the process of Board renewal and the Board was very pleased to welcome Kalidas Madhavpeddi as a new Independent Non-Executive Director. We will seek to make further appointments, particularly of a new Audit Committee Chair and a further female Director, later this year.

Effective corporate governance

It is an important pillar of corporate governance that the chairman manages the Board and the CEO and senior executives manage the business. However, the Board must also ensure that it has a genuine oversight of all material aspects of the Group and its operations.

In my introduction to this Annual Report on page 1, I highlight the importance of our purpose. Obviously, the Board needs to understand and ensure appropriate leadership of the Group's business and implementation of its strategy. As well as through consideration of Board materials and discussions with and questions of the CEO, CFO and Head of Industrial Assets, the Board regularly meets other senior leaders of the Group's business.

The Group's corporate functions are also vital. The General Counsel is a contributor to every Board and ECC meeting. He also attends every Audit Committee meeting, during which the Directors also have an opportunity to question the Chief Risk Officer, who is responsible for market and credit risk, the Head of Internal Audit and the Financial Controller.

At ECC and Remuneration Committee meetings we also engage with the Head of Human Resources.

At HSEC meetings we have discussions with the Head of HSEC, the Head of Sustainable Development and the Head of HSEC Assurance. At these meetings there is also a management presentation whenever there is a fatality. This is another opportunity for the Directors to hold management to account and to carefully scrutinise our management teams in action.

This is not just about the prevention of future fatalities – fundamental as that is – but it is also about the Directors clearly and forcefully engaging with the business managers to assess their qualities and strengths and to determine whether they are genuinely agents for change.

As a Board, we strongly support our *Raising Concerns* programme, which is a channel for employees to raise concerns. We review the procedures in place to ensure that all concerns are appropriately investigated and addressed and review individually the high risk concerns which are required to be brought to the Board's attention.

Realising our purpose

At the beginning of this report, I explained the material nature of the changes to the Code and why they are important.

The constant yet varied interaction with the business and function leaders is a crucial part of our governance. As well as providing direct and real interaction, it also provides another insight into the Group's culture and allows the Directors to assess whether our purpose and strategy are being realised.

In this Annual Report the Board has sought to ensure that our reporting reflects our mission to ensure that the Group fulfils its purpose and that it has the culture and strategy to do so. This is an ongoing matter and as well as assessing our own performance we will carefully consider what other major UK listed companies, particularly in the global resources space, have done and are doing to fulfil these objectives and clearly report on their progress

I sign off this report at a time of considerable uncertainty for the markets in which the Group operates. Although there are difficult challenges ahead, your Board is determined to guide this remarkable Company through the next stage of its journey.

Tony Hayward
Chairman
4 March 2020

Directors and officers

Directors

Anthony Hayward
Chairman (62)

E H I

Chairman since May 2013; he joined the Board in 2011 as the Senior Independent Director. Chair of Nomination Committee during 2019.

Experience
Dr Hayward is managing partner of St James's Asset Management, a partner and member of the European advisory Board of AEA Capital and has other private equity interests.

He was CEO of BP plc from 2007–10, having joined BP in 1982. He became group treasurer in 2000, chief executive for BP upstream activities and a member of the main board of BP in 2003.

From 2011–15 he was CEO of Genel Energy plc and chairman from 2015–17.

Dr Hayward studied geology at Aston University in Birmingham and completed a Ph.D at Edinburgh University. He is a fellow of the Royal Society of Edinburgh.

Ivan Glasenberg
Chief Executive Officer (63)

H

Joined Glencore in April 1984; Chief Executive Officer since January 2002.

Experience
Initially worked in Glencore's coal department in South Africa as a marketer. Following time in Australian and Asian offices, in 1990 he was made head of Glencore's coal marketing and industrial businesses, and remained in this role until he became Group CEO in January 2002.

Mr Glasenberg is a Chartered Accountant of South Africa, holds a Bachelor of Accountancy from the University of Witwatersrand and an MBA from the University of Southern California.

Martin Gilbert
Senior Independent Director (64)

A I R

Senior Independent Director since May 2018; appointed in May 2017.

Experience
Mr Gilbert is vice chairman of Standard Life Aberdeen plc (LON:SLA) and chairman of Revolut Limited.

Mr. Gilbert was formerly co-CEO of Standard Life Aberdeen and co-founder of Aberdeen Asset Management, which was established in 1983.

Mr Gilbert is a member of the international advisory panel of the Monetary Authority of Singapore and the international advisory board of British American Business.

Mr Gilbert was educated in Aberdeen. He has an LLB, an MA in Accountancy and is a Chartered Accountant.

Peter Coates AO
Non-Executive Director (74)

E H

Non-Executive Director since January 2014; previously Executive Director from June to December 2013 and Non-Executive Director from April 2011 to May 2013.

Experience
Mr Coates worked in senior positions in a range of resource companies before joining Glencore's coal unit as a senior executive in 1994. When Glencore sold its Australian and South African coal assets to Xstrata in 2002 he became CEO of Xstrata's coal business, stepping down in December 2007.

He was non-executive chairman of Xstrata Australia (2008–09), Minara Resources Ltd (2008–11) and Santos Ltd (2009–13 and 2015–18). He is currently a non-executive director of Event Hospitality and Entertainment Ltd (ASX:EVT).

Mr Coates holds a Bachelor of Science degree in Mining Engineering from the University of New South Wales. He was appointed to the Office of the Order of Australia in June 2009 and awarded the Australasian Institute of Mining and Metallurgy Medal for 2010.

Leonhard Fischer
Non-Executive Director (57)

A I

Appointed in April 2011. Member of Nomination and Remuneration Committees during 2019.

Experience
Mr Fischer is founder and chairman of the investment committee of DFG Deutsche Fondsgesellschaft SE Invest.

He was CEO of BHF Kleinwort Benson group S.A. from 2009–16, before that CEO of Winterthur group from 2003–06, and a member of the executive board of Credit Suisse group from 2004–07. He joined Credit Suisse from Allianz, where he had been a member of the management board.

Mr Fischer holds an M.A. in Finance from the University of Georgia.

John Mack
Non-Executive Director (75)

R N

Appointed in June 2013.

Experience
Mr Mack is a non-executive director of New Fortress Energy (NASDAQ:NFE) and also serves on the board of Tri Alpha. He also serves on the board of Trustees of New York-Presbyterian Hospital and the University Hospitals of both Columbia and Cornell.

Mr Mack previously served as CEO of Morgan Stanley from 2005–09. He retired as chairman in 2011. Mr Mack first joined Morgan Stanley in May 1972, becoming a board director in 1987 and president in 1993.

From 2001 to 2005, Mr Mack served as co-CEO of Credit Suisse.

Mr Mack is a graduate of Duke University.

Gill Marcus
Non-Executive Director (70)

A E

Appointed in January 2018. Member of Nomination Committee during 2019.

Experience
Ms Marcus was Governor of the South African Reserve Bank from 2009–14.

She worked in exile for the African National Congress from 1970 before returning to South Africa in 1990. In 1994 she was elected to the South African Parliament. In 1996 she was appointed as the deputy minister of finance and from 1999 to 2004 was deputy governor of the Reserve Bank. Ms Marcus was the non-executive chair of the Absa Group from 2007–09 and has been a non-executive director of Gold Fields Ltd and Bidvest. She has acted as chair of a number of South African regulatory bodies. In 2018, she was appointed to the Judicial Commission of Inquiry into allegations of impropriety at the Public Investment Corporation. Ms Marcus is a graduate of the University of South Africa.

Patrice Merrin
Non-Executive Director (71)

E H I N

Appointed in June 2014. Chair of Nomination Committee from 2020.

Experience
Following initial roles with Molson and Canadian Pacific, Ms Merrin worked at Sherritt for ten years until 2004, latterly as COO. She then became CEO of Luscar, Canada's largest thermal coal producer. She is currently a non-executive director of Samuel, Son & Co. Limited.

She has been a non-executive chair of Detour Gold Corporation (TSX:DGC) from June 2019 to January 2020, chairman of CML Healthcare, of Enssolutions, NB Power, and Arconic. Ms Merrin was a non-executive director of Kew Media Group Inc. (TSX:KEW), and a director of the Alberta Climate Change and Emissions Management Corporation from 2009 to 2014.

Ms Merrin is a graduate of Queen's University, Ontario and completed the Advanced Management Programme at INSEAD.

Kalidas Madhavpeddi
Non-Executive Director (64)

N R

Appointed in February 2020.

Experience
Mr Madhavpeddi has over 30 years of experience in the international mining industry, including being CEO of China Molybdenum International (China Moly) from 2008 to 2018. He started his career at Phelps Dodge, where he worked from 1980 to 2006, ultimately becoming senior vice president responsible for the company's global business development, acquisitions and divestments, as well as its global exploration programs.

Mr Madhavpeddi is currently a director of Novagold Resources (TSX: NG) and Trilogy Metals (TSX:TMQ). He was formerly director and chair of the governance committee of Capstone Mining (TSX:CS). He has degrees from the Indian Institute of Technology, Madras, India and the University of Iowa and has completed the Advanced Management Program at Harvard Business School.

Notes
All the Directors are non-executive apart from Mr Glasenberg. The Non-Executive Directors are designated as independent apart from Mr Coates and Dr Hayward. Committee membership is as follows:

Board diversity Page 97

- A Audit
- E Ethics, Compliance and Culture (ECC)
- H Health, Safety, Environment and Communities (HSEC)
- I Investigations
- N Nomination
- R Remuneration
- ● denotes Committee chair

Officers

Steven Kalmin
Chief Financial Officer (49)

Appointed as Chief Financial Officer in June 2005.

Experience
Mr Kalmin joined Glencore in September 1999 as general manager of finance and treasury functions at Glencore's coal industrial unit. He moved to Glencore's head office in 2003 to oversee Glencore's accounting functions, becoming CFO in June 2005. In November 2017 he was appointed as a director of Katanga Mining Limited (TSX: KAT).

Mr Kalmin holds a Bachelor of Business (with distinction) from the University of Technology, Sydney and is a member of Chartered Accountants Australia and New Zealand and the Financial Services Institute of Australasia.

Before joining Glencore, Mr Kalmin worked for nine years at Horwath Chartered Accountants.

John Burton
Company Secretary (55)

Appointed Company Secretary in September 2011.

Experience
From 2006 to 2011, Mr Burton was company secretary and general counsel of Informa plc, where heestablished the group legal function and a new company secretarial team. Before that he had been a partner of CMS in London for 8 years, advising on a broad range of corporate and securities laws matters.

Mr Burton holds a B.A. degree in Law from Durham University. He was admitted as a Solicitor in England and Wales in 1990.

Corporate Governance report

This report should be read in conjunction with the Directors' report and the remainder of the Governance section

Board governance and structure
This Governance report, along with the Strategic report and the Directors' report, sets out how Glencore has applied the principles of the new 2018 UK Corporate Governance Code (the Code) in a manner which enables shareholders to evaluate how these principles have been applied. The Board believes that the Company has throughout the year complied with all relevant provisions contained in the Code.

This new Code brought in material changes, including a strong emphasis on a company's purpose, strategy, values and culture. The Board welcomed these changes and has sought to embrace them in its work and that of its committees. In particular in response to the new requirements, at the beginning of the year we established the new ECC committee in order to focus, along with ethical and compliance matters, on culture and stakeholder engagement.

Directors
During 2019 the Board comprised seven Non-Executive Directors (including the Chairman) and one Executive Director. On 4 February 2020 Mr Kalidas Madhavpeddi was appointed as Non-Executive Director.

For 2020, the composition of the Nomination and Remuneration Committees have been changed (see pages 94 and 95).

A list of the current Directors, with their brief biographical details and other significant commitments, is provided in the previous pages.

We have consulted with major shareholders on the following arrangements:

1. Dr Hayward will this year have served on the Board for nine years. However, due to the management succession taking place and the ongoing investigations, the Board has recommended to shareholders that he remains as Chairman, with the position to be reconsidered in one year's time
2. The Company has not appointed a new director to be chairman of the Audit Committee. In the circumstances the Board has asked Mr Fischer to remain in place, until his successor is appointed. This extension shall expire by year-end. Also the audit tender process (see page 108) will not commence until the new Chair is appointed.

The Chief Financial Officer attends all meetings of the Board and Audit Committee. The Company Secretary attends all meetings of the Board and its Committees.

Board attendance throughout the year
Attendance during the year for all scheduled full agenda Board and all Board Committee meetings is set out in the table below:

	Board of 6	HSEC of 5	ECC of 5	Audit of 4	Remuneration of 3	Nomination of 3
Anthony Hayward	6	5	5	–	–	3
Peter Coates	6	5	5	–	–	–
Leonhard Fischer	6	–	–	4	3	3
Martin Gilbert	6	–	–	4	3	–
Ivan Glasenberg	6	5	–	–	–	–
John Mack	5	–	–	–	3	3
Gill Marcus	5	–	5	4	–	3
Patrice Merrin	6	5	5	–	–	–

In addition, there were another four limited agenda meetings of the Board.

Most Directors also attend by invitation the meetings of the Committees of which they are not members.

Roles and responsibilities

Chairman
- Leading the Board
- Shaping the culture in the boardroom
- Promoting sound and effective Board governance
- Ensuring effective communication with shareholders
- Leading the annual performance evaluation of the Board

Senior Independent Director
- Acting as confidant of the Chairman and, when appropriate, as an intermediary for other independent Directors
- Acting as Chair of the Board if the Chairman is unable to attend
- Leading the Chairman's performance appraisal along with other independent Directors
- Answering shareholders' queries when usual channels of communication are unavailable

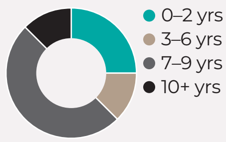
Chief Executive Officer
- Leading the management team
- Developing the Group's strategy in conjunction with the Board
- Implementing the decisions of the Board and its Committees
- Achieving the Group's commercial objectives
- Developing Group policies and ensuring effective implementation

Other Non-Executive Directors
- Challenging the Chief Executive Officer and senior management constructively
- Bringing an independent mindset and a variety of backgrounds and experience around the Board table
- Providing leadership and challenge as chairs or members of the Board Committees, which (except HSEC) comprise only Non-Executive Directors
- Assisting the Senior Independent Director in assessing the Chairman's performance and leadership

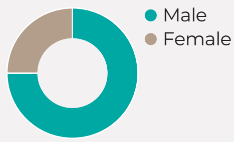
Company Secretary
- Ensuring that Board procedures are complied with and that papers are provided in sufficient detail and on time
- Informing and advising the Board on all governance matters
- Informing the Board on all matters reserved to it
- Assisting the Chairman and the Board regarding the annual performance evaluation process

Board diversity and experience

Tenure



Gender



	Tony Hayward British	Ivan Glasenberg S. African	Martin Gilbert British	Leonhard Fischer German	Peter Coates Australian	John Mack American	Gill Marcus S. African	Patrice Merrin Canadian	Kalidas Madhavpeddi American
Experience									
Resources	●	●			●			●	●
Non-executive directorship	●	●	●	●	●	●	●	●	●
C-suite	●	●	●	●	●	●	●	●	●
Global transactions	●	●	●	●	●	●		●	●
Technical Skills									
Leadership & Strategy	●	●	●	●	●	●	●	●	●
Financial Expertise	●	●	●	●		●	●		●
Ethics & Governance	●	●	●	●	●	●	●	●	●
Health & Safety	●	●	●		●			●	●
Investor Relations	●	●	●	●	●	●		●	●
Communications & Reputation	●	●	●			●	●	●	●
Risk Management	●	●	●	●	●	●	●	●	●

Division of responsibilities

As a Jersey incorporated company, Glencore has a unitary Board, meaning all Directors share equal responsibility for decisions taken. Glencore has established a clear division between the respective responsibilities of the Non-Executive Chairman and the Chief Executive Officer, which are set out in a schedule of responsibilities approved by the Board and reviewed annually. While the Non-Executive Chairman is responsible for leading the Board's discussions and decision-making, the CEO is responsible for implementing and executing strategy and for leading Glencore's operating performance and day-to-day management. The CEO, CFO and General Counsel have line of sight across the Group.

The Company Secretary is responsible for ensuring that there is clear and effective information flow to the Non-Executive Directors. Further details of these responsibilities are set out opposite.

From 2019, the new position of Head of Industrial Assets was created with Mr Peter Freyberg appointed to the role, reporting to the CEO. Internal reporting lines and organisational structures were amended such that Glencore's industrial activities report to the Head of Industrial Assets and all of its marketing activities report to the Head of Marketing (being the CEO). The CEO, the Head of Industrial Assets, the CFO and General Counsel lead our management team supported by the heads of each department for marketing and industrial business and the heads of corporate functions.

Senior Independent Director

Mr Gilbert is the Senior Independent Non-Executive Director. He is available to meet with shareholders and acts as an intermediary between the Chairman and other independent Directors when required. This division of responsibilities, coupled with the schedule of reserved matters for the Board, ensures that no individual has unfettered powers of decision.

Non-Executive Directors

The Company's Non-Executive Directors provide a broad range of skills and experience to the Board (see table above), which assists in their roles in formulating the Company's strategy and in providing constructive challenge to executive management.

Glencore regularly assesses its Non-Executive Directors' independence. Except for Mr Peter Coates, due to his employment by the Group during 2013 and the Chairman, all are regarded by the Board as Independent Non-Executive Directors within the meaning of "independent" as defined in the Code and free from any business or other relationship which could materially interfere with the exercise of their independent judgement. However, as noted on page 96, from May this year Mr Fischer shall, if re-elected, exceed nine year terms. In line with Provision 10 of the Code, the Board considered the independence of Mr Fischer against the different circumstances and factors included in the Code and the FRC's *Guidance on Board Effectiveness*, concluding that in absence of any other circumstance or factor but that of the slight excess of his tenure, he remained fully capable of demonstrating objective judgement and promoting constructive challenge for the Board and management. Therefore the Board considers Mr Fischer as an independent director.

Management of conflicts of interest

All Directors endeavour to avoid any situation of conflict of interest with the Company. Potential conflicts can arise and therefore processes and procedures are in place requiring Directors to identify and declare any actual or potential conflict of interest. Any notifications are required to be made by the Directors prior to, or at, a Board meeting and all Directors have a duty to update the whole Board of any changes in circumstances. Glencore's Articles of Association and Jersey law allow for the Board to authorise potential conflicts and the potentially conflicted Director must abstain from any vote accordingly. During 2019, no abstention procedures for conflicts had to be activated.

Related Party Transactions

In the course of its business, the Group enters into transactions with organisations which may constitute related parties.

All material related party transactions are required to be reviewed and approved by the Board. In the event that a conflict exists for a Director, he or she will not be allowed to vote on the resolution approving the transaction, as noted above. Additionally, the Board seeks advice whenever an assessment is to be made as to whether any material transaction may be a related party transaction under the terms of FCA Listing Rule 11.

Transactions between the Group and its significant joint ventures and associates are summarised in note 32 to the Financial Statements.

Acquisition and disposal of assets

The Board reviews and approves all material proposed transactions, including acquisitions and disposals of assets. Additionally, there is an assessment as to whether material transactions comply with FCA Listing Rule 10 requirements.

If required, the Board may engage an independent third party as consultant to review the proposed transaction and provide an independent opinion for the Board to consider before making a decision.

Board Committees

The following permanent Committees are in place to assist the Board in exercising its functions: Audit, Nomination, Remuneration, HSEC and ECC. The Board is provided with technical and commercial updates as appropriate during the year, including as to compliance and our Raising Concerns programme. The Board may also establish temporary Committees for specific purposes, such as the Investigations Committee. As each Committee reports to the Board, meetings are held prior to Board meetings, during which the Chair of each Committee leads a discussion concerning the Committee's activities since the previous Board meeting.

A report for 2019 from each Chair of the permanent Committees is set out later in this Corporate Governance report.

All permanent Committees' terms of reference are available at: **glencore.com/who-we-are/governance**

Each Committee reports to, and has its terms of reference approved by, the Board and the minutes of the Committee meetings are circulated to the Board. Each Committee regularly reviews its terms of reference to ensure they reflect the Board's expectations as to the Committee's role as well as the latest corporate governance requirements and recommended practices.

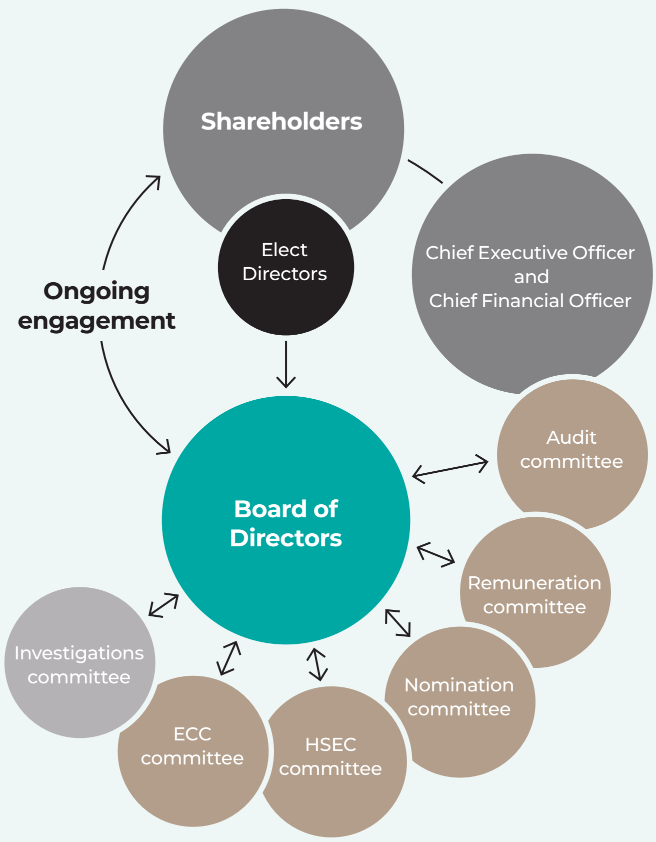
In July 2018, following receipt of a subpoena from the US Department of Justice (DOJ), the Board reconstituted the ad-hoc Investigations Committee to direct the Company's response. The Investigations Committee's mandate continued throughout 2019 and includes oversight of the Company's response to the CFTC, Brazilian and SFO investigations.

Board meetings

The Board has approved a schedule that sets out the matters solely reserved for its approval, including Group strategy, financial statements and annual budget, risk appetite, material acquisitions and disposals. Meetings are usually held at the Company's headquarters in Baar, Switzerland. Details of the Board and Committee meetings held during the year are detailed on page 96.

The Board and its Committees have standing agenda items to cover their proposed business at their scheduled meetings. The Chairman

Corporate Governance



Board activities during 2019

Below are details of the main topics which were reviewed, discussed, and when required, approved by the Board during 2019:

Regular updates
- Chairman's report
- Reports from Committee Chairs
- Reports from CEO, CFO, Company Secretary, General Counsel and senior management
- Group performance report
- Customer performance dashboard

Financial & Risk
- Finance reports, forecasts and capital position updates
- 2020 budget/2021–23 business plan
- Dividend & buyback programmes
- Financial statements
- Group risk appetite
- Group risk management framework

Governance & Stakeholders
- Annual report
- AGM and voting results
- Investor relations reports
- Analysts updates
- Corporate governance framework
- Stakeholder engagement

Legal, Regulatory & Compliance
- Group policies
- Legal matters updates and investigations
- Regulatory & Compliance updates
- Group Compliance Programme
- *Raising Concerns* reports

Health, Safety & Environment
- Fatalities, major incidents and other safety issues
- Environmental incidents reports
- Human Rights and Communities reports
- Carbon/Climate reports
- Tailings Storage Facilities reviews
- Supply chain traceability

Other activities
- Board and Directors' evaluation
- Chairman's performance
- Succession planning for Board and senior management
- Senior management remuneration

seeks to ensure that the very significant work of the Committees feeds into, and benefits as to feedback from, the full Board. The Board and Committee meetings receive support from senior management through reports and presentations, which among others vary from operational, financial, audit, risk, legal and compliance, governance, and investor relations to cover all aspects of the Group. These reports and presentations allow Directors to further their understanding of the business and provide the insights necessary for defining the Company's strategy and objectives, in turn contributing to a more effective Board. A summary of the Board's main activities during 2019 is set out on the next page.

Appointment and re-election of Directors
All Directors will be offering themselves for re-election at the 2020 AGM, see previous page.

All of the Non-Executive Directors have letters of appointment and the details of their terms are set out in the Directors' remuneration report. No other contract with the Company or any subsidiary undertaking of the Company in which any Director was materially interested existed during or at the end of the financial year.

Information, management meetings, site visits and professional development
It is considered of great importance that the Non-Executive Directors attain a good knowledge of the Company and its business and allocate sufficient time to Glencore to discharge their responsibilities effectively. The Board calendar is planned to ensure that Directors are briefed on a wide range of topics.

During 2019, Directors have visited Group operations and offices to discuss aspects of the business with employees and executives. It is intended that a greater number of visits will take place in 2020, reflecting more employee engagement. Directors have also participated in internal events, such as the HSEC and Compliance summits, giving them the opportunity to engage directly with those who deal with some of the key challenges the Group faces. For further details of these, please refer to sections on stakeholder engagement and ethics and compliance (pages 26–29 and 42–44). Directors also attend appropriate external seminars and briefings.

All Directors have access to the advice and services of the Company Secretary, who is responsible to the Board for ensuring the Board procedures are complied with, and have access to independent and professional advice at the Company's expense, where they judge this to be necessary to discharge their responsibilities as Directors.

Director induction and information
New Directors receive a full, formal and tailored induction on joining the Board, including meetings with senior management.

The induction process of Mr Madhavpeddi has commenced and will continue throughout 2020, including a comprehensive introduction to the main aspects

Risk – Board leadership

The Board provides leadership and oversight on risk management. Specifically it:

1
Provides a robust assessment of the emerging and principal risks facing the Group
The Board has carried out a robust assessment of the emerging and principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity. This assessment is essential in enabling the Board to determine the Group's risk appetite, which is one of the critical factors used when setting the Group's strategy and objectives. The Directors' description of those risks and how they are being managed or mitigated is set out on pages 74–89.

2
Reassesses the Group's long-term viability
Taking account of the Group's financial position and principal risks, the Directors assess the prospects of the Group and conclude whether they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment. Their conclusions are set out on page 75.

3
Monitors the Group's risk management and internal control systems
The Board monitors the soundness of the Group's risk management and internal control systems and carries out reviews of their effectiveness, including reviewing the Group's internal financial controls. This monitoring and review covers all material controls relative to financial, operational and compliance functions. Further details on pages 101–104.

4
Promotes a risk aware culture
The Board sets the tone on the Group's overall culture, including the risk management culture by giving clear mandate related to risk and reward to Management, aiming to ensure that there is an appropriate balance between the level of risk assumed, the quality of internal controls and the expected return. Further details on page 102.

of the Group, its business and functions, the roles and responsibilities of a UK premium listed company director, and the Company's Code of Conduct.

The Directors receive training on legal and compliance matters and regular updates on relevant business and governance matters.

Board performance and effectiveness

Since an external evaluation was carried out during 2018 and no material governance issue arose during 2019, a performance evaluation was conducted internally.

As part of this process, each Director completed questionnaires that covered various key indicators of Board and Committee performance and effectiveness, including the findings from the 2018 external evaluation (summarised in the 2018 Annual Report). Results were provided to the Chairman and the Senior Independent Director by the Company Secretary.

Additionally, the Chairman conducted an individual session with each Director to discuss individual performance. The Senior Independent Director conducted the Chairman's individual assessment.

Final results were presented to the Board collectively for discussion.

The Board was assessed as performing well, with confidence also in the effectiveness of its HSEC, ECC and Audit Committees (its main risk and oversight committees).

Particular issues of focus raised for the Board included:

- health and safety, especially fatalities reduction
- pursuing the investigations
- ensuring stability during the senior management changes
- seeking strong resource industry experience on the Board
- greater diversity on the Board
- risk management, compliance and the role of internal audit continuing to be an area of focus

Remuneration

Remuneration is covered in the Directors' remuneration report which follows this section and includes a description of the work of the Remuneration Committee.

Diversity

The diversity policy which is applied to appointments to our administrative, management and supervisory bodies with regard to aspects such as, for instance, age, gender, or education and professional backgrounds is the same as for all Group employees.

The Board is very cognisant of the ongoing desire from stakeholders for greater diversity in senior management and boards. In particular, leading UK institutional shareholders have set a target for women to comprise 33% of senior management and boards of FTSE 100 companies by the end of 2020. For the Board we are confident that we will achieve this target. For senior management, while we support the aims of diversity, we do not believe that a one size fits all policy is appropriate or currently achievable. Still today we find it challenging to fill senior positions in remote mining locations and for the marketing of commodities, by women.

Accountability and audit

Financial reporting

The Group has in place a comprehensive financial review cycle, which includes a detailed annual planning/budgeting process where business units prepare budgets for overall consolidation and approval by the Board. The Group uses a large number of performance indicators to measure both operational and financial activity in the business. Depending on the measure, these are reported and reviewed on a daily, weekly or monthly basis. In addition, management in the business receives weekly and monthly reports of indicators which are the basis of regular operational meetings, where corrective action is taken if necessary. At a Group level, a well-developed management accounts pack, including income statement, balance sheet, cash flow statement as well as key ratios is prepared and reviewed monthly by management. As part of the monthly reporting process, a reforecast of the current year projections is performed. To ensure consistency of reporting, the Group has a global consolidation system as well as a common accounting policies and procedures manual. Management monitors the publication of new reporting standards and works closely with our external auditors in evaluating their impact, if any.

Risk management and internal control

The Board has applied provisions 28 to 31 of the Code by establishing a continuous process for identifying, evaluating and managing the risks that are considered significant by the Group in accordance with the revised Guidance on Internal Control published by the Financial Reporting Council. This process has been in place for the period under review and up to the date of approval of the Annual Report and financial statements. The process is designed to manage and mitigate rather than eliminate risk, and can only provide reasonable and not absolute assurance against material misstatement or loss. The Directors confirm that they have carried out a robust assessment of the principal and emerging risks facing the Group and have reviewed the effectiveness of the risk management and internal control systems. This review excludes associates of the Group as Glencore does not have the ability to dictate or modify the internal controls of these entities. This report describes how the effectiveness of the Group's structure of internal controls including financial, operational and compliance controls and risk management systems is reviewed.

Investigations

The Group is subject to the investigations listed on page 81 which are overseen by the Investigations Committee.

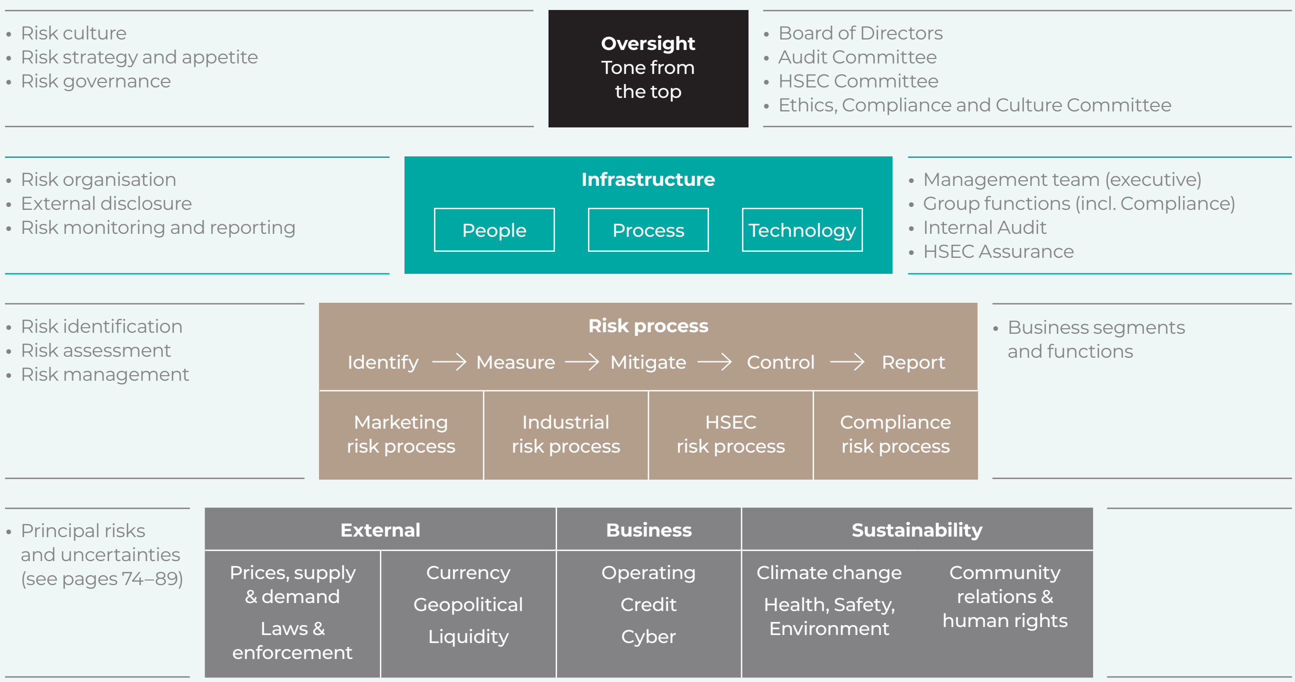
It operates entirely separately from the Group's executives, who have no decision-making power concerning the investigations. The Investigations Committee also monitors the Group's exposure arising from investigations by regulatory and enforcement authorities, and conclude on the appropriate disclosure in the financial statements: see note 31 for further details.

Approach to risk management

Effective risk management is crucial in helping the Group achieve its objectives of preserving its overall financial strength for the benefit of all stakeholders, and safeguarding its ability to continue as a going concern, while generating sustainable long-term profitability. Spanning the organisational structure, Glencore's disciplined approach to risk management and control originates with strategic responsibility in the hands of the Board, which also retains operational authority on matters exceeding agreed thresholds of materiality.

The Board retains the authority for assessing and approving the Group's overall risk appetite and sets overall limits which are reviewed annually.

Risk Management Framework



It is assisted by the work of the Audit Committee for oversight, by the Internal Audit function and by senior management for day-to-day operational matters, in order to maintain an effective risk management governance apparatus for the Group.

Additionally, the General Counsel reports at each scheduled meeting of the ECC Committee on all material compliance risks and matters.

Risk culture

Glencore recognises the critical importance of the development and maintenance of an appropriate institutional risk culture. The effectiveness of risk management and internal control ultimately depends on the individuals responsible for operating the systems that are put in place and Glencore's risk culture is built around 4 key pillars recognising this:

- Competence – relying on management capability and experience
- Motivation – aligning the interest of shareholders and management
- Communication – clear direction from the top permeating all layers of the business
- Organisation – flat organisational structure for more effective monitoring and reporting

Risk is an essential part of our business, from individual trader decisions to the most fundamental investment choices – risk is constantly analysed and considered.

Our organisational culture promotes risk awareness, encouraging proactive risk management behaviours. The risk management framework enables a high level of ownership by management and employees.

Risk Management Framework

Management engagement

The Company's senior management reviews the major risks facing the Group and decides if the level of risk fits within the appetite approved by the Board or whether further steps need to be taken to mitigate these risks.

Together, central and business management risk culture aims to strike an appropriate balance between the level of risk assumed and the expected return.

Board committees

The Audit Committee is responsible for reviewing the risk management framework and internal controls.

Mandated by the Board, the Audit, ECC and HSEC Committees were responsible in 2019 for ensuring that the significant risks identified are properly managed. See our Principal Risks and Uncertainties section pages 74-89 for more details.

Group functions

Group functions (Risk Management, Compliance, Legal, HSEC and Sustainable Development) support the business risk owners and senior management in mitigating risk across the Group.

Internal Audit

Internal Audit, as an independent assurance provider, reviews the risk management process and internal controls established by management.

A risk-based audit approach is applied in order to focus on high-risk areas during the audit process. It involves discussions with management on key risk areas identified in the Group's budgeting process, emerging risks, operational changes, new investments and capital projects.

The key results from this process assist in forming the audit plan and scope, which are reported to the Audit Committee for their review and ratification.

Industrial risk management

We believe that every employee should be accountable for the risks related to their role. As a result, we encourage our employees to escalate risks (not limited to hazards), whether potential or realised, to their immediate supervisors. This enables risks to be tackled and mitigated at an early stage by the team with the relevant level of expertise.

Led by the Head of Industrial Assets and Industrial Leads, management teams at each industrial operation are responsible for implementing processes that identify, assess and manage risk.

Any significant risks are reported to the relevant Industrial Lead and escalated to the Head of Industrial Assets, who in turn reports to the Audit, ECC or HSEC Committees as appropriate. A Corporate Risk Management Framework is implemented on a Group-wide basis to ensure consistency in the assessment and reporting of risks.

The risks that may impact on business objectives and plans are maintained in a business risk register. They include strategic, compliance, operational and reporting risks.

HSEC risk management

These risk management processes are managed at asset level, with the support and guidance from the central sustainability and HSEC teams, and subject to the leadership and oversight of the HSEC Committee.

The Group's internal assurance programme assesses compliance with leading practices in health and safety, environment and communities, but mainly focuses on catastrophic risks.

Further information is provided in the report from the HSEC Committee on page 106 and will be published in the Group's sustainability report for 2019.

Marketing risk management

Glencore's marketing activities are exposed to a variety of risks, such as commodity price, basis, volatility, foreign exchange, interest rate, credit and performance, liquidity and regulatory. Glencore devotes significant resources to developing and implementing policies and procedures to identify, monitor and manage these risks.

Glencore has a disciplined and conservative approach to Marketing Risk (MR) management supported by its flat organisational structure. Glencore continues to update and implement policies that are intended to mitigate and manage commodity price, credit and other related risks.

Glencore's MR is managed at an individual, business and central level. Initial responsibility for risk management is provided by the businesses in accordance with and complementing their commercial decision-making. A support, challenge and verification role is provided by the central MR function headed by the Chief Risk Officer (CRO) via its daily risk reporting and analysis which is split by market and credit risk.

The CEO, as the central figure of commercial leadership and control, drives functional risk management policy, supported by the CFO and the CRO, with data and reporting from the central risk team and the other key functional units. In turn the CEO reports to, and seeks authority limits from, the Board. The main oversight role is performed by the Audit Committee which receives a report from the CRO at each of its scheduled meetings. It also approves the Group-wide risk profile, and any exceptions to agreed positional thresholds.

At the heart of the risk management regime is the process of continuous challenge that takes place between the CEO, the CRO and the business heads which sets risk appetite in accordance with Group requirements and market conditions for each commodity, subject to the Audit Committee's oversight. The objective is to ensure that an appropriate balance is maintained between the levels of risk assumed and expected return, which relies on the commodity-specific expert knowledge provided by business heads. This is then subject to challenge from the CEO based on his overall Group knowledge and experience. This healthy tension is designed to manage risk effectively while facilitating the fast, commercial decision-making that is required in a dynamic commodity marketing company.

Another important consideration of the MR team is the challenge of dealing with the impact of large transactional flows across many locations. The function seeks to ensure effective supervision by its timely and comprehensive transaction recording, ongoing monitoring of the transactions and resultant exposures, providing all encompassing positional reporting, and continually assessing universal counterparty credit exposure.

Key focus points

Market Risk limits and reporting

The MR team provides a wide array of daily and weekly reporting. For example, daily risk reports showing Group Value at Risk (VaR) as shown on page 104 and various other stress tests and analysis are distributed to the CEO, CFO and CRO. Additionally, business risk summaries showing positional exposure and other relevant metrics, together with potential margin call requirements, are also circulated daily. The MR function strives to enhance its stress and scenario testing as well as improving measures to capture risk exposure within the specific areas of the business, e.g. within metals, concentrate treatment and refining charges are analysed.

Credit Risk Management

The Group continues to make extensive use of credit enhancement tools, seeking letters of credit, insurance cover, discounting and other means of reducing credit risk from counterparts. In addition, mark-to-market exposures in relation to hedging contracts are regularly and substantially collateralised (primarily with cash) pursuant to margining agreements in place with such hedge counterparts.

The Group-wide Credit Risk Policy governs higher levels of credit risk exposure, with an established threshold for referral of credit decisions by business heads to the CFO and the CEO (relating to unsecured amounts in excess of $75 million with BBB (or equivalent) or lower rated counterparts). At lower levels of materiality, decisions may be taken by the business heads where key strategic transactions or established relationships, together with credit analysis, suggest that some level of open account exposure may be warranted.

Legal and compliance Risk

The Group has dedicated legal and compliance resources to assist Group businesses in complying with regulatory obligations and internal policies, procedures and guidelines.

For further details see pages 43–45.

Systems and reporting

The Group has not yet identified a single trading system able to manage the broad range of requirements that its different business profiles operate within. Therefore, interfacing with multiple source systems and transferring data from one system to another heightens risks relative to data integrity, granularity, consistency and timeliness.

Glencore also regularly reviews its requirements and systems in the light of changes to applicable regulations. The impact new regulations to commodity market participants is potentially considerable. The impact on our marketing business will largely be in the form of compliance requirements (with associated costs), rather than meaningful commercial limitations. Glencore's compliance, finance, IT and risk teams continue to work together in monitoring and advising management on these developments.

Internal Audit

Glencore has a dedicated Internal Audit Function reporting directly to the Audit Committee. The role of Internal Audit is to evaluate and improve the effectiveness of risk management, control, and business governance processes, and thus enhance and protect organisational value.

Internal Audit reviews areas of potential risk within the business and suggests control solutions to mitigate exposures identified. The Audit Committee considers and approves the risk-based audit plan, areas of audit focus and resources and is regularly updated on audits performed and relevant findings, as well as the progress on implementing the actions arising. In particular, the Committee considered Internal Audit's main conclusions, its KPIs and the effectiveness and timeliness of management's responses to its findings.

The Audit Committee has concluded that the Internal Audit function remains effective, taking into account the successful review undertaken in 2017 by KPMG. As part of this work, it considered the function's management framework and its improvement programme.

Interactions with shareholders

The Board aims to present a balanced and clear view of the Group in communications with shareholders and believes that being transparent in describing how we see the market and the prospects for the business is extremely important.

We communicate with shareholders in a number of different ways. The formal reporting of our full- and half-year results and quarterly production reports is achieved through a combination of releases, presentations, group calls and individual meetings. The full- and half-year reporting is followed by investor meetings in a variety of locations where we have institutional shareholders. We also regularly meet with existing and prospective shareholders to update or to introduce them to the Company and periodically arrange visits to parts of the business to give analysts and major shareholders a better understanding of how we manage our operations. These visits and meetings are principally undertaken by the CEO, CFO, Head of Industrial Assets and senior members of the Investor Relations team.

In addition, many major shareholders have meetings with the Chairman and appropriate senior personnel of the Group, including other Non-Executive Directors, the Company Secretary and senior Sustainability managers. The matters covered by meetings with the Chairman and Company Secretary included the work of each of the Board's committees.

AGM

The Company's next AGM is due to be held in Zug on 6 May 2020. Full details of the meeting will be set out in the AGM notice of meeting, which will be sent to shareholders in April. Shareholders unable to attend are encouraged to vote by proxy as detailed in the notice.

All documents relating to the AGM will be available on the Company's website at: **glencore.com/agm**

Value at risk

The Group monitors its commodity price risk exposure by using a VaR computation assessing "open" commodity positions which are subject to price risks. VaR is one of the risk measurement techniques the Group uses to monitor and limit its primary market exposure related to its physical marketing exposures and related derivative positions. VaR estimates the potential loss in value of open positions that could occur as a result of adverse market movements over a defined time horizon, given a specific level of confidence. The methodology is a statistically defined, probability based approach that takes into account market volatilities, as well as risk diversification benefits by recognising offsetting positions and correlations between commodities and markets. In this way, risks can be compared across all markets and commodities and risk exposures can be aggregated to derive a single risk value.

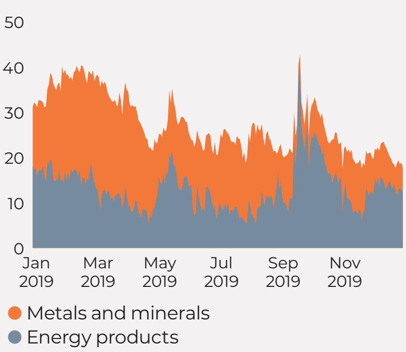
Last year, the Board approved the Audit Committee's recommendation of a one day, 95% VaR limit of $100 million for 2019, consistent with the previous year. This limit is subject to review and approval on an annual basis. The purpose of this Group limit is to assist senior management in controlling the Group's overall risk profile, within this tolerance threshold. During 2019 Glencore's reported average daily VaR was approximately $27 million, with an observed high of $43 million and a low of $18 million.

There were no breaches in the limit during the year.

The Group remains aware of the extent of coverage of risk exposures and their limitations. In addition, VaR does not purport to represent actual gains or losses in fair value on earnings to be incurred by the Group, nor are these VaR results considered indicative of future market movements or representative of any actual impact on its future results. VaR remains viewed in the context of its limitations; notably, the use of historical data as a proxy for estimating future events, market illiquidity risks and risks associated with longer time horizons as well as tail risks. Recognising these limitations the Group complements and refines this risk analysis through the use of stress and scenario analysis. The Group regularly back-tests its VaR to establish adequacy of accuracy and to facilitate analysis of significant differences, if any.

The Board has again approved the Audit Committee's recommendation of a one day, 95% VaR limit of $100 million for 2020.

VaR development ($m)



Ethics, Compliance and Culture (ECC) report

Chair
Anthony Hayward

Other members
Patrice Merrin
Gill Marcus
Peter Coates

The Committee met five times during the year. Each Committee member served throughout the year and attended all of the meetings. Every scheduled meeting had an agenda which reflected the Committee's objective of overseeing key ethics and compliance matters and the Group's culture. Nicola Leigh is the secretary of this Committee.

Responsibilities

The main responsibilities of the Committee are:

- Overseeing the implementation of the Group Ethics and Compliance Programme including Group policies, procedures, systems and controls for the prevention of unethical business practices and misconduct
- Reviewing reports and the activities of the following management committees: business ethics committee and business approval committee (see page 43 for further information)
- Assessing and monitoring culture to ensure alignment with the Company's purpose and values
- Monitoring the Group's stakeholder engagement

Main activities

During the year, the Committee:

- Provided oversight on the implementation of the key compliance policies and procedures relating to anti-corruption, sanctions, anti-money laundering, market abuse, the prevention of the facilitation of tax evasion, competition law, data protection and conflicts of interest
- Reviewed the compliance structure and resourcing to assess whether it is sufficient for the Group
- Considered a variety of other material ethics and compliance issues arising from risk assessments, internal monitoring and reviews conducted by third party specialists
- Considered the matters set out in section 172 of the UK Companies Act 2006 which involved reviewing and discussing the Company's key stakeholder groups (see page 26)
- Reviewed workforce engagement and provided guidance for culture surveys and focus groups in the Australian industrial operations and in all of the marketing offices

Workforce engagement

During the year, a key task for this Committee has been to assess and monitor company culture. The Board designated three Non-Executive Directors (NEDs) as workforce engagement NEDs who were appointed to engage with our workforce based on geographic location.

Peter Coates – Australia
Patrice Merrin – North America
Gill Marcus – Africa

I am also participating in this work and will assist them in helping to ensure that workers' views and concerns are brought to the Board and, where appropriate, taken into account in Board decision-making.

Additionally, and in order to ensure there was effective engagement with, and encourage participation and feedback from, our workforce, culture surveys were launched. The purpose of the surveys was, amongst others, to gauge our compliance culture, determine how our workforce perceives management's commitment to ethics and compliance, test alignment with our values and measure feedback on key cultural elements. Participation rates and results were positive, with areas for improvement being highlighted to this Committee, the Board and management.

For further information on the culture survey results see *Our people* section on page 32.

Mr Coates began the NED engagement process with visits to certain coal, copper and zinc operations in Australia. At these industrial assets, the survey responses were supplemented by face-to-face focus group discussions. Focus groups included a cross section of the workforce; frontline workers, supervisors and managers. Mr Coates led these focus groups and reported that workers were engaged and spoke openly regarding the topics in the survey and related matters. Similar engagement site visits are planned for 2020 at other major industrial assets in Canada, Kazakhstan, South America and Africa.

Tony Hayward
Chair of the ECC Committee
4 March 2020

Health, Safety, Environment & Communities (HSEC) report

Chair
Peter Coates

Other members
Ivan Glasenberg
Anthony Hayward
Patrice Merrin

The Committee met five times during the year. Each Committee member served throughout the year and attended all of the meetings. Every scheduled meeting had a substantial agenda, reflecting the Committee's objective of monitoring the achievement by management of ongoing improvements in HSEC performance.

John Burton is the Secretary of this Committee.

Responsibilities

The main responsibilities of the Committee are:

- Ensuring that appropriate Group policies are developed in line with our Values and Code of Conduct for the identification and management of current and emerging health, safety, environmental, community and human rights risks
- Ensuring that the policies are effectively communicated throughout the Company and that appropriate processes and procedures are developed at an operational level to comply and evaluate the effectiveness of these policies through:
  - assessment of operational performance
  - review of updated internal and external reports
  - independent audits and reviews of performance with regard to HSEC matters, and action plans developed by management in response to issues raised
- Evaluate and oversee the quality and integrity of any reporting to external stakeholders concerning HSEC matters
- Reporting to the Board

Main activities

During the year, the Committee:

- Reviewed and approved the Group's HSEC strategy
- Supported an enhanced Fatality Reduction Programme (FRP) which consisted of major interventions (Mopani and Kazzinc) and deep dive SafeWork reviews (see page 39 for further details). The FRP will roll into 2020 and will involve enhanced leadership development programmes
- Provided leadership for catastrophic hazard management which is amongst the most important non-financial risk management issues for the Group Continued oversight of the SafeWork programme implementation, focusing on identification of fatal hazards and an appropriate safety culture
- Oversaw the operation of the Group's assurance programme for sustainability matters with an emphasis on catastrophic hazards and approved the assurance plan for 2020
- Monitored the Group's tailings storage facilities assurance processes, including participation in the comprehensive disclosure initiative led by the Church of England
- Provided ongoing support for management's carbon/climate policies. This included reviewing the work of the climate change working group, chaired by Dr Hayward
- Considered engagement with communities and NGOs on sustainability matters
- Reviewed and oversaw the Group's sustainability report
- Held an investor roadshow to inform and receive feedback on the Company's sustainable development strategy and approach to HSEC management
- Advised on the programme and hosted the internal HSEC Summit for the year
- Considered a variety of other material HSEC issues such as resettlement programmes, incident reporting and health strategy

Peter Coates
Chair of the HSEC Committee
4 March 2020

Audit Committee report

Chair
Leonhard Fischer

Other members
Martin Gilbert
Gill Marcus

The Committee met four times during the year. Each Committee member served throughout the year and attended all of the meetings. All Committee members are considered by the Board to be Independent Non-Executive Directors and to be financially literate by virtue of their relevant financial experience and competence in accounting. As a whole, the Committee has the skills and experience relevant to the sector.

John Burton is Secretary to the Committee.

The Committee usually invites the CEO, CFO, General Counsel, Group Financial Controller, CRO and Head of Internal Audit and the lead partner from the external auditor to attend each meeting. Other members of management and the external auditor may attend as and when required. Other Directors also usually attend its meetings. The Committee also holds closed sessions with the external auditors and the Head of Internal Audit without members of management being present. The Committee has adopted guidelines allowing non-audit services to be contracted with the external auditors on the basis set out below.

Role and responsibilities

The primary function of the Committee is to assist the Board in fulfilling its responsibilities with regard to financial reporting, external and internal audit, financial risk management and controls.

During the year, the Committee's principal work included the following:

- Reviewing the full-year (audited), and half-year (unaudited), financial statements with management and the external auditor
- Considering the scope and methodologies to determine the Company's going concern and longer-term viability statements
- Reviewing and agreeing the preparation and scope of the year-end reporting process
- Considering applicable regulatory changes to reporting obligations
- Evaluating the Group's procedures for ensuring that the Annual Report and accounts, taken as a whole, are fair, balanced and understandable
- Reviewing the Group's financial and accounting policies and practices including discussing material issues with management and the external auditors, especially matters that influence or could affect the presentation of accounts and key figures
- Reviewing the Group's internal financial controls and financial risk management systems
- Considering the output from the Group-wide processes used to identify, evaluate and mitigate financial risks, including credit and performance risks, across the industrial and marketing activities
- Monitoring and reviewing the effectiveness of Glencore's internal controls for which there were no significant failings or weaknesses noted
- Reviewing the global audit plan, scope and fees of the audit work to be undertaken by the external auditor
- Recommending to the Board a resolution to be put to the shareholders for their approval on the appointment of the external auditor and to authorise the Board to fix the remuneration and terms of engagement of the external auditor
- Monitoring the independence of the external auditor and reviewing the operation of the Company's policy for the provision of non-audit services by it
- Considering and approving two assignments above the approval threshold with the external auditors in respect of non-audit services
- Evaluating the effectiveness of the external auditor
- Reviewing the Internal Audit department's annual audit plan and reviewing the effectiveness of the Internal Audit function

Risk analysis

The Committee receives reports and presentations at each meeting on management of marketing and other risks (excluding operational and sustainability risks which are reviewed by the HSEC Committee and compliance risks reviewed by the ECC) and at least once a year considers an in-depth study of the perceived main risks and uncertainties and the Group's risk management framework as a whole.

Significant issues

The Committee assesses whether suitable accounting policies including the implementation of new accounting standards, primarily IFRS 16 Leases, have been adopted and whether management has made appropriate estimates and judgements. It also reviews the external auditor's reports outlining audit work performed and conclusions reached in respect of key judgements, as well as identifying any issues in respect of these.

During the year, the Committee has focused in particular on these key matters:

1. Acquisitions and disposals

Accounting for acquisitions involve significant management judgements and estimates. In 2019, the Committee analysed the accounting treatment for the acquisitions of Astron Energy and Polymet.

2. Impairment

The Committee considered whether the carrying value of goodwill, industrial assets, physical trade positions and material loans and advances may be impaired as a result of commodity price volatility and some asset specific factors including the impact of climate change. The Committee reviewed management's reports, outlining the basis for the key assumptions used in calculating the recoverable value for the Group's assets. Future performance assumptions used are derived from the Board approved business plan. As part of the process for approval of this plan, the Committee considered the feasibility of strategic plans underpinning future performance expectations, and whether they remain achievable. Considerable focus was applied to management's commodity price and exchange rate assumptions and their sensitivities within the models. Assets based in Colombia, Chad, DRC, New Caledonia, Peru, South Africa and Zambia were subject to particular scrutiny. The Committee discussed with the external auditor their work in respect of the impairment review, which was a key area of focus for them.

3. Taxation

Due to its global reach, including operating in high-risk jurisdictions, the Group is subject to enhanced complexity and uncertainty in accounting for income taxes, particularly the evaluation of tax exposures and recoverability of deferred tax assets. The Committee has engaged with management to understand the potential tax exposures globally and the key estimates taken in determining the positions recorded, including the status of communications with local tax authorities and the carrying values of deferred tax assets. The African copper assets and tax risk exposures in the UK have been particular areas of focus.

4. Counterparty exposures

The Group's global operations expose it to credit and performance risk, which result in the requirement to make estimates around recoverability of receivables, loans, trade advances and contractual non-performance. As part of an ongoing review, the Committee considered material continuing exposures, the robustness of processes followed to evaluate recoverability and whether the amounts recorded in the financial statements are reasonable.

Following its analysis of these matters, the Committee satisfied itself that the estimates made by management are reasonable and that financial statements disclosures included in the accounts are appropriate.

5. Other material issues

These have included in 2019, the segment disclosure change, going concern and long-term viability assessments and analysis of the internal control environment.

Internal and external audit

The Committee monitored the internal audit function as described under Internal Audit on page 103.

The Committee has evaluated the effectiveness of the external auditor and as part of this assessment, has considered:

- The steps taken by the auditor to ensure their objectivity and independence
- The deep knowledge of the Company which enhances Deloitte's ability to perform as external auditor
- Competence when handling key accounting and audit judgements and ability to communicate these to the Committee and management
- The extent of the auditor's resources and technical capability to deliver a robust and timely audit, including consideration of the qualifications and expertise of the team
- Auditor's performance and progress against the agreed audit plan, including communication of changes to the plan and identified risks and the proven stability that is gained from the continued engagement of Deloitte as external auditor

The Committee assesses the quality and effectiveness of the external audit process on an annual basis in conjunction with the senior management team. Key areas of focus include consideration of the quality and robustness of the audit, identification of and response to areas of risk and the experience and expertise of the audit team, including the lead audit partner.

The Group's policy on non-audit services provided by the external auditor is designed to ensure the external auditor independence and objectivity is safeguarded. A specified wide range of services may not be provided as they have the potential to impair the external auditor's independence (Excluded Services). The Audit Committee's approval is required for (1) any Excluded Service (2) any other engagement where either (i) the fee is contingent, (ii) the fee may exceed $500,000, or (iii) the fees for all non-audit work may exceed $15 million in a particular year. Subject to these restrictions and other safeguards in the policy, the external auditor may be permitted to provide certain non-audit services when it is concluded that they are the most appropriate supplier due to efficiency and status as a leading firm for those specific services. For 2019, fees paid to the external auditor were $30 million, the total non-audit fees of which were $6 million; further details are contained in note 29 to the financial statements.

A new policy will be adopted next year to reflect regulatory changes which will considerably restrict the scope of non-audit services from 2021.

Deloitte has been the auditor of the listed entity since its IPO in 2011. In 2018, a lead audit engagement partner rotation occurred.

The Committee has determined that it is satisfied that the work of Deloitte LLP is effective, the scope is appropriate and significant judgements have been challenged robustly by the lead partner and team. Additionally, there are no contractual restrictions on the Company's choice of external auditor. The Committee has therefore recommended to the Board that a proposal be put to shareholders at the forthcoming AGM for the reappointment of Deloitte LLP as external auditor.

A search for my successor as Chair of the committee is underway (see page 96). As stated last year, following this appointment, the Committee will operate a tender process for the appointment of the Company's external auditor for a period up to ten years. This process will be implemented next year and the appointment will be with effect from the audit of the financial statements for the following year.

Leonhard Fischer
Chair of the Audit Committee
4 March 2020

Nomination Committee report

Chair
Patrice Merrin

Other members
John Mack
Kalidas Madhavpeddi

During 2019, the committee comprised Anthony Hayward (Chair), John Mack, Leonhard Fischer and Gill Marcus.

The Committee met three times during the year. Each Committee member served throughout the year and attended all of the meetings. In addition, some of the discussions and deliberations in respect of the matters summarised below were carried out at Board meetings.

John Burton is the Secretary of this Committee.

Roles and responsibilities

The main responsibilities of the Nomination Committee are to assist the Board with succession planning and with the selection process for the appointment of new Directors, both Executive and Non-Executive, including the Chairman, and senior management.

This involves:

- Evaluating the balance and skills, knowledge and experience of the Board and identifying the capabilities required for a particular appointment
- Overseeing the search process
- Evaluating the need for Board refreshment and succession planning generally
- Overseeing planning for CEO and CFO succession planning
- Monitoring the CEO's planning for senior management succession to seek to ensure that the Company has a suitable pipeline of candidates
- Considering diversity in appointments

Main activities

The Committee focused on three main tasks during this year.

The most important has been senior management succession, as described on page 92.

Secondly, prior to the notice of 2019 AGM being compiled, the Committee considered the performance of each Director. It concluded that each Director is effective in their role and continues to demonstrate the commitment required to remain on the Board. Accordingly, it recommended to the Board that re-election resolutions be put for each Director at the 2019 AGM.

Thirdly, the Committee considered the composition of the Board and refreshment. The Committee continued its work on succession planning. This has led to the appointment of Kalidas Madhavpeddi who brings extensive mining experience and further diversity to the Board table. Further refreshment is planned in respect of a new Audit committee Chair and another female director.

The Committee notes the recommendations of the Hampton Alexander Review on gender and the Parker Review on ethnic diversity. It is part of the Committee's policy when making new Board appointments to consider the importance of diversity on the Board, including gender and ethnicity. This is considered in conjunction with experience and qualifications. Following the appointment of Mr Madhavpeddi, the Board meets the ethnic diversity target of the Parker Review. We also expect that one third of our Directors will be female by the end of 2020, which will therefore satisfy the Board target of the Hampton Alexander Review.

Patrice Merrin
Chair of the Nomination Committee
4 March 2020

Directors' remuneration report

For the year ended 31 December 2019

Chairman
John Mack

Other members
Kalidas
Madhavpeddi
Martin Gilbert

Introduction

On behalf of the Remuneration Committee, I am pleased to present our Directors' remuneration report for the year ended 31 December 2019. As ever, we have sought to make this report as short, simple and straightforward as possible.

During 2019, the Committee comprised Leonhard Fischer, Martin GIlbert and myself.

As a Jersey registered company headquartered in Switzerland, Glencore is not subject to the UK's reporting regime although as we consider it to be reflective of good practice, this report is prepared in compliance with the regime, unless stated otherwise. Accordingly, over the following pages, we have set out:

- The Group's forward-looking Directors' Remuneration Policy will be proposed to shareholders at the 2020 AGM as it was last approved in 2017 and practice is to renew the policy every third year. The changes to the Directors' Remuneration Policy reflect increasing the salary cap to the current maximum market level and developments in best practice guidance since it was last renewed. The increase in the salary cap is simply to provide suitable future flexibility as Mr Glasenberg has confirmed that he would not accept any salary increase over the life of the policy.
- Details of the implementation of our reward policy in 2019 including:
  - the governance surrounding pay decisions in 2019, members of the Committee and its advisers in 2019
  - details of what was paid to Directors in respect of their service on the Board during the financial year ended 31 December 2019.

Accordingly, we have presented this report to reflect the reporting requirements on remuneration matters for companies with a UK governance profile, particularly the UK's Large and Medium-sized Companies and Groups (Accounts and Reports) (Amendment) Regulations 2013 (the "UK Remuneration Regulations"). The Company aims to comply in all material respects with the reporting obligations within these regulations as a matter of good practice. The report also describes how the Board has complied with the provisions set out in the UK Corporate Governance Code relating to remuneration matters.

Our auditors have reported on certain parts of the Directors' remuneration report and stated whether, in their opinion, those parts of the report have been properly prepared. Those sections of the report which have been subject to audit are clearly indicated.

The Committee also notes that it has been following with interest the wider discussion relating to the design of long-term incentives in UK listed companies and can see considerable merit in the use of restricted stock in a cyclical sector such as resources, particularly if such shares are held over longer periods to be aligned with the cycle. It also notes that the policy level of 2x salary is considerably below the market level both relative to resources companies and to the FTSE 30 more generally. Rather than seek to address these issues in the 2020 policy renewal, the Committee considers it appropriate to defer such design issues until succession occurs and any replacement CEO can, therefore, make an appropriate contribution to this planning. Accordingly, it is highly likely that a new policy will be required as and when succession occurs. The Committee would undertake appropriate consultation at the time before submitting a further policy to shareholders.

As at the 2014 and 2017 AGMs, to reflect best practice, we shall be seeking shareholder approval of our remuneration arrangements through two votes, one on the Directors' remuneration report (excluding the Directors' Remuneration Policy) and a separate vote on our Directors' Remuneration Policy. Both will technically be advisory only as the Company is not subject to the UK statutory regime to make the latter binding although, clearly, the Committee will take any voting outcome very seriously.

The Committee continues to ensure that the Directors' Remuneration Policy and its implementation are attractive to shareholders in reflecting good governance, simplicity and reasonable terms.

John Mack
Chair of Remuneration Committee
4 March 2020

Part A–Directors' Remuneration Policy

The Directors' Remuneration Policy as set out in this section of the report will take effect for all payments made to Directors from the date of the 2020 AGM. Whilst it does not differ materially from that approved at the 2017 AGM, the Policy approved by shareholders at the 2017 AGM will apply until approval is obtained for the new Policy. Any changes to the policy are highlighted where relevant.

UK legislation and related investor guidance encourages companies to disclose a cap within which each element of remuneration policy will operate. Although not subject to this legislation, the Committee has set an annual cap for each element of remuneration under the *maximum opportunity* column which will apply until a revised policy is approved by shareholders.

The General Policy table must be read alongside the notes set out on page 114 which together set out and explain our Remuneration Policy. The Policy for the Executive Directors currently only applies to Mr Glasenberg as he is the only Executive Director.

General Policy

Elements of the package

Remuneration Policy for the Directors is summarised in the table below:

General Policy for Executive Directors

(this section does not technically form part of the Directors' Remuneration Policy and is for information only)

We have the same philosophy as any other Remuneration Committee, namely to set the Company's remuneration policies and practices so that they promote the long-term success of the Company and support the implementation of the Group's strategy while aligning the interests of the Executive Directors and executives with those of shareholders generally. This policy has consistently underpinned our entire approach to executive remuneration.

The Committee is satisfied that the remuneration policy is in the best interests of shareholders and does not raise any environmental, social or governance issues and does not promote excessive risk taking.

One exceptional aspect of our CEO's remuneration is that, at his instigation and reflecting his status as a major shareholder, he does not participate in bonus or LTI arrangements, a policy which will continue into 2020. As a result, we are currently able to set overall remuneration for our CEO at significantly lower levels than in comparable companies. The Committee believes that his significant personal shareholding creates sufficient alignment of interest with shareholders in the absence of participation in a bonus or LTI arrangement. However, the Committee accepts that any successor would require participation in variable pay plans on market competitive terms which would necessitate further changes to this policy.

Elements of the package

Base salary

Provides market competitive fixed remuneration that rewards relevant skills, responsibilities and contribution

Policy and operation
Salaries are positioned within a market competitive range for companies of a similar size and complexity.

The Committee does not slavishly follow data but uses it as a reference point in considering, in its judgement, the appropriate level having regard to other relevant factors, including corporate and individual performance and any changes in an individual's role and responsibilities. Base salary is paid monthly in cash.

Maximum opportunity
Base salaries are reviewed annually with the next review due to take place in December 2020.

The Committee has not increased Executive Director salary levels since the Company's IPO in May 2011, reflecting his status as a significant shareholder.

Mr Glasenberg, the CEO, is the only Executive Director on the Board. A base salary cap of $2 million p.a. has been set This cap will increase in line with UK RPI from 24 May 2020 being the date at which the cap is proposed to be approved.

This is simply a cap and, in practice, we would expect actual increases to be limited to the average level of increase awarded to staff at the Company's headquarters in Baar, Switzerland (except where there is a meaningful increase in the scope of the role or an appointment is initially at a below market level).

Performance measures
Not applicable (n/a)

Key changes to last approved policy
Increase salary cap to $2 million and include an RPI uplift to the salary cap

Benefits

To provide appropriate supporting non-monetary benefits

Policy and operation
Provides appropriate insurance cover benefits.

Values are shown in the single figure table on page 116 but may fluctuate without the Committee taking action.

The Company may periodically change the benefits available to staff for the office at which an Executive Director works in which case the Director would normally be eligible to receive the amended benefits on similar terms to all relevant staff. In the case of Mr Glasenberg, this would be expected to mean employees generally in the Baar office.

Maximum opportunity
Benefits received by Mr Glasenberg comprise salary loss (long-term sickness) and accident insurance/travel insurance.

A monetary limit of $20,000 p.a for Mr Glasenberg has been set with a limit of $100,000 applying to any successor.

Performance measures
n/a

Key changes to last approved policy
Setting limit in line with market levels

Pension

Provides basic retirement benefits which reflects local market practice

Policy and operation
Mr Glasenberg participates in the defined contribution scheme for all Baar-based employees.

Maximum opportunity
An annual cap on the cost of provision of retirement benefits of $150,000 per Executive Director has been set.

Any Executive Director's benefit will be aligned with the average percentage contribution or entitlement available to staff in the relevant market.

Performance measures
n/a

Key changes to last approved policy
None

Significant Personal Shareholdings

Aligns the interests of executives and shareholders

Policy and operation
The Committee has set a formal shareholding requirement for Executive Directors of 500% of salary.

Usually to be achieved within 5 years of Board appointment. An Executive Director will normally be required to retain the lower of the actual holding on stepping down from the Board and such shares as then represents the policy level of 500% of salary for 2 years after stepping down (although the Board may relax this requirement in appropriate cases) with such policy enforceable through a requirement to lodge such shares at the Company's request.

Maximum opportunity
n/a

Performance measures
n/a

Key changes to last approved policy
Increased the headline level to 5x salary.
Added post-cessation guidelines.

Elements of the package continued

Annual Bonus Plan

Supports delivery of short-term operational, financial and strategic goals

Policy and operation
Annual Bonus plan levels and the appropriateness of measures are reviewed annually to ensure they continue to support the strategy.

50% of any Annual Bonus plan outcome to be deferred into shares for a period of up to three years although the Committee reserves discretion to alter the current practice of deferral (whether by altering the portion deferred, the period of deferral or whether amounts are deferred into cash or shares).

The Committee to reserve discretion to reduce any formulaic outcome if it is not considered appropriate in all the circumstances.

Cash element paid in one tranche following the year-end.

Malus provisions apply to any amounts deferred.

Maximum opportunity
The Committee has set a maximum annual bonus level of 200% of base salary p.a.

Performance measures
The performance measures applied may be financial, non-financial and corporate, divisional or individual and in such proportions as the Committee considers appropriate.

Additionally, the Committee will consider the outcomes against pre-set targets following their calculation and may moderate these outcomes to take account of a range of factors including the Committee's view of overall Company performance in the year and the Committee specifically reserves the ability to reduce payments if not satisfied that any formulaic outcome is appropriate in all the circumstances.

Key changes to last approved policy
Consistent with developments in best practice, deferral to apply to at least 50% of the bonus and broad discretion to reduce payment as required by the UK's Corporate Governance Code introduced.

Long-Term Incentives

Glencore Performance Share Plan incentivises the creation of shareholder value over the longer term

Policy and operation
No Executive Director has, to date, participated, although this will be kept under review to ensure it remains appropriate.

Awards will be subject to a performance period of at least 3 years followed by a further holding period of at least 2 years during which shares may not ordinarily be sold (other than to meet any tax liabilities arising).

Malus clauses apply.

The Company will honour the vesting of all awards granted under previous policies in accordance with the terms of such awards.

Maximum opportunity
Overall annual Executive Directors' limit of 200% of salary for LTI grants (recognising that this is less than the formal limit in the plan).

Performance measures
Executive Directors do not at present participate in the plan reflecting, in the case of the CEO, the significant alignment achieved through his personal shareholding.

Accordingly, no performance conditions have been established for Executive Directors. On any future participation, the Committee may set such performance conditions on LTI awards as it considers appropriate (whether financial or non-financial and whether corporate, divisional or individual).

The Committee specifically reserves the ability to reduce payments if not satisfied that any formulaic outcome is appropriate in all the circumstances.

Key changes to last approved policy
Clarify that awards will be subject to a holding period.

Elements of the package continued

Chairman and Non-Executive Director fees

Reflects time commitment, experience, global nature and size of the Company

Policy and operation
The objective in setting the fees paid to the Chairman and the other Non-Executive Directors is to be competitive with other listed companies of equivalent size and complexity. Fee levels are periodically reviewed by the Board (for Non-Executives) and the Committee (for the Chairman). In both cases, the Company does not adopt a quantitative approach to pay positioning and exercises judgement as to what it considers to be reasonable in all the circumstances as regards quantum.

Non-Executive Directors and the Senior Independent Director receive a base fee.

Additional fees are paid for chairing or membership of a Board committee.

Chairman receives a single inclusive fee.

Reasonable business related expenses are reimbursed (including any tax thereon).

Non-Executive Directors are not eligible for any other remuneration or benefits of any nature.

Reviewed every year with the next review due to take place in December 2020.

Maximum opportunity
Fees are paid monthly in cash.

Aggregate fees for all Non-Executive Directors (including the Chairman) are subject to the cap set in the Articles of Association. This is currently set at $5,000,000.

Performance measures
n/a

Key changes to last approved policy
None

Notes to the Policy table

1. Mr Glasenberg, the only Executive Director, has received no salary increase since it was set in May 2011, although the currency of payment for all Directors was changed to the US dollar, the Company's functional currency, on 1 January 2014.
2. Differences between the policy on remuneration for Directors from the policy on remuneration of other employees: the only Executive Director has waived any entitlement to participate in the variable pay arrangements. Arrangements also differ from its pay policies for Group employees as necessary to reflect the appropriate market rate position for the relevant roles. In particular, Mr Glasenberg's pension benefits are in accordance with those provided to other Swiss-based employees and do not include any enhancement.
3. For 2019, all remuneration and fees were paid in US Dollars except for pension contributions and the provision of benefits which were provided in Swiss Francs.

Recruitment Remuneration Policy

The Company's Recruitment Remuneration Policy aims to give the Committee sufficient flexibility to secure the appointment and promotion of high-calibre executives to strengthen the management team and secure the skill sets to deliver our strategic aims.

- The starting point for the Committee will be to look to the General Policy for Executive Directors as set out above and structure a package in accordance with that Policy. However, the Policy was developed having regard to the specific circumstances of the current Executive Director and therefore (consistent with the UK regulations) for a newly appointed Executive Director the Committee is not constrained by the caps on fixed pay within the Policy on a recruitment or at any subsequent annual review within the life of this Policy as approved by shareholders. The Committee will not pay more than it considers to be necessary to secure the recruitment having regards to appropriate market rates and evolving best practice
- For an internal appointment, any variable pay element awarded in respect of the prior role may either continue on its original terms or be adjusted to reflect the new appointment as appropriate
- For external and internal appointments, the Committee may agree that the Company will meet certain relocation expenses as they consider appropriate and/or to make a contribution towards legal fees in connection with agreeing employment terms. Such costs will be outside the formal caps and will be limited to two years
- The Committee reserves the right to make awards of incentive pay that are necessary to secure a candidate, which may include either awards to compensate for the forfeiture of incentive awards in a previous employer or to provide appropriate incentives for a new recruit to the Group. Details of any such awards will be appropriately disclosed
- Where it is necessary to make a recruitment related pay award to an external candidate, the Company will not pay more than is, in the view of the Committee, necessary and will in all cases seek, in the first instance, to deliver any such awards under the terms of the existing incentive pay structure. It may, however, be necessary in some cases to make such awards on terms that are more bespoke than the existing annual and equity-based pay structures in the Group in order to secure a candidate
- All such awards for external appointments, whether under the Annual Bonus plan, Performance Share Plan or otherwise, to compensate for awards forfeited on leaving a previous employer will take account of the nature, time-horizons and performance requirements on those awards. In particular, the Committee's starting point will be to ensure that any awards being forfeited which remain subject to outstanding performance requirements (other than where these are substantially complete) are bought-out with replacement requirements and any awards with service requirements are bought out with similar terms. However, exceptionally the Committee may relax those obligations where it considers it to be in the interests of shareholders and those factors are, in the view of the Committee, equally reflected in some other way, for example through a significant discount to the face value of the awards forfeited. It will only include guaranteed sums where the Committee considers that it is necessary to secure the recruitment
- For the avoidance of doubt, where recruitment related awards are intended to replace existing awards held by a candidate in an existing employer, the maximum amounts for incentive pay as stated in the general policies will not apply to such awards. The Committee has not placed a maximum limit on any such awards which it may be necessary to make as it is not considered to be in shareholders' interests to set any expectations for prospective candidates regarding such awards. Any recruitment-related awards which do not replace awards with a previous employer will be subject to the limits on incentive awards as detailed in the general policy

The elements of any package for a new recruit and the approach taken by the Committee in relation to setting each element of the package will be consistent with the Executive Directors' Remuneration Policy described in this report, as modified by the above statement of principles where appropriate.

A new Non-Executive Director would be recruited on the terms explained above in respect of the main Policy for such Directors.

Termination Policy Summary

In practice, the facts surrounding any termination do not always fit neatly into defined categories for good or bad leavers. Therefore, it is appropriate for the Committee to consider the suitable treatment on a termination having regard to all of the relevant facts and circumstances available at that time. Further, in practice no Executive Director has, to date, participated in the PSP so the Policy remains to be tested. This Policy applies both to any negotiations linked to notice periods on a termination and any treatment which the Committee may choose to apply under the discretions available to it under the terms of the annual bonus and LTI arrangements. The potential treatments on termination under these plans are summarised below.

Incentives	Good leaver	Bad leaver
	If a leaver is deemed to be a "good leaver"; i.e. leaving through, serious ill health or death or otherwise at the discretion of the Committee	If a leaver is deemed to be a "bad leaver"; typically voluntary resignation or leaving for disciplinary reasons
Annual Bonus	Pro-rated bonus	No awards made
Deferred element of bonus	Typically retained for the balance of the deferral period (although the Committee may exceptionally approve early release)	May be retained or forfeited at Committee discretion
LTIP	Will receive a pro-rated award (if applicable, subject to the application of the performance conditions at the normal measurement date.) Committee discretion to disapply pro-rating	All awards will normally lapse.

The UK legislation does not require the inclusion of a cap or limit in relation to payments for loss of office. The Committee will take all relevant factors into account in deciding whether any discretion should be exercised in an individual's favour in these circumstances, and the Committee will aim to ensure that any payments made are, in its view, appropriate having regard to prevailing best practice guidelines. The Committee may also, after taking appropriate legal advice, sanction the payment of additional sums in the settlement of potential legal claims.

Potential rewards under various scenarios

Under the formal policy, consistent with other large FTSE companies, the total available variable pay (i.e. the maximum amount payable in respect of bonus and long-term incentives) available to Mr Glasenberg would be approximately $5,790,000 (being four times base salary). As Mr Glasenberg has waived entitlement to all variable elements for 2019, including both bonus and long-term incentives, his base salary and all benefits are set at less than 25% of the aggregate remuneration which would potentially have been available to him had he not waived participation in these aspects. These waivers are considered appropriate as the level of his personal shareholding is sufficient to provide a keen alignment of interest between him and of shareholders more generally without the need to add additional aspects to his package (and cost to other shareholders). His fixed remuneration is set at a moderately below market level so the waivers do not reflect any element of an excessive bias to fixed pay in the traditional sense. Consistent with UK legislation, it has been prepared using the following assumptions.

In 2019, Mr Glasenberg's base salary was paid in US dollars and his benefits and pension contributions were paid in Swiss francs, as described above and in the following single figure table.

Fixed	• Consists of base salary, benefits and pension • Base salary is applicable to both 2018 and 2019 • Benefits measured as benefits figure in the single figure table • Pension measured as pension figure in the single figure table			
Ivan Glasenberg	**Base Salary $'000**	**Benefits $'000**	**Pension $'000**	**Total Fixed $'000**
	1,447	**4**	**52**	**1,503**
On-target and Maximum	Based on what the Executive Director would receive if performance was on-target (whether inclusive or exclusive of share price appreciation and dividends): • STI: Mr Glasenberg currently waives any right to participate in the annual bonus plan • LTI: He does not currently participate in the Performance Share Plan			

Directors' service contracts

Executive Director's Contract

The table below summarises the key features of the service contract for Mr Glasenberg, the only person who served as an Executive Director during 2019.

All Directors' contracts and letters of appointment will be available for inspection on the terms to be specified in the Notice of 2020 AGM.

Provision	Service contract terms
Notice period	Twelve months' notice by either party
Contract date	28 April 2011 (as amended on 30 October 2013)
Expiry date	Rolling service contract
Termination payment	No special arrangements or entitlements on termination. Any compensation would be limited to base salary only for any unexpired notice period (plus any accrued leave)
Change in control	On a change of control of the Company, no provision for any enhanced payments, nor for any liquidated damages

External appointments

None currently although Mr Glasenberg was for part of 2019 a non-executive director of Rosneft.

He assigned to the Group the compensation received in relation to that appointment.

The appropriateness of any future appointment is considered as part of the annual review of Directors' interests/potential conflicts.

Non-Executive Directors' Letters of appointment and re-election

All Non-Executive Directors have letters of appointment with the Company for an initial period of three years from their date of appointment, subject to reappointment at each AGM. The Company may terminate each appointment by immediate notice and there are no special arrangements or entitlements on termination except that the Chairman is entitled to three months' notice.

The annual fees are paid in accordance with a Non-Executive Director's role and responsibilities. The Chairman's fee is inclusive of all his committee responsibilities. The fees payable for 2019, which were unchanged from 2018 except for the addition of fees for membership of the ECC Committee, are as follows:

US$'000	
Directors	
Chairman	1,150
Senior Independent Director	200
Non-Executive Director	135
Committee Fees:	
ECC	
Member	50
Remuneration	
Chair	45
Member	25
Audit	
Chair	60
Member	35
Nomination	
Chair	40
Member	20
HSEC	
Chair	125
Member	40
Investigations	
Member	40

Part B – Implementation Report

Implementation Report – Unaudited Information

Remuneration Committee

Membership and experience of the Remuneration Committee

The members of the Committee provide a useful balance of skills, experience and perspectives to provide the critical analysis required in carrying out the Committee's function. Each of Messrs John Mack, Martin Gilbert, and Leonhard Fischer (until 2019), and Kalidas Madhavpeddi (from 2020) has had a long career in the management of large organisations and therefore provides considerable experience of remuneration analysis and implementation. All members of the Remuneration Committee are considered to be independent. Further details concerning independence of the Non-Executive Directors are contained on page 97.

Role of the Remuneration Committee

The terms of reference of the Committee set out its role. They are available on the Company's website at: **glencore.com/who-we-are/governance**

Its principal responsibilities are, on behalf of the Board, to:

- Determine and agree with the Board the framework for the remuneration of the Company's Chairman, the Chief Executive and the Executive Directors
- Regularly review the appropriateness and relevance of the Remuneration Policy
- Establish the remuneration package for the Executive Directors including the scope of pension benefits
- Determine the remuneration package for the Chairman, in consultation with the Chief Executive
- Oversee schemes of performance related remuneration (including share incentive plans), and determine awards for the Executive Directors (as appropriate)
- Ensure that the contractual terms on termination for the Executive Directors are fair and not excessive
- Monitor senior management remuneration

The Committee considers corporate performance on HSEC and governance issues when setting remuneration for the Executive Director. Additionally, the Committee seeks to ensure that the incentive structure for the Group's senior management does not raise HSEC or governance risks by inadvertently promoting and/or rewarding behaviours that are not aligned with the Group policies, values and culture.

Remuneration Committee meetings

The Committee met two times during the year and considered, amongst other matters, the Remuneration Policy and the packages applicable to the Chairman, the CEO and senior management, and the content and approval of the remuneration report.

The Chairman, CEO and CFO are usually invited to attend some or all of the proceedings of Remuneration Committee meetings; however, they do not participate in any decisions concerning their own remuneration.

Advisers to the Remuneration Committee

The Committee appointed and received independent remuneration advice during the year from its external adviser, FIT Remuneration Consultants LLP (FIT). FIT is a member of the Remuneration Consultants Group (the UK professional body for these consultants) and adheres to its code of conduct. The Committee was satisfied that the advice provided by FIT was objective and independent.

FIT's fees for this advice in respect of 2019 were $58,491 (2018: $13,921). FIT's fees were charged on the basis of the firm's standard terms of business for advice provided. FIT also provided advice to Glencore Agriculture Limited, in which Glencore owns a 49.9% interest, on the development of a remuneration policy, for which it charged $36,900.

The Committee also receives advice from the Company Secretary.

Relative importance of remuneration spend

The table below illustrates the change in total remuneration, distributions paid and net profit from 2018 to 2019.

	2019 US$m	2018 US$m
Distributions and buy-backs attributable to equity holders	5,028	4,841
Net income/(loss) attributable to equity holders	(404)	3,408
Total remuneration	5,231	5,063

The figures presented have been calculated on the following bases:

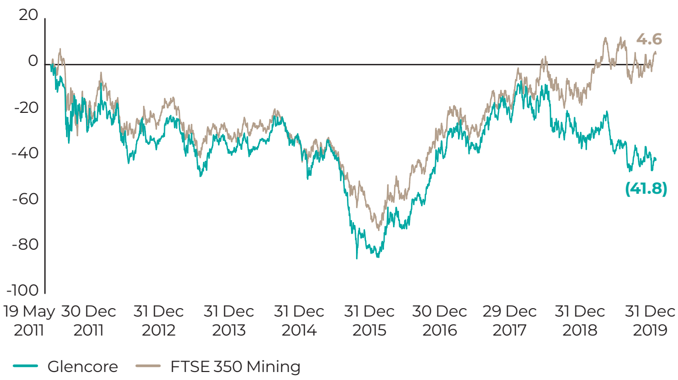
- **Distributions and buy-backs** – distributions paid and shares bought back during the year
- **Net income/(loss) attributable to equity holders** – our reported net loss in respect of the financial year.
- **Total remuneration** – represents total personnel costs as disclosed in note 23 to the financial statements which includes salaries, wages, social security, other personnel costs and share-based payments

Performance graph and table

This graph shows the value to 31 December 2019, on a total shareholder return (TSR) basis, of £100 invested in Glencore plc on 24 May 2011 (our IPO date) compared with the value of £100 invested in the FTSE 350 Mining Index. The FTSE 350 Mining Index is considered to be an appropriate comparator for this purpose as it is an equity index consisting of companies listed in London in the same sector as Glencore.

The UK reporting regulations also require that a TSR performance graph is supported by a table summarising aspects of CEO remuneration, as shown below for the same period as the TSR performance graph:

Performance



CEO single figure remuneration since 2011

		Single figure of total remuneration[1] (US$'000)	Annual variable element award rates against maximum opportunity[2]	Long-term incentive vesting rates against maximum opportunity[2]
2019	**Ivan Glasenberg**	**1,503**	**–**	**–**
2018	Ivan Glasenberg	1,503	–	–
2017	Ivan Glasenberg	1,513	–	–
2016	Ivan Glasenberg	1,509	–	–
2015	Ivan Glasenberg	1,510	–	–
2014	Ivan Glasenberg	1,513	–	–
2013	Ivan Glasenberg	1,509	–	–
2012	Ivan Glasenberg	1,533	–	–
2011	Ivan Glasenberg	1,483	–	–

1 The value of benefits and pension provision in the single figure vary as a result of the application of exchange rates although in the relevant local currency these parts of Mr Glasenberg's remuneration have not altered since May 2011. In this table the figures are reported in US dollars, the currency in which Mr Glasenberg received his salary in 2019. The salary was payable in pounds sterling prior to 2014. Therefore those figures have been translated into US dollars at the exchange rates used for the preparation of the financial statements in those years.
Mr Glasenberg's pension and other benefits are charged to the Group in Swiss francs and these amounts are translated into US dollars on the same basis.
2 The CEO has requested not to be considered for these potential awards.

CEO pay ratio

The table below shows the ratio of CEO single figure remuneration for 2019 to the comparable, indicative, full-time equivalent total remuneration for employees globally, whose pay is ranked at the 25th percentile, median and 75th percentile. As we are a global group, which is not headquartered in the UK and whose UK employees represents less than one per cent. of all our employees worldwide, we have decided to amend this comparison to all employees. Our methodology is fully compliant with the UK Remuneration Regulations except that we have substituted all of our employees for just the UK employees as specified in the Regulations.

Year	Method (A)	25th percentile pay ratio	Median pay ratio	75th percentile pay ratio
2019	A	176 : 1	71 : 1	23 : 1

Percentage change in pay of Chief Executive Officer

The UK Remuneration Regulations provide for disclosure of percentage changes of the CEO's remuneration against the average percentage change for employees generally or an appropriate group of employees. Given that the CEO has, since May 2011, waived any entitlement to any increase in salary (and given that his only other unwaived benefits are those provided to all employees at the Company's head office in Baar) no such comparison has been made.

Most recent shareholder voting outcomes

The votes cast to approve the Directors' remuneration report, for the year ended 31 December 2018 at the 2019 AGM were:

Votes "For"	Votes "Against"	Votes "Withheld[1]"
Directors' remuneration report		
97.16%	2.84%	
(10,432,283,849)	(305,386,249)	(85,133,166)

1 A vote withheld is not counted in the calculation of the proportion of votes for and against the resolution.

The Committee continues to seek a productive and ongoing dialogue with investors on the Directors' Remuneration Policy, remuneration aspects of corporate governance, any changes to the Company's executive pay arrangements and developments as to executive remuneration issues in general.

Implementation Report – Audited Information

Non-Executive fees

The emoluments of the Non-Executive Directors for 2019 were as follows:

Name	Total 2019 US$'000	Total 2018 US$'000
Non-Executive Chairman		
Anthony Hayward	1,150	1,150
Non-Executive Directors		
Peter Coates	310	260
Leonhard Fischer	280	280
Martin Gilbert	300	157
Peter Grauer[1]	n/a	48
John Mack	200	200
Patrice Merrin	265	224
Gill Marcus	240	190

1 Retired on 6 March 2018.

Single figure table
Ivan Glasenberg

US$'000	**2019**	2018
Salary	1,447	1,447
Benefits	4	4
Annual Bonus	–	–
Long-term incentives	–	–
Pension	52	52
Total	**1,503**	**1,503**

The notes to the performance table above also apply in relation to the compilation of this table. As no bonuses or long-term incentives have been granted to Mr Glasenberg, there are no relevant performance measures to be disclosed although the first page of this report notes the alignment of his position with that of other shareholders.

The aggregate fees for all Non-Executive Directors for 2019 were $2,745,000 (2018: $2,509,000).

The total emoluments of all Directors for 2019 (including pension contributions for Mr Glasenberg) were $4,248,000 (2018: $4,012,000).

Directors' interests

The Directors' interests in shares are set out in the Directors' report which is set out after this report. Mr Glasenberg's holding is considerably in excess of the proposed formal share ownership guideline for Executive Directors of 500% of salary.

Approval

This report in its entirety has been approved by the Committee and the Board of Directors and signed on its behalf by:

John Mack
Chair of Remuneration Committee
4 March 2020

Directors' report

For the year ended 31 December 2019

Company Secretary
John Burton

Introduction

This Annual Report is presented by the Directors on the affairs of Glencore plc (the "Company") and its subsidiaries (the "Group" or "Glencore"), together with the financial statements and auditor's report, for the year ended 31 December 2019. The Directors' report includes details of the business, the development of the Group and likely future developments as set out in the Strategic Report, which together form the management report for the purposes of the UK Financial Conduct Authority's Disclosure and Transparency Rule (DTR) 4.1.8R. The notice concerning forward-looking statements is set out at the end of the Annual Report.

Corporate structure

Glencore plc is a public company limited by shares, incorporated in Jersey and domiciled in Baar, Switzerland. Its shares are listed on the London and Johannesburg Stock Exchanges.

Financial results and distributions

The Group's financial results are set out in the financial statements section of this Annual Report.

A total capital distribution of US$0.20 per share was paid in two instalments in 2019 in respect of the 2018 financial year.

The Board is recommending to shareholders an aggregate capital distribution of US$0.20 per share in respect of the 2019 financial year as further detailed on page 51.

Review of business, future developments and post balance sheet events

A review of the business and the future developments of the Group is presented in the Strategic Report.

A description of acquisitions, disposals, and material changes to Group companies undertaken during the year is included in the Financial review and in note 25 to the financial statements.

Financial instruments

Descriptions of the use of financial instruments and financial risk management objectives and policies, including hedging activities and exposure to price risk, credit risk, liquidity risk and cash flow risk are included in notes 26 and 27 to the financial statements.

Corporate governance

A report on corporate governance and compliance with the UK Corporate Governance Code is set out in the Corporate Governance report and forms part of this report by reference.

Health, safety, environment & communities (HSEC)

An overview of health, safety and environmental performance and community participation is provided in the Sustainable Development section of the Strategic report. The work of the HSEC Board committee is contained in the Corporate Governance report.

Greenhouse gas emissions

A summary of the Group's greenhouse gas emissions is included on pages 16–23.

Taxation policy

Our Tax Policy: **glencore.com/group-tax-policy** and our most recent Payments to Governments report: **glencore.com/payments-to-governments-report** set out the Company's approach to tax and transparency and disclose the payments made by the Group on a country-by-country and project-by-project basis.

Exploration and research and development

The Group's business units carry out exploration and research and development activities that are necessary to support and expand their operations.

Employee policies and involvement

Glencore has a diversity and recruitment policies that aim to treat individuals fairly and not to discriminate on the basis of gender, race, ethnicity, disability, religion or beliefs, or on any other basis. Applications for employment and promotion are fully considered on their merits, and employees are given appropriate training and equal opportunities for career development and promotion.

If disability occurs during employment, the Group seeks to accommodate that disability where reasonably possible, including with appropriate training.

The Group's Code of Conduct and other policies support and protect the interests of employees in a number of ways such as requiring open, fair and respectful communication, zero tolerance for human rights violations, fair remuneration and, above all, a safe working environment.

Employee communication is mainly provided by the Group's intranet, corporate website and via emails. A range of information is made available to employees, including all policies and procedures applicable to them as well as information on the Group's financial performance and the main drivers of its business. Employee consultation depends upon the type and location of operation or office. Further information on our people is set out on pages 30-33.

Directors' conflicts of interest

Under Jersey law and the Company's Articles of Association (which mirror section 175 of the UK Companies Act 2006), a Director must avoid a situation in which the Director has, or can have, a direct or indirect interest that conflicts, or possibly may conflict, with the interests of the Company. The duty is not infringed if the matter has been authorised by the Directors. Under the Articles, the Board has the power to authorise potential or actual conflict situations. The Board maintains effective procedures to enable the Directors to notify the Company of any actual or potential conflict situations and for those situations to be reviewed and, if appropriate, to be authorised by the Board. Directors' conflict situations are reviewed annually. A register of authorisations is maintained.

Directors' liabilities and indemnities

The Company has granted third party indemnities to each of its Directors against any liability that attaches to them in defending proceedings brought against them, to the extent permitted by Jersey law. In addition, Directors and Officers of the Company and its subsidiaries are covered by directors & officers liability insurance.

Directors and Officers

The names of the Company's Directors and Officers who were in office at the end of 2019, together with their biographical details and other information, are shown on pages 94–95.

Directors' interests

Details of interests in the ordinary shares of the Company of those Directors who held office during 2019 are given below:

Name	Number of Glencore Shares	Percentage of Total Voting Rights
Executive Directors		
Ivan Glasenberg	1,211,957,850	9.09
Non-Executive Directors		
Anthony Hayward	244,907	0.00
Peter Coates	1,585,150	0.01
Leonhard Fischer	–	–
Martin Gilbert	50,000	0.00
John Mack	750,000	0.00
Gill Marcus	–	–
Patrice Merrin	43,997	0.00

Share capital and shareholder rights

As at 31 January 2020, the issued ordinary share capital of the Company was $145,862,001 represented by 14,586,200,066 ordinary shares of $0.01 each, of which 1,261,887,525 shares are held in treasury and 108,374,217 shares are held by Group employee benefit trusts.

Major interests in shares

Taking into account the information available to Glencore as at 31 January 2020, the table below shows the Company's understanding of the interests in 3% or more of the total voting rights attaching to its issued ordinary share capital:

Name of holder	Number of shares	Percentage of Total Voting Rights
Qatar Holding	1,221,497,099	9.16
Ivan Glasenberg	1,211,957,850	9.09
BlackRock Inc	759,873,369	5.70
Harris Associates	727,656,874	5.46
Daniel Maté	454,136,143	3.41
Aristotelis Mistakidis	450,175,134	3.38

Share capital

The rights attaching to the Company's ordinary shares, being the only share class of the Company, are set out in the Company's Articles of Association (the "Articles"), which can be found at **glencore.com/who-we-are/governance/**. Subject to Jersey law, any share may be issued with or have attached to it such preferred, deferred or other special rights and restrictions as the Company may by special resolution decide or, if no such resolution is in effect, or so far as the resolution does not make specific provision, as the Board may decide.

No such resolution is currently in effect. Subject to the recommendation of the Board, holders of ordinary shares may receive a distribution. On liquidation, holders of ordinary shares may share in the assets of the Company.

Holders of ordinary shares are also entitled to receive the Company's Annual Report and Accounts (or a summarised version) and, subject to certain thresholds being met, may requisition the Board to convene a general meeting (GM) or submit resolutions for proposal at AGMs. None of the ordinary shares carry any special rights with regard to control of the Company.

Holders of ordinary shares are entitled to attend and speak at GMs of the Company and to appoint one or more proxies or, if the holder of shares is a corporation, a corporate representative. On a show of hands, each holder of ordinary shares who (being an individual) is present in person or (being a corporation) is present by a duly appointed corporate representative, not being himself a member, shall have one vote. On a poll, every holder of ordinary shares present in person or by proxy shall have one vote for every share of which he or she is the holder. Electronic and paper proxy appointments and voting instructions must be received not later than 48 hours before a GM. A holder of ordinary shares can lose the entitlement to vote at GMs where that holder has been served with a disclosure notice and has failed to provide the Company with information concerning interests held in those shares. Except as (1) set out above and (2) permitted under applicable statutes, there are no limitations on voting rights of holders of a given percentage, number of votes or deadlines for exercising voting rights.

The Directors may refuse to register a transfer of a certificated share which is not fully paid, provided that the refusal does not prevent dealings in shares in the Company from taking place on an open and proper basis or where the Company has a lien over that share.

The Directors may also refuse to register a transfer of a certificated share unless the instrument of transfer is:

(i) lodged, duly stamped (if necessary), at the registered office of the Company or any other place as the Board may decide accompanied by the certificate for the share(s) to be transferred and/or such other evidence as the Directors may reasonably require as proof of title; or
(ii) in respect of only one class of shares.

Transfers of uncertificated shares must be carried out using CREST and the Directors can refuse to register a transfer of an uncertificated share in accordance with the regulations governing the operation of CREST.

The Directors may decide to suspend the registration of transfers, for up to 30 days a year, by closing the register of shareholders. The Directors cannot suspend the registration of transfers of any uncertificated shares without obtaining consent from CREST.

There are no other restrictions on the transfer of ordinary shares in the Company except: (1) certain restrictions may from time to time be imposed by laws and regulations (for example insider trading laws); (2) pursuant to the Company's share dealing code whereby the Directors and certain employees of the Company require approval to deal in the Company's shares; and (3) where a shareholder with at least a 0.25% interest in the Company's issued share capital has been served with a disclosure notice and has failed to provide the Company with information concerning interests in those shares. There are no agreements between holders of ordinary shares that are known to the Company, which may result in restrictions on the transfer of securities or on voting rights.

The rules for appointment and replacement of the Directors are set out in the Articles. Directors can be appointed by the Company by ordinary resolution at a GM or by the Board upon the recommendation of the Nomination Committee. The Company can remove a Director from office, including by passing an ordinary resolution or by notice being given by all the other Directors. The Company may amend its Articles by special resolution approved at a GM.

The powers of the Directors are set out in the Articles and provide that the Board may exercise all the powers of the Company including to borrow money. The Company may by ordinary resolution authorise the Board to issue shares, and increase, consolidate, sub-divide and cancel shares in accordance with its Articles and Jersey law.

Purchase of own shares

In February 2019, the Company renewed its buyback programme, which had started in July 2018.

In 2019, the Company purchased 678,315,262 of its own ordinary shares. The authority to purchase own shares was approved by the shareholders on 9 May 2019. The Directors will seek a similar authority at the Company's AGM to be held in 2020.

Going concern

The financial position of the Group, its cash flows, liquidity position and borrowing facilities are set out in the Strategic Report. Furthermore, notes 26 and 27 to the financial statements include the Group's objectives and policies for managing its capital, its financial risk management objectives, details of its financial instruments and hedging activities and its exposure to credit and liquidity risk. Significant financing activities that took place during the year are detailed in the Financial review section, which starts on page 46.

The results of the Group, principally pertaining to its industrial asset base, are exposed to fluctuations in both commodity prices and currency exchange rates whereas the performance of marketing activities is primarily physical volume driven with commodity price risk substantially hedged.

The Directors have a reasonable expectation, having made appropriate enquiries, that the Group has adequate resources to continue its operational existence for the foreseeable future. For this reason they continue to adopt the going concern basis in preparing the financial statements. The Directors have made this assessment after consideration of the Group's budgeted cash flows and related assumptions including appropriate stress testing of the identified uncertainties (being primarily commodity prices and currency exchange rates) and undrawn credit facilities, monitoring of debt maturities, and after review of the Guidance on Risk Management, Internal Control and Related Financial and Business Reporting 2014 as published by the UK Financial Reporting Council.

Longer-term viability

In accordance with provision 31 of the Code, the Directors have assessed the prospects of the Group's viability over a longer period than the 12 months required by the going concern assessment above. A summary of the assessment made is set out on page 75 in the Principal risks and uncertainties section.

Based on the results of the related analysis, the Directors have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the four-year period of this assessment. They also believe that the review period of four years is appropriate having regard to the Group's business model, strategy, principal risks and uncertainties, and viability.

Auditor

Each of the persons who is a Director at the date of approval of this Annual Report confirms that:

a. so far as the Director is aware, there is no relevant audit information of which the Company's auditor is unaware; and
b. the Director has taken all the steps that he or she ought to have taken as a director in order to make himself or herself aware of any relevant audit information and to establish that the Company's auditor is aware of that information.

Deloitte LLP have expressed their willingness to continue in office as auditor and a resolution to reappoint them will be proposed at the forthcoming AGM.

Statement of Directors' responsibilities

The Directors are responsible for preparing the Annual Report and financial statements in accordance with applicable law and regulations.

Company law requires the Directors to prepare financial statements for the Company for each financial year.

The financial statements are prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board and International Financial Reporting Standards as adopted for use in the European Union (together "IFRS"). The financial statements are required by law to be properly prepared in accordance with the Companies (Jersey) Law 1991. International Accounting Standard 1 requires that financial statements present fairly for each financial year the Company's financial position, financial performance and cash flows. This requires the faithful representation of the effects of transactions, other events and conditions in accordance with the definitions and recognition criteria for assets, liabilities, income and expenses set out in the International Accounting Standards Board's *Framework for the preparation and presentation of financial statements*.

In virtually all circumstances, a fair presentation will be achieved by compliance with all applicable IFRSs.

The Directors confirm that the Annual Report and accounts taken, as a whole, is fair, balanced and understandable, and provides the information necessary for shareholders to assess the performance, strategy and business model of the Company.

However, the Directors are also required to:

- Properly select and apply accounting policies
- Present information, including accounting policies, in a manner that provides relevant, reliable, comparable and understandable information
- Provide additional disclosures when compliance with the specific requirements in IFRSs are insufficient to enable users to understand the impact of particular transactions, other events and conditions on the entity's financial position and financial performance
- Make an assessment of the Company's ability to continue as a going concern

The Directors are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that the financial statements comply with the Companies (Jersey) Law 1991. They are also responsible for safeguarding the assets of the Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities. The Directors are responsible for the maintenance and integrity of the corporate and financial information included on the Company's website. The legislation governing the preparation and dissemination of the Company's financial statements may differ from legislation in other jurisdictions.

Signed on behalf of the Board

John Burton
Company Secretary
4 March 2020

Information required by Listing Rule LR 9.8.4C

In compliance with UK Listing Rule 9.8.4C the Company discloses the following information:

Listing Rule	Information required	Relevant disclosure
9.8.4(1)	Interest capitalised by the Group	See note 8 to the financial statements
9.8.4(2)	Unaudited financial information as required (LR 9.2.18)	See Chief Executive Officer's review
9.8.4(5)	Director waivers of emoluments	See Directors' remuneration report
9.8.4(6)	Director waivers of future emoluments	See Directors' remuneration report
9.8.4(12)	Waivers of dividends	See note 18 to the financial statements
9.8.4(13)	Waivers of future dividends	See note 18 to the financial statements
9.8.4(14)	Agreement with a controlling shareholder (LR 9.2.2A)	Not applicable

There are no disclosures to be made in respect of the other numbered parts of LR 9.8.4.

Confirmation of Directors' responsibilities

We confirm that to the best of our knowledge:

- the consolidated financial statements, prepared in accordance with International Financial Reporting Standards and interpretations as adopted by the European Union, International Financial Reporting Standards and interpretations as issued by the International Accounting Standards Board and the Companies (Jersey) Law 1991, give a true and fair view of the assets, liabilities, financial position and income of the Group and the undertakings included in the consolidation taken as a whole
- the management report, which is incorporated in the Strategic 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
- the Annual Report and consolidated financial statements, taken as a whole, are fair and balanced and understandable and provide the information necessary for shareholders to assess the performance, position, strategy and business model of the Company

The consolidated financial statements of the Group for the year ended 31 December 2019 were approved on the date below by the Board of Directors.

Signed on behalf of the Board:

Anthony Hayward
Chairman

Ivan Glasenberg
Chief Executive Officer

4 March 2020

Sharing knowledge and experience across sites

Openness

Danielle Bell
Plant Metallurgist – Mount Isa Mines, Australia

Danielle joined Glencore's graduate programme in 2013 and now works as a metallurgist at the copper concentrator.

"There is a generous mentoring spirit," she says, "Mining sites share their knowledge and experience."

It's this openness – one of our core values – that has helped her to learn the complexities of mining and succeed in her role.

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Financial statements

Independent Auditor's Report to the members of Glencore plc

Report on the audit of the financial statements

Opinion

In our opinion the financial statements of Glencore plc and its subsidiaries (together "the Group"):

- give a true and fair view of the state of affairs of the Group as at 31 December 2019 and of the Group's loss for the year then ended;
- have been properly prepared in accordance with International Financial Reporting Standards ("IFRSs") as adopted by the European Union and as issued by the International Accounting Standards Board ("IASB"); and
- have been properly prepared in accordance with the Companies (Jersey) Law 1991.

We have audited the financial statements of the Group which comprise:

- the consolidated statement of income;
- the consolidated statement of comprehensive income;
- the consolidated statement of financial position;
- the consolidated statement of cash flows;
- the consolidated statement of changes of equity; and
- the related notes 1 to 34.

The financial reporting framework that has been applied in their preparation is applicable law and IFRSs as adopted by the European Union and as issued by the IASB.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the financial statements section of our report.

We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the Financial Reporting Council's (the "FRC's") Ethical Standard as applied to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Summary of our audit approach

Key audit matters	The key audit matters that we identified in the current year were: • Government investigations; • Impairments of non-current assets; • Revenue recognition; • Fair value measurements; • Classification of financial instruments; • Credit and performance risk; and • Taxation: Uncertain tax positions and the recognition and recoverability of deferred taxes. Our assessment of the Group's key audit matters is broadly consistent with 2018, with the "United States Department of Justice Investigation" key audit matter of 2018 now expanded and renamed "Government investigations" to incorporate additional audit focus areas following announcements of the Commodity Futures Trading Commission (the "CFTC") and the UK Serious Fraud Office (the "SFO") investigations in 2019.
Materiality	We determined materiality for the Group to be $250 million (2018: $250 million), based on the average 3-year adjusted pre-tax profit.
Scoping	We focused our Group audit scope primarily on the audit work at 42 components, representing the Group's most material marketing operations and industrial assets. These 42 components account for 96% of the Group's net assets, 96% of the Group's revenue and 90% of the Group's Adjusted EBITDA (refer to segment information in note 2 to the financial statements).
Significant changes in our approach	There were no significant changes to our audit approach when compared to 2018 other than the increased procedures on the "Government investigations" key audit matter following the announcements of additional government investigations during the year.

Conclusions relating to going concern, principal risks and viability statement

Going concern

We have reviewed the directors' statement in the Basis of preparation section of note 1 to the financial statements about whether they considered it appropriate to adopt the going concern basis of accounting in preparing the financial statements and their identification of any material uncertainties to the Group's ability to continue as a going concern over a period of at least twelve months from the date of approval of the financial statements.

We considered as part of our risk assessment the nature of the Group, its business model and related risks including where relevant the impact of Brexit, the requirements of the applicable financial reporting framework and the system of internal control. We evaluated the directors' assessment of the Group's ability to continue as a going concern, including challenging the underlying data and key assumptions used to make the assessment, and evaluated the directors' plans for future actions in relation to their going concern assessment.

We are required to state whether we have anything material to add or draw attention to in relation to that statement required by Listing Rule 9.8.6R(3) and report if the statement is materially inconsistent with our knowledge obtained in the audit.

Going concern is the basis of preparation of the financial statements that assumes an entity will remain in operation for a period of at least 12 months from the date of approval of the financial statements.

We confirm that we have nothing material to report, add or draw attention to in respect of these matters.

Principal risks and viability statement

Based solely on reading the directors' statements and considering whether they were consistent with the knowledge we obtained in the course of the audit, including the knowledge obtained in the evaluation of the directors' assessment of the Group's ability to continue as a going concern, we are required to state whether we have anything material to add or draw attention to in relation to:

- the disclosures on pages 74 to 89 that describe the principal risks, procedures to identify emerging risks, and an explanation of how these are being managed or mitigated;
- the directors' confirmation on page 100 that they have carried out a robust assessment of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity; or
- the directors' explanation on page 75 as to how they have assessed the prospects of the Group, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

We are also required to report whether the directors' statement relating to the prospects of the Group required by Listing Rule 9.8.6R(3) is materially inconsistent with our knowledge obtained in the audit.

Viability means the ability of the group to continue over the time horizon considered appropriate by the directors.

We confirm that we have nothing material to report, add or draw attention to in respect of these matters.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those which had the greatest effect on the overall audit strategy, the allocation of resources in the audit and directing the efforts of the engagement team.

These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Government investigations

Description of key audit matter	How the scope of our audit responded to the key audit matter
The Group is subject to certain investigations by regulatory and enforcement authorities as disclosed in Note 31 to the financial statements. Plaintiffs have also filed a securities class action in connection with these investigations. The Board discussions on this matter are set out on page 101 and the Group's discussion on the Laws and enforcement principal risk and uncertainty are set out on pages 80–81. The Investigations Committee of the Board, is overseeing the Group's response to these investigations. The Group has engaged external legal counsel and forensic experts to assist the Group in responding to the various investigations, to represent it in litigation and to perform additional investigations at the request of the Investigations Committee covering various aspects of the Group's business. The Group has identified facts that may be relevant to the investigations and has shared these facts with the relevant authorities. The Group is continuing to co-operate with the various regulatory and enforcement authorities on further subpoenas and information requests received. At this stage of the investigations, the Group and its legal advisors believe that the length of the investigations and the monetary impact from the resolutions thereof, such as these may be, cannot be determined but may be material. The judgement of the Investigations Committee (guided by the General Counsel) is needed to determine whether an obligation exists and a provision should be recorded at 31 December 2019 in accordance with the accounting criteria set out under IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*. The Investigations Committee has concluded that no present obligation exists as at 31 December 2019. The Group has thus disclosed as a contingent liability (under IAS 37) that the timing and amount of any financial obligations (such as fines, penalties or damages, which could be material) or other consequences, including external costs arising from any of the various investigations and the class action suit, are not possible to predict and estimate at the end of the reporting period. Consequently no liability has been recognised, nor has any estimate of the contingent liability been disclosed, in relation to these matters in the consolidated statement of financial position at 31 December 2019. We identified a key audit matter related to the risk that a material provision is required to settle the various investigations, which is not recorded in the current year's financial statements. As a result, the disclosure as a contingent liability may not be adequate.	Our procedures regarding compliance with laws and regulations included: • We obtained an understanding of the Group's compliance policies, procedures and controls, including the Group's procedures to mitigate the risk of and respond to allegations of fraud, bribery and corruption. • We tested the Group's controls over the selection, appointment and renewal of intermediaries. • We increased our professional scepticism and maintained a high level of vigilance to possible indications of significant non-compliance with laws and regulations relating to fraud, bribery and corruption whilst carrying out our other audit procedures. We enhanced our audit procedures to identify and investigate any suspicious payments in cash or otherwise. Specifically, we reassessed and customised search parameters within journal entry testing for key words relevant to cash payments and payments to governments. We scrutinised expense accounts for evidence of improper payments and expanded inquiries with local management regarding the payment process and compliance with group compliance policies in regards to payments to intermediaries or governments. This analysis was in addition to our standard journal entry testing procedures. • We made enquiries from Group and in-scope component management whether the Group is in compliance with laws and regulations relating to fraud, money laundering, bribery and corruption. In addition and more specifically in response to the government investigations we performed the following: • We attended regular briefings from the General Counsel and the external legal counsel during the year. • We continued to understand and challenge the adequacy of the scope and outcomes of the work of external legal counsel and the appointed forensic experts ("the advisors"). • We considered whether the advisors' scope and outcomes as described to us were sufficient to inform the Investigations Committee's assessment and representation of whether an obligation exists and a provision should be recorded at 31 December 2019, and as to whether a reliable estimate of any contingent liability could be disclosed. • We enquired of the Investigations Committee and the General Counsel as to their awareness of any identified known or likely non-compliance from the investigations to date and whether any such non-compliance could result in a potential material outflow (penalty or fine) and whether there is a present obligation at 31 December 2019. • We cross checked the results of these enquires against the written confirmations received from the Group's legal advisers to identify any inconsistencies in representations made. • We worked with our Deloitte forensic experts, experienced in similar investigations to assess the reasonableness of the position of the Investigations Committee, the General Counsel and the external counsel that the recognition criteria of IAS 37 had not been met as at 31 December 2019.

Key observations

Based on the results of our procedures, we concluded that the timing of the completion of the investigations, and the outcome thereof, are uncertain. Consistent with the Investigations Committee and the General Counsel, we concurred that no present obligation exists to settle any potential fines or penalties associated with these investigations. We concurred that no estimate of the contingent liability can yet be made and that the disclosure on "Legal and regulatory proceedings" in note 31 of the financial statements is appropriate.

Impairments of non-current assets

Description of key audit matter

The carrying value of the Group's non-current assets within the scope of IAS 36 Impairment of assets includes intangible assets, property, plant and equipment ("PPE"), non-financial instruments advances and loans, non-financial instruments accounts receivable, and investments in associates and joint ventures, and amounted to $80,496 million at 31 December 2019.

Various factors influence the demand for and profitability of Glencore's commodities and services, which management need to monitor closely in assessing the recoverability of non-current assets such as:

- The volatility in expected future prices of certain commodities key to the Group (particularly coal, oil, copper, cobalt, zinc, ferroalloys and nickel), foreign exchange rates, production levels, operating costs and discount rates;
- Changes in mining and tax legislation, political and other macro-economic developments;
- Responses to climate change impacts by regulators and consumers, which could negatively impact demand for the Group's products, particularly coal; and
- Geological and other operational challenges that negatively affect an assets performance over time.

For loans, advances and other investments, assessing counterparty risk, solvency and liquidity can be highly subjective.

Management completes an impairment review on all of the Group's significant assets and investments annually, as part of the Group's budgeting process.

As disclosed in note 6, pre-tax impairments totalling $1,954 million were recorded in PPE and intangible assets and $248 million of other impairments were recognised on various other items. In addition, as disclosed in note 10, $785 million of pre-tax impairments were recognised in investments in associates and joint ventures. No impairment reversals were recorded during the period.

The outcome of impairment assessments could vary significantly were different assumptions applied. Refer to sensitivity disclosures within "Key sources of estimation uncertainty" in note 1, additional disclosures within notes 6 and 10, as well as the Audit Committee Report on page 107. As a result, we have identified a potential risk of fraud through management bias due to the significant estimation uncertainty and subjectivity in certain judgements and key assumptions applied by management in the impairment assessment.

Climate-related risks and considerations:
As described on pages 16 to 22, climate change, and the world's response to climate change, presents significant risks, opportunities and uncertainties for Glencore's business and many of the commodity markets in which it operates. In February 2019, Glencore announced a number of commitments following engagement with investor signatories of the Climate Action 100+ initiative as part of the global initiative to transition to a low-carbon economy. In February 2020, Glencore announced steps to further its commitment to the transition to a low-carbon economy. Management's assessment is that the greatest risk posed by climate change to the Group's financial reporting is the risk of impairment of certain of the Group's non-current assets, specifically its thermal coal portfolio and in particular, its Colombian coal assets which are exposed to the decarbonisation of their main market in Europe.

How the scope of our audit responded to the key audit matter

- We obtained an understanding of relevant controls in management's impairment assessment process.
- We reviewed management's assessment of impairment risk and their assessment of the indicators of impairment and challenged the significant assumptions used. We considered the risk of management bias in forecast assumptions and estimates by analysing management's inputs against third party forecast and macroeconomic data, Deloitte's independent assessment of discount rates, and reconciliations to latest internal budget information. For certain benchmark coal prices we specifically performed a look back assessment on actual sales prices achieved compared to previous management price forecasts used in impairment models.
- We performed an independent assessment of impairment indicators and challenged management in areas where our assessments differed.
- We challenged management's sensitivity analysis by performing independent sensitivity analyses with management's models, including for certain assets which were not identified as having indicators of impairment but have a higher risk of impairment due to lower available headroom in discounted cash flow models, volatility in key pricing assumptions, or the existence of operational circumstances which may indicate potential for impairment.
- We challenged management's determination of cash-generating units ("CGUs") against the requirements of the accounting standards and our understanding of the nature of the mining operations and the interdependency of cash inflows between various assets/groups of assets.
- Where indicators of impairment (or impairment reversals) were identified, we performed detailed testing on management's impairment model and where appropriate based on our risk assessment, we utilised Deloitte valuation and mining specialists to assess the appropriateness of management's underlying model inputs and key assumptions and the integrity of technical mining inputs (e.g. production parameters, recovery rates and resource conversion rates). Production assumptions were cross checked against life of mine plans, where applicable, as well as reserves and resources estimates. Where possible, benchmarking across similar assets in the same commodity was performed.
- For non-financial instruments advances and loans and non-financial instruments accounts receivable with a combined carrying value of $5,149 million (see notes 11 and 13, respectively), we challenged management's assessment of recoverability by reviewing supporting agreements and obtaining evidence of current performance, correspondence with the third party and any other information we are aware of that may influence the third party's ability to perform.
- We assessed the adequacy of impairment related disclosures in the financial statements, including the key assumptions used and the sensitivity of the financial statements to these assumptions.

Climate-related audit response:

- We worked with internal environmental experts in considering potential climate change risk factors such as stranded assets, green taxes, the potential impact of activities of investors and other stakeholders, environmental legislation, loss of customers or demand, and loss of sources of–and access to–funding.
- We challenged management's assertion on the impact of climate-related risks relating to its thermal coal portfolio by comparing management's impact assessment with reputable public industry projections of demand into the future, such as the International Energy Agency's (the "IEA") Stated- and Sustainable Development Policy Scenarios and using management's impairment models to perform sensitivities on long-term price assumptions based on external broker consensus price projections and IEA projections.

Impairments of non-current assets continued

Description of key audit matter	How the scope of our audit responded to the key audit matter
	• We reviewed the time period through which coal CGUs are valued to assess if the assumptions are consistent with management's long-term investment plans, public disclosures and external evidence about energy transition timing and effects. • We considered whether management's sensitivity and estimation uncertainty disclosures were adequate in the context of climate change risks and uncertainties.

Key observations

Based on the results of our testing, we concluded that management's assessment of impairment indicators was appropriate, including in the context of climate change.

We concluded that key commodity pricing, foreign exchange and discount rate assumptions were in line with third party evidence and our specialists' acceptable ranges. We concluded that reasonable considerations and weight had been given by management to the possible impacts of climate change on its thermal coal impairment assessments.

We found management's disclosures on key assumptions and impairment sensitivities to be in compliance with IFRS requirements.

Revenue recognition

Description of key audit matter	How the scope of our audit responded to the key audit matter
Revenue for the year was $215,111 million (2018: $219,754 million). Refer to note 1 for the revenue recognition accounting policies. Due to the nature of marketing transactions as well as the fact that substantially all output from industrial assets is sold by the Group's marketing divisions, we have identified revenue recognition in the Marketing operations as a key audit matter. Marketing operations: Marketing related activities depend on the reliability of the trade capture systems and their IT infrastructure environment. We identified a risk that the capture of trades and their key contractual terms within the trade book is incomplete or inaccurate, either due to fraud or error, impacting the timing and quantum of revenue recognition for commodity sales with deliveries occurring on or around year-end. Judgement is required to determine when control is transferred under certain contractual arrangements with third parties, especially on or around year-end, and in particular where the sale of goods is connected with an agreement to repurchase goods at a later date. As the majority of the Group's trades are measured at fair value through profit and loss, a complete and accurate trade capture process that includes all specific and bespoke terms within the commodity contracts is critical for accurate financial reporting and monitoring of trade book exposures and performance. As described in note 1, the Group has updated its accounting policies in line with the clarification and guidance from the IFRS Interpretations Committee ("IFRIC") on accounting for contracts to sell a non-financial item that is physically settled (the "New IFRIC Guidance"). It has resulted in the 2018 Revenue balance being restated by reclassifying $770 million of credits from "Cost of goods sold" to "Revenue", in line with the requirements of IAS 8. Refer to note 1.	We have reviewed Glencore's revenue recognition policies for compliance with the requirements of IFRS. For marketing operations we: • tested relevant controls surrounding the completeness and accuracy of trade capture and the revenue and trade cycle; • tested general IT controls surrounding major technology applications and critical interfaces involving revenue recognition and the completeness and accuracy of trade capture; • obtained third party confirmations where relevant to assess completeness and accuracy of trade books and challenged management where there were identified inconsistencies; • tested the accuracy of trades entered into around the reporting date within the trade book system by tracing and agreeing a sample of trades from their source documents to the trade book system; • utilised data analytics tools to test the completeness, occurrence and accuracy of realised revenue and to enhance audit effectiveness over large transaction volumes • agreed, on a sample basis, deliveries occurring on or around 31 December 2019 between the trade book system and the relevant shipping documents to assess whether the IFRS revenue recognition criteria were met for recorded sales; and • challenged management on their interpretation and application of the New IFRIC Guidance and reconciled management's assessment of the restatement impact to appropriate supporting information.

Key observations

Based on the results of our testing, we are satisfied that the revenue recognition policies are in line with IFRS and were appropriately applied throughout the period.

Fair value measurements

Description of key audit matter	How the scope of our audit responded to the key audit matter
The Group holds $38,389 million in marketing inventories, loans, accounts receivable, accounts payable, and other financial assets and liabilities that are measured at fair value at 31 December 2019. These fair value measurements significantly impact the Group's results. Determination of fair values of marketing inventories, and financial assets and liabilities is a complex and subjective area often requiring significant estimates, particularly where valuations utilise unobservable inputs (e.g. price differentials, credit risk assessments, market volatility and forecast operational estimates). At 31 December 2019, total 'Level 3' financial assets and liabilities amounted to $433 million and $464 million respectively. We refer readers to "Key sources of estimation uncertainty" within note 1 and additionally notes 11, 12, 13, 24, 25, 27, and 28.	We tested relevant internal controls over management's processes for determining inputs to fair value measurements and performed detailed substantive testing on a sample basis of the related fair value measurements. We worked with financial instrument specialists embedded within the audit team with experience in commodity trading, to specifically test the evidence supporting significant unobservable inputs utilised in 'Level 3' measurements in the fair value hierarchy as set out in notes 11 and 28 to the financial statements, which included assessing management's valuation assumptions against independent price quotes, recent transactions, and other relevant documentation.

Key observations

Based on the results of our testing, we are satisfied that the 'Level 3' fair value measurements are supported by reasonable assumptions in line with recent transactions and/or externally verifiable information.

We found the financial statement disclosures on fair value measurements to be appropriate.

Classification of financial instruments

Description of key audit matter	How the scope of our audit responded to the key audit matter
Glencore trades a diverse portfolio of commodities and utilises a wide variety of trading strategies in order to profit from volatility in market prices, differentials and spreads whilst maximising flexibility and optionality. The classification of contracts relating to the Group's marketing operations can be complex, particularly distinguishing sales contracts where the Group physically delivers its own production to a third party with no history of net settlement occurring ("own use"), from those which form part of the Group's regular marketing operations and which are measured at fair value through profit and loss. Differences in classification affect the recognition of associated gains and losses. Contracts which are designated as "own use" are exempt from fair value measurement (i.e. mark-to-market accounting). Transactions for the sale or purchase of commodities may contain a financing element and/or embedded derivatives, which may require judgement in determining the most appropriate classification, presentation and accounting treatment. Refer to notes 1, 21, 27 and 28.	We obtained an understanding of the trading strategies and associated product flows within the Group's marketing departments, including assessment of the design and implementation of the key controls over market risk management using financial instrument specialists embedded within the audit team with experience in commodity trading. We analysed the trade books to understand unusual or complex derivatives open at year-end. We also analysed the trading results for portfolios designated as "own use" for evidence of any net settlements, which may indicate potential tainting of the IFRS 9 Financial Instruments "own use" criteria. We challenged management's judgement and conclusions associated with the classification and accounting for new significant arrangements and/or significant changes to existing arrangements containing a financing element. Our challenge included evaluation of the commercial substance of the arrangements in the context of applicable IFRS guidance and industry practice. We assessed the adequacy of related disclosures in the financial statements in accordance with the requirements of IFRS.

Key observations

Based on the results of our testing, we are satisfied that all significant assumptions applied in respect of the classification and valuation of financial instruments are appropriate and that disclosures given around financial instruments are in accordance with the requirements of IFRS.

Credit and performance risk

Description of key audit matter	How the scope of our audit responded to the key audit matter
The Group is exposed to credit and performance risk arising from the Group's global production and marketing operations, particularly in markets demonstrating significant price volatility with limited liquidity and terminal markets. This risk is heightened in times of increased price volatility where suppliers may be incentivised to default on delivery and customers may be unwilling to take the deliveries or unable to pay. At 31 December 2019, total advances and loans and accounts receivable classified as financial assets, as well as advances repayable with product, amounted to $16,904 million. Refer to notes 11, 13 and 27 and the Audit Committee Report on page 108.	We obtained an understanding of internal controls relevant to the Group's centralised and local credit and performance risk monitoring procedures. We challenged management's assessment of the recoverability of aged and overdue receivables, loans and advance payments with delayed or overdue deliveries, considering historical patterns of trading and settlement as well as recent communications with the counterparties and other post balance sheet date evidence. In addition, we challenged the valuation of significant fixed price positions across the Group at year-end, with particular focus on commodities demonstrating high price volatility during the year, where the risk of non-performance is higher.

Key observations

We concluded that the Group's provisioning in relation to counterparty and performance risk was appropriately assessed.

Taxation: Uncertain tax positions and the recognition and recoverability of deferred taxes

Description of key audit matter	How the scope of our audit responded to the key audit matter
The global tax environment is complex, particularly with respect to cross border transactions. There continues to be an increase in enforcement activities, and increasingly stringent interpretations of existing legislation by local revenue authorities. As described in note 7, and the Audit Committee Report on page 108, the legality of the immediate application of the 2018 DRC Mining Code enacted in 2018 is subject to legal challenge, therefore judgement is required on how this legislation should be interpreted and applied. These developments give rise to complexity and uncertainty in respect of the calculation of income taxes and deferred tax assets and consideration of contingent liabilities associated with tax years open to audit and other exposures. The new accounting interpretation, IFRIC 23 Uncertainty over Income Tax Treatments, applicable from 1 January 2019, provides further guidance on the recognition and measurement requirements in IAS 12 Income Taxes when there is uncertainty over income tax treatments, and the Group is required to reassess its various tax exposures under the measurement approach introduced by IFRIC 23. As disclosed in note 7, at 31 December 2019, the Group has recorded total deferred tax liabilities of $5,974 million and total deferred tax assets of $1,477 million. Additionally, the Group has $12,857 million of available gross tax losses carried forward and deductible temporary differences for which no deferred tax assets have been recognised. The assessment of tax-related contingent liabilities is disclosed in note 22. Refer to "Key sources of estimation uncertainty" within note 1 and additional disclosures in notes 7 and 22, and the Audit Committee Report on page 108.	We engaged Deloitte tax experts to assist in executing the following audit procedures: • We considered the appropriateness of management's assumptions and estimates to support the recognition of deferred tax assets with reference to forecast taxable profits. We challenged the appropriateness of management's tax utilisation model by comparing these forecasts against the tax entities' budgets or underlying asset life of mine plans; • We challenged management's current position regarding the application of the 2018 DRC Mining Code, and negotiations with the DRC tax authorities; • We reviewed and challenged management's assessment of uncertain tax positions by reviewing correspondence with local tax authorities and reviewing third party expert tax opinions where appropriate, to assess the adequacy of associated provisions and disclosures having consideration of the new IFRIC 23 guidance; and • We challenged management on the adequacy of disclosures in the financial statements in relation to taxation, specifically on the requirement for adequate assessment of uncertainties and contingent liabilities.

Key observations

The results of our testing were satisfactory and we concurred that the recorded deferred tax assets and uncertain tax provisions and related disclosures are appropriate.

Our application of materiality

We define materiality as the magnitude of misstatement in the financial statements that makes it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced. We use materiality both in planning the scope of our audit work and in evaluating the results of our work.

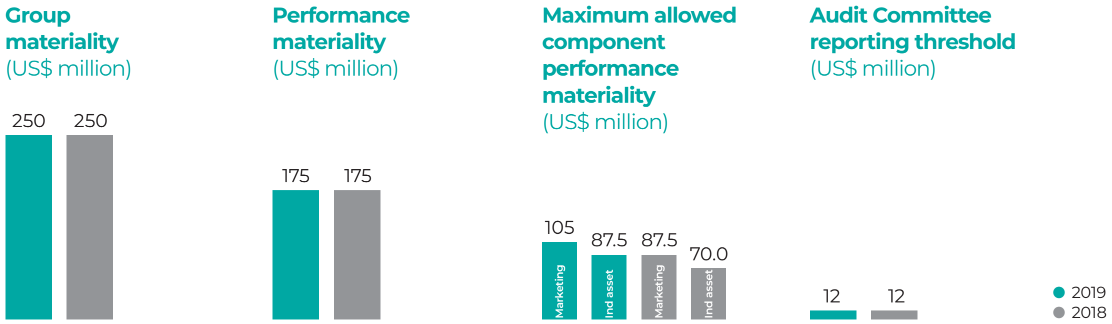
Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

Group materiality and performance materiality

Group materiality: $250 million (2018: $250 million)

Group performance materiality: $175 million (2018: $175 million)

The applied materiality is approximately 5% of average 3-year adjusted pre-tax profit (2018: 5%), and equates to less than 1% (2018: less than 1%) of equity.



Basis for determining materiality and performance materiality

Consistent with the methodology applied in prior years, we have determined materiality by using a percentage of the 3-year average (for 2019: 2017 – 2019) of adjusted pre-tax profits. The selected materiality is 12.3% of current year adjusted pre-tax profit without the effect of averaging (2018: 3.5%).

We set performance materiality at a level lower than materiality to reduce the probability that, in aggregate, uncorrected and undetected misstatements exceed the materiality for the financial statements as a whole. Group performance materiality for the 2019 audit has been set at $175 million (70% of Group materiality), based on our past audit experience, which has indicated a low number of uncorrected misstatements noted in prior years and the size and complexity of the Group. Similarly, component audit procedures are performed with reference to the component performance materiality (see ranges applied below), which is set at an appropriate percentage of the materiality applied at the individual component level.

Due to the diversified nature of the Group's operations, we have historically introduced a maximum allowed component performance materiality such that our scoping and component level procedures are set at a level that is commensurate with the contributions of each component. The maximum permitted component performance materiality for marketing operations is $105 million. Component performance materiality for industrial assets is limited to $87.5 million owing to their lower contribution to pre-tax profits on an individual basis.

The performance materialities applied to individual components ranged from $8 million to $105 million.

Rationale for the benchmark applied

The pre-tax profits for the 2017-2019 years have been adjusted in determining materiality to exclude items which, due to their nature and variable financial impact and/or expected infrequency of the underlying events, are not considered indicative of the continuing operations of the Group. These 'adjusting items' are outlined in notes 5 and 6 to the financial statements and include impairments and gains and losses of asset disposals for example. If included, these would distort materiality year-on-year.

We consider using a 3-year average to be more appropriate than an assessment based on current year results alone given the nature of the mining industry which is exposed to cyclical commodity price fluctuations and therefore provides a more appropriate base reflective of the scale of the Group's size and operations.

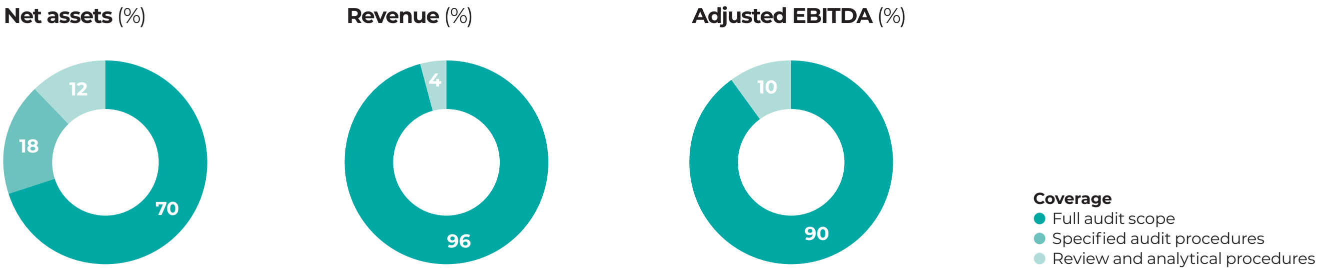
We have reported to the Audit Committee all audit differences in excess of $12 million (2018: $12 million), as well as differences below this threshold that, in our view, warranted reporting on qualitative grounds. We also report to the Audit Committee on disclosure matters that we identified when assessing the overall presentation of the financial statements.

An overview of the scope of our audit

Our Group audit was scoped by obtaining an understanding of the Group and its environment and assessing the risks of material misstatement at the Group level. Our scoping considered both quantitative and qualitative factors including a component's contribution to financial metrics (revenue, EBIT and Adjusted EBITDA), production output and qualitative criteria, such as being a significant development project or exhibiting particular risk factors. Based on our continuing assessment, we scoped in audit work at 42 components (2018: 42 components), representing the Group's most material marketing operations and industrial assets, and utilised 25 component audit teams (2018: 24 component audit teams) in 18 countries (2018: 20 countries).

- 24 components (2018: 27 components) were subject to a full scope audit; and
- 18 components (2018: 15 components) were subject to specified audit procedures where the extent of our testing was based on our assessment of the risk of material misstatement and of the materiality of the Group's operations at those locations.

These 42 components account for 88% of the Group's net assets (2018: 87%), 96% of the Group's revenue (2018: 96%) and 90% of the Group's Adjusted EBITDA (2018: 93%).



Detailed audit instructions were sent to the auditors of these in-scope components. These instructions identified the significant audit risks, areas of audit focus, the account balances, classes of transactions and disclosures considered material and their relevant risks of material misstatement as assessed by the Group audit team. The instructions also set out the audit procedures to be performed and set out the information to be reported back to the Group audit team and other matters relevant to the audit.

The Group audit team continued to follow a programme of regular telephone calls and on-site meetings with components throughout the year. The on-site meetings are designed to enable the Group Audit Partner or another senior member of the Group audit team to periodically meet with local management and the component audit team on a rotational basis. In 2019, the Group audit team held in-person meetings with 17 components (2018: 11 components).

For all in-scope components, the Group audit team was involved in the audit work performed by the component auditors through a combination of our global planning conference call meetings, provision of referral instructions, review and challenge of related component inter-office reporting and of findings from their work (which included the audit procedures performed to respond to risks of material misstatement), attendance at component audit closing conference calls and regular interaction on any related audit and accounting matters which arose.

At the parent entity level, we tested the consolidation process and carried out analytical procedures to confirm our conclusion that there was no reasonable possibility of a risk of material misstatement in the aggregated financial information of the remaining components not subject to audit or audit of specified account balances.

Other information

The directors are responsible for the other information. The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

In this context, matters that we are specifically required to report as uncorrected material misstatements of the other information include where we conclude that:

- *Fair, balanced and understandable* – the statement given by the directors that they consider the annual report and financial statements taken as a whole is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's position and performance, business model and strategy, is materially inconsistent with our knowledge obtained in the audit; or
- *Audit committee reporting* – the section describing the work of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee; or
- *Directors' statement of compliance with the UK Corporate Governance Code* – the parts of the directors' statement required under the Listing Rules relating to the company's compliance with the UK Corporate Governance Code containing provisions specified for review by the auditor in accordance with Listing Rule 9.8.10R(2) do not properly disclose a departure from a relevant provision of the UK Corporate Governance Code.

We have nothing to report in respect of these matters.

Responsibilities of directors

As explained more fully in the statement of directors' responsibilities, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the Group's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Group or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are 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 ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and 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 these financial statements.

Details of the extent to which the audit was considered capable of detecting irregularities, including fraud, are set out below.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Extent to which the audit was considered capable of detecting irregularities, including fraud

We identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and then design and perform audit procedures responsive to those risks, including obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion.

Identifying and assessing potential risks related to irregularities

In identifying and assessing risks of material misstatement in respect of irregularities, including fraud and non-compliance with laws and regulations, our procedures included the following:

- Enquiring of senior management, internal audit, members of the legal and compliance functions, and the Audit and Investigations Committees, including obtaining and reviewing supporting documentation, concerning the group's policies and procedures relating to:
  - identifying, evaluating and complying with laws and regulations and whether they were aware of any instances of non-compliance;
  - detecting and responding to the risks of fraud and whether they have knowledge of any actual, suspected or alleged fraud; and
  - reviewing internal controls established to mitigate risks related to fraud or non-compliance with laws and regulations.
- Understanding the nature of the industry and sector, control environment and business performance including the design of the Group's remuneration policies, key drivers for directors' and senior management remuneration, bonus levels and performance targets.
- Discussing among the engagement team, including significant component audit teams, and involving relevant internal specialists, including forensic, tax, mining, valuations and IT regarding how and where fraud might occur in the financial statements and any potential indicators of fraud.

As a result of the above, we identified potential for fraud in the following areas:

- Matters arising from the ongoing government investigations which could highlight control weaknesses in management's processes;
- Key sources of estimation uncertainty within management's testing of impairment of non-current assets within the scope of IAS 36; and
- Revenue transactions in marketing operations that occur close to period end and have a significant gross margin impact which contain complex terms and/or may be reversed subsequent to period end.

In common with all audits under ISAs (UK), we are also required to perform specific procedures to respond to the risk of management override.

We also obtained an understanding of the legal and regulatory frameworks that the group operates in, focusing on the provisions of those laws and regulations that had a direct effect in the determination of material amounts and disclosures in the financial statements or that had a fundamental effect on the operations of the group. The key laws and regulations we considered in this context included the Companies (Jersey) Law 1991, Primary and Secondary Listing Rules, Disclosure and Transparency rules on audit committees and corporate governance statements, the UK Corporate Governance code and related guidance, the FRC Ethical Standards, the US Foreign Corrupt Practices Act, the US Anti-Money Laundering regulations and the UK Bribery Act 2010. In addition, compliance with the Group's various operating licenses, environmental regulations, and tax legislation in the jurisdictions in which it operates are fundamental to the Group's ability to continue operating in those jurisdictions.

Audit response to risks identified

As a result of our risk identification and assessment as described above, the key audit matters related to the detection of irregularities, including fraud, were: "Government investigations", "Impairments of non-current assets" and "Revenue recognition". The key audit matters section of our report explains these matters in more detail and also describes the specific procedures we performed in response to these key audit matters. In addition, our procedures to respond to risks identified included the following:

- reviewing the financial statement disclosures and testing to supporting documentation to assess compliance with provisions of relevant laws and regulations described as having a direct effect on the financial statements;
- enquiring of management, the Audit Committee, the Investigations Committee, General Counsel and external legal counsel (where applicable) concerning actual and potential litigation and claims;
- performing analytical procedures to identify any unusual or unexpected relationships that may indicate risks of material misstatement due to fraud;
- performing focused analytical procedures on key financial metrics of non-significant components to identify any unusual or material transactions that may indicate a risk of material misstatement and evaluating the business rationale of such transactions;
- reading minutes of meetings of those charged with governance, reviewing internal audit reports and reviewing correspondence with relevant regulatory and taxation authorities, where applicable; and
- in addressing the risk of fraud through management override of controls, testing the appropriateness of journal entries and other adjustments, assessing whether the judgements made in making accounting estimates are indicative of a potential bias, and evaluating the business rationale of any significant transactions that are unusual or outside the normal course of business.

We also communicated relevant identified laws and regulations and potential fraud risks to all engagement team members, including internal specialists and significant component audit teams, and remained alert to any indications of fraud or non-compliance with laws and regulations throughout the audit.

Report on other legal and regulatory requirements

Opinion on other matters prescribed by our engagement letter

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the provisions of the UK Companies Act 2006 as if that Act had applied to the company.

Matters on which we are required to report by exception

Adequacy of explanations received and accounting records

Under the Companies (Jersey) Law, 1991 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit;
- proper accounting records have not been kept by the parent company or proper returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns.

We have nothing to report in respect of these matters.

Other matters

Auditor tenure

Following the recommendation of the Audit Committee, we were appointed by the Board of Directors on 22 August 2011 to audit the financial statements of Glencore plc for the year ending 31 December 2011 and subsequent financial periods. The period of total uninterrupted engagement including previous renewals and reappointments of the firm as auditors of Glencore plc is 9 years, covering the years ending December 2011 to December 2019. The Engagement Partner has rotated twice during this period, with the most recent rotation being after the 2017 audit.

Consistency of the audit report with the additional report to the audit committee

Our audit opinion is consistent with the additional report to the audit committee we are required to provide in accordance with ISAs (UK).

Use of our report

This report is made solely to the company's members, as a body, in accordance with Article 113A of the Companies (Jersey) Law, 1991. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Geoffrey Pinnock, CA (SA)
for and on behalf of Deloitte LLP
Recognised Auditor
London, UK
4 March 2020

Consolidated statement of income

For the year ended 31 December 2019

US$ million	Notes	2019	2018 Restated[1]
Revenue	3	215,111	220,524
Cost of goods sold		(210,434)	(211,468)
Selling and administrative expenses		(1,391)	(1,381)
Share of income from associates and joint ventures	10	114	1,043
Net loss on disposals of non-current assets	4	(43)	(139)
Other expense – net	5	(173)	(764)
Impairments of non-current assets	6	(2,322)	(1,452)
Impairments of non-current financial assets	6	(86)	(191)
Dividend income	10	49	21
Interest income		227	228
Interest expense		(1,940)	(1,742)
(Loss)/income before income taxes		**(888)**	**4,679**
Income tax expense	7	(618)	(2,063)
(Loss)/income for the year		**(1,506)**	**2,616**
Attributable to:			
Non-controlling interests		(1,102)	(792)
Equity holders of the Parent		(404)	3,408
(Loss)/earnings per share:			
Basic (US$)	17	(0.03)	0.24
Diluted (US$)	17	(0.03)	0.24

1 Adjusted to present mark-to-market movements on physical forward sales contracts within revenue (see note 1).

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of comprehensive income

For the year ended 31 December 2019

US$ million	Notes	**2019**	2018
(Loss)/income for the year		(1,506)	2,616
Other comprehensive income			
Items not to be reclassified to the statement of income in subsequent periods:			
Defined benefit plan actuarial losses, net of tax of $19 million (2018: $10 million)	23	(80)	(35)
Gain/(loss) on equity investments accounted for at fair value through other comprehensive income, net of tax of $11 million (2018: $2 million)	10	337	(848)
Gain due to changes in credit risk on financial liabilities accounted for at fair value through profit and loss		(1)	–
Net items not to be reclassified to the statement of income in subsequent periods		**256**	**(883)**
Items that have been or may be reclassified to the statement of income in subsequent periods:			
Exchange gain/(loss) on translation of foreign operations		117	(711)
Losses on cash flow hedges, net of tax of $4 million (2018: $1 million)	16	(51)	(18)
Share of other comprehensive loss from associates and joint ventures	10	(37)	(124)
Items recycled to the statement of income	25	–	218
Net items that have been or may be reclassified to the statement of income in subsequent periods		**29**	**(635)**
Other comprehensive income/(loss)		**285**	**(1,518)**
Total comprehensive (loss)/income		**(1,221)**	**1,098**
Attributable to:			
Non-controlling interests		(1,103)	(841)
Equity holders of the Parent		(118)	1,939

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of financial position

As at 31 December 2019

US$ million	Notes	2019	2018
Assets			
Non-current assets			
Property, plant and equipment	8	55,357	56,770
Intangible assets	9	7,006	6,971
Investments in associates and joint ventures	10	12,984	13,909
Other investments	10	2,387	2,067
Advances and loans	11	2,427	2,555
Other financial assets	27	25	51
Inventories	12	575	353
Deferred tax assets	7	1,477	1,728
		82,238	**84,404**
Current assets			
Inventories	12	19,936	20,564
Accounts receivable	13	17,021	17,787
Other financial assets	27	2,381	3,482
Prepaid expenses		315	389
Cash and cash equivalents	14	1,899	2,046
		41,552	**44,268**
Assets held for sale	15	286	–
		41,838	**44,268**
Total assets		**124,076**	**128,672**
Equity and liabilities			
Capital and reserves – attributable to equity holders			
Share capital	16	146	146
Reserves and retained earnings		40,128	45,592
		40,274	**45,738**
Non-controlling interests	33	(1,038)	(355)
Total equity		**39,236**	**45,383**
Non-current liabilities			
Borrowings	20	29,067	26,424
Deferred income	21	2,670	2,301
Deferred tax liabilities	7	5,974	6,839
Other financial liabilities	27	379	529
Provisions including post-retirement benefits	22	7,302	6,824
		45,392	**42,917**
Current liabilities			
Borrowings	20	7,976	8,570
Accounts payable	24	26,193	26,484
Deferred income	21	558	412
Provisions	22	489	554
Other financial liabilities	27	3,722	3,243
Income tax payable		354	1,109
		39,292	**40,372**
Liabilities held for sale	15	156	–
		39,448	**40,372**
Total equity and liabilities		**124,076**	**128,672**

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of cash flows

For the year ended 31 December 2019

US$ million	Notes	**2019**	2018
Operating activities			
(Loss)/income before income taxes		(888)	4,679
Adjustments for:			
Depreciation and amortisation		7,160	6,325
Share of income from associates and joint ventures	10	(114)	(1,043)
Streaming revenue and other non-current provisions		(296)	(647)
Loss on disposals of non-current assets	4	43	139
Unrealised mark-to-market movements on other investments	5	(47)	(139)
Impairments	6	2,408	1,643
Other non-cash items – net[1]		367	739
Interest expense – net		1,713	1,514
Cash generated by operating activities before working capital changes		**10,346**	**13,210**
Working capital changes			
Decrease in accounts receivable[2]		1,211	2,734
Decrease in inventories		678	3,539
Increase/(decrease) in accounts payable[3]		199	(4,948)
Total working capital changes		**2,088**	**1,325**
Income taxes paid		(2,301)	(1,740)
Interest received		200	183
Interest paid		(1,604)	(1,419)
Net cash generated by operating activities		**8,729**	**11,559**
Investing activities			
Net cash used in acquisition of subsidiaries	25	(123)	(2,922)
Net cash received from disposal of subsidiaries	25	5	88
Exchangeable loan provided for the conditional acquisition of Astron Energy	13/25	–	(1,044)
Purchase of investments		(125)	(19)
Proceeds from sale of investments		119	16
Purchase of property, plant and equipment		(4,712)	(4,687)
Proceeds from sale of property, plant and equipment		178	136
Dividends received from associates and joint ventures	10	942	1,139
Net cash used by investing activities		**(3,716)**	**(7,293)**

1 Includes certain non-cash items as disclosed in note 5, share based remuneration and inventory net realisable value adjustments.
2 Includes movements in other financial assets, prepaid expenses and long-term advances and loans.
3 Includes movements in other financial liabilities, provisions and deferred income.

The accompanying notes are an integral part of the consolidated financial statements.

US$ million	Notes	2019	2018
Financing activities[1]			
Proceeds from issuance of capital market notes[2]		3,866	185
Proceeds from issuance of non-dilutive convertible bonds[2]		–	576
Purchase of call options on non-dilutive convertible bonds		–	(95)
Repayment of capital market notes		(3,167)	(3,650)
(Repayment)/proceeds from revolving credit facility		(29)	4,624
Proceeds from other non-current borrowings		291	15
Repayment of other non-current borrowings		(325)	–
Repayment of finance lease obligations under IAS 17		–	(72)
Repayment of lease liabilities under IFRS 16		(358)	–
Margin receipts/(calls) in respect of financing related hedging activities		529	(507)
(Repayment of)/proceeds from current borrowings		(682)	439
Proceeds from/(repayment of) U.S. commercial papers		79	(634)
Acquisition of non-controlling interests in subsidiaries		(24)	(58)
Return of capital/distributions to non-controlling interests		(305)	(343)
Purchase of own shares	16	(2,318)	(2,005)
Disposal of own shares		6	27
Distributions paid to equity holders of the Parent	18	(2,710)	(2,836)
Net cash used by financing activities		**(5,147)**	**(4,334)**
Decrease in cash and cash equivalents		(134)	(68)
Effect of foreign exchange rate changes		(11)	(33)
Cash and cash equivalents, beginning of period		2,046	2,147
Cash and cash equivalents, end of year		**1,901**	**2,046**
Cash and cash equivalents reported in the statement of financial position		1,899	**2,046**
Cash and cash equivalents attributable to assets held for sale		2	–

1 Refer to note 20 for reconciliation of movement in borrowings.

2 Net of issuance costs relating to capital market notes of $25 million (2018: $4 million).

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of changes of equity

For the year ended 31 December 2019

	Retained earnings	Share premium	Other reserves (Note 16)	Own shares (Note 16)	Total reserves and retained earnings	Share capital	Total equity attributable to equity holders	Non-controlling interests (Note 33)	Total equity
1 January 2018	**2,244**	**51,340**	**(2,425)**	**(1,575)**	**49,584**	**146**	**49,730**	**(300)**	**49,430**
Income for the year	3,408	–	–	–	3,408	–	3,408	(792)	2,616
Other comprehensive income	(159)	–	(1,310)	–	(1,469)	–	(1,469)	(49)	(1,518)
Total comprehensive income	**3,249**	**–**	**(1,310)**	**–**	**1,939**	**–**	**1,939**	**(841)**	**1,098**
Own share disposal[1]	(153)	–	–	262	109	–	109	–	109
Own share purchases[1]	–	–	–	(2,005)	(2,005)	–	(2,005)	–	(2,005)
Equity-settled share-based expenses[2]	8	–	–	–	8	–	8	–	8
Change in ownership interest in subsidiaries[3]	–	–	(1,207)	–	(1,207)	–	(1,207)	1,108	(99)
Acquisition/disposal of business[4]	–	–	–	–	–	–	–	21	21
Reclassifications	(5)	–	5	–	–	–	–	–	–
Distributions paid[5]	–	(2,836)	–	–	(2,836)	–	(2,836)	(343)	(3,179)
31 December 2018	**5,343**	**48,504**	**(4,937)**	**(3,318)**	**45,592**	**146**	**45,738**	**(355)**	**45,383**
1 January 2019	**5,343**	**48,504**	**(4,937)**	**(3,318)**	**45,592**	**146**	**45,738**	**(355)**	**45,383**
Loss for the year	(404)	–	–	–	(404)	–	(404)	(1,102)	(1,506)
Other comprehensive (loss)/income	(118)	–	404	–	286	–	286	(1)	285
Total comprehensive loss	**(522)**	**–**	**404**	**–**	**(118)**	**–**	**(118)**	**(1,103)**	**(1,221)**
Own share disposal[1]	(115)	–	–	199	84	–	84	–	84
Own share purchases[1]	–	–	–	(2,318)	(2,318)	–	(2,318)	–	(2,318)
Equity-settled share-based expenses[2]	12	–	–	–	12	–	12	–	12
Change in ownership interest in subsidiaries[3]	–	–	(418)	–	(418)	–	(418)	358	(60)
Acquisition/disposal of business[4]	–	–	–	–	–	–	–	371	371
Reclassifications	24	–	(20)	–	4	–	4	(4)	–
Distributions paid[5]	–	(2,710)	–	–	(2,710)	–	(2,710)	(305)	(3,015)
31 December 2019	**4,742**	**45,794**	**(4,971)**	**(5,437)**	**40,128**	**146**	**40,274**	**(1,038)**	**39,236**

1 See note 16.
2 See note 19.
3 See note 33.
4 See note 25.
5 See note 18.

The accompanying notes are an integral part of the consolidated financial statements.

Notes to the financial statements

1. Accounting policies

Corporate information

Glencore plc (the "Company", "Parent", the "Group" or "Glencore"), is a leading integrated producer and marketer of natural resources, with worldwide activities in the production, refinement, processing, storage, transport and marketing of metals and minerals and energy products. Glencore operates on a global scale, marketing and distributing physical commodities sourced from third party producers and own production to industrial consumers, such as those in the battery, electronic, construction, automotive, steel, energy and oil industries. Glencore also provides financing, logistics and other services to producers and consumers of commodities. In this regard, Glencore seeks to capture value throughout the commodity supply chain. Glencore's long experience as a commodity producer and merchant has allowed it to develop and build upon its expertise in the commodities which it markets and cultivate long-term relationships with a broad supplier and customer base across diverse industries and in multiple geographic regions.

Glencore is a publicly traded limited company incorporated in Jersey and domiciled in Switzerland. Its ordinary shares are traded on the London and Johannesburg stock exchanges.

These consolidated financial statements were authorised for issue in accordance with the Director's resolution on 4 March 2020.

Statement of compliance

The consolidated financial statements have been prepared in accordance with:

- International Financial Reporting Standards (IFRS) and interpretations as adopted by the European Union (EU) effective for the year ended 31 December 2019, and
- IFRS and interpretations as issued by the International Accounting Standards Board (IASB) effective for the year ended 31 December 2019.

Critical accounting judgements and key sources of estimation uncertainty

The preparation of the consolidated financial statements requires management to make judgements, estimates and assumptions that affect the reported amounts of assets and liabilities as well as the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable and relevant under the circumstances, independent estimates, quoted market prices and common, industry standard modelling techniques. Actual outcomes could result in a material adjustment to the carrying amount of assets or liabilities affected in future periods.

Glencore has identified the following areas as being critical to understanding Glencore's financial position as they require management to make complex and/or subjective judgements, estimates and assumptions about matters that are inherently uncertain:

Critical accounting judgements

In the process of applying Glencore's accounting policies, management has made the following judgements based on the relevant facts and circumstances including macro-economic circumstances and, where applicable, interpretation of underlying agreements, which have the most significant effect on the amounts recognised in the consolidated financial statements.

(i) Determination of control of subsidiaries and joint arrangements (see note 34)

Judgement is required to determine when Glencore has control of subsidiaries or joint control of joint or other unincorporated arrangements. This requires an assessment of the relevant activities (those relating to the operating and capital decisions of the arrangement, such as: the approval of the capital expenditure programme for each year, and appointing, remunerating and terminating the key management personnel or service providers of the operations) and when the decisions in relation to those activities are under the control of Glencore or require unanimous consent. See note 25 for a summary of the acquisitions of subsidiaries completed during the year and the key judgements made in determining control thereof.

Judgement is also required in determining the classification of a joint arrangement between a joint venture or a joint operation through an evaluation of the rights and obligations arising from the arrangement and in particular, if the joint arrangement has been structured through a separate vehicle, further consideration is required of whether:

(1) the legal form of the separate vehicle gives the parties rights to the assets and obligations for the liabilities;

(2) the contractual terms and conditions give the parties rights to the assets and obligations for the liabilities; and

(3) other facts and circumstances give the parties rights to the assets and obligations for the liabilities.

1. Accounting policies continued

Joint arrangements in which the primary activity is the provision of output to the shareholders, typically convey substantially all the economic benefits of the assets to the parties and judgement is required in assessing whether the terms of the offtake agreements and any other obligations for liabilities of the arrangement result in the parties being substantially the only source of cash flows contributing to the continuity of the operations of the arrangement.

Certain joint arrangements that are structured through separate vehicles including Collahuasi and Glencore Agri are accounted for as joint ventures. The Collahuasi arrangement is primarily designed for the provision of output to the shareholders sharing joint control, the offtake terms of which are at prevailing market prices and the parties are not obligated to cover any potential funding shortfalls. In management's judgement, Glencore is not the only possible source of funding and does not have a direct or indirect obligation to the liabilities of the arrangement, but rather shares in its net assets and, therefore, such arrangements have been accounted for as joint ventures.

Differing conclusions around these judgements, may materially impact how these businesses are presented in the consolidated financial statements – under the full consolidation method, equity method or recognition of Glencore's share of assets, liabilities, revenue and expenses, including any assets or liabilities held jointly. See note 10 for a summary of these joint arrangements and the key judgements made in determining the applicable accounting treatment for the material joint arrangements entered during the year.

(ii) Classification of transactions which contain a financing element (notes 20, 21 and 24)

Transactions for the purchase of commodities may contain a financing element such as extended payment terms. Under such an arrangement, a financial institution may issue a letter of credit on behalf of Glencore and act as the paying party upon delivery of product by the supplier and Glencore will subsequently settle the liability directly with the financial institution, generally from 30 up to 90 days after physical supply. Judgement is required to determine the most appropriate classification and presentation of these transactions within the statements of cash flows and financial position. In determining the appropriate classification, management considers the underlying economic substance of the transaction and the significance of the financing element to the transaction. Typically, the economic substance of the transaction is determined to be operating in nature as the financing element is insignificant and the time frame in which the original arrangement is extended by, is consistent and within supply terms commonly provided in the market. As a result, the entire cash flow is presented as operating in the statement of cash flow with a corresponding trade payable in the statement of financial position. As at 31 December 2019, trade payables include $5,687 million (2018: $5,152 million) of such liabilities arising from supplier financing arrangements, the weighted average of which have extended the settlement of the original payable to 73 days (2018: 59 days) after physical supply and are due for settlement 38 days (2018: 29 days) after year end. These payables are not included within net funding and net debt as defined in the APMs section.

(iii) Classification of trade receivables and liabilities at amortised cost or fair value through profit and loss (notes 13, 24 and 28)

Judgement is required to determine the appropriate IFRS 9 classification of trade receivables containing provisional pricing features (i.e. the final selling price is subject to movements in market prices after the date of sale) to be measured at amortised cost or fair value through profit and loss. This requires an assessment of the exposure of the underlying trade receivable to future movements in market prices at the date of initial recognition of such receivable, which is typically the date of delivery of the goods. Those receivables that are exposed to future movements in market prices have contractual cash flow characteristics that are not solely payments of principal and interest and are therefore measured at fair value through profit or loss (see notes 13 and 28). For those receivables that are not exposed to future movements in market prices, a further assessment of the business model for managing the receivables is required to determine the appropriate classification and measurement. The business model pertaining to those receivables that do not contain provisional pricing features is to hold the assets to collect the contractual cash flows and as such, these financial assets are classified as at "amortised cost" (see note 13).

A similar assessment is undertaken for trade payables, and for those payables that contain provisional price features, the Group elected to designate the entire payable as at fair value through profit and loss consistent with the accounting for provisionally priced receivables. The balance of trade payables are classified as at "amortised cost" (see notes 24 and 28).

Differing conclusions around classification of these instruments, may impact the presentation of these financial assets or liabilities within their respective note disclosures. However, as these types of financial assets and liabilities have short maturities, any estimation uncertainty related to these judgements and/or a differing measurement criteria (i.e. an expected credit loss impairment model or fair value methodology) is not anticipated to result in a material change to the carrying value of the financial asset or liability within the next financial year.

1. Accounting policies continued

Key sources of estimation uncertainty

In the process of applying Glencore's accounting policies, management has made key estimates and assumptions concerning the future and other key sources of estimation uncertainty. The key assumptions and estimates at the reporting date that have a significant risk of resulting in a material adjustment to the carrying amount of assets and liabilities within the next financial year, are described below. Actual results may differ from these estimates under different assumptions and conditions and may materially affect financial results or the financial position reported in future periods.

(i) Recognition of deferred tax assets (note 7)

Deferred tax assets are recognised only to the extent it is considered probable that those assets will be recoverable. This involves an assessment of when those deferred tax assets are likely to reverse, and a judgement as to whether there will be sufficient taxable income available to offset the tax assets when they do reverse. These judgements and estimates are subject to risk and uncertainty and therefore, to the extent assumptions regarding future profitability change, there can be a material increase or decrease in the amounts recognised in the consolidated statement of income in the period in which the change occurs. The recoverability of deferred tax assets including the estimates and assumptions contained therein are reviewed regularly by management.

(ii) Impairments and impairment reversals (notes 6 and 10)

Investments in associates and joint ventures, other investments, advances and loans, property, plant and equipment and intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of an individual asset or a cash-generating unit (CGU) may not be fully recoverable, or at least annually for CGUs to which goodwill and other indefinite life intangible assets have been allocated. Indicators of impairment may include changes in the Group's operating and economic assumptions, including those arising from changes in reserves or mine planning, updates to the Group's commodity supply, demand and price forecasts, or the possible impacts from emerging risks such as those related to climate change and the transition to a lower carbon economy. If an asset or CGU's recoverable amount is less than its carrying amount, an impairment loss is recognised in the consolidated statement of income. For those assets of CGUs which were impaired in prior periods, if their recoverable amount exceeds their carrying amount, an impairment reversal is recorded in the consolidated statement of income. Future cash flow estimates which are used to calculate the asset's or CGU's fair value are discounted using asset or CGU specific discount rates and are based on expectations about future operations, primarily comprising estimates about production and sales volumes, commodity prices (considering current and future prices and price trends including factors such as the current global trajectory of climate change), reserves and resources, operating costs and capital expenditures. Estimates are reviewed regularly by management. Changes in such estimates and in particular, deterioration in the commodity pricing outlook, could impact the recoverable values of these assets or CGUs, whereby some or all of the carrying amount may be impaired or the impairment charge reversed (if pricing outlook improves significantly) with the impact recorded in the statement of income.

As noted above and further described below in the 'impairment or impairment reversal' accounting policy, the Group carries out, at least annually, an impairment assessment. Following this review, indicators of impairment were identified for various CGUs primarily due to a deterioration in the underlying commodity prices most influencing the respective operation. Accordingly, the Group assessed the recoverable value of these CGUs and as at 31 December 2019, except for those CGUs disclosed in notes 6 and 10, the estimated recoverable values exceeded the carrying values. However, for certain CGUs where no impairment was recognised, should there be a significant deterioration in the key assumptions (mainly price curves over the life of mine), a material impairment could result within the next financial year. A summary of the carrying values, the key / most sensitive assumptions and a sensitivity impact of potential (10% assumed to be a reasonably possible change within the next year) movements in these assumptions for each such CGU with limited headroom (relative to their estimated recoverable value) is as follows:

- Coal South Africa – carrying value ($2,748 million), short to long-term API 4 coal price assumptions ($73–86/mt), a 10% fall (across the curve) in the API 4 coal price assumptions could result in an impairment of $703 million.
- Mopani – carrying value ($1,672 million), long-term copper price assumption ($6,500/t), a 10% fall in the copper price assumption could result in an impairment of $181 million. A 10% reduction in estimated annual production over the life of mine could result in an impairment of $116 million.
- Koniambo – carrying value ($1,645 million), long-term nickel price assumption ($15,400/t), a 10% fall in the nickel price assumption could result in an impairment of $715 million. A 10% reduction in estimated annual production over the life of mine could result in an impairment of $668 million.
- Chad Oil – carrying value ($804 million), short to long-term oil price assumptions ($65–$72/bbl), a 10% fall (across the curve) in the oil price assumptions could result in an impairment of $202 million.
- Volcan – carrying value ($3,272 million), long-term zinc price assumption ($2,500/t), a 10% fall (across the curve) in the zinc price assumption could result in an impairment of $234 million.

1. Accounting policies continued

(iii) Restoration, rehabilitation and decommissioning costs (note 22)

A provision for future restoration, rehabilitation and decommissioning costs requires estimates and assumptions to be made around the relevant regulatory framework, the magnitude of the possible disturbance and the timing, extent and costs of the required closure and rehabilitation activities. Most of these rehabilitation and decommissioning events are expected to take place many years in the future and the currently estimated requirements and costs that will have to be met when the restoration event occurs are inherently uncertain and could materially change over time.

In calculating the appropriate provision for the expected restoration, rehabilitation or decommissioning obligations, cost estimates of the future potential cash outflows based on current studies of the expected rehabilitation activities and timing thereof, are prepared. These forecasts are then discounted to their present value using a risk-free rate specific to the liability and the currency in which they are denominated.

Any changes in the expected future costs or risk-free rate are initially reflected in both the provision and the asset and subsequently in the consolidated statement of income over the remaining economic life of the asset. As the actual future costs can differ from the estimates due to changes in laws, regulations, technology, costs and timing, the provisions including the estimates and assumptions contained therein are reviewed regularly by management.

(iv) Fair value measurements (notes 10, 11, 12, 13, 24, 25, 27 and 28)

In addition to recognising derivative instruments at fair value, as discussed below, an assessment of the fair value of assets and liabilities is also required in accounting for other transactions, most notably, business combinations and marketing inventories and disclosures related to fair values of financial assets and liabilities. In such instances, fair value measurements are estimated based on the amounts for which the assets and liabilities could be exchanged at the relevant transaction date or reporting period end, and are therefore not necessarily reflective of the cash flow upon actual settlements. Where fair value measurements cannot be derived from publicly available information, they are estimated using models and other valuation methods. To the extent possible, the assumptions and inputs used take into account externally verifiable inputs. However, such information is by nature subject to uncertainty, particularly where comparable market-based transactions often do not exist.

Derivative instruments are carried at fair value for which Glencore evaluates the quality and reliability of the assumptions and data used to measure fair value in the three hierarchy levels, Level 1, 2 and 3, as prescribed by IFRS 13 Fair Value Measurement. Fair values are determined in the following ways: externally verified via comparison to quoted market prices in active markets (Level 1); by using models with externally verifiable inputs (Level 2); or by using alternative procedures such as comparison to comparable instruments and/or using models with unobservable market inputs requiring Glencore to make market-based assumptions (Level 3). Level 3 inputs therefore include the highest level of estimation uncertainty.

Adoption of new and revised standards

In the current year, Glencore has adopted all new and revised IFRS standards that became effective as of 1 January 2019, the material changes being:

(i) IFRS 16 – Leases

IFRS 16 provides a comprehensive model for identification of lease arrangements and their treatment (on-balance sheet) in the financial statements of both lessees and lessors. It superseded IAS 17 Leases and its associated interpretative guidance. The Group applied the modified retrospective approach. Under this approach, the Group did not restate prior-year amounts reported and applied the practical expedient to retain the classification of existing contracts as leases under the previous accounting standard (i.e. IAS 17) instead of reassessing whether existing contracts are/or contain a lease at the date of initial application.

The Group has elected to apply the following other practical expedients available under the standard:

- The application of a single discount rate for portfolios of leases with reasonably similar characteristics;
- The use of hindsight for determination of the lease term as of the date of initial application;
- The use of onerous provision assessment under IAS 37 immediately prior to the date of initial application rather than impairment assessment of right-of-use assets under IAS 36;
- The exclusion of initial direct costs of obtaining a lease from the measurement of right-of-use assets at the date of initial application; and
- Leases with a remaining lease term of less than 12 months from the date of initial application have not been recognised under IFRS 16 and will remain accounted for as operating expenditures.

Upon adoption of IFRS 16, right-of-use assets of $792 million (net of $9 million of previously recognised onerous lease provisions), lease receivables of $64 million and lease liabilities of $865 million were recognised as at 1 January 2019. The reconciliation between the operating lease commitments as at 31 December 2018 and the opening balance for the lease liabilities as at 1 January 2019 is as follows:

1. Accounting policies continued

US$ million	
Operating lease commitments at 31 December 2018	1,052
Vessels/chartering commitments at 31 December 2018	335
Total lease commitments at 31 December 2018	**1,387**
Leases not yet commenced	(72)
Leases of low-value assets	(31)
Short-term leases	(163)
Effect of discounting	(256)
Total additional lease liabilities recognised on adoption of IFRS 16	**865**
Existing finance lease obligations at 31 December 2018	387
Total lease liabilities at 1 January 2019	**1,252**
Of which:	
Current lease liabilities	149
Non-current lease liabilities	1,103

The lease liabilities were discounted using asset and company specific incremental borrowing rates as at 1 January 2019. The weighted-average discount rate was 7.5%. In order to calculate the incremental borrowing rates, reference interest rates were derived from the yields of corporate bonds in major countries and currencies, for a period up to 10 years. The reference interest rates were supplemented by a lessee and asset class risk premium, as appropriate.

The current period lease disclosures can be found in notes 8 and 20.

(ii) IFRIC 23 – Uncertainty over income tax treatment

The interpretation addresses the accounting for income taxes when tax treatments involve uncertainty that affects the application of IAS 12 Income Taxes. Due to its global reach, including operating in high-risk jurisdictions, the Group's global tax position is subject to enhanced complexity and uncertainty, which may lead to uncertain tax treatments and the corresponding recognition and measurement of current and deferred taxes. The judgements and estimates made to separately recognise and measure the effect of each uncertain tax treatment are re-assessed whenever circumstances change or when there is new information that affects those judgements. The Group has re-assessed its global tax exposure and the key estimates taken in determining the positions recorded for adopting IFRIC 23. As of 1 January 2019, the global tax exposure has been determined by reference to the uncertainty that the tax authority may not accept the Group's proposed treatment of tax positions. The adoption of the interpretation had no material impact on the Group.

(iii) IFRIC agenda decision on the Physical Settlement of Contracts to Buy or Sell a non-Financial Item

In March 2019, the International Financial Reporting Interpretations Committee (IFRIC) issued an agenda decision on the Physical Settlement of Contracts to Buy or Sell a non-Financial Item. The committee concluded that, for physical commodity contracts within the scope of IFRS 9 Financial instruments, entities should not transfer previously recognised unrealised mark-to-market movements to different income statement line items upon realisation. The Group previously recognised mark-to-market movements on the re-measurement of physical forward sales contracts that do not meet own use exemption, within cost of goods sold up to the point of realisation.

Following the agenda decision, the Group has revised its accounting policy to recognise mark-to-market movements on physical forward sales contracts that do not meet own use exemption within the revenue line item and no longer within cost of goods sold. For physical forward purchase contracts that do meet the own use exemption, the mark-to-market movements continue to be recognised within cost of goods sold. Upon adoption of this change, the prior year revenue and cost of goods sold balances increased by an equal amount of $770 million (0.3% of pre-adjusted revenue), resulting in no impact on net income.

(iv) Amendments to IFRS 9, IAS 39 and IFRS 7 (September 2019) – Interest Rate Benchmark Reform

The Group has chosen to early adopt the amendments to IFRS 9 and IFRS 7, which are mandatory for annual reporting periods beginning on or after 1 January 2020.

These amendments modify specific hedge accounting requirements to allow hedge accounting to continue for affected hedges during the period of uncertainty before the hedged items or hedging instruments affected by the current interest rate benchmarks are amended as a result of the on-going interest rate benchmark reforms.

The Group has issued foreign currency and US dollar-denominated fixed rate debt (see note 20) which it fair value hedges using fixed to USD LIBOR cross currency interest rate swaps and interest rate swaps (see note 26). The amendments permit continuation of hedge accounting even if in the future USD LIBOR may no longer be separately identifiable. However, this relief does not extend to the requirement that the designated interest rate risk component must continue to be reliably measureable. If the risk component is no longer reliably measureable, the hedging relationship is discontinued.

1. Accounting policies continued

The amendments are applied retrospectively to those hedging relationships that existed at the beginning of the reporting period in which an entity first applies the amendments or that were designated thereafter.

The Group will continue to apply the amendments to IFRS 9 until the uncertainty arising from the interest rate benchmark reforms with respect to the timing and the amount of the underlying cash flows that the Group is exposed ends. The Group has assumed that this uncertainty will not end until the Group's contracts that reference IBORs are amended to specify the date on which the interest rate benchmark will be replaced, the cash flows of the alternative benchmark rate and the relevant spread adjustment. This will, in part, be dependent on the introduction of fall back clauses which have yet to be added to the Group's contracts and the negotiation with counterparties.

Following adoption of the amendments to IFRS 9 there is no impact upon the Group's financial statements and existing hedge relationships except for additional disclosures provided within note 26.

Revised standards not yet effective

At the date of the authorisation of these consolidated financial statements, the following revised IFRS standards, which are applicable to Glencore, were issued but not yet effective:

(i) Amendments to IFRS 3 – Definition of business – effective for year ends beginning on or after 1 January 2020

The amendments intend to assist the determination of whether a transaction should be accounted for as a business combination or as an asset acquisition. To be considered a business, an acquired set of activities and assets must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. IFRS 3 continues to adopt a market participant's perspective to determine whether an acquired set of activities and assets is a business, but clarifies the minimum requirements to be a business and removes the assessment of a market participant's ability to replace missing elements.

The amendments also introduce an optional concentration test that permits a simplified assessment of whether an acquired set of activities and assets is not a business – it is not a business if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets.

The amended definitions shall be applicable for any future acquisition within the scope of IFRS 3 following the effective date.

(ii) Amendments to IAS 1 and IAS 8 – Definition of material – effective for year ends beginning on or after 1 January 2020

The amendments clarify the definition of material and how it should be applied by including in the definition guidance that until now has been featured elsewhere in IFRS Standards, and ensures that the definition of material is consistent across all IFRS Standards. Information is considered material if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.

No significant changes to presentation or disclosures within these financial statements are expected following adoption of this amendment.

1. Accounting policies continued

Basis of preparation

The financial statements are prepared under the historical cost convention except for certain financial assets, liabilities, marketing inventories and pension obligations that are measured at revalued amounts or fair values at the end of each reporting period as explained in the accounting policies below. Historical cost is defined as the amount of cash or cash equivalents paid or the fair value of the consideration given to acquire them at the time of their acquisition. The principal accounting policies adopted are set out below.

The Directors have assessed that they have, at the time of approving these financial statements, a reasonable expectation that the Group has adequate resources to continue in operational existence for the 12 months from the date of approval of the 2019 Annual Report and Accounts. Therefore, they continue to adopt the going concern basis of accounting in preparing these financial statements. Also see page 122. Further information on Glencore's objectives, policies and processes for managing its capital and financial risks are detailed in note 26.

All amounts are expressed in millions of United States Dollars, unless otherwise stated, consistent with the predominant functional currency of Glencore's operations.

Principles of consolidation

The consolidated financial statements incorporate the financial statements of the Company and entities controlled by the Company and its subsidiaries.

Control is achieved when Glencore is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Specifically, Glencore controls an investee if, and only if, Glencore has all of the following:

- Power over the investee (i.e. existing rights that give it the current ability to direct the relevant activities of the investee)
- Exposure, or rights, to variable returns from its involvement with the investee, and
- The ability to use its power over the investee to affect its returns

When Glencore has less than a majority of the voting rights of an investee or similar rights of an investee, it considers all relevant facts and circumstances in assessing whether it has power over the investee including:

- The size of Glencore's holding of voting rights relative to the size and dispersion of holdings of the other vote holders
- Potential voting rights held by Glencore, other vote holders or other parties
- Rights arising from other contractual arrangements, and
- Any additional facts and circumstances that indicate that Glencore has, or does not have, the current ability to direct the relevant activities at the time that decisions need to be made, including voting patterns at previous shareholders' meetings

The Company reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control listed above. Consolidation of a subsidiary begins when Glencore obtains control over the subsidiary and ceases when Glencore loses control of the subsidiary. Specifically, income and expenses of a subsidiary acquired or disposed of during the year are included in the consolidated statement of income and other comprehensive income from the date Glencore gains control until the date when Glencore ceases to control the subsidiary.

Profit or loss and each component of other comprehensive income are attributed to the owners of the Company and to the non-controlling interests. Total comprehensive income of subsidiaries is attributed to the owners of the Company and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with the Group's accounting policies. All intragroup assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

Changes in Glencore's interests in subsidiaries that do not result in a loss of control are accounted for as equity transactions with any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received being recognised directly in equity and attributed to equity holders of Glencore.

When Glencore loses control of a subsidiary, a gain or loss is recognised in the consolidated statement of income and is calculated as the difference between (i) the aggregate of the fair value of the consideration received and the fair value of any retained interest and (ii) the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interests. All amounts previously recognised in other comprehensive income in relation to that subsidiary are accounted for as if Glencore had directly disposed of the related assets or liabilities of the subsidiary (i.e. reclassified to profit or loss or transferred to another category of equity as specified/permitted by applicable IFRSs). The fair value of any investment retained in the former subsidiary at the date when control is lost is regarded as the fair value on initial recognition for subsequent accounting under IFRS 9, when applicable, or the cost on the initial recognition of an investment in an associate or a joint venture.

1. Accounting policies continued

Investments in associates and joint ventures
Associates and joint ventures (together "Associates") in which Glencore exercises significant influence or joint control are accounted for using the equity method. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies. Significant influence is presumed if Glencore holds between 20% and 50% of the voting rights, unless evidence exists to the contrary. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint arrangement. Joint control is the contractually agreed sharing of control over an arrangement, which exists only when decisions about relevant strategic and/or key operating decisions require unanimous consent of the parties sharing control.

Equity accounting involves Glencore recording its share of the Associate's net income and equity. Glencore's interest in an Associate is initially recorded at cost and is subsequently adjusted for Glencore's share of changes in net assets of the Associate, less any impairment in the value of individual investments. Where Glencore transacts with an Associate, unrealised profits and losses are eliminated to the extent of Glencore's interest in that Associate.

Changes in Glencore's interests in Associates are accounted for as a gain or loss on disposal with any difference between the amount by which the carrying value of the Associate is adjusted and the fair value of the consideration received being recognised directly in the consolidated statement of income.

Joint operations
A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement.

When Glencore undertakes its activities under joint operations, Glencore recognises in relation to its interest in a joint operation:

- Its assets, including its share of any assets held jointly
- Its liabilities, including its share of any liabilities incurred jointly
- Its revenue from the sale of its share of the output arising from the joint operation
- Its share of the revenue from the sale of the output by the joint operation, and
- Its expenses, including its share of any expenses incurred jointly

The Group accounts for the assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with the IFRSs applicable to the particular assets, liabilities, revenues and expenses.

Where Glencore transacts with a joint operation, unrealised profits and losses are eliminated to the extent of Glencore's interest in that joint operation.

Other unincorporated arrangements
In some cases, Glencore participates in unincorporated arrangements where it has the rights to its share of the assets and obligations for its share of the liabilities of the arrangement, rather than a right to the net returns of the arrangement, but does not share joint control. In such cases, Glencore accounts for its share of the assets, liabilities, revenues and expenses in accordance with the IFRSs applicable to the particular assets, liabilities, revenues and expenses and obligations for the liabilities relating to the arrangement, similar to a joint operation noted above.

Business combinations and goodwill
Acquisitions of subsidiaries and businesses are accounted for using the acquisition method of accounting. The cost of the acquisition is measured at fair value, which is calculated as the sum of the acquisition date fair values of the assets transferred, liabilities incurred to the former owners of the acquiree and the equity interests issued in exchange for control of the acquiree. The identifiable assets, liabilities and contingent liabilities ("identifiable net assets") are recognised at their fair value at the date of acquisition. Acquisition related costs are recognised in the consolidated statement of income as incurred.

Where a business combination is achieved in stages, Glencore's previously held interests in the acquired entity are remeasured to fair value at the acquisition date (i.e. the date Glencore attains control) and the resulting gain or loss, if any, is recognised in the consolidated statement of income.

Goodwill is measured as the excess of the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree, and the fair value of the acquirer's previously held equity interest in the acquiree (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed.

1. Accounting policies continued

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to the CGUs that are expected to benefit from the synergies of the combination. CGUs to which goodwill has been allocated are tested for impairment annually, or more frequently when there is an indication that the unit may be impaired. If the recoverable amount of the CGU is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to the other assets of the unit pro-rata based on the carrying amount of each asset in the unit.

Any impairment loss is recognised directly in profit or loss. An impairment loss recognised for goodwill is not able to be reversed in subsequent periods.

On disposal of the relevant CGU, the attributable amount of goodwill is included in the determination of the profit or loss on disposal.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, Glencore reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted for additional information obtained during the "measurement period" (which cannot exceed one year from the acquisition date) about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognised at that date.

Non-controlling interests that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation may be initially measured either at fair value or at the non-controlling interests' proportionate share of the recognised amounts of the acquiree's identifiable net assets. The choice of measurement basis is made on a transaction-by-transaction basis. Other types of non-controlling interests are measured at fair value or, when applicable, on the basis specified in another IFRS.

Similar procedures are applied in accounting for the purchases of interests in Associates and joint operations. Any goodwill arising from such purchases is included within the carrying amount of the investment in Associates, but not amortised thereafter. Any excess of Glencore's share of the net fair value of the Associate's identifiable net assets over the cost of the investment is included in the consolidated statement of income in the period of the purchase.

Non-current assets held for sale and disposal groups

Non-current assets and assets and liabilities included in disposal groups are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use, they are available for immediate disposal and the sale is highly probable. Non-current assets held for sale are measured at the lower of their carrying amount or fair value less costs to sell.

Revenue recognition

Revenue is derived principally from the sale of goods and in some instances the goods are sold on Cost and Freight (CFR) or Cost, Insurance and Freight (CIF) Incoterms. When goods are sold on a CFR or CIF basis, the Group is responsible for providing these services (shipping and insurance) to the customer, sometimes after the date at which Glencore has lost control of the goods. Revenue is recognised when the performance obligations have been satisfied, which is once control of the goods and/or services has transferred from Glencore to the buyer. Revenue is measured based on consideration specified in the contract with a customer and excludes amounts collected on behalf of third parties. The same recognition and presentation principles apply to revenues arising from physical settlement of forward sale contracts that do not meet the own use exemption.

Revenue related to the sale of goods is recognised when the product is delivered to the destination specified by the customer, which is typically the vessel on which it is shipped, the destination port or the customer's premises and the buyer has gained control through their ability to direct the use of and obtain substantially all the benefits from the asset. Where the sale of goods is connected with an agreement to repurchase goods at a later date, revenue is recognised when the repurchase terms are at prevailing market prices, the goods repurchased are readily available in the market, and the buyer gained control of the goods originally sold to them. As at 31 December 2019, the outstanding repurchase commitments under such agreements were approximately $1.4 billion (2018: $1.3 billion). Should it be determined that control has not transferred or the buyer does not have the ability to benefit substantially from ownership of the asset, revenue is not recognised and any proceeds received are accounted for as a financing arrangement. For certain commodities, the sales price is determined on a provisional basis at the date of sale as the final selling price is subject to movements in market prices up to the date of final pricing, normally ranging from 30 to 90 days after initial booking (provisionally priced sales). 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 character of a commodity derivative. Accordingly, the fair value of the final sales price adjustment is re-estimated continuously and changes in fair value are recognised as an adjustment to revenue. In all cases, fair value is estimated by reference to forward market prices.

Revenue from the sale of material by-products are included within revenue. Where a by-product is not regarded as significant, revenue may be credited against cost of goods sold.

1. Accounting policies continued

Revenue related to the provision of shipping and insurance related activities is recognised over time as the service is rendered.

Payments received for future metal deliveries (prepayments) are accounted for as executory contracts whereby the prepayment is initially recorded as deferred revenue in the consolidated statement of financial position. The initial deferred revenue amount is unwound and revenue is recognised in the consolidated statement of income as and when Glencore physically delivers the metal and loses control of it. Where these prepayments are in excess of one year and contain a significant financing component, the amount of the deferred revenue is adjusted for the effects of the time value of money. Glencore applies the practical expedient to not adjust the promised amount of consideration for the effects of time value of money if the period between delivery and the respective payment is one year or less.

Royalty, interest and dividend income is recognised when the right to receive payment has been established, it is probable that the economic benefits will flow to Glencore and the amount of income can be measured reliably. Royalty revenue is recognised on an accrual basis in accordance with the substance of the relevant agreement. Interest income is accrued on a time basis, by reference to the principal outstanding and the applicable effective interest rate.

Foreign currency translation

Glencore's reporting currency and the functional currency of the majority of its operations is the U.S. dollar as this is assessed to be the principal currency of the economic environment in which it operates.

(i) Foreign currency transactions

Transactions in foreign currencies are converted into the functional currency of each entity using the exchange rate prevailing at the transaction date. Monetary assets and liabilities outstanding at year end are converted at year-end rates. The resulting exchange differences are recorded in the consolidated statement of income.

(ii) Translation of financial statements

For the purposes of consolidation, assets and liabilities of group companies whose functional currency is in a currency other than the U.S. dollar are translated into U.S. dollars using year-end exchange rates, while their statements of income are translated using average rates of exchange for the year. Translation adjustments are included as a separate component of shareholders' equity and have no consolidated statement of income impact to the extent that no disposal of the foreign operation has occurred. Where an intragroup balance is, in substance, part of the Group's net investment in an entity, exchange gains and losses on that balance are taken to the currency translation reserve. Cumulative translation differences are recycled from equity and recognised as income or expense on disposal of the operation to which they relate.

Goodwill and fair value adjustments arising from the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and are translated at the closing rate.

Borrowing costs

Borrowing costs are expensed as incurred except where they relate to the financing of construction or development of qualifying assets in which case they are capitalised up to the date when the qualifying asset is ready for its intended use.

Retirement benefits

Glencore operates various pension schemes in accordance with local requirements and practices of the respective countries. The annual costs for defined contribution plans that are funded by payments to separate trustee administered funds or insurance companies equal the contributions that are required under the plans and accounted for as an expense.

Glencore uses the Projected Unit Credit Actuarial method to determine the present value of its defined benefit obligations and the related current service cost and, where applicable, past service cost. Net interest is calculated by applying the discount rate at the beginning of the period to the net defined benefit liability or asset.

The cost of providing pensions is charged to the consolidated statement of income so as to recognise current and past service costs, interest cost on defined benefit obligations, and the effect of any curtailments or settlements, net of expected returns on plan assets. Actuarial gains and losses are recognised directly in other comprehensive income and will not be reclassified to the consolidated statement of income. The retirement benefit obligation/asset recognised in the consolidated statement of financial position represents the actual deficit or surplus in Glencore's defined benefit plans. Any surplus resulting from this calculation is limited to the present value of any economic benefits available in the form of refunds from the plans or reductions in future contributions to the plans.

Glencore also provides post-retirement healthcare benefits to certain employees in Canada, South Africa and the United States. These are accounted for in a similar manner to the defined benefit pension plans, however are unfunded.

1. Accounting policies continued

Share-based payments

(i) Equity-settled share-based payments

Equity-settled share-based payments are measured at the fair value of the awards based on the market value of the shares at the grant date. Fair value excludes the effect of non-market-based vesting conditions. The fair value is charged to the consolidated statement of income and credited to retained earnings on a straight-line basis over the period the estimated awards are expected to vest.

At each balance sheet date, the Company revises its estimate of the number of equity instruments expected to vest as a result of the effect of non-market-based vesting conditions. The impact of the revision of the original estimates, if any, is recognised in the consolidated statement of income such that the cumulative expense reflects the revised estimate, with a corresponding adjustment to retained earnings.

(ii) Cash-settled share-based payments

For cash-settled share-based payments, a liability is initially recognised at fair value based on the estimated number of awards that are expected to vest, adjusting for market and non-market-based performance conditions. Subsequently, at each reporting period until the liability is settled, it is remeasured to fair value with any changes in fair value recognised in the consolidated statement of income.

Income taxes

Income taxes consist of current and deferred income taxes. Current taxes represent income taxes expected to be payable based on enacted or substantively enacted tax rates at the period end on expected current taxable income, and any adjustment to tax payable in respect of previous years. Deferred taxes are recognised for temporary differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases used in the computation of taxable income, using enacted or substantively enacted income tax rates which are expected to be effective at the time of reversal of the underlying temporary difference. Deferred tax assets and unused tax losses are only recognised to the extent that their recoverability is probable. Deferred tax assets are reviewed at reporting period end and amended to the extent that it is no longer probable that the related benefit will be realised. To the extent that a deferred tax asset not previously recognised subsequently fulfils the criteria for recognition, an asset is then recognised.

Deferred tax assets and liabilities are offset when they relate to income taxes levied by the same authority and Glencore has both the right and the intention to settle its current tax assets and liabilities on a net or simultaneous basis. The tax effect of certain temporary differences is not recognised principally with respect to the initial recognition of an asset or liability (other than those arising in a business combination or in a manner that initially impacted accounting or taxable profit) and temporary differences relating to investments in subsidiaries and Associates to the extent that Glencore can control the timing of the reversal of the temporary difference and it is probable the temporary difference will not reverse in the foreseeable future. Deferred tax is provided in respect of fair value adjustments on acquisitions. These adjustments may relate to assets such as extraction rights that, in general, are not eligible for income tax allowances.

Current and deferred tax are recognised as an expense or income in the consolidated statement of income, except when they relate to items that are recognised outside the consolidated statement of income (whether in other comprehensive income or directly in equity) or where they arise from the initial accounting for a business combination.

Royalties, extraction taxes and other levies/taxes are treated as taxation arrangements when they have the characteristics of an income tax, including being imposed and determined in accordance with regulations established by the respective government's taxation authority and the amount payable is based on taxable income – rather than physical quantities produced or as a percentage of revenues – after adjustment for temporary differences. For such arrangements, current and deferred tax is provided on the same basis as described above for other forms of taxation. Obligations arising from royalty arrangements that do not satisfy these criteria are recognised as current provisions and included in cost of goods sold.

Glencore assesses its liabilities and contingencies for all tax years open to audit based upon the latest information available. Inherent uncertainties exist in estimates of tax contingencies due to complexities of interpretation and changes in tax laws. For those matters where it is probable that an adjustment will be made, the Group records its best estimate of these tax liabilities, including related interest charges, taking into account the range of possible outcomes.

Property, plant and equipment

Property, plant and equipment are stated at cost, being the fair value of the consideration given to acquire or construct the asset, including directly attributable costs required to bring the asset to the location or to a condition necessary for operation and the direct cost of dismantling and removing the asset, less accumulated depreciation and any accumulated impairment losses.

Property, plant and equipment are depreciated to their estimated residual value over the estimated useful life of the specific asset concerned, or the estimated remaining life of the associated mine (LOM), field or lease.

1. Accounting policies continued

Depreciation commences when the asset is available for use. The major categories of property, plant and equipment are depreciated/amortised on a units of production (UOP) and/or straight-line basis as follows:

Buildings	10–45 years
Freehold land	not depreciated
Plant and equipment	3–30 years/UOP
Right-of-use assets	2–30 years
Mineral and petroleum rights	UOP
Deferred mining costs	UOP

(i) Mineral and petroleum rights
Mineral and petroleum reserves, resources and rights (together "Mineral and petroleum rights") which can be reasonably valued, are recognised in the assessment of fair values on acquisition. Mineral and petroleum rights for which values cannot be reasonably determined are not recognised. Exploitable Mineral and petroleum rights are amortised using the UOP basis over the commercially recoverable reserves and, in certain circumstances, other mineral resources. Mineral resources are included in amortisation calculations where there is a high degree of confidence that they will be extracted in an economic manner.

(ii) Exploration and evaluation expenditure
Exploration and evaluation expenditure relates to costs incurred in the exploration and evaluation of potential mineral and petroleum resources and includes costs such as exploration and production licences, researching and analysing historical exploration data, exploratory drilling, trenching, sampling and the costs of pre-feasibility studies. Exploration and evaluation expenditure for each area of interest, other than that acquired from another entity, is charged to the consolidated statement of income as incurred except when the expenditure is expected to be recouped from future exploitation or sale of the area of interest and it is planned to continue with active and significant operations in relation to the area, or at the reporting period end, the activity has not reached a stage which permits a reasonable assessment of the existence of commercially recoverable reserves, in which case the expenditure is capitalised. As the intangible component (i.e. licences) represents an insignificant and indistinguishable portion of the overall expected tangible amount to be incurred and recouped from future exploitation, these costs along with other capitalised exploration and evaluation expenditure are recorded as a component of property, plant and equipment. Purchased exploration and evaluation assets are recognised at their fair value at acquisition.

As the capitalised exploration and evaluation expenditure asset is not available for use, it is not depreciated. All capitalised exploration and evaluation expenditure is monitored for indications of impairment. Where a potential impairment is indicated, an assessment is performed for each area of interest or at the CGU level. To the extent that capitalised expenditure is not expected to be recovered it is charged to the consolidated statement of income.

Administration costs that are not directly attributable to a specific exploration area are charged to the consolidated statement of income. Licence costs paid in connection with a right to explore in an existing exploration area are capitalised and amortised over the term of the permit.

Development expenditure
When commercially recoverable reserves are determined and such proposed development receives the appropriate approvals, capitalised exploration and evaluation expenditure is transferred to construction in progress, a component within the plant and equipment asset sub-category. All subsequent development expenditure is similarly capitalised, provided commercial viability conditions continue to be satisfied. Proceeds from the sale of product extracted during the development phase are netted against development expenditure. Upon completion of development and commencement of production, capitalised development costs are further transferred, as required, to the appropriate plant and equipment asset category and depreciated using the unit of production method (UOP) or straight-line basis.

(iii) Deferred mining costs
Mainly comprises certain capitalised costs related to underground mining as well as pre-production and in-production stripping activities as outlined below. Deferred mining costs are amortised using the UOP basis over the life of the ore body to which those costs relate.

Deferred stripping costs
Stripping costs incurred in the development of a mine (or pit) before production commences are capitalised as part of the cost of constructing the mine (or pit) and subsequently amortised over the life of the mine (or pit) on a UOP basis.

In-production stripping costs related to accessing an identifiable component of the ore body to realise benefits in the form of improved access to ore to be mined in the future (stripping activity asset), are capitalised within deferred mining costs provided all the following conditions are met:

1. Accounting policies continued

(a) it is probable that the future economic benefit associated with the stripping activity will be realised;

(b) the component of the ore body for which access has been improved can be identified; and

(c) the costs relating to the stripping activity associated with the improved access can be reliably measured.

If all of the criteria are not met, the production stripping costs are charged to the consolidated statement of income as they are incurred.

The stripping activity asset is subsequently depreciated on a UOP basis over the life of the identified component of the ore body that became more accessible as a result of the stripping activity and is then stated at cost less accumulated depreciation and any accumulated impairment losses.

(iv) Biological assets

Biological assets are carried at their fair value less estimated selling costs. Any changes in fair value less estimated selling costs are included in the consolidated statement of income in the period in which they arise.

Leases

As lessee, the Group assesses whether a contract contains a lease at inception of the contract. The Group recognises a right-of-use asset and corresponding lease liability in the statement of financial position for all lease arrangements where it is the lessee, except for short-term leases with a term of twelve months or less and leases of low value assets. For these leases, the Group recognises the lease payments as an operating expense on a straight-line basis over the term of the lease.

The lease liability is initially measured at the present value of the future lease payments from the commencement date of the lease. The lease payments are discounted using the interest rate implicit in the lease or, if not readily determinable, the asset and company specific incremental borrowing rates. Lease liabilities are recognised within borrowings on the statement of financial position. The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and by reducing the carrying amount to reflect the lease payments made. The Group remeasures the lease liability, with a corresponding adjustment to the related right-of-use assets, whenever:

- The lease term changes or there is a significant event or change in circumstances resulting in a change in the assessment of exercise of a purchase option, in which case the lease liability is remeasured by discounting the revised lease payments using a revised discount rate;
- The lease payments change due to the changes in an index or rate or a change in expected payment under a guaranteed residual value, in which case the lease liability is remeasured by discounting the revised lease payments using an unchanged discount rate;
- A lease contract is modified and the lease modification is not accounted for as a separate lease, in which case the lease liability is remeasured based on the lease term of the modified lease by discounting the revised lease payments using a revised discount rate at the effective date of modification.

The right-of-use assets are initially recognised on the balance sheet at cost, which comprises the amount of the initial measurement of the corresponding lease liability, adjusted for any lease payments made at or prior to the commencement date of the lease, any lease incentive received and any initial direct costs incurred, and expected costs for obligations to dismantle and remove right-of-use assets when they are no longer used. Right-of-use assets are recognised within property, plant and equipment on the statement of financial position. Right-of-use assets are depreciated on a straight-line basis from the commencement date of the lease over the shorter of the useful life of the right-of-use asset or the end of the lease term.

The Group enters into lease arrangements as a lessor with respect to some of its time charter vessels. Leases for which the Group is an intermediate lessor are classified as finance or operating leases by reference to the right-of-use asset arising from the head lease. Income from operating leases is recognised on a straight-line basis over the term of the relevant lease. Amounts due from lessees under finance leases are recognised as receivables at the amount of the Group's net investment in the leases. Finance lease income is allocated to accounting periods so as to reflect a constant periodic rate of return on the Group's net investment outstanding in respect of these leases.

The comparative period lease contracts were accounted for under IAS 17. Assets under finance leases, where substantially all of the risks and rewards of ownership transferred to the Group as lessee, were capitalised and amortised over their expected useful lives on the same basis as owned assets or, where shorter, the term of the relevant lease. All other leases were classified as operating leases, the expenditures for which were recognised in the statement of income on a straight-line basis over the lease term.

Restoration, rehabilitation and decommissioning

Restoration, rehabilitation and decommissioning costs arising from the installation of plant and other site preparation work, discounted using a risk-free rate specific to the liability and the currency in which they are denominated to their net present value, are provided for and capitalised at the time such an obligation arises. The costs are charged to the consolidated statement of income over the life of the operation through depreciation of the asset and the unwinding of the discount on the provision.

1. Accounting policies continued

Costs for restoration of subsequent site disturbance, which is created on an ongoing basis during production, are provided for at their net present values and charged to the consolidated statement of income as extraction progresses.

Changes in the estimated timing of the rehabilitation or changes to the estimated future costs are accounted for prospectively by recognising an adjustment to the rehabilitation liability and a corresponding adjustment to the asset to which it relates, provided a reduction, if any, in the provision is not greater than the depreciated capitalised cost of the related asset, in which case the capitalised cost is reduced to Nil and the remaining adjustment recognised in the consolidated statement of income. In the case of closed sites, changes to estimated costs are recognised immediately in the consolidated statement of income.

Intangible assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is their fair value at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortisation (calculated on a straight-line basis over their useful lives) and accumulated impairment losses, if any.

Internally generated intangibles are not capitalised. Instead, the related expenditure is recognised in the consolidated statement of income and other comprehensive income in the period in which the expenditure is incurred.

Identifiable intangible assets with a finite life are amortised on a straight-line basis over their expected useful life. The amortisation method and period are reviewed annually and impairment testing is undertaken when circumstances indicate the carrying amount may not be recoverable. Other than goodwill which is not depreciated, Glencore has no identifiable intangible assets with an indefinite life.

The major categories of intangibles are amortised on a straight-line basis as follows:

Port allocation rights	30–40 years
Licences, trademarks and software	3–20 years
Customer relationships	5–9 years
Acquired offtake arrangements	5–10 years

Goodwill impairment testing

For the purpose of impairment testing, goodwill has been allocated to the CGUs, or groups of CGUs, that are expected to benefit from the synergies of the business combination and which represent the level at which management monitors and manages the goodwill. In assessing whether an impairment is required, the carrying value of the CGU is compared with its recoverable amount. The recoverable amount is the higher of its fair value less costs of disposal (FVLCD) and its value in use (VIU). If the recoverable amount of the CGU is less than the carrying amount of the unit, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to the other assets of the unit on a pro-rata basis of the carrying amount of each asset in the unit. Any impairment loss for goodwill is recognised directly in the consolidated statement of income. An impairment loss recognised for goodwill can not be reversed in subsequent periods.

Other investments

Equity investments, other than investments in Associates, are recorded at fair value. Glencore designated investments that are not held for trading as at fair value through other comprehensive income. As a result, changes in fair value are recorded in the consolidated statement of other comprehensive income. Dividends from these investments are recognised in the consolidated statement of income, unless the dividend represents a recovery of part of the cost of the equity investment.

Impairment or impairment reversals

Glencore conducts, at least annually, an internal review of asset values which is used as a source of information to assess for any indications of impairment or impairment reversal. Formal impairment tests are carried out, at least annually, for cash-generating units containing goodwill and for all other non-current assets, when events or changes in circumstances indicate the carrying value may not be recoverable.

A formal impairment or reversal test involves determining whether the carrying amounts are in excess (or below, as the case may be) of their recoverable amounts. An asset's recoverable amount is determined as the higher of its FVLCD and its VIU. Such reviews are undertaken on an asset-by-asset basis, except where assets do not generate cash flows independent of other assets, in which case the review is undertaken at the CGU level.

If the carrying amount of an asset exceeds its recoverable amount, an impairment loss is recorded in the consolidated statement of income to reflect the asset at the lower amount.

For those assets which were impaired in prior periods, if their recoverable amount exceeds their carrying amount, an impairment reversal is recorded in the consolidated statement of income to reflect the asset at the higher amount to the extent the increased carrying amount does not exceed the carrying value of the asset that would have been determined had no impairment previously been recognised. Goodwill impairments cannot be subsequently reversed.

1. Accounting policies continued

Provisions

Provisions are recognised when Glencore has a present obligation (legal or constructive), as a result of past events, and it is probable that an outflow of resources embodying economic benefits that can be reliably estimated will be required to settle the liability.

The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at the balance sheet date, taking into account the risks and uncertainties surrounding the obligation, including interpretation of specific laws and likelihood of settlement. Where a provision is measured using the cash flow estimated to settle the present obligation, its carrying amount is the present value of those cash flows (when the effect of the time value of money is material).

Onerous contracts

An onerous contract is considered to exist where Glencore has a contract under which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received from the contract. Present obligations arising under onerous contracts are recognised and measured as provisions.

Unfavourable contracts

An unfavourable contract is considered to exist when Glencore, in a business combination, acquires a contract under which the terms of the contract require Glencore to sell or purchase products or services on terms which are economically unfavourable compared to current market terms at the time of the business combination. Unfavourable contracts are recognised at the present value of the economic loss and amortised into the statement of income over the term of the contract.

Inventories

The vast majority of inventories attributable to the marketing activities ("marketing inventories") are valued at fair value less costs of disposal with the remainder valued at the lower of cost or net realisable value. Unrealised gains and losses from changes in fair value are reported in cost of goods sold.

Inventories held by the industrial activities ("production inventories") are valued at the lower of cost or net realisable value. Cost is determined using the first-in-first-out (FIFO) or the weighted average method and comprises material costs, labour costs and allocated production related overhead costs. Where the production process results in more than one product being produced (joint products), cost is allocated between the various products according to the ratio of contribution of these metals to gross sales revenue. Financing and storage costs related to inventory are expensed as incurred.

Non-financial instruments (physical advances or prepayments)

The Group enters into physical advances and prepayment agreements with certain suppliers and customers. When such advances and prepayments are primarily settled in cash or another financial asset, they are classified as financial instruments (see below). When settlement is satisfied primarily through physical delivery or receipt of an underlying product they are classified as non-financial instruments.

Financial instruments

Financial assets and financial liabilities are recognised in the Group's consolidated statement of financial position when the Group becomes a party to the contractual provisions of the instrument.

Financial assets are classified as either financial assets at amortised cost, at fair value through other comprehensive income (FVTOCI) or at fair value through profit or loss (FVTPL) depending upon the business model for managing the financial assets and the nature of the contractual cash flow characteristics of the financial asset. Financial assets are initially recognised at fair value on the trade date, including, in the case of instruments not recorded at fair value through profit or loss, directly attributable transaction costs. Subsequently, other investments, provisionally priced trade receivables and derivatives are carried at fair value and trade receivables that do not contain provisional price features, loans and other receivables are carried at amortised cost adjusted for any loss allowance.

Financial liabilities, other than derivatives and those containing provisional price features, are initially recognised at fair value of consideration received net of transaction costs as appropriate and subsequently carried at amortised cost. Financial liabilities that contain provisional pricing features and derivatives are carried at FVTPL.

(i) Impairment of financial assets

A loss allowance for expected credit losses is determined for all financial assets, other than those at FVTPL, at the end of each reporting period. The expected credit loss recognised represents a probability-weighted estimate of credit losses over the expected life of the financial instrument.

The Group applies the simplified approach to measure the loss allowance for trade receivables classified at amortised cost, using the lifetime expected loss provision. The expected credit losses on these financial assets is estimated using a provision matrix by reference to past default experience and an equivalent credit rating, adjusted as appropriate for current observable data and forward-looking information.

1. Accounting policies continued

For all other financial assets at amortised cost, the Group recognises lifetime expected credit losses when there has been a significant increase in credit risk since initial recognition, which is determined by:

- A review of overdue amounts,
- Comparing the risk of default at the reporting date and at the date of initial recognition, and
- An assessment of relevant historical and forward-looking quantitative and qualitative information.

For those balances that are beyond 30 days overdue it is presumed to be an indicator of a significant increase in credit risk.

If the credit risk on the financial instrument has not increased significantly since initial recognition, the Group measures the loss allowance for that financial instrument at an amount equal to 12-months expected credit loss, which comprises the expected lifetime loss from the instrument were a default to occur within 12 months of the reporting date.

The Group considers an event of default has materialised and the financial asset is credit impaired when information developed internally or obtained from external sources indicates that the debtor is unlikely to pay the Group without taking into account any collateral held by the Group or if the financial asset is more than 90 days past due, unless the Group has reasonable and supportable information to demonstrate that a more lagging default criterion is more appropriate. The Group writes off a financial asset when there is information indicating that the debtor is in severe financial difficulty and there is no realistic prospect of recovery.

(ii) Derecognition of financial assets and financial liabilities

The Group derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognises its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognise the financial asset and also recognises a collateralised borrowing for the proceeds received.

The Group derecognises financial liabilities when the Group’s obligations are discharged, cancelled or have expired.

On derecognition of a financial asset/financial liability in its entirety, the difference between the carrying amount of the financial asset/financial liability and the sum of the consideration received and receivable/paid and payable is recognised in profit and loss. On derecognition of equity investments designated and measured at FVTOCI, the cumulative gain or loss recognised in other comprehensive income is reclassified directly to retained earnings.

Own shares

The cost of purchases of own shares is deducted from equity. Where they are purchased, issued to employees or sold, no gain or loss is recognised in the consolidated statement of income. Such gains and losses are recognised directly in equity. Any proceeds received on disposal of the shares or transfers to employees are recognised in equity.

1. Accounting policies continued

Derivatives and hedging activities

Derivative instruments, which include physical contracts to sell or purchase commodities that do not meet the own use exemption, are initially recognised at fair value when Glencore becomes a party to the contractual provisions of the instrument and are subsequently remeasured to fair value at the end of each reporting period. Fair values are determined using quoted market prices, dealer price quotations or using models and other valuation techniques, the key inputs for which include current market and contractual prices for the underlying instrument, time to expiry, yield curves, volatility of the underlying instrument and counterparty risk.

Gains and losses on derivative instruments for which hedge accounting is not applied, other than the revenue adjustment mechanism embedded within provisionally priced sales and mark-to-market movements on physical forward sales contracts, are recognised in cost of goods sold.

Those derivatives qualifying and designated as hedges are either (i) a Fair Value Hedge of the change in fair value of a recognised asset or liability or an unrecognised firm commitment, or (ii) a Cash Flow Hedge of the change in cash flows to be received or paid relating to a recognised asset or liability or a highly probable transaction.

At the inception of the hedge and on an ongoing basis, Glencore documents whether the hedging instrument is effective in offsetting changes in fair values or cash flows of the hedged item attributable to the hedged risk, which is when the hedging relationship meets the qualifying hedge effectiveness requirements.

Glencore discontinues hedge accounting when the qualifying criteria for the hedged relationship is no longer met.

A change in the fair value of derivatives designated as a Fair Value Hedge is reflected together with the change in the fair value of the hedged item in the consolidated statement of income.

A change in the fair value of derivatives designated as a Cash Flow Hedge is initially recognised as a cash flow hedge reserve in shareholders' equity. The deferred amount is then released to the consolidated statement of income in the same periods during which the hedged transaction affects the consolidated statement of income. Hedge ineffectiveness is recorded in the consolidated statement of income when it occurs.

When a hedging instrument expires or is sold, or when a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in equity at that time remains in shareholders' equity and is recognised in the consolidated statement of income when the committed or forecast transaction is ultimately recognised in the consolidated statement of income. However, if a forecast or committed transaction is no longer expected to occur, the cumulative gain or loss that was recognised in equity is immediately transferred to the consolidated statement of income.

A derivative may be embedded in a non-derivative "host contract" such as provisionally priced sales and purchases. Such combinations are known as hybrid instruments. If a hybrid contract contains a host that is a financial asset within the scope of IFRS 9, then the relevant classification and measurement requirements are applied to the entire contract at the date of initial recognition. Should the host contract not be a financial asset within the scope of IFRS 9, the embedded derivative is separated from the host contract and accounted for as a standalone derivative. Where the embedded derivative is separated, the host contract is accounted for in accordance with its relevant accounting policy, unless the entire instrument is designated at FVTPL in accordance with IFRS 9.

Notes to the financial statements
continued

2. Segment information

Changes in segmental reporting

During the period, key members of the Group's Metals and minerals, Energy products and Agricultural products segments retired and a new position with oversight and responsibility for all of Glencore's industrial assets (Head of Industrial Assets) was created. Internal reporting lines and organisational structures were amended such that Glencore's industrial activities report to the Head of Industrial Assets and all of its marketing activities report to the Head of Marketing (being the Group CEO). This change in oversight and responsibility for the two differing parts of our business (marketing and industrial) and associated remuneration has resulted in a change in the 'chief operating decision makers' reporting and accountability structures and, with it, our reportable segments. Aligning with the new executive structure and respective operational oversight and responsibility, the new reportable segments are – 'Industrial' and 'Marketing' activities.

Comparative 2018 information has been restated for the change in reportable segments.

Segment information

Glencore is organised and operates on a worldwide basis in two core business segments – Marketing activities and Industrial activities, reflecting the reporting lines and structure used by Glencore's Management to allocate resources and assess the performance of Glencore.

The business segments' contributions to the Group are primarily derived from a) the net margin or premium earned from physical Marketing activities (net sale and purchase of physical commodities) and the provision of marketing and related value-add services and b) the net margin earned from Industrial asset activities (resulting from the sale of physical commodities over the cost of production and/or cost of sales). Due to similar economic characteristics of the operating segments within the Marketing activities and Industrial activities, these operating segments have been aggregated under the two reportable segments.

Corporate and other: consolidated statement of income amount represents Group related income and expenses (including share of Glencore Agri earnings and certain variable bonus charges). Statement of financial position amounts represent Group related balances.

The financial performance of the operating segments is principally evaluated by management with reference to Adjusted EBIT/EBITDA. Adjusted EBIT is the net result of segmental revenue (revenue including Proportionate adjustments as defined in the Alternative performance measure section) less cost of goods sold and selling and administrative expenses plus share of income from associates and joint ventures, dividend income and the attributable share of Adjusted EBIT of relevant material associates and joint ventures, which are accounted for internally by means of proportionate consolidation, excluding significant items. Adjusted EBITDA consists of Adjusted EBIT plus depreciation and amortisation, including the related Proportionate adjustments. In addition, Volcan, while a subsidiary of the Group, is accounted for under the equity method for internal reporting and analysis due to the relatively low economic ownership held by the Group.

The accounting policies of the operating segments are the same as those described in note 1 with the exception of relevant material associates, the Collahuasi joint venture and Volcan. Under IFRS 11, Glencore's investments in the Antamina copper/zinc mine (34% owned) and the Cerrejón coal mine (33% owned) are considered to be associates as they are not subject to joint control and the Collahuasi copper mine (44% owned) is considered to be a joint venture. Associates and joint ventures are required to be accounted for in Glencore's financial statements under the equity method. For internal reporting and analysis, Glencore evaluates the performance of these investments under the proportionate consolidation method, reflecting Glencore's proportionate share of the revenues, expenses, assets and liabilities of the investments. For internal reporting and analysis, management evaluates the performance of Volcan under the equity method, reflecting the Group's relatively low 23.3% economic ownership in this fully ring-fenced listed entity, with its stand-alone, independent and separate capital structure. The balances as presented for internal reporting purposes are reconciled to Glencore's statutory disclosures in the following tables and/or in the Alternative performance measures section.

2. Segment information continued

Glencore accounts for intra-segment sales and transfers where applicable as if the sales or transfers were to third parties, i.e. at arm's length commercial terms.

2019 US$ million	Marketing activities	Industrial activities	Inter-segment eliminations	Total
Revenue				
Metals and minerals	73,561	27,672	(16,751)	84,482
Energy products	120,627	15,067	(2,921)	132,773
Corporate and other	–	4	–	4
Revenue – segmental	**194,188**	**42,743**	**(19,672)**	**217,259**
Proportionate adjustment – revenue[1]	–	(2,148)	–	(2,148)
Revenue – reported measure	**194,188**	**40,595**	**(19,672)**	**215,111**
Metals and minerals				
Adjusted EBITDA	1,169	5,555	–	6,724
Depreciation and amortisation	(80)	(4,438)	–	(4,518)
Proportionate adjustment – depreciation[1]	–	(101)	–	(101)
Adjusted EBIT	**1,089**	**1,016**	**–**	**2,105**
Energy products				
Adjusted EBITDA	1,515	3,854	–	5,369
Depreciation and amortisation	(191)	(2,392)	–	(2,583)
Proportionate adjustment – depreciation[1]	–	(188)	–	(188)
Adjusted EBIT	**1,324**	**1,274**	**–**	**2,598**
Corporate and other				
Adjusted EBITDA[2]	(47)	(445)	–	(492)
Depreciation and amortisation	–	(60)	–	(60)
Adjusted EBIT	**(47)**	**(505)**	**–**	**(552)**
Total Adjusted EBITDA	**2,637**	**8,964**	**–**	**11,601**
Total depreciation and amortisation	(271)	(6,890)	–	(7,161)
Total depreciation proportionate adjustment	–	(289)	–	(289)
Total Adjusted EBIT	**2,366**	**1,785**	**–**	**4,151**
Share of associates' significant items[1,3]				(219)
Share of associates' significant items – Volcan				(73)
Movement in unrealised inter-segment profit elimination adjustments[4]				468
Loss on disposals of non-current assets				(43)
Other (expense)/income – net				(173)
Impairments				(2,408)
Interest expense – net				(1,713)
Income tax expense				(618)
Proportionate adjustment – net finance and income tax expense[1]				(878)
Loss for the year				**(1,506)**

1 Refer to APMs section for definition.

2 Marketing activities include $58 million, pre-significant items, of Glencore's equity accounted share of Glencore Agri.

3 Share of associates' significant items comprise Glencore's share of significant charges relating to impairments and other items booked directly by various associates, notably Glencore Agri ($73 million), Trevali ($65 million) and Oil vessels' entities ($62 million).

4 Represents the required adjustment to eliminate unrealised profit or losses arising on inter-segment transactions, i.e. before ultimate sale to a third party. For Glencore, such adjustments arise on the sale of product, in the ordinary course of business, from its Industrial to Marketing operations. Management assesses segment performance prior to any such adjustments, as if the sales were to third parties.

2. Segment information continued

2018 US$ million	Marketing activities	Industrial activities	Inter-segment eliminations	Total Restated[1]
Revenue				
Metals and minerals	72,744	31,385	(20,291)	83,838
Energy products	129,930	12,660	(3,285)	139,305
Corporate and other	–	24	–	24
Revenue – segmental	**202,674**	**44,069**	**(23,576)**	**223,167**
Proportionate adjustment – revenue[2]	–	(2,643)	–	(2,643)
Revenue – reported measure	**202,674**	**41,426**	**(23,576)**	**220,524**
Metals and minerals				
Adjusted EBITDA	1,767	8,478	–	10,245
Depreciation and amortisation	(25)	(4,316)	–	(4,341)
Proportionate adjustment – depreciation[2]	–	(109)	–	(109)
Adjusted EBIT	**1,742**	**4,053**	**–**	**5,795**
Energy products				
Adjusted EBITDA	795	5,312	–	6,107
Depreciation and amortisation	(53)	(1,913)	–	(1,966)
Proportionate adjustment – depreciation[2]	–	(190)	–	(190)
Adjusted EBIT	**742**	**3,209**	**–**	**3,951**
Corporate and other				
Adjusted EBITDA[3]	(70)	(515)	–	(585)
Depreciation and amortisation	–	(18)	–	(18)
Adjusted EBIT	**(70)**	**(533)**	**–**	**(603)**
Total Adjusted EBITDA	**2,492**	**13,275**	**–**	**15,767**
Total depreciation and amortisation	(78)	(6,247)	–	(6,325)
Total depreciation proportionate adjustment	–	(299)	–	(299)
Total Adjusted EBIT	**2,414**	**6,729**	**–**	**9,143**
Share of associates' significant items[2,4]				(40)
Movement in unrealised inter-segment profit elimination adjustments[5]				237
Loss on disposals of non-current assets				(139)
Other (expense)/income – net				(764)
Impairments				(1,643)
Interest expense – net				(1,514)
Income tax expense				(2,063)
Proportionate adjustment – net finance and income tax expense[2]				(601)
Income for the year				**2,616**

1 Adjusted to present mark-to-market movements on physical forward sales contracts within revenue (see note 1).
2 Refer to APMs section for definition.
3 Marketing activities include $21 million of Glencore's equity accounted share of Glencore Agri.
4 Share of associates' significant items comprise Glencore's share of significant charges relating to impairments booked directly by various associates.
5 Represents the required adjustment to eliminate unrealised profit or losses arising on inter-segment transactions, i.e. before ultimate sale to a third party. For Glencore, such adjustments arise on the sale of product, in the ordinary course of business, from its Industrial to Marketing operations. Management assesses segment performance prior to any such adjustments, as if the sales were to third parties.

2. Segment information continued

2019 US$ million	Marketing activities	Industrial activities	Corporate and other	Total
Current assets	27,198	12,455	–	39,653
Current liabilities	(24,359)	(6,957)	–	(31,316)
Allocatable current capital employed	**2,839**	**5,498**	**–**	**8,337**
Property, plant and equipment	921	54,436	–	55,357
Intangible assets	5,293	1,713	–	7,006
Investments in associates and other investments	6,202	9,169	–	15,371
Non-current advances and loans	1,511	916	–	2,427
Inventories	–	575	–	575
Allocatable non-current capital employed	**13,927**	**66,809**	**–**	**80,736**
Other assets[1]			3,687	3,687
Other liabilities[2]			(53,524)	(53,524)
Total net assets	**16,766**	**72,307**	**(49,837)**	**39,236**
Capital expenditure				
Metals and minerals	94	3,963	–	4,057
Energy products	344	1,312	–	1,656
Corporate and other	–	74	–	74
Capital expenditure – segmental[3]	**438**	**5,349**	**–**	**5,787**
Proportionate adjustment – capital expenditure[4]	–	(419)	–	(419)
Capital expenditure – reported measure	**438**	**4,930**	**–**	**5,368**

2018 US$ million	Marketing activities	Industrial activities	Corporate and other	Total
Current assets	31,514	10,708	–	42,222
Current liabilities	(25,065)	(6,737)	–	(31,802)
Allocatable current capital employed	**6,449**	**3,971**	**–**	**10,420**
Property, plant and equipment	457	56,313	–	56,770
Intangible assets	5,559	1,412	–	6,971
Investments in associates and other investments	6,122	9,854	–	15,976
Non-current advances and loans	1,575	980	–	2,555
Inventories	–	353	–	353
Allocatable non-current capital employed	**13,713**	**68,912**	**–**	**82,625**
Other assets[1]			3,825	3,825
Other liabilities[2]			(51,487)	(51,487)
Total net assets	**20,162**	**72,883**	**(47,662)**	**45,383**
Capital expenditure				
Metals and minerals	34	3,996	–	4,030
Energy products	55	1,043	–	1,098
Corporate and other	–	38	–	38
Capital expenditure – segmental	**89**	**5,077**	**–**	**5,166**
Proportionate adjustment – capital expenditure[4]	–	(389)	–	(389)
Capital expenditure – reported measure	**89**	**4,688**	**–**	**4,777**

1 Other assets include non-current financial asset, deferred tax assets, cash and cash equivalents and assets held for sale.
2 Other liabilities include borrowings, non-current deferred income, deferred tax liabilities, non-current provisions, non-current financial liabilities and liabilities held for sale.
3 Includes $656 million ($361 million in Marketing activities and $295 million in Industrial activities) of 'right-of-use assets' capitalised in accordance with IFRS 16 – Leases.
4 Refer to APMs section for definition.

2. Segment information continued

Geographical information

US$ million	2019	2018 Restated[1]
Revenue from third parties[2]		
The Americas	38,114	36,939
Europe	75,749	76,761
Asia	82,988	94,643
Africa	8,214	5,240
Oceania	10,046	6,941
	215,111	**220,524**
Non-current assets[3]		
The Americas	21,702	23,491
Europe	11,048	10,824
Asia	4,669	4,453
Africa	17,548	16,921
Oceania	20,955	22,314
	75,922	**78,003**

1 Adjusted to present mark-to-market movements on physical forward sales contracts within revenue (see note 1).
2 Revenue by geographical destination is based on the country of incorporation of the sales counterparty, however this may not necessarily be the country of the counterparty's ultimate parent and/or final destination of product.
3 Non-current assets are non-current assets excluding other investments, advances and loans, other financial assets and deferred tax assets. Non-current assets comprise assets in Australia of $19,277 million (2018: $20,500 million), in Peru of $9,923 million (2018: $10,596 million) and the DRC of $6,911 million (2018: $7,272 million).

3. Revenue

US$ million	2019	2018 Restated[1]
Sale of commodities	212,244	217,889
Freight, storage and other services	2,867	2,635
Total	**215,111**	**220,524**

1 Adjusted to present mark-to-market movements on physical forward sales contracts within revenue (see note 1).

Revenue is derived principally from the sale of commodities, recognised once control of the goods has transferred from Glencore to the buyer. Revenue from sale of commodities includes $221 million (2018: $770 million) of mark-to-market related adjustments on provisionally priced sales arrangements. Revenue derived from freight, storage and other services is recognised over time as the service is rendered. Revenue is measured based on consideration specified in the contract with the customer and excludes amounts collected on behalf of third parties. This is consistent with the revenue information disclosed for each reportable segment (see note 2).

4. Net loss on disposals of non-current assets

US$ million	Notes	2019	2018
Revaluation of previously held interest in newly acquired business (Polymet)	25	(38)	–
Loss on sale of Mototolo	25	–	(137)
Gain on sale of Terminales Portuarios Chancay S.A.	25	26	–
Net (loss)/gain on sale of other investments/operations		(8)	15
Loss on disposal of property, plant and equipment		(23)	(17)
Total		**(43)**	**(139)**

Polymet

In June 2019, Glencore concluded the acquisition of an additional 42.9% interest in Polymet Mining Corp. Prior to acquisition, Glencore owned a 28.8% interest in Polymet which was accounted for as an associate. The revaluation of the existing interest at the date of acquisition resulted in a reported loss of $38 million (see note 25).

Terminales Portuarios Chancay S.A.

In April 2019, Glencore disposed of a 60% interest in Terminales Portuarios Chancay S.A. for $11 million, subsequently accounting for its remaining share of 40% using the equity method (see notes 10 and 25).

Mototolo

In November 2018, Glencore disposed of its 40% interest in the Mototolo joint venture, a PGM mine in South Africa, resulting in a loss of $137 million, mainly on account of recycling foreign currency translation reserves to the statement of income (see note 25).

5. Other expense – net

US$ million	Notes	2019	2018
Net changes in mark-to-market valuations on investments		47	139
Net foreign exchange losses		(70)	(58)
Legal related costs		(159)	(86)
Closed site rehabilitation costs		(81)	(8)
Closure and severance costs		(173)	–
Disposal of Rosneft stake related income/(costs)		325	(325)
KCC debt restructuring	33	–	(248)
Katanga OSC settlement and restatement		–	(22)
Acquisition related costs	25	(6)	(142)
Other expenses – net		(56)	(14)
Total		**(173)**	**(764)**

Together with foreign exchange movements and mark-to-market movements on investments, other expense includes other items that, due to their nature and variable financial impact or infrequency of the events giving rise to these items, are reported separately from operating segment results.

Net changes in mark-to-market valuations on investments
Primarily relates to movements on interests in investments (see note 10) and the ARM Coal non-discretionary dividend obligation (see note 28) carried at fair value.

Legal related costs
Includes various investigations (legal, expert and compliance) related costs of $117 million (2018: $24 million)(see note 31).

In 2018, the Strategic Fuel Fund Association of South Africa (SFF) brought various claims against Glencore Energy UK (GENUK), a subsidiary of the Group, asserting that certain purchases of oil from SFF were invalid on the basis that SFF did not comply with its necessary approval and procurement processes and that GENUK is therefore not entitled to remove the inventory until the dispute is resolved. Over the period, holding costs and related charges recognised in relation to this inventory amounted to $42 million (2018: $62 million).

Closed site rehabilitation costs
Relates to movements in restoration, rehabilitation and decommissioning estimates related to sites that are no longer operational (classified as "closed sites") (see note 22).

Closure and severance related costs
As a result of the sharp decline in cobalt prices and weak, oversupplied cobalt markets, it was determined in H2 2019, to put Mutanda on temporary care and maintenance. Furthermore, in Q4 2019, following an extensive business review, it was determined to permanently close the Brunswick lead smelter in Canada. As a result of these decisions, severance and inventory write downs of $27 million and $56 million respectively were recognised at Mutanda (Industrial activities segment) and inventory write downs and future rehabilitation costs of $18 million and $15 million respectively were recognised at the Brunswick smelter (Industrial activities segment). Also, as a result of the ongoing mine optimisation review at Katanga (Industrial activities segment), $10 million of severance and $47 million of inventory write downs were recognised due to organisational, production and development updates.

Disposal of Rosneft stake related income/(costs)
In January 2017, Glencore and Qatar Investment Authority (QIA) entered into various agreements establishing a 50:50 consortium (QHG) to acquire 19.5% of OSJC Rosneft Oil (Rosneft) and enter into a 5 year offtake agreement with Rosneft. In September 2018, the consortium arrangements were terminated with each member taking a direct ownership in Rosneft shares – QIA received an 18.93% stake and Glencore retained a 0.57% equity stake commensurate with its original equity swap investment in 2017 (see note 10) and the QHG group of entities being wholly owned by Glencore. Upon completion of the transaction, the QHG group had incurred a liability for funding and other closure costs totalling $325 million. While QHG had a legally enforceable contractual claim to recover these costs, the ability to recognise the potential claim as an asset was not virtually certain and thus, in 2018, these costs were expensed in full.

5. Other expense – net continued

In September 2019, an agreement was reached to settle QHG's outstanding claim through the effective sale of the liability for these funding and closure costs which were carried in various QHG group companies. This resulted in a gain of $325 million being recognised.

Katanga OSC settlement and restatement

In December 2018, Katanga Mining Limited (Katanga), a controlled subsidiary of the Group listed on the Toronto Stock Exchange, entered into a settlement agreement with the Ontario Securities Commission (OSC) including a payment of $22 million. The settlement agreement resolved an investigation by the OSC into certain of Katanga's historic accounting practices, corporate governance and disclosure practices.

6. Impairments

US$ million	Notes	2019	2018
Property, plant and equipment and intangible assets	8/9	(1,954)	(1,452)
Investments	10	(137)	–
Advances and loans – non-current	11	(86)	(191)
VAT receivables		(162)	–
Inventory and other		(69)	–
Total impairments[1]		**(2,408)**	**(1,643)**

1 Impairments recognised during the year are allocated to Glencore's operating segments as follows: Marketing activities $201 million (2018: $92 million) and Industrial activities $2,207 million (2018: $1,551 million).

As part of a regular portfolio review, Glencore carries out an assessment of whether there are indicators of asset impairment or whether a previously recorded impairment may no longer be required.

The recoverable amounts of the property, plant and equipment and intangible assets were measured based on fair value less costs of disposal (FVLCD), determined by discounted cash flow techniques based on the most recent approved financial budgets and three-year business plans, which are underpinned and supported by life of mine plans of the respective operations. The valuation models use the most recent reserve and resource estimates, relevant cost assumptions generally based on past experience and where possible, market forecasts of commodity price and foreign exchange rate assumptions discounted using operation specific discount rates ranging from 6.6%–13.5% (2018: 7%–13.5%). The valuations remain sensitive to price and a deterioration/improvement in the pricing outlook may result in additional impairments/reversals. The determination of FVLCD uses Level 3 valuation techniques for both years.

As a result of the regular impairment assessment, the following significant impairment charges resulted:

2019

Property, plant and equipment and intangible assets

- Following the sharp further decline in cobalt prices over H1 2019 and in response thereof, significant updates were made to Mutanda's mine plans, culminating in the decision to place the operation on temporary care and maintenance in December 2019, for future restart, once the current weak and oversupplied cobalt market sufficiently recovers. As a result, the Mutanda operations (Industrial activities segment) were impaired by $300 million to its estimated recoverable amount of $2,600 million, including continued value recognition for the long-term copper sulphide resource potential. The valuation remains sensitive to price and a prolonged temporary care and maintenance scenario and further deteriorations in these key assumptions may result in additional impairment. The operation specific discount rate used in the valuation was 13.5%. The short to long-term copper and cobalt price assumptions were $6,500/mt and $20.00–$27.00/lb, respectively. Should the copper and cobalt assumptions fall by 10% (across the curve), or should it be determined that the temporary care and maintenance scenario be prolonged for an additional 2 years, with all other assumptions held constant, a further impairment ranging between $317 million and $468 million would be recognised.
- During H1 2019, Glencore's exploration licenses in Chad East expired and Glencore entered into discussions with the Government of the Republic of Chad with a view to extending the exploration licenses on terms acceptable to both parties. The discussions did not result in any agreement to extend the licenses. As a result, the full carrying value pertaining to the acreage held under exploration licenses ($538 million) (Industrial activities segment) was impaired. The expiry of the exploration licences has no impact on Glencore's current production and development assets in the Mangara, Badila and Krim fields (Chad West), which are held under exploitation licences.
- During H1 2019, challenging warehousing conditions persisted and as a result, the remaining goodwill of $50 million related to the Access World warehousing business (Marketing activities segment) was impaired.

6. Impairments continued

- Global LNG oversupply with resultant low spot gas prices, and to a lesser extent, higher EU carbon prices, placed considerable pressure on the API2 European coal market, the primary price reference market for our Colombian coal operations. This impact, including reflecting our latest Colombian mine-life approval expectations, resulted in a reduction in future production and revenue estimates. As a result, the Prodeco operation (Industrial activities segment) was impaired by $514 million, along with an inventory write down of $41 million to its estimated recoverable amount of $778 million. The valuation remains sensitive to price and a further deterioration in the pricing outlook may result in a further impairment. The operation specific discount rate used in the valuation was 8.1%. The short to long-term API2 price assumptions were $70–83/mt. Should the price assumptions fall by 10% (across the curve) with all other assumptions held constant, a further impairment of $466 million would be recognised.
- In November 2019, an agreement to dispose of the Oxidos and Cerro de Pasco operations (separately identifiable zinc and silver processing areas within the Volcan group) (Industrial activities segment), which predominantly comprise an oxide processing plant, environmental and rehabilitation provisions and old tailings dumps, was reached with $30 million due over a two year period plus a royalty, contingent upon the price of silver and gold over certain thresholds, estimated to be worth $100 million on a discounted basis. The transaction is subject to customary regulatory approvals and is expected to close during 2020. As a result of the agreed disposal, it has been determined that these operations meet the requirements of IFRS 5, which requires that its assets and liabilities be presented as current assets and liabilities "held for sale" as at 31 December 2019 at the lower of their carrying value or fair value less costs to sell, and as a result of this reclassification to assets held for sale, an impairment charge of $354 million was recognised as well as a VAT impairment of $24 million. Also see note 15.
- The balance of the impairment charges on property, plant and equipment (none of which were individually material) relate to specific assets where utilisation is no longer required or to projects no longer processed due to changes in production and development plans. As a result, the full carrying amount of these asses/projects was impaired, with $168 million recognised in our Industrial activities segment and $30 million recognised in our Marketing activities segment.

VAT receivables

As a result of the continued decline in the Zambian government's cash flow position and continued challenge by the Zambian Revenue Authority on the validity of Mopani's (Industrial activities segment) Value Added Tax ("VAT") claims pertaining to 2013-15 submissions, such claims amounting to $127 million were impaired in full.

The balance of the impairment charges on VAT receivables (none of which were individually material) were recognised in our Industrial activities segment ($5 million) and in our Marketing activities segment ($6 million).

2018

Property, plant and equipment

- As a result of delays in various expansion programs, cost increases owing to inflation, tax and other regulatory pressures and, in particular, a materially lower acid price assumption (by-product from smelting), the Mopani copper operations in Zambia (Industrial activities segment) were impaired by $803 million, to its estimated recoverable amount of $1,427 million. The valuation remains sensitive to price and a further deterioration in the pricing outlook may result in additional impairment. The operation specific discount rate used in the valuation was 11.1%. The short to long-term copper and cobalt price assumptions were $6,500/mt and $27.22/lb, respectively, and acid price assumptions were $220/mt for 2019 and 2020 and $50/mt over the remaining life of mine. As at 31 December 2018, had the copper, cobalt and acid price assumptions fallen by 10%, a further $390 million of impairment would have been recognised. In addition, had operating costs risen by 5% as a result of further operational challenges and delays, a further $165 million of impairment would have been recognised.
- In Q4 2018, a significant downward revision in the amount and timing of copper oxide reserves at our Mutanda copper operations in the DRC was highlighted, which lowers near term forecast annual copper production. In addition, the significant increased costs and elevated political risk stemming from the introduction of the 2018 Mining Code, has reduced the value of the base business, as well as reduced the value and probability of approving the development of new facilities to treat the sulphide reserves. As a result of these changes, the Mutanda operations (Industrial activities segment) were impaired by $600 million, to its estimated recoverable amount of $3,006 million. The valuation remains sensitive to price and adverse applications of the 2018 Mining Code. A further deterioration in these assumptions may result in additional impairment. The operation specific discount rate used in the valuation was 13.5%. The short to long-term copper and cobalt price assumptions were $6,500/mt and $27.22/lb, respectively, and it was assumed that no super profits tax would be incurred. As at 31 December 2018, had the copper and cobalt price assumptions fallen by 10% and it was determined that super profits tax was due, a further impairment ranging between $479 million and $1,008 million would have been recognised.
- The balance of the impairment charges on property, plant and equipment (none of which were individually material) relate to specific assets where utilisation is no longer required or to projects no longer progressed due to changes in production and development plans. As a result, the full carrying amount of these assets/projects was impaired, with $49 million recognised in our Industrial activities segment.

6. Impairments continued

Advances and loans – non-current

In 2018, certain loans and physical advances were restructured over the period due to various non-performance factors, resulting in the following impairments being recognised:

- $92 million impairment of a loan provided under an Energy related financing arrangement (Marketing activities segment). The estimated recoverable amount of the advance was $23 million.
- $99 million impairment of a financial loan arrangement (Industrial activities segment). The estimated recoverable amount of the loan was $155 million, see note 11.

7. Income taxes

Income taxes consist of the following:

US$ million	**2019**	2018
Current income tax expense	(1,315)	(2,290)
Adjustments in respect of prior year current income tax	74	21
Deferred income tax credit	603	264
Adjustments in respect of prior year deferred income tax	20	(58)
Total tax expense reported in the statement of income	**(618)**	**(2,063)**
Deferred income tax credit recognised directly in other comprehensive income	4	8
Total tax credit recognised directly in other comprehensive income	**4**	**8**

The effective Group tax rate is different from the statutory Swiss income tax rate applicable to the Company for the following reasons:

US$ million	**2019**	2018
(Loss)/income before income taxes	(888)	4,679
Less: Share of income from associates and joint ventures	(114)	(1,043)
Parent Company's and subsidiaries' (loss)/income before income tax and attribution	**(1,002)**	**3,636**
Income tax credit/(expense) calculated at the Swiss income tax rate of 15% (2018: 15%)	150	(545)
Tax effects of:		
Different tax rates from the standard Swiss income tax rate	450	(227)
Tax-exempt income ($175 million (2018: $275 million) from recurring items and $37 million (2018: $77 million) from non-recurring items)	212	352
Items not tax deductible ($689 million (2018: $585 million) from recurring items and $200 million (2018: $187 million) from non-recurring items)	(889)	(772)
Foreign exchange fluctuations	(12)	(130)
Changes in tax rates ($Nil (2018: $Nil) from recurring items and $13 million (2018: $1 million) from non-recurring items)	(13)	1
Utilisation and changes in recognition of tax losses and temporary differences	(187)	(357)
Recognition of temporary differences arising from retrospective changes in tax restructuring regulations	120	–
Tax losses not recognised	(543)	(340)
Adjustments in respect of prior years	94	(37)
Other	–	(8)
Income tax expense	**(618)**	**(2,063)**

The non-tax deductible items of $889 million (2018: $772 million) primarily relate to financing costs, impairments and various other expenses.

The impact of tax-exempt income of $212 million (2018: $352 million) primarily relates to non-taxable intra-group dividends, income that is not effectively connected to the taxable jurisdiction, and various other items.

The tax impact of foreign exchange fluctuations relates to the foreign currency movements on deferred tax balances where the underlying tax balances are denominated in a currency different to the functional currency determined for accounting purposes.

7. Income taxes continued

Deferred taxes

Deferred taxes as at 31 December 2019 and 2018 are attributable to the items in the table below:

US$ million	2019	Recognised in the statement of income	Recognised in other comprehensive income	Business combination and disposal of subsidiaries	Foreign currency exchange movements	Other	2018
Deferred tax assets[1]							
Tax losses carried forward	1,212	(308)	–	6	–	–	1,514
Other	265	54	4	7	(1)	(13)	214
Total	**1,477**	**(254)**	**4**	**13**	**(1)**	**(13)**	**1,728**
Deferred tax liabilities[1]							
Depreciation and amortisation	(5,680)	742	–	(69)	(35)	–	(6,318)
Mark-to-market valuations	(71)	(10)	9	3	–	–	(73)
Other	(223)	145	(9)	–	(1)	90	(448)
Total	**(5,974)**	**877**	**–**	**(66)**	**(36)**	**90**	**(6,839)**
Total Deferred tax – net	**(4,497)**	**623**	**4**	**(53)**	**(37)**	**77**	**(5,111)**

US$ million	2018	Recognised in the statement of income	Recognised in other comprehensive income	Business combination and disposal of subsidiaries	Foreign currency exchange movements	Other	2017
Deferred tax assets[1]							
Tax losses carried forward	1,514	(58)	–	–	(1)	50	1,523
Other	214	38	(2)	–	(32)	–	210
Total	**1,728**	**(20)**	**(2)**	**–**	**(33)**	**50**	**1,733**
Deferred tax liabilities[1]							
Depreciation and amortisation	(6,318)	487	2	(157)	224	(19)	(6,855)
Mark-to-market valuations	(73)	(5)	(1)	–	(2)	–	(65)
Other	(448)	(256)	9	(105)	8	–	(104)
Total	**(6,839)**	**226**	**10**	**(262)**	**230**	**(19)**	**(7,024)**
Total Deferred tax – net	**(5,111)**	**206**	**8**	**(262)**	**197**	**31**	**(5,291)**

1 Asset and liability positions in the same category reflect the impact of tax assets and liabilities arising in local tax jurisdictions that cannot be offset against tax assets and liabilities arising in other tax jurisdictions.

Deferred tax assets are recognised for tax losses carried forward only to the extent that realisation of the related tax benefit is probable. As at 31 December 2019, $1,571 million (2018: $2,140 million) of deferred tax assets related to available loss carry forwards have been brought to account, of which $1,212 million (2018: $1,514 million) are disclosed as deferred tax assets with the remaining balance being offset against deferred tax liabilities arising in the same tax entity. This balance is primarily comprised of:

- $517 million (2018: $520 million) in entities domiciled in the DRC (Katanga Mining Group),
- $287 million (2018: $452 million) in entities domiciled in Switzerland, and
- $366 million (2018: $403 million) in entities domiciled in the U.S.

In evaluating whether it is probable that taxable profits will be earned in future accounting periods prior to any tax loss expiry as may be the case, all available evidence was considered, including approved budgets, forecasts and business plans and, in certain cases, analysis of historical operating results. These forecasts are consistent with those prepared and used internally for business planning and impairment testing purposes. Following this evaluation, it was determined there would be sufficient taxable income generated to realise the benefit of the deferred tax assets and that no reasonably possible change in any of the key assumptions would result in a material reduction in forecast headroom of tax profits so that the recognised deferred tax asset would not be realised, other than the potential developments in the DRC discussed below.

The recognised losses carried forward in Switzerland primarily relate to non-recurring events. Based on the core business activities conducted in Switzerland and taxable income forecasts going forward, sufficient taxable profits are expected to fully utilise the recognised tax losses prior to expiration.

The recognised losses carried forward in the U.S. primarily relate to non-recurring events in 2011 and have a carry forward period of 20 years. The U.S. entities comprise our core U.S. marketing activities and based on taxable income forecasts going forward, sufficient taxable profits are expected to fully utilise the recognised tax losses prior to expiration.

7. Income taxes continued

DRC related income tax judgements

The losses carried forward in the DRC have an unlimited carry forward period, but are subject to an annual utilisation limitation. Katanga Mining resumed processing operations in December 2017 and is expected to generate taxable profits in the future. Should this potential fully materialise, up to $824 million (2018: $705 million) of unrecognised tax effected losses are available to be recognised.

During 2018, the DRC parliament adopted a new mining code ("2018 Mining Code") introducing wide-ranging reforms including the introduction of higher royalties, a new Super Profits Tax regime and further regulatory controls. This triggered a re-assessment of our tax positions in the DRC. Based on the potential challenge of historical tax positions and uncertainties of the 2018 Mining Code, specifically, the application and interpretation of the Super Profits Tax, which cannot be offset by carry forward income tax losses, consideration was given to the range of possible outcomes to determine the expected value of the tax losses available for future offset, including to what extent previously incurred tax losses would be available to offset future taxable profits. Any adverse challenge by the DRC tax authorities could significantly impact the currently recognised tax losses.

Available gross tax losses

Available gross tax losses carried forward and deductible temporary differences, for which no deferred tax assets have been recognised in the consolidated financial statements, are detailed below and will expire as follows:

US$ million	**2019**	2018
1 year	41	1,418
2 years	45	36
3 years	307	35
Thereafter	3,172	2,791
Unlimited	9,292	7,807
Total	**12,857**	**12,087**

As at 31 December 2019, unremitted earnings of $55,282 million (2018: $55,029 million) have been retained by subsidiaries for reinvestment. No provision is made for income taxes.

8. Property, plant and equipment

2019

US$ million	Notes	Freehold land and buildings	Plant and equipment	Right-of-use assets	Mineral and petroleum rights	Exploration and evaluation	Deferred mining costs	**Total**
Gross carrying amount:								
1 January 2019		6,060	43,629	–	29,687	2,183	17,066	98,625
Impact of adoption of IFRS 16[1]		–	(843)	1,635	–	–	–	792
Restatement[2]	25	2	(7)	–	–	–	–	(5)
1 January 2019 (restated)		6,062	42,779	1,635	29,687	2,183	17,066	99,412
Business combination	25	200	772	169	467	–	15	1,623
Disposal of subsidiaries	25	(59)	(32)	–	–	–	–	(91)
Additions		65	3,558	656	104	1	962	5,346
Disposals		(33)	(679)	(90)	(40)	–	(632)	(1,474)
Effect of foreign currency exchange movements		4	81	(1)	74	–	9	167
Reclassification to held for sale	15	(176)	(36)	(1)	(16)	(1)	(8)	(238)
Other movements		148	(218)	(55)	(53)	65	597	484
31 December 2019		**6,211**	**46,225**	**2,313**	**30,223**	**2,248**	**18,009**	**105,229**
Accumulated depreciation and impairment:								
1 January 2019		1,655	21,742	–	8,758	1,588	8,112	41,855
Impact of adoption of IFRS 16[1]		–	(312)	312	–	–	–	–
1 January 2019 (restated)		1,655	21,430	312	8,758	1,588	8,112	41,855
Disposal of subsidiaries	25	(4)	(32)	–	–	–	–	(36)
Disposals		(6)	(553)	(77)	(1)	–	(611)	(1,248)
Depreciation		377	3,059	396	1,709	6	1,469	7,016
Impairment	6	20	264	–	804	532	265	1,885
Effect of foreign currency exchange movements		1	26	–	15	–	–	42
Reclassification to held for sale	15	(27)	–	–	(14)	(1)	–	(42)
Other movements		1	452	2	(361)	33	273	400
31 December 2019		**2,017**	**24,646**	**633**	**10,910**	**2,158**	**9,508**	**49,872**
Net book value 31 December 2019		**4,194**	**21,579**	**1,680**	**19,313**	**90**	**8,501**	**55,357**

1 Gross finance lease arrangements of $843 million and related depreciation of $312 million previously presented within plant and equipment, have been reclassified to the 'right-of-use assets' heading. There has been no change in the amount recognised.

2 Adjustment to provisionally reported purchase price allocation in relation to Ale.

Plant and equipment includes expenditure for construction in progress of $4,161 million (2018: $3,268 million). Mineral and petroleum rights include biological assets of $19 million (2018: $18 million). Depreciation expenses included in cost of goods sold are $6,970 million (2018: $6,224 million) and in selling and administrative expenses, $46 million (2018: $19 million).

During 2019, $66 million (2018: $49 million) of interest was capitalised. With the exception of project specific borrowings, the rate used to determine the amount of borrowing costs eligible for capitalisation was 4% (2018: 4%).

As at 31 December 2019, with the exception of leases, no property, plant or equipment was pledged as security for borrowings (2018: $Nil).

Notes to the financial statements
continued

8. Property, plant and equipment continued

Leases

The Group leases various assets including land and buildings and plant and equipment. As at 31 December 2019, the net book value of recognised right-of use assets relating to land and buildings was $595 million and plant and equipment $1,085 million. The depreciation charge for the period relating to those assets was $103 million and $293 million, respectively.

Disclosure of amounts recognised as lease liabilities in the statement of financial position and cash outflows for leases in the year are included within note 20.

Amounts recognised in the statement of income are detailed below:

US$ million	**2019**
Depreciation on right-of-use assets	(396)
Interest expense on lease liabilities	(101)
Expense relating to short-term leases	(758)
Expense relating to low-value leases	(3)
Expense relating to variable lease payments not included in the measurement of the lease liability	(1)
Income from subleasing right-of-use assets	231
Total	**(1,028)**

At 31 December 2019, the Group is committed to $224 million of short-term lease payments and $146 million related to capitalised leases not yet commenced.

2018

US$ million	Notes	Freehold land and buildings	Plant and equipment	Mineral and petroleum rights	Exploration and evaluation	Deferred mining costs	**Total**
Gross carrying amount:							
1 January 2018 (restated)[1]		5,711	41,310	28,619	2,170	14,674	92,484
Business combination	25	130	555	1,534	–	938	3,157
Disposal of subsidiaries	25	(74)	(467)	(248)	–	(105)	(894)
Additions		72	3,611	195	–	860	4,738
Disposals		(24)	(1,066)	(90)	–	(200)	(1,380)
Effect of foreign currency exchange movements		(27)	(452)	(419)	–	(49)	(947)
Reclassification from held for sale		3	237	16	–	25	281
Other movements		269	(99)	80	13	923	1,186
31 December 2018		**6,060**	**43,629**	**29,687**	**2,183**	**17,066**	**98,625**
Accumulated depreciation and impairment:							
1 January 2018 (restated)[1]		1,363	18,731	6,778	1,584	6,748	35,204
Disposal of subsidiaries	25	(45)	(377)	(180)	–	(98)	(700)
Disposals		(10)	(968)	(184)	–	(66)	(1,228)
Depreciation		354	3,059	1,539	4	1,287	6,243
Impairment	6	3	415	861	–	173	1,452
Effect of foreign currency exchange movements		(3)	(134)	(91)	–	(8)	(236)
Reclassification from held for sale		3	54	11	–	72	140
Other movements		(10)	962	24	–	4	980
31 December 2018		**1,655**	**21,742**	**8,758**	**1,588**	**8,112**	**41,855**
Net book value 31 December 2018		**4,405**	**21,887**	**20,929**	**595**	**8,954**	**56,770**

1 Certain balances in the prior year have been restated to reflect appropriate reclassification. The restatements were only within property, plant and equipment headings, there were no depreciation and amortisation changes..

9. Intangible assets

2019

US$ million	Notes	Goodwill	Port allocation rights	Licences, trademarks and software	Customer relationships and other	**Total**
Cost:						
1 January 2019		13,293	1,336	434	664	15,727
Restatement[1]	25	–	–	87	(240)	(153)
1 January 2019 (restated)		13,293	1,336	521	424	15,574
Business combination	25	–	–	24	347	371
Disposal of subsidiaries	25	–	–	–	(33)	(33)
Additions		–	–	10	12	22
Disposals		–	(1)	(11)	(1)	(13)
Effect of foreign currency exchange movements		–	40	(4)	(1)	35
Other movements		–	(1)	56	(28)	27
31 December 2019		**13,293**	**1,374**	**596**	**720**	**15,983**
Accumulated amortisation and impairment:						
1 January 2019		8,243	159	268	86	8,756
Disposals		–	–	(11)	(1)	(12)
Amortisation expense[2]		–	33	35	76	144
Impairment	6	50	–	–	19	69
Effect of foreign currency exchange movements		–	7	–	–	7
Other movements		–	(1)	23	(9)	13
31 December 2019		**8,293**	**198**	**315**	**171**	**8,977**
Net book value 31 December 2019		**5,000**	**1,176**	**281**	**549**	**7,006**

1 Adjustment to provisionally reported purchase price allocation in relation to Ale.

2 Recognised in cost of goods sold.

2018

US$ million	Notes	Goodwill	Port allocation rights	Licences, trademarks and software	Customer relationships and other	**Total**
Cost:						
1 January 2018		13,293	1,555	468	183	15,499
Restatement[1]	25	–	–	(76)	29	(47)
1 January 2018 (restated)		13,293	1,555	392	212	15,452
Business combination	25	–	–	2	425	427
Disposal of subsidiaries	25	–	–	–	(4)	(4)
Additions		–	1	25	13	39
Disposals		–	(1)	(8)	–	(9)
Effect of foreign currency exchange movements		–	(219)	(2)	(7)	(228)
Reclassification from held for sale	15	–	–	1	–	1
Other movements		–	–	24	25	49
31 December 2018		**13,293**	**1,336**	**434**	**664**	**15,727**
Accumulated amortisation and impairment:						
1 January 2018		8,243	149	237	83	8,712
Disposal of subsidiaries	25	–	–	–	(4)	(4)
Disposals		–	–	(8)	–	(8)
Amortisation expense[2]		–	37	35	10	82
Effect of foreign currency exchange movements		–	(27)	(2)	(1)	(30)
Other movements		–	–	6	(2)	4
31 December 2018		**8,243**	**159**	**268**	**86**	**8,756**
Net book value 31 December 2018		**5,050**	**1,177**	**166**	**578**	**6,971**

1 Adjustment to provisionally reported purchase price allocation in relation to Volcan.

2 Recognised in cost of goods sold.

9. Intangible assets continued

Goodwill
The carrying amount of goodwill has been allocated to cash-generating units (CGUs), or groups of CGUs as follows:

US$ million	**2019**	2018
Metals and minerals marketing business	3,326	3,326
Coal marketing business	1,674	1,674
Metals warehousing business	–	50
Total	**5,000**	**5,050**

Metals and minerals and coal marketing businesses
Goodwill of $3,326 million and $1,674 million was recognised in connection with previous business combinations and was allocated to the metals and minerals marketing and coal marketing CGUs respectively, based on the annual synergies expected to accrue to the respective marketing departments as a result of increased volumes, blending opportunities and freight and logistics arbitrage opportunities.

Metals warehousing business
During the period, the goodwill of $50 million related to the Access World warehousing business was impaired (see note 6).

Port allocation rights
Port allocation rights represent contractual entitlements to export certain amounts of coal on an annual basis from Richard Bay Coal Terminal in South Africa recognised as part of previous business combinations. The rights are amortised on a straight-line basis over the estimated economic life of the port of 40 years.

Licences, trademarks and software
Intangibles related to internally developed technology and patents were recognised in previous business combinations and are amortised over the estimated economic life of the technology which ranges between 10–15 years.

Customer relationships
Customer relationships mainly represent intangible assets related to long-standing customer relationships recognised in respect of business combinations completed in 2019 and 2018 (see note 25). These intangible assets are being amortised on a straight-line basis over their estimated economic life which ranges between 5–9 years.

Goodwill impairment testing
Given the nature of each CGU's activities, information on its fair value is usually difficult to obtain unless negotiations with potential purchasers or similar transactions are taking place. Consequently,

- The recoverable amount for each of the marketing CGUs is determined by reference to the FVLCD which utilises a price to earnings multiple approach based on the 2019 approved financial budget which includes factors such as marketing volumes handled and operating, interest and income tax charges, generally based on past experience. The price to earnings multiple of 15 times (2018: 15 times) is derived from observable market data for broadly comparable businesses; and
- Glencore believes that no reasonably possible changes in any of the above key assumptions would cause the recoverable amount to fall below the carrying value of the CGU. The determination of FVLCD for each of the marketing CGUs used Level 3 valuation techniques in both years.

10. Investments in associates, joint ventures and other investments

Investments in associates and joint ventures

US$ million	Notes	2019	2018
1 January		13,909	13,998
Additions		104	19
Disposals		(96)	(1)
Share of income from associates and joint ventures		114	1,043
Share of other comprehensive loss from associates and joint ventures		(37)	(124)
Additions from business combinations	25	–	109
Transfer of previously equity accounted investment to subsidiary	25	(40)	–
Fair value of retained interest in Terminales Portuarios Chancay S.A.	25	150	–
Impairments	6	(137)	–
Dividends received		(942)	(1,139)
Other movements		(41)	4
31 December		**12,984**	**13,909**
Of which:			
Investments in associates		6,858	7,707
Investments in joint ventures		6,126	6,202

As at 31 December 2019, the carrying value of our listed associates is $605 million (2018: $772 million), mainly comprising Century Aluminum and Trevali, which have a carrying value of $395 million (2018: $441 million) and $119 million (2018: $244 million), respectively. The fair value of our listed associates and joint ventures, using published price quotations (a Level 1 fair value measurement) is $427 million (2018: $463 million). As at 31 December 2019, $104 million (2018: $101 million) of the carrying amount of Glencore's investment in Century Aluminium was pledged under a loan facility, with proceeds received and recognised in current borrowings of $80 million (2018: $90 million)(see note 20).

Impairments

Primarily comprise impairment charges in respect of our investments in Trevali ($48 million) and Oil vessels' entities ($67 million).

Terminales Portuarios Chancay S.A.

In April 2019, Glencore disposed of a 60% interest in Terminales Portuarios Chancay S.A. for $11 million (see notes 4 and 25), subsequently accounting for its remaining share of 40% using the equity method.

10. Investments in associates, joint ventures and other investments continued

2019 Details of material associates and joint ventures

Summarised financial information in respect of Glencore's associates and joint ventures, reflecting 100% of the underlying associates' and joint ventures' relevant figures, is set out below.

US$ million	Cerrejón	Antamina	**Total material associates**	Collahuasi	Glencore Agri	**Total material joint ventures**	**Total material associates and joint ventures**
Non-current assets	2,399	4,589	**6,988**	4,905	5,712	**10,617**	**17,605**
Current assets	630	1,276	**1,906**	1,306	7,363	**8,669**	**10,575**
Non-current liabilities	(768)	(1,170)	**(1,938)**	(1,207)	(3,855)	**(5,062)**	**(7,000)**
Current liabilities	(57)	(486)	**(543)**	(794)	(5,389)	**(6,183)**	**(6,726)**
The above assets and liabilities include the following:							
Cash and cash equivalents	157	55	**212**	163	184	**347**	**559**
Current financial liabilities[1]	(21)	(53)	**(74)**	(15)	(2,770)	**(2,785)**	**(2,859)**
Non-current financial liabilities[1]	(15)	(146)	**(161)**	(95)	(3,450)	**(3,545)**	**(3,706)**
Net assets 31 December 2019	**2,204**	**4,209**	**6,413**	**4,210**	**3,831**	**8,041**	**14,454**
Glencore's ownership interest	33.3%	33.8%		44.0%	49.9%		
Acquisition fair value and other adjustments	409	1,872	**2,281**	1,116	1,246	**2,362**	**4,643**
Carrying value	1,143	3,295	**4,438**	2,968	3,158	**6,126**	**10,564**

1 Financial liabilities exclude trade, other payables and provisions.

Summarised profit and loss in respect of Glencore's associates and joint ventures, reflecting 100% of the underlying associates' and joint ventures' relevant figures for the year ended 31 December 2019 including group adjustments relating to alignment of accounting policies or fair value adjustments, is set out below.

US$ million	Cerrejón	Antamina	**Total material associates**	Collahuasi	Glencore Agri	**Total material joint ventures**	**Total material associates and joint ventures**
Revenue	1,483	3,038	**4,521**	3,147	25,057	**28,204**	**32,725**
(Loss)/income for the year	(1,440)	892	**(548)**	945	(29)	**916**	**368**
Other comprehensive loss	–	–	**–**	(23)	(3)	**(26)**	**(26)**
Total comprehensive (loss)/income	(1,440)	892	**(548)**	922	(32)	**890**	**342**
Glencore's share of dividends paid	66	243	**309**	467	–	**467**	**776**
The above (loss)/income for the year includes the following:							
Depreciation and amortisation	(565)	(811)	**(1,376)**	(640)	(524)	**(1,164)**	**(2,540)**
Interest income[1]	–	15	**15**	35	28	**63**	**78**
Interest expense[2]	(12)	(3)	**(15)**	(25)	(202)	**(227)**	**(242)**
Impairment, net of tax[3]	(1,305)	–	**(1,305)**	–	–	**–**	**(1,305)**
Income tax credit/(expense)	46	(489)	**(443)**	(437)	(40)	**(477)**	**(920)**

1 Includes foreign exchange gains and other income of $68 million.

2 Includes foreign exchange losses of $16 million.

3 Glencore's attributable share of impairment relating to Cerrejón amounts to $435 million, net of taxes of $213 million, resulting from lower API2 coal price assumptions and reduced production estimates, including in relation to updated mine-life approval expectations. The operation specific discount rate used in the valuation was 8.1%. The short to long-term API 2 price assumptions were $70–83/mt. Should the price assumptions fall by 10% (across the curve) with all other assumptions held constant a further impairment of $312 million would be recognised.

10. Investments in associates, joint ventures and other investments continued

2018 Details of material associates and joint ventures

Summarised financial information in respect of Glencore's associates and joint ventures, reflecting 100% of the underlying associates' and joint ventures' relevant figures, is set out below.

US$ million	Cerrejón	Antamina	Total material associates	Collahuasi	Glencore Agri	Total material joint ventures	Total material associates and joint ventures
Non-current assets	2,554	4,428	**6,982**	4,751	4,549	**9,300**	**16,282**
Current assets	876	1,120	**1,996**	1,170	6,917	**8,087**	**10,083**
Non-current liabilities	(652)	(1,132)	**(1,784)**	(1,161)	(2,968)	**(4,129)**	**(5,913)**
Current liabilities	(409)	(534)	**(943)**	(483)	(4,739)	**(5,222)**	**(6,165)**
The above assets and liabilities include the following:							
Cash and cash equivalents	307	77	**384**	161	180	**341**	**725**
Current financial liabilities[1]	(2)	(34)	**(36)**	(12)	(1,995)	**(2,007)**	**(2,043)**
Non-current financial liabilities[1]	–	(144)	**(144)**	(96)	(2,669)	**(2,765)**	**(2,909)**
Net assets 31 December 2018	**2,369**	**3,882**	**6,251**	**4,277**	**3,759**	**8,036**	**14,287**
Glencore's ownership interest	33.3%	33.8%		44.0%	49.9%		
Acquisition fair value and other adjustments	900	1,925	**2,825**	1,136	1,309	**2,445**	**5,270**
Carrying value	1,689	3,237	**4,926**	3,018	3,184	**6,202**	**11,128**

1 Financial liabilities exclude trade, other payables and provisions.

Summarised profit and loss in respect of Glencore's associates and joint ventures, reflecting 100% of the underlying associates' and joint ventures' relevant figures for the year ended 31 December 2018, including group adjustments relating to alignment of accounting policies or fair value adjustments, is set out below.

US$ million	Cerrejón	Antamina	Total material associates	Collahuasi	Glencore Agri	Total material joint ventures	Total material associates and joint ventures
Revenue	2,516	3,489	**6,005**	3,241	26,304	**29,545**	**35,550**
Income for the year	359	1,224	**1,583**	963	(15)	**948**	**2,531**
Other comprehensive loss	–	–	**–**	(20)	2	**(18)**	**(18)**
Total comprehensive income	359	1,224	**1,583**	943	(13)	**930**	**2,513**
Glencore's share of dividends paid	194	405	**599**	440	–	**440**	**1,039**
The above profit for the year includes the following:							
Depreciation and amortisation	(571)	(789)	**(1,360)**	(611)	(261)	**(872)**	**(2,232)**
Interest income[1]	–	–	**–**	46	59	**105**	**105**
Interest expense[2]	–	(6)	**(6)**	(25)	(171)	**(196)**	**(202)**
Income tax expense	(231)	(711)	**(942)**	(496)	(123)	**(619)**	**(1,561)**

1 Includes foreign exchange gains and other income of $73 million.
2 Includes foreign exchange losses of $24 million.

Aggregate information of associates that are not individually material:

US$ million	**2019**	2018
The Group's share of (loss)/income	(110)	93
The Group's share of other comprehensive loss	(25)	(116)
The Group's share of total comprehensive loss	(135)	(23)
Aggregate carrying value of the Group's interests	2,420	2,781

10. Investments in associates, joint ventures and other investments continued

The amount of corporate guarantees (excluding Glencore Agri) in favour of associates and joint ventures as at 31 December 2019 was $483 million (2018: $419 million). Issued guarantees in favour of Glencore Agri amounted to $500 million as at 31 December 2019 (2018: $506 million), mainly relating to a $400 million Viterra bond maturing in 2020. No amounts have been claimed or provided as at 31 December 2019. Glencore's share of joint ventures' capital commitments amounts to $108 million (2018: $19 million).

Other investments

US$ million	2019	2018
Fair value through other comprehensive income[1]		
United Company Rusal plc[2]	–	440
EN+ GROUP PLC[2]	674	–
OAO NK Russneft[3]	869	744
Yancoal	172	233
OSJC Rosneft	440	376
Other	135	207
	2,290	2,000
Fair value through profit and loss		
Century Aluminum Company cash-settled equity swaps	69	67
Champion Iron Limited share warrants[4]	28	–
	97	67
Total	**2,387**	**2,067**

1 Fair value through other comprehensive income includes net disposals of $36 million for the period.
2 In January 2019, Glencore agreed to exchange its interest in United Company Rusal plc into a 10.6% interest in EN+ GROUP PLC.
3 Glencore's investment in OAO NK Russneft is pledged under a loan facility issued to OAO NK Russneft.
4 The warrants are exercisable until October 2025 for conversion into direct share ownership.

Although Glencore holds a 25% interest in Russneft, it does not exercise significant influence over its financial and operating policy decisions.

During the year, dividend income from equity investments designated as at fair value through other comprehensive income amounted to $49 million (2018: $21 million).

11. Advances and loans

US$ million	Notes	2019	2018
Financial assets at amortised cost			
Loans to associates		294	275
Other non-current receivables and loans		511	376
Rehabilitation trust fund		147	120
Financial assets at fair value through profit and loss			
Other non-current receivables and loans		116	155
Non-financial instruments			
Pension surpluses	23	42	41
Advances repayable with product[1]		1,172	1,387
Other non-current receivables		145	201
Total		**2,427**	**2,555**

1 Net of $1,216 million (2018: $1,142 million) provided by various banks, the repayment terms of which are contingent upon and connected to the future delivery of contractual production.

Financial assets at amortised cost

Loans to associates

Loans to associates generally bear interest at applicable floating market rates plus a premium.

Other non-current receivables and loans

Other non-current receivables and loans comprise the following:

US$ million	2019	2018
Secured financing arrangements	493	360
Other	18	16
Total	**511**	**376**

Various financing facilities, generally marketing related and secured against certain assets and/or payable from the future sale of production of the counterparty. The non-current receivables and loans are interest-bearing and on average are to be repaid over a three-year period.

Rehabilitation trust fund

Glencore makes contributions to controlled funds that were established to meet the costs of its restoration and rehabilitation liabilities, primarily in South Africa. These funds are not available for the general purposes of the Group, and there is no present obligation to make any further contributions.

Loss allowances of financial assets at amortised cost

The Group determines the expected credit loss of other non-current receivables and loans (at amortised cost) based on different scenarios of probability of default and expected loss applicable to each of the material underlying balances. The movement in loss allowance for financial assets classified at amortised cost is detailed below:

US$ million	Loans to associates	Other non-current receivables and loans	Total
Gross carrying value 31 December 2019	325	866	**1,191**
Loss allowances			
1 January 2019	27	323	350
Released during the period	–	(10)	(10)
Charged during the period	4	43	47
Reclassifications	–	(1)	(1)
31 December 2019	31	355	**386**
Net carrying value 31 December 2019	**294**	**511**	**805**

11. Advances and loans continued

Financial assets at fair value through profit and loss

Other non-current receivables and loans

In 2018, the terms of a loan arrangement were substantially restructured and modified. Under the new terms, repayment of the loan is dependent upon the underlying performance of the operations and as such, the contractual cash flows no longer represent "solely payments of principal and interest" and therefore the loan is accounted for at fair value through profit and loss (FVTPL). Following the substantial modification, the loan was de-recognised as a financial asset at amortised cost and the new loan was recognised at a fair value of $155 million. During 2019 fair value movements of negative $39 million were recognised (see note 6).

Fair value was determined using a Level 3 discounted cash flow model technique, with the key unobservable inputs being a discount rate specific to the operation of 13% and a repayment profile dependent upon the underlying business plans and forecasts over the next 5 years. The valuation is sensitive to timing of the underlying cash flows and could result in a $42 million reduction of fair value if the repayment schedule is extended by an additional 9 years.

Non-financial instruments

Advances repayable with product

US$ million	**2019**	2018
Counterparty		
Société Nationale d'Electricité (SNEL) power advances	303	340
Chad State National Oil Company	360	393
Société Nationale des Pétroles du Congo	18	65
Other	491	589
Total	**1,172**	**1,387**

SNEL power advances

In early 2012, a joint agreement with Société Nationale d'Électricité (SNEL), the Democratic Republic of the Congo's (DRC) national electricity utility, was signed whereby Glencore's operations would contribute $375 million to a major electricity infrastructure refurbishment programme, including transmission and distribution systems. This is expected to facilitate a progressive increase in power availability to 450 megawatts by the end of Q1 2020. Funding commenced in the second quarter of 2012 and will continue until Q1 2020. The loans are being repaid via discounts on electricity purchases, which will accelerate upon completion of the refurbishment programme.

Chad State National Oil Company

Glencore has provided a net $379 million (2018: $393 million) to the Chad State National Oil Company (SHT) to be repaid through future oil deliveries over ten years. As at 31 December 2019 the advance is net of $778 million (2018: $805 million) provided by a syndicate of lenders, the repayment terms of which are contingent upon and connected to the receipt of oil due from SHT under the prepayment. Of the net amount advanced, $360 million (2018: $393 million) is receivable after 12 months and is presented within Other non-current receivables and loans and $19 million (2018: $Nil) is due within 12 months and included within Accounts receivable.

Société Nationale des Pétroles du Congo (SNPC)

Glencore has provided a net $156 million (2018: $183 million) to SNPC repayable through future oil deliveries over five years. As at 31 December 2019, the advance is net of $498 million (2018: $530 million) provided by the lenders, the repayment terms of which are contingent upon and connected to the future receipt of oil contractually due from SNPC. Of the net amount advanced, $18 million (2018: $65 million) is due after 12 months and is presented within Other long-term receivables and loans and $138 million (2018: $118 million) is due within 12 months and included within Accounts receivable. SNPC has indicated to Glencore and the syndicate of banks that it wishes to restructure the terms of this arrangement. Whilst no agreement has been reached at the reporting date, a future restructuring may materially impact the portion of this advance that is realised within one year.

12. Inventories

Current inventory

Inventories of $19,936 million (2018: $20,564 million) comprise $10,516 million (2018: $11,449 million) of inventories carried at fair value less costs of disposal and $9,420 million (2018: $9,115 million) valued at the lower of cost or net realisable value. The amount of inventories and related ancillary costs recognised as an expense during the period was $192,418 million (2018: $196,509 million).

Fair value of inventories is a Level 2 fair value measurement (see note 28) using observable market prices obtained from exchanges, traded reference indices or market survey services adjusted for relevant location and quality differentials. There are no significant unobservable inputs in the fair value measurement of such inventories.

Glencore has a number of dedicated financing facilities, which finance a portion of its inventories. In each case, the inventory has not been derecognised as the Group has not transferred control. The proceeds received are recognised as current borrowings (see note 20). As at 31 December 2019, the total amount of inventory pledged under such facilities was $430 million (2018: $562 million). The proceeds received and recognised as current borrowings were $339 million (2018: $366 million) and $80 million (2018: $139 million) as non-current borrowings.

Non-current inventory

$575 million (2018: $353 million) of inventories valued at lower of cost or net realisable value are not expected to be utilised or sold within 12 months and are therefore classified as non-current inventory.

13. Accounts receivable

US$ million	Notes	**2019**	2018
Financial assets at amortised cost			
Trade receivables		3,724	4,163
Trade advances		44	321
Margin calls paid[1]		2,198	1,388
Associated companies		326	546
Other receivables[2]		399	422
Financial assets at fair value through profit and loss			
Trade receivables containing provisional pricing features	28	6,526	6,471
Exchangeable loan (see below)		–	1,044
Finance lease receivable	28	14	–
Non-financial instruments			
Advances repayable with product[3]		1,433	1,535
Income tax receivable		350	121
Other tax and related receivables		2,007	1,776
Total		**17,021**	**17,787**

1 Includes $635 million (2018: $1,041 million) of cash collateral payments under margin arrangements related to cross currency swaps held to hedge non-U.S. dollar denominated bonds.
2 Includes current portion of non-current loans receivable in amount of $129 million (2018: $104 million).
3 Includes advances, net of $1,248 million (2018: $1,136 million) provided by banks, the repayment terms of which are contingent upon and connected to the future delivery of contractual production over the next 12 months.

The average credit period on sales of goods is 18 days (2018: 19 days). The carrying value of trade receivables approximates fair value.

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13. Accounts receivable continued

The Group applies a simplified approach to measure the loss allowance for trade receivables classified at amortised cost, using the lifetime expected loss provision. The expected credit loss on trade receivables is estimated using a provision matrix by reference to past default experience and credit rating, adjusted as appropriate for current observable data. The following table details the risk profile of trade receivables based on the Group's provision matrix.

US$ million	Trade receivables – days past due					
As at 31 December 2019	**Not past due**	**<30**	**31–60**	**61–90**	**>90**	**Total**
Gross carrying amount	3,077	356	56	59	192	3,740
Expected credit loss rate	0.28%	0.55%	0.83%	1.10%	2.34%	
Lifetime expected credit loss	(9)	(2)	–	(1)	(4)	(16)
Total	**3,068**	**354**	**56**	**58**	**188**	**3,724**

The movement in allowance for doubtful accounts is detailed below:

US$ million	2019	2018
1 January	317	304
Released during the period	(31)	(54)
Charged during the period	195	99
Utilised during the period	(84)	(11)
Reclassifications	1	(21)
31 December	**398**	**317**

Impairment losses recognised on trade receivables are recorded within cost of goods sold.

Glencore has a number of dedicated financing facilities, which finance a portion of its receivables. The receivables have not been derecognised, as the Group retains the principal risks and rewards of ownership. The proceeds received are recognised as current borrowings (see note 20). As at 31 December 2019, the total amount of trade receivables pledged was $837 million (2018: $1,943 million) and proceeds received and classified as current borrowings amounted to $719 million (2018: $1,539 million) and $Nil (2018: $126 million) as non-current borrowings.

Exchangeable loan

On 6 October 2017, Glencore entered into an agreement with Off the Shelf Investments Fifty Six (RF) Proprietary Limited ("OTS") to acquire from OTS (i) a 75% stake in Chevron South Africa Proprietary Limited (Chevron SA) and certain related interests and (ii) the entire issued share capital of Chevron Botswana Proprietary Limited (Chevron Botswana) (together the "Operations") following closing of OTS's exercise of its pre-emptive right to acquire these Operations from the Chevron group. OTS's acquisition from Chevron closed on 1 October 2018, at which time Glencore advanced $1,044 million to OTS under an exchangeable loan arrangement. The transaction completed on 6 April 2019, whereby the loan advanced was exchanged into the shares in the underlying businesses (see note 25).

14. Cash and cash equivalents

US$ million	2019	2018
Bank and cash on hand	1,618	1,860
Deposits and treasury bills	281	186
Total	**1,899**	**2,046**

Cash and cash equivalents comprise cash held at bank, cash in hand and short-term bank deposits with an original maturity of three months or less. The carrying amount of these assets approximates their fair value.

As at 31 December 2019, $92 million (2018: $63 million), including $15 million(2018: $18 million) held in "on-shore" accounts in our DRC operations, was restricted. In 2018, the DRC made various changes to its mining code, including various restrictions on a company's ability to repatriate excess funds earned above its initial investment amounts. The "on-shore" cash in our DRC operations can only be used to fund DRC related expenditures and any excess currently cannot be repatriated out of the DRC to the Group.

15. Assets and liabilities held for sale

In November 2019, an agreement was reached to dispose the Oxidos and Cerro de Pasco operations (separately identifiable zinc and silver processing areas within the Volcan group) which predominantly comprise an oxide processing plant, environmental and rehabilitation provisions and old tailings dumps for $30 million, due over a two year period, and a royalty contingent upon the price of silver and gold over certain thresholds, estimated to be worth $100 million on a discounted basis. The transaction is subject to customary regulatory approvals and is expected to close during 2020. As a result of the agreed disposal, it has been determined that these operations meet the requirements of IFRS 5 which requires that its assets and liabilities be presented as current assets and liabilities "held for sale" as at 31 December 2019 at the lower of their carrying value or fair value less costs to sell and as a result of this reclassification to assets held for sale, an impairment charge of $378 million ($272 million net of tax) was recognised. Also see note 6.

Assets of $286 million and liabilities of $156 million have been classified as held for sale within the Industrial activities segment as detailed below:

US$ million	**Cerro de Pasco**
Non-current assets	
Property, plant and equipment	196
Deferred tax assets	13
	209
Current assets	
Inventories	22
Accounts receivable	53
Cash and cash equivalents	2
	77
Total assets held for sale	**286**
Non-current liabilities	
Deferred tax liabilities	(68)
Provisions	(52)
	(120)
Current liabilities	
Borrowings	(2)
Accounts payable	(34)
	(36)
Total liabilities held for sale	**(156)**
Total net assets held for sale	**130**

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16. Share capital and reserves

	Number of shares (thousand)	Share capital (US$ million)	Share premium (US$ million)
Authorised:			
31 December 2019 and 2018 Ordinary shares with a par value of $0.01 each	50,000,000		
Issued and fully paid up:			
1 January 2018 and 31 December 2018 – Ordinary shares	**14,586,200**	**146**	**48,504**
Distributions paid (see note 18)	–	–	(2,710)
31 December 2019 – Ordinary shares	**14,586,200**	**146**	**45,794**

	Treasury Shares		Trust Shares		**Total**	
	Number of shares (thousand)	Share premium (US$ million)	Number of shares (thousand)	Share premium (US$ million)	**Number of shares (thousand)**	**Share premium (US$ million)**
Own shares:						
1 January 2018	191,459	(948)	129,850	(627)	**321,309**	**(1,575)**
Own shares purchased during the year	422,113	(1,684)	63,420	(321)	**485,533**	**(2,005)**
Own shares disposed during the year	–	–	(53,140)	262	**(53,140)**	**262**
Own shares transferred to satisfy employee share awards	(30,000)	149	30,000	(149)	–	–
31 December 2018	**583,572**	**(2,483)**	**170,130**	**(835)**	**753,702**	**(3,318)**
1 January 2019	583,572	(2,483)	170,130	(835)	**753,702**	**(3,318)**
Own shares purchased during the year	678,315	(2,318)	–	–	**678,315**	**(2,318)**
Own shares disposed during the year	–	–	(40,138)	199	**(40,138)**	**199**
31 December 2019	**1,261,887**	**(4,801)**	**129,992**	**(636)**	**1,391,879**	**(5,437)**

Own shares

Own shares comprise shares acquired under the Company's share buy-back programmes and shares of Glencore plc held by Group employee benefit trusts ("the Trusts") to satisfy the potential future settlement of the Group's employee stock plans, primarily assumed as part of previous business combinations.

The Trusts also coordinate the funding and manage the delivery of ordinary shares and free share awards under certain of Glencore's share plans. The shares have been acquired by either stock market purchases or share issues from the Company. The Trusts are permitted to sell the shares and may hold up to 5% of the issued share capital of the Company at any one time. The Trusts have waived the right to receive distributions from the shares that they hold. Costs relating to the administration of the Trusts are expensed in the period in which they are incurred.

As at 31 December 2019, 1,391,879,129 shares (2018: 753,702,088 shares), equivalent to 9.54% (2018: 5.17%) of the issued share capital were held at a cost of $5,437 million (2018: $3,318 million) and market value of $4,347 million (2018: $2,798 million).

16. Share capital and reserves continued

Other reserves

US$ million	Translation adjustment	Cash flow hedge reserve	Net unrealised gain/(loss)	Net ownership changes in subsidiaries	Total
1 January 2019	(2,779)	(47)	38	(2,149)	(4,937)
Exchange gain on translation of foreign operations	114	–	–	–	114
Loss on cash flow hedges, net of tax	–	(51)	–	–	(51)
Gain on equity investments accounted for at fair value through other comprehensive income	–	–	342	–	342
Change in ownership interest in subsidiaries (see note 33)	–	–	–	(418)	(418)
Gain due to changes in credit risk on financial liabilities accounted for at fair value through profit and loss	–	–	(1)	–	(1)
Reclassifications	–	1	(15)	(6)	(20)
31 December 2019	**(2,665)**	**(97)**	**364**	**(2,573)**	**(4,971)**
1 January 2018	(2,321)	(39)	877	(942)	(2,425)
Exchange loss on translation of foreign operations	(662)	–	–	–	(662)
Loss on cash flow hedges, net of tax	–	(18)	–	–	(18)
Loss on equity investments accounted for at fair value through other comprehensive income	–	–	(848)	–	(848)
Change in ownership interest in subsidiaries (see note 33)	–	–	–	(1,207)	(1,207)
Reclassifications	(14)	10	9	–	5
Items recycled to the statement of income upon disposal of subsidiaries (see note 25)	218	–	–	–	218
31 December 2018	**(2,779)**	**(47)**	**38**	**(2,149)**	**(4,937)**

17. Earnings per share

US$ million	2019	2018
(Loss)/income attributable to equity holders of the Parent for basic earnings per share	(404)	3,408
Weighted average number of shares for the purposes of basic earnings per share (thousand)	13,684,091	14,151,826
Effect of dilution:		
Equity-settled share-based payments (thousand)	92,474	101,701
Weighted average number of shares for the purposes of diluted earnings per share (thousand)	13,776,565	14,253,527
Basic (loss)/earnings per share (US$)	**(0.03)**	**0.24**
Diluted (loss)/earnings per share (US$)[1]	**(0.03)**	**0.24**

Headline earnings:

Headline earnings is a Johannesburg Stock Exchange (JSE) defined performance measure. The calculation of basic and diluted earnings per share, based on headline earnings as determined by the requirements of the Circular 1/2019 as issued by the South African Institute of Chartered Accountants (SAICA), is reconciled using the following data:

US$ million	2019	2018
(Loss)/income attributable to equity holders of the Parent for basic earnings per share	(404)	3,408
Net loss on disposals[2]	43	139
Net loss on disposals – tax	(6)	(38)
Impairments[3]	3,191	1,452
Impairments – non-controlling interest	(270)	(218)
Impairments – tax	(323)	(181)
Headline and diluted earnings for the year	**2,231**	**4,562**
Headline earnings per share (US$)	**0.16**	**0.32**
Diluted headline earnings per share (US$)	**0.16**	**0.32**

1 These equity-settled share-based payments could potentially dilute basic earnings per share in the future, but did not impact diluted loss per share because they were anti-dilutive..
2 See note 4.
3 Comprises impairments of property, plant and equipment, intangible assets, investments, advances and loans and VAT receivables (see note 6), Glencore's share of impairments booked directly by various associates (see note 2) and impairments related to Cerrejón (see note 10).

18. Distributions

US$ million	2019	2018
Paid during the year:		
First tranche distribution – $0.10 per ordinary share (2018: $0.10)	1,368	1,427
Second tranche distribution – $0.10 per ordinary share (2018: $0.10)	1,342	1,409
Total	**2,710**	**2,836**

The proposed distribution in respect of the year ended 31 December 2019 of $0.20 per ordinary share amounting to $2.6 billion is subject to approval by shareholders at the Annual General Meeting and has not been included as a liability in these financial statements. These distributions declared are expected to be paid equally ($0.10 each) in May 2020 and September 2020.

19. Share-based payments

US$ million	Number of awards granted (thousands)	Fair value at grant date (US$ million)	**Number of awards outstanding 2019 (thousands)**	Number of awards outstanding 2018 (thousands)	**Expense recognised 2019 (US$ million)**	Expense recognised 2018 (US$ million)
Deferred Bonus Plan – Bonus share award						
2017 Series	16,506	64	–	9,088	–	–
2018 Series	12,891	65	11,052	12,891	–	65
2019 Series	9,552	33	9,552	–	33	–
	38,949		**20,604**	**21,979**	**33**	**65**
Performance Share Plan						
2014 Series	21,584	119	–	826	–	1
2015 Series	79,787	109	11,878	33,026	5	11
2016 Series	23,984	84	7,407	15,190	9	27
2017 Series	19,732	95	12,498	18,904	27	52
2018 Series	28,210	103	27,912	7,758	54	2
2019 Series	12,171	37	12,171	–	–	–
	185,468		**71,866**	**75,704**	**95**	**93**
Total	**224,417**		**92,470**	**97,683**	**128**	**158**

Deferred Bonus Plan

Under the Glencore Deferred Bonus Plan (DBP), the payment of a portion of a participant's annual bonus is deferred for a period of one to two years as an award of either ordinary shares (a "Bonus Share Award") or cash (a "Bonus Cash Award"). The awards are vested at grant date with no further service conditions, however they are subject to forfeiture for malus events. The Bonus Share Awards may be satisfied, at Glencore's option, in shares by the issue of new ordinary shares, by the transfer of ordinary shares held in treasury or by the transfer of ordinary shares purchased in the market or in cash, with a value equal to the market value of the award at settlement, including distributions paid between award and settling. Glencore currently intends to settle these awards in shares. The associated expense is recorded in the statement of income/loss as part of the expense for performance bonuses.

Performance Share Plan

Under the Glencore Performance Share Plan (PSP), participants are awarded PSP awards which vest in annual tranches over a specified period, subject to continued employment and forfeiture for malus events. At grant date, each PSP award is equivalent to one ordinary share of Glencore. The awards vest in three or five equal tranches on 31 December or 31 January of the years following the year of grant, as may be the case. The fair value of the awards is determined by reference to the market price of Glencore's ordinary shares at grant date. The PSP awards may be satisfied, at Glencore's option, in shares by the issue of new ordinary shares, by the transfer of ordinary shares held in treasury or by the transfer of ordinary shares purchased in the market or in cash, with a value equal to the market value of the award at vesting, including distributions paid between award and vesting. Glencore currently intends to settle these awards in shares.

Share-based awards assumed in previous business combinations

	Total options outstanding (thousands)	**Weighted average exercise price (GBP)**
1 January 2019	106,637	3.88
Lapsed	–	–
Exercised[1]	(4,014)	1.10
31 December 2019	**102,623**	**3.98**
1 January 2018	124,603	4.00
Lapsed	(9,626)	6.58
Exercised[1]	(8,340)	2.62
31 December 2018	**106,637**	**3.88**

1 The weighted average share price at date of exercise of the share based awards was GBP3.03 (2018: GBP3.91).

Notes to the financial statements

continued

19. Share-based payments continued

As at 31 December 2019, a total of 102,623,112 options (2018: 106,637,103 options) were outstanding and exercisable, having a range of exercise prices from GBP3.37 to GBP4.80 (2018: GBP1.10 to GBP4.80) and a weighted average exercise price of GBP3.98 (2018: GBP3.88). These outstanding awards have expiry dates ranging from February 2020 to February 2022 (2018: March 2019 to February 2022) and a weighted average contractual life of 1.2 years (2018: 2.19 years). The awards may be satisfied at Glencore's option, by the issue of new ordinary shares, by the transfer of ordinary shares held in treasury or by the transfer of ordinary shares purchased in the market. Glencore currently intends to settle these awards, when exercised, by the transfer of ordinary shares held in treasury.

20. Borrowings

US$ million	Notes	2019	2018
Non-current borrowings			
Capital market notes		21,452	19,804
Committed syndicated revolving credit facilities		5,615	5,623
Finance lease obligations under IAS 17		–	277
Lease liabilities under IFRS 16		1,158	–
Other bank loans		842	720
Total non-current borrowings		**29,067**	**26,424**
Current borrowings			
Secured inventory/receivables/other facilities	10/12/13	1,138	1,995
U.S. commercial paper		675	596
Capital market notes		2,455	2,775
Finance lease obligations under IAS 17		–	110
Lease liabilities under IFRS 16		484	–
Other bank loans[1]		3,224	3,094
Total current borrowings		**7,976**	**8,570**
Total borrowings		**37,043**	**34,994**

1 Comprises various uncommitted bilateral bank credit facilities and other financings.

Reconciliation of cash flow to movement in borrowings

US$ million	Notes	2019	2018
Cash related movements in borrowings[1]			
Proceeds from issuance of capital market notes		3,866	185
Proceeds from issuance of non-dilutive convertible bond		–	576
Repayment of capital market notes		(3,167)	(3,650)
(Repayment of)/proceeds from revolving credit facilities		(29)	4,624
Proceeds from other non-current borrowings		291	15
Repayment of other non-current borrowings		(325)	–
Repayment of finance lease obligations under IAS 17		–	(72)
Repayment of lease liabilities under IFRS 16		(358)	–
Proceeds from/(repayment of) U.S. commercial papers		79	(634)
(Repayment of)/proceeds from current borrowings		(682)	439
		(325)	1,483
Non-cash related movements in borrowings			
Borrowings acquired/(disposed) in business combinations	25	284	263
Reclassification of the derivative component of the non-dilutive convertible bond		–	(95)
Foreign exchange movements		231	(557)
Fair value hedge movements		387	(143)
Impact of adoption of IFRS 16		865	–
Change in finance lease obligations under IAS 17		–	90
Change in lease liabilities under IFRS 16		582	–
Interest on convertible bonds		19	12
Other non-cash movements		6	7
		2,374	(423)
Increase in borrowings for the year		**2,049**	**1,060**
Total borrowings – opening		34,994	33,934
Total borrowings – closing		**37,043**	**34,994**

1 See consolidated statement of cash flows

20. Borrowings continued

Capital Market Notes

US$ million	Maturity	2019	2018
Euro 750 million 3.375% coupon bonds	Sep 2020	–	865
Euro 1,250 million 1.25% coupon bonds	Mar 2021	1,386	1,413
Euro 600 million 2.75% coupon bonds	Apr 2021	667	688
Euro 700 million 1.625% coupon bonds	Jan 2022	793	814
Euro 1,000 million 1.875% coupon bonds	Sep 2023	1,118	1,140
Euro 400 million 3.70% coupon bonds	Oct 2023	480	492
Euro 600 million 0.625% coupon bonds	Sep 2024	672	–
Euro 750 million 1.75% coupon bonds	Mar 2025	860	858
Euro 500 million 3.75% coupon bonds	Apr 2026	616	618
Euro 500 million 1.50% coupon bonds	Oct 2026	568	–
Eurobonds		**7,160**	**6,888**
JPY 10 billion 1.075% coupon bonds	May 2022	92	91
GBP 500 million 7.375% coupon bonds	May 2020	–	669
GBP 500 million 6.00% coupon bonds	Apr 2022	664	640
GBP 500 million 3.125% coupon bonds	Mar 2026	672	–
Sterling bonds		**1,336**	**1,309**
CHF 500 million 1.25% coupon bonds	Dec 2020	–	513
CHF 250 million 2.25% coupon bonds	May 2021	254	249
CHF 175 million 1.25% coupon bonds	Oct 2024	184	182
CHF 250 million 0.35% coupon bonds	Sep 2025	258	–
Swiss Franc bonds		**696**	**944**
US$ 1,000 million 2.875% coupon bonds	Apr 2020	–	412
US$ 1,000 million 4.95% coupon bonds	Nov 2021	1,022	1,034
US$ 600 million 5.375% coupon bonds[1]	Feb 2022	535	535
US$ 250 million LIBOR plus 1.65% coupon bonds	May 2022	250	250
US$ 1,000 million 4.25% coupon bonds	Oct 2022	1,005	1,008
US$ 500 million 3.00% coupon bonds	Oct 2022	498	497
US$ 1,500 million 4.125% coupon bonds	May 2023	1,542	1,495
US$ 1,000 million 4.125% coupon bonds	Mar 2024	993	–
US$ 1,000 million 4.625% coupon bonds	Apr 2024	1,042	1,004
US$ 625 million non-dilutive convertible bonds	Mar 2025	513	494
US$ 500 million 4.00% coupon bonds	Apr 2025	502	475
US$ 1,000 million 4.00% coupon bonds	Mar 2027	1,030	964
US$ 50 million 4.00% coupon bonds	Mar 2027	50	50
US$ 500 million 3.875% coupon bonds	Oct 2027	514	479
US$ 750 million 4.875% coupon bonds	Mar 2029	801	–
US$ 250 million 6.20% coupon bonds	Jun 2035	271	272
US$ 500 million 6.90% coupon bonds	Nov 2037	589	591
US$ 500 million 6.00% coupon bonds	Nov 2041	538	539
US$ 500 million 5.55% coupon bonds	Oct 2042	473	473
US$ bonds		**12,168**	**10,572**
Total non-current bonds		**21,452**	**19,804**

1 Assumed in the Volcan acquisition, see note 25.

20. Borrowings continued

US$ million	Maturity	2019	2018
AUD 500 million 4.50% coupon bonds	Sep 2019	–	355
GBP 650 million 6.50% coupon bonds	Feb 2019	–	829
GBP 500 million 7.375% coupon bonds	May 2020	675	–
Euro 750 million 3.375% coupon bonds	Sep 2020	842	–
CHF 175 million 2.125% coupon bonds	Dec 2019	–	179
CHF 500 million 1.250% coupon bonds	Dec 2020	519	–
US$ 500 million LIBOR plus 1.36% coupon bonds	Jan 2019	–	279
US$ 1,500 million 2.50% coupon bonds	Jan 2019	–	688
US$ 1,000 million 3.125% coupon bonds	Apr 2019	–	445
US$ 1,000 million 2.875% coupon bonds	Apr 2020	419	–
Total current bonds		**2,455**	**2,775**

2019 Bond activities

- In March 2019, issued a 5 year $1,000 million, 4.125% coupon bond
- In March 2019, issued a 10 year $750 million, 4.875% coupon bond
- In March 2019, issued a 7 year GBP 500 million 3.125% coupon bond
- In April 2019, issued a 7 year EUR 500 million 1.50% coupon bond
- In September 2019, issued a 6 year CHF 250 million 0.35% coupon bond
- In September 2019, issued a 5 year EUR 600 million 0.625% coupon bond

2018 Bond activities

- In March 2018, Glencore issued a $500 million non-dilutive cash settled guaranteed convertible bond due 2025. In September 2018, a further $125 million was issued on similar terms. On the date of issuance, the Bonds were bifurcated into a debt and derivative component with the debt component carried at amortised cost accreting to par value ($625 million) at an effective interest rate of 3.7% per annum and the option component carried at fair value with mark-to-market movements recognised through the statement of income. See note 28.
- Concurrent with the placing of the Bonds, Glencore purchased cash-settled call options over the same number of Glencore shares underlying the convertible bonds to economically hedge the exposure to the potential exercise of conversion rights embedded in the Bonds. These purchased call options are carried at fair value with mark-to-market movements recognised through the statement of income. See note 28.
- In October 2018, Glencore issued a 6-year CHF 175 million, 1.25% coupon bond

Committed syndicated revolving credit facilities

In March 2019 (effective May 2019), Glencore signed new one-year revolving credit facilities of $9,775 million, refinancing the $9,085 million one-year revolving facilities signed in March 2018. Funds drawn under the facilities bear interest at US$LIBOR plus a margin of 40 basis points. Glencore also voluntarily reduced the medium term facility size from $5,115 million to $4,650 million, extended the facility to five-years, and replaced the two one-year extension options.

As at 31 December 2019, the active facilities comprise:

- a $9,775 million one year revolving credit facility with a one-year borrower's term-out option (to May 2021) and a one-year extension option; and
- a $4,650 million medium-term revolving credit facility (to May 2024), with two one-year extension options.

20. Borrowings continued

Secured facilities

US$ million	Maturity[1]	Interest	**2019**	2018
Syndicated committed metals inventory/receivables facilities[2]	Oct 2024	3.2%	82	328
Syndicated uncommitted metals and oil inventory/receivables facilities	Jan[3]/Jul/Aug/Oct 2020	US$ LIBOR + 65 bps	1,056	1,842
Other secured facilities	Dec 2020	US$ LIBOR + 62 bps	80	90
Total			**1,218**	**2,260**
Current			1,138	1,995
Non-current			80	265

1 Uncommitted facilities are re-drawn several times until actual expiry of the facility contract.
2 Comprises various facilities. The maturity and interest detail represent the weighted average of the various debt balances outstanding at year end.
3 Since year-end, in the ordinary course of business, these maturities have been rolled/extended as required.

21. Deferred income

US$ million	Notes	Unfavourable contracts	Prepayments	**Total**
1 January 2019		684	2,029	2,713
Additions		–	940	940
Accretion in the year		–	134	134
Utilised in the year		(83)	(484)	(567)
Effect of foreign currency exchange difference		8	–	8
31 December 2019		**609**	**2,619**	**3,228**
Current		78	480	558
Non-current		531	2,139	2,670
1 January 2018		585	2,386	2,971
Additions		–	40	40
Accretion in the year		–	140	140
Utilised in the year		(77)	(537)	(614)
Acquired in business combination	25	220	–	220
Effect of foreign currency exchange difference		(44)	–	(44)
31 December 2018		**684**	**2,029**	**2,713**
Current		80	332	412
Non-current		604	1,697	2,301

21. Deferred income continued

Unfavourable contracts

In several business combinations, Glencore recognised liabilities related to various assumed contractual agreements to deliver tonnes of coal over various periods ending until 2034 at fixed prices lower than the prevailing market prices on the respective acquisition dates.

These amounts are released to revenue as the underlying commodities are delivered to the buyers over the life of the contracts at rates consistent with the extrapolated forward price curves at the time of the acquisitions.

Prepayments

Prepayments comprise various medium and long-term product supply agreements whereby an upfront prepayment is received in exchange for the future delivery of a specific product, such as gold, silver or cobalt. The arrangements are accounted for as executory contracts whereby the advance payment is recorded as deferred revenue. The revenue from the advance payment is recognised as the specific product identified in the contract is delivered consistent with the implied forward price curve at the time of the transaction and an accretion expense, representing the time value of the upfront deposit, is also recognised.

Non-current prepayments predominantly comprise:

- Life of mine arrangements – long-term streaming agreements for the future delivery of gold and/or silver produced over the life of mine from our Antamina, Antapaccay and Ernest Henry operations. In addition to the upfront payment received, for product delivered from the Antamina and Antapaccay operations, Glencore receives an ongoing amount equal to 20% of the spot silver and gold price. Once certain delivery thresholds have been met at Antapaccay, the ongoing cash payment increases to 30% of the spot gold and silver prices. As at 31 December 2019, $1,396 million (2018: $1,518 million) of product delivery obligations remain.
- Silver supply arrangement – In December 2019, Glencore signed an extension of a silver prepayment arrangement, in exchange for an upfront advance payment of $500 million. Under the terms of the arrangement, Glencore is required to deliver an average of 19 million ounces of silver per annum, over a three year period. As at 31 December 2019, $415 million (2018: $178 million) of product delivery obligations remain.
- Cobalt supply arrangement – In March 2019, Glencore signed a six year cobalt prepayment arrangement in exchange for an upfront advance payment of $100 million. Under the terms of the arrangement, Glencore is required to deliver an average of 1,621 metric tons of cobalt per annum over a four year period starting 2021. As at 31 December 2019, $101 million (2018: $Nil) of product delivery obligations remain.
- Palladium supply arrangement – In June 2019, Glencore signed a five year palladium prepayment arrangement in exchange for an upfront advance payment of $200 million. Under the terms of the arrangement, Glencore is required to deliver a minimum of 44 thousand ounces of palladium per annum over a five year period starting 2020. As at 31 December 2019, $160 million (2018: $Nil) of product delivery obligations remain.

22. Provisions

US$ million	Notes	Post-retirement employee benefits	Other employee entitlements	Rehabilitation costs	Onerous contracts	Other	**Total**
1 January 2019		798	243	4,457	722	1,158	7,378
Utilised		(93)	(25)	(171)	(1)	(118)	(408)
Released		–	(8)	(46)	(195)	(18)	(267)
Accretion		28	–	139	40	3	210
Assumed in business combination	25	44	–	80	–	2	126
Additions		153	19	419	36	151	778
Impact of adoption of IFRS 16		–	–	–	(8)	–	(8)
Reclassification to held for sale	15	–	–	(45)	–	(7)	(52)
Effect of foreign currency exchange movements		28	(1)	14	1	(8)	34
31 December 2019		**958**	**228**	**4,847**	**595**	**1,163**	**7,791**
Current		–	10	239	98	142	489
Non-current		958	218	4,608	497	1,021	7,302
1 January 2018		847	294	4,180	1,092	1,158	7,571
Utilised		(92)	(71)	(211)	–	(136)	(510)
Released		–	(36)	–	(476)	(43)	(555)
Accretion		–	–	135	–	–	135
Assumed in business combination	25	–	26	82	31	134	273
Disposal of subsidiaries	25	–	(1)	(41)	–	(31)	(73)
Additions		95	31	391	75	92	684
Effect of foreign currency exchange movements		(52)	–	(79)	–	(16)	(147)
31 December 2018		**798**	**243**	**4,457**	**722**	**1,158**	**7,378**
Current		–	16	116	227	195	554
Non-current		798	227	4,341	495	963	6,824

Post-retirement employee benefits
The provision for post-retirement employee benefits includes pension plan liabilities of $446 million (2018: $393 million) and post-retirement medical plan liabilities of $512 million (2018: $405 million), see note 23.

Other employee entitlements
The employee entitlement provision represents the value of governed employee entitlements due to employees upon their termination of employment. The associated expenditure will occur in a pattern consistent with when employees choose to exercise their entitlements.

Rehabilitation costs
Rehabilitation provision represents the accrued cost required to provide adequate restoration and rehabilitation upon the completion of production activities. These amounts will be settled when rehabilitation is undertaken, generally at the end of a project's life, which ranges from two to in excess of 50 years with an average for all sites, weighted by closure provision, of some 24 years (2018: 24 years).

As at 31 December 2019, the discount rate applied in calculating the restoration and rehabilitation provision is a pre-tax risk free rate specific to the liability and the currency in which they are denominated as follows: US dollar 1.8% (2018: 2.0%), South African rand 3.8% (2018: 4.0%), Australian dollar 2.5% (2018: 2.8%), Canadian dollar 2.0% (2018: 2.3%), and Chilean peso 2.8% (2018: 3.0%). The effect of decreasing the discount rates used by 0.5% would result in an increase in the overall rehabilitation provision by $351 million, with a resulting equal movement in property, plant and equipment. In the following year, the depreciation expense would increase by some $15 million, with an opposite direction interest expense adjustment of $5 million. The resulting net impact in the statement of income would be a decrease of $10 million, eventually netting to $Nil over the weighted average settlement date of the provision.

22. Provisions continued

Onerous contracts
Onerous contracts represent liabilities related to contractual take or pay commitments for securing coal logistics capacity at fixed prices and quantities higher than the acquisition date forecasted usage and prevailing market price. The provision is released to costs of goods sold as the underlying commitments are incurred.

Other
Other comprises provisions for possible demurrage, mine concession, tax and construction related claims.

Tax disputes
Glencore assesses its liabilities and contingencies for all tax years open to audit based upon the latest information available. Inherent uncertainties exist in estimates of tax contingencies due to complexities of interpretation and changes in tax laws. For those matters where it is probable that an adjustment will be made, the Group records its reasoned estimate of these tax liabilities, including related interest charges. These current open tax matters are spread across numerous jurisdictions and consist primarily of legacy transfer pricing matters that have been open for a number of years and may take several more years to resolve; reasonably possible adverse outcomes are not considered to be individually material, therefore management does not anticipate a significant risk of material change in estimates within the next financial year.

DRC 2018 Mining Code
Owing to the lack of guidance and clarification on the practical application of the "Super Profits Tax" legislation under the 2018 Mining Code (see also note 7), the Group has taken the view that no Super Profits Tax is due in the current year and that any potential amount payable will not result in a material adjustment to the tax provision in the current year and within the next financial year.

UK Tax Audit
HMRC have issued formal transfer pricing, unallowable purposes and diverted profits tax assessments for the 2008–2018 tax years, amounting to $774 million. The Group has appealed against, and continues to vigorously contest, these assessments, following, over the years, various legal opinions received and detailed analysis conducted, supporting its positions and policies applied. Therefore, the Group has not provided for the amount assessed. The matter is now proceeding through the Mutual Agreement Process, pursuant to article 24 of the Switzerland – United Kingdom Income Tax Treaty 1977. Management does not anticipate a significant risk of material changes in estimates in this matter in the next financial year.

23. Personnel costs and employee benefits

Total personnel costs, which include salaries, wages, social security, other personnel costs and share-based payments, incurred for the years ended 31 December 2019 and 2018, were $5,231 million and $5,063 million, respectively. Personnel costs related to consolidated industrial subsidiaries of $4,035 million (2018: $3,887 million) are included in cost of goods sold. Other personnel costs, including deferred bonus and performance share plans, are included in selling and administrative expenses.

The Company and certain subsidiaries sponsor various pension schemes in accordance with local regulations and practices. Eligibility for participation in the various plans is either based on completion of a specified period of continuous service, or date of hire. Among these schemes are defined contribution plans as well as defined benefit plans.

Defined contribution plans
Glencore's contributions under these plans amounted to $141 million in 2019 (2018: $140 million).

Post-retirement medical plans
The Company participates in a number of post-retirement medical plans, principally in Canada, which provide coverage for prescription drugs, medical, dental, hospital and life insurance to eligible retirees. Almost all of the post-retirement medical plans in the Group are unfunded.

Defined benefit pension plans
The Company operates defined benefit plans in various countries, the main locations being Canada, Switzerland, UK and the U.S.. Approximately 67% of the present value of obligations accrued relates to the defined benefit plans in Canada, which are pension plans that provide benefits to members in the form of a guaranteed level of pension payable for life. Contributions to the Canadian plans are made to meet or exceed minimum funding requirements based on provincial statutory requirements and associated federal taxation rules.

The majority of benefit payments are from trustee-administered funds; however, there are also a number of unfunded plans where Glencore meets the benefit payments as they fall due. Plan assets held in trusts are governed by local regulations and practices in each country. Responsibility for governance of the plans – overseeing all aspects of the plans including investment decisions and contribution schedules – lies with Glencore. Glencore has set up committees to assist in the management of the plans and has also appointed experienced, independent professional experts such as investment managers, actuaries, custodians, and trustees.

23. Personnel costs and employee benefits continued

The movement in the defined benefit pension and post-retirement medical plans over the year is as follows:

US$ million	Notes	Post-retirement medical plans	Defined benefit pension plans: Present value of defined benefit obligation	Fair value of plan assets	Net liability for defined benefit pension plans
1 January 2019		**405**	2,651	(2,299)	**352**
Current service cost		7	52	–	52
Past service cost – plan amendments		(1)	(5)	–	(5)
Settlement of pension plan disposal		–	(86)	85	(1)
Interest expense/(income)		21	93	(83)	10
Total expense recognised in consolidated statement of income		**27**	54	2	**56**
(Gain) on plan assets, excluding amounts included in interest expense – net		–	–	(207)	(207)
(Gain) from change in demographic assumptions		–	(2)	–	(2)
Loss from change in financial assumptions		39	256	–	256
Loss from actuarial experience		1	12	–	12
Actuarial losses/(gains) recognised in consolidated statement of comprehensive income		**40**	266	(207)	**59**
Employer contributions		–	–	(72)	(72)
Employee contributions		–	1	(1)	–
Benefits paid directly by the Company		(21)	(8)	8	–
Benefits paid from plan assets		–	(153)	153	–
Net cash (outflow)/inflow		**(21)**	(160)	88	**(72)**
Acquisition of business	25	44	25	(25)	–
Exchange differences		17	115	(106)	9
31 December 2019		**512**	2,951	(2,547)	**404**
Of which:					
Pension surpluses	11	–			(42)
Pension deficits	22	512			446

The actual return on plan assets in respect of defined benefit pension plans amounted to a gain of $396 million (2018: loss of $222 million), comprising interest income and the re-measurement of plan assets.

During the next financial year, the Group expects to make a contribution of $90 million to the defined benefit pension and post-retirement medical plans across all countries, including current service costs and contributions required by pension legislation. Contributions over the next five years for the Canadian plans only, based on the most recently filed actuarial reports, approximate $120 million. Future funding requirements and contributions are reviewed and adjusted on an annual basis.

23. Personnel costs and employee benefits continued

US$ million	Notes	Post-retirement medical plans	Defined benefit pension plans Present value of defined benefit obligation	Fair value of plan assets	Net liability for defined benefit pension plans
1 January 2018		**455**	3,090	(2,766)	**324**
Current service cost		7	52	–	52
Past service cost – plan amendments		–	2	–	2
Settlement of pension plan disposal		–	(155)	153	(2)
Interest expense/(income)		16	89	(87)	2
Total expense recognised in consolidated statement of income		**23**	(12)	66	**54**
Loss on plan assets, excluding amounts included in interest expense – net		–	–	127	127
Loss from change in demographic assumptions		–	6	–	6
Gain from change in financial assumptions		(16)	(95)	–	(95)
Loss/(gain) from actuarial experience		(1)	24	–	24
Actuarial (gains)/losses recognised in consolidated statement of comprehensive income		**(17)**	(65)	127	**62**
Employer contributions		–	–	(74)	(74)
Employee contributions		–	1	(1)	–
Benefits paid directly by the Company		(18)	(8)	8	–
Benefits paid from plan assets		–	(159)	159	–
Net cash (outflow)/inflow		**(18)**	(166)	92	**(74)**
Exchange differences		(38)	(196)	182	(14)
31 December 2018		**405**	2,651	(2,299)	**352**
Of which:					
Pension surpluses	11	–			(41)
Pension deficits	22	405			393

The defined benefit obligation accrued in Canada represents the majority for the Company. The breakdown below provides details of the Canadian plans for both the statement of financial position and the weighted average duration of the defined benefit obligation as at 31 December 2019 and 2018. The defined benefit obligation of any of the Group's defined benefit plans outside of Canada as at 31 December 2019 does not exceed $250 million (2018: $206 million).

23. Personnel costs and employee benefits continued

2019

US$ million	Canada	Other	**Total**
Post-retirement medical plans			
Present value of defined benefit obligation	443	69	**512**
of which: amounts owing to active members	140	13	153
of which: amounts owing to pensioners	303	56	359
Defined benefit pension plans			
Present value of defined benefit obligation	1,967	984	**2,951**
of which: amounts owing to active members	525	453	978
of which: amounts owing to non-active members	24	188	212
of which: amounts owing to pensioners	1,418	343	1,761
Fair value of plan assets	(1,882)	(665)	**(2,547)**
Net defined benefit liability at 31 December 2019	**85**	**319**	**404**
Of which:			
Pension surpluses	(40)	(2)	(42)
Pension deficits	125	321	446
Weighted average duration of defined benefit obligation – years	12	17	**14**

2018

US$ million	Canada	Other	**Total**
Post-retirement medical plans			
Present value of defined benefit obligation	378	27	**405**
of which: amounts owing to active members	118	2	120
of which: amounts owing to pensioners	260	25	285
Defined benefit pension plans			
Present value of defined benefit obligation	1,829	822	**2,651**
of which: amounts owing to active members	488	378	866
of which: amounts owing to non-active members	19	164	183
of which: amounts owing to pensioners	1,322	280	1,602
Fair value of plan assets	(1,745)	(554)	**(2,299)**
Net defined benefit liability at 31 December 2018	**84**	**268**	**352**
Of which:			
Pension surpluses	(40)	(1)	(41)
Pension deficits	124	269	393
Weighted average duration of defined benefit obligation – years	12	17	**14**

Estimated future benefit payments of the Canadian plans, which reflect expected future service but exclude plan expenses, up until 2029 are as follows:

US$ million	Post-retirement medical plans	Defined benefit pension plans	**Total**
2020	19	146	165
2021	19	105	124
2022	19	149	168
2023	20	102	122
2024	20	101	121
2025–2029	100	506	606
Total	**197**	**1,109**	**1,306**

23. Personnel costs and employee benefits continued

The plan assets consist of the following:

US$ million	**2019**	2018
Cash and short-term investments	34	38
Fixed income	1,085	1,060
Equities	960	839
Other	468	362
Total	**2,547**	**2,299**

All investments have been fair valued based on quoted market prices with the exception of securities of $2 million (2018: $2 million) included in "Other".

The fair value of plan assets includes none of Glencore's own financial instruments and no property occupied by or other assets used by Glencore. For many of the plans, representing a large portion of the global plan assets, asset-liability matching strategies are in place, where the fixed-income assets are invested broadly in alignment with the duration of the plan liabilities, and the proportion allocated to fixed-income assets is raised when the plan funding level increases. The asset mix for each plan reflects the nature, expected changes in, and size of the liabilities and the assessment of long-term economic conditions, market risk, expected investment returns as considered during a formal asset mix study, including sensitivity analysis and/or scenario analysis, conducted periodically for the plans.

Through its defined benefit plans, Glencore is exposed to a number of risks, the most significant of which are detailed below:

Asset volatility: The plan liabilities are calculated using a discount rate set with reference to corporate bond yields; if plan assets underperform this yield, this will create a deficit. The funded plans hold a significant proportion of equities, which are expected to outperform bonds in the long term while contributing volatility and risk in the short term. Glencore believes that due to the long-term nature of the plan liabilities, a level of continuing equity investment is an appropriate element of Glencore's long-term strategy to manage the plans efficiently.

Change in bond yields: A decrease in bond yields will increase plan liabilities, although this will be partially offset by an increase in the value of the plans' bond holdings.

Inflation risk: Some of the plans' benefit obligations are linked to inflation, and higher inflation will lead to higher liabilities, although, in most cases, caps on the level of inflationary increases are in place to protect the plan against extreme inflation.

Life expectancy: The majority of the plans' obligations are to provide benefits for the life of the member, so increases in life expectancy will result in an increase in the plans' liability.

Salary increases: Some of the plans' benefit obligations related to active members are linked to their salaries. Higher salary increases will therefore tend to lead to higher plan liabilities.

The principal weighted-average actuarial assumptions used were as follows:

	Post-retirement medical plans		Defined benefit pension plans	
	2019	2018	**2019**	2018
Discount rate	3.9%	4.0%	2.7%	3.5%
Future salary increases	–	–	2.6%	2.6%
Future pension increases	–	–	0.4%	0.3%
Ultimate medical cost trend rate	4.5%	4.2%	–	–

Mortality assumptions are based on the latest available standard mortality tables for the individual countries concerned. As at 31 December 2019, these tables imply expected future life expectancy, for employees aged 65, 16 to 24 years for males (2018: 16 to 24) and 20 to 25 years for females (2018: 20 to 25). The assumptions for each country are reviewed regularly and are adjusted where necessary to reflect changes in fund experience and actuarial recommendations.

23. Personnel costs and employee benefits continued

The sensitivity of the defined benefit obligation to changes in principal assumptions as at 31 December 2019 is set out below, assuming that all other assumptions are held constant and the effect of interrelationships is excluded.

US$ million	Increase/(decrease) in pension obligation Post-retirement medical plans	Defined benefit pension plans	Total
Discount rate			
Increase by 50 basis points	(36)	(177)	**(213)**
Decrease by 50 basis points	39	199	**238**
Rate of future salary increase			
Increase by 100 basis points	–	40	**40**
Decrease by 100 basis points	–	(38)	**(38)**
Rate of future pension benefit increase			
Increase by 100 basis points	–	50	**50**
Decrease by 100 basis points	–	(37)	**(37)**
Medical cost trend rate			
Increase by 100 basis points	77	–	**77**
Decrease by 100 basis points	(61)	–	**(61)**
Life expectancy			
Increase in longevity by one year	15	70	**85**

24. Accounts payable

US$ million	Notes	2019	2018
Financial liabilities at amortised cost			
Trade payables		7,099	7,569
Margin calls received[1]		310	753
Associated companies		1,501	824
Other payables and accrued liabilities		1,776	1,710
Financial liabilities at fair value through profit and loss			
Trade payables containing provisional pricing features	28	14,808	15,073
Non-financial instruments			
Advances settled in product		240	251
Other tax and related payables		459	304
Total		**26,193**	**26,484**

1 Includes $263 million (2018: $139 million) of cash collateral receipts under margin arrangements related to cross currency swaps held to hedge non-U.S. dollar denominated bonds.

Trade payables are obligations to pay for goods and services. Trade payables typically have maturities up to 90 days depending on the type of material and the geographic area in which the purchase transaction occurs and the agreed terms. The carrying value of trade payables approximates fair value.

Notes to the financial statements

continued

25. Acquisition and disposal of subsidiaries and other entities

2019 Acquisitions

In 2019, Glencore acquired a 75% controlling interest in Chevron South Africa Proprietary Limited and a 100% interest in Chevron Botswana Proprietary Limited (together "Astron Energy"), a 42.9% additional interest in Polymet Mining Corp ("Polymet") and increased its interest in Ulan and Hail Creek.

The net cash used in the acquisition of subsidiaries and the provisional fair value of assets acquired and liabilities assumed on the acquisition date are detailed below:

US$ million	Astron Energy	Polymet	Ulan	Hail Creek	Other	**Total**
Non-current assets						
Property, plant and equipment	1,013	420	134	40	16	1,623
Intangible assets	335	24	–	–	12	371
Advances and loans[1]	7	13	–	–	1	21
	1,355	457	134	40	29	**2,015**
Current assets						
Inventories	584	–	3	3	–	590
Accounts receivable[1]	294	2	8	3	–	307
Cash and cash equivalents	50	6	1	1	1	59
	928	8	12	7	1	**956**
Non-controlling interest	(260)	(111)	–	–	–	**(371)**
Non-current liabilities						
Borrowings	(151)	(1)	–	–	(2)	(154)
Deferred tax liabilities	(199)	–	–	–	(4)	(203)
Provisions including post-retirement benefits	(48)	(63)	(5)	(2)	–	(118)
	(398)	(64)	(5)	(2)	(6)	**(475)**
Current liabilities						
Borrowings	(130)	–	–	–	–	(130)
Accounts payable	(487)	(7)	(17)	(5)	(1)	(517)
Provisions	(3)	(4)	–	(1)	–	(8)
	(620)	(11)	(17)	(6)	(1)	**(655)**
Total fair value of net assets acquired	**1,005**	**279**	**124**	**39**	**23**	**1,470**
Less: cash and cash equivalents acquired	(50)	(6)	(1)	(1)	(1)	(59)
Less: amounts previously recognised as exchangeable loan	(1,005)	–	–	–	–	(1,005)
Less: amounts previously recognised as investments	–	(36)	–	–	(4)	(40)
Less: amounts previously recognised as non-current loan	–	(243)	–	–	–	(243)
Net cash (received)/used in acquisition of subsidiaries	**(50)**	**(6)**	**123**	**38**	**18**	**123**
Acquisition related costs	–	–	6	–	–	6

1 There is no material difference between the gross contractual amounts for loans and advances and accounts receivable and their fair value.

Astron Energy

On 6 October 2017, Glencore entered into an agreement with Off the Shelf Investments Fifty Six (RF) Proprietary Limited ("OTS") to acquire from OTS (i) a 75% stake in Chevron South Africa Proprietary Limited (Chevron SA) and certain related interests and (ii) the entire issued share capital of Chevron Botswana Proprietary Limited (together the "Astron Energy") following closing of OTS's exercise of its pre-emptive right to acquire Astron Energy from the Chevron group. OTS's acquisition from Chevron closed on 1 October 2018, at which time Glencore advanced $1,044 million to OTS under an exchangeable loan arrangement. On 8 April 2019, the loan was exchanged into the 75% stake in Chevron SA and the 100% stake in Chevron Botswana acquired by OTS. As Glencore holds the majority of the voting shares, providing it the ability to appoint a controlling number of directors to the board, Glencore is required to account for Astron Energy using the full consolidation method in accordance with IFRS 10.

The fair values are provisional and expected to be finalised within 12 months of the acquisition. It is expected that adjustments could be made to the allocation of value between intangible assets, plant and equipment, deferred taxes and provisions.

If the acquisition had taken place effective 1 January 2019, the operation would have contributed additional revenue of $1,914 million and additional attributable net loss of $1 million. From the date of acquisition, the operation contributed $3,888 million of revenue and $71 million of attributable net loss.

25. Acquisition and disposal of subsidiaries and other entities continued

Polymet

On 26 June 2019, Glencore concluded the acquisition (via a rights issue) of an additional 42.9% interest in Polymet Mining Corp ("Polymet"), a company in the early stages of developing the NorthMet polymetallic (copper, nickel and precious metals) deposit in Minnesota for a total consideration of $243 million. Polymet is listed on the Toronto and New York stock exchanges. As noted, the consideration was satisfied through Glencore's participation in Polymet's rights issue, in which the proceeds raised were used to repay loans previously extended to Polymet by Glencore. As such, Glencore did not commit any new funds to Polymet. Following the capital raise, Glencore's voting interest increased from 28.8% to 71.7%.

As Glencore holds the majority of the voting rights, providing it the ability to appoint a controlling number of directors to the board, Glencore is required to account for Polymet using the full consolidation method in accordance with IFRS 10.

Prior to acquisition, Glencore owned a 28.8% interest in Polymet which was accounted for as an associate. In accordance with IFRS 3: Business Combinations, this equity interest is required to be revalued, at the date of acquisition, to its fair value with any resulting gain or loss recognised in the statement of income. The fair value of the existing interest was determined to be $36 million, by reference to the Polymet share price on the date of acquisition and as a result, a loss of $38 million was recognised in loss on disposals and investments.

The fair values are provisional and expected to be finalised within 12 months of the acquisition. It is expected that adjustments could be made to the allocation of value between intangible assets, plant and equipment, deferred taxes and provisions.

If the acquisition had taken place effective 1 January 2019, the operation would have contributed additional revenue of $Nil and additional attributable net loss of $2 million. From the date of acquisition, the operation contributed $Nil of revenue and attributable net loss of $3 million.

Ulan/Hail Creek

In January 2019, Glencore completed the acquisition of an additional 10% of Ulan and 2.7% of Hail Creek for a net consideration of $124 million and $39 million respectively, increasing Glencore's interest in Ulan and Hail Creek to 100% and 84.7%, respectively.

Notes to the financial statements
continued

25. Acquisition and disposal of subsidiaries and other entities continued

2018 Acquisitions
In 2018, Glencore acquired a 49% interest in Hunter Valley operations coal mine in New South Wales ("HVO"), an 82% interest in Hail Creek coal mine as well as a 71% interest in the Valeria coal resource in Queensland ("Hail Creek"), a 78% interest in ALE Combustiveis ("Ale"), a Brazilian fuel distributor and other businesses, none of which are individually material. The net cash used in the acquisition of subsidiaries and the fair value of assets acquired and liabilities assumed on the acquisition date are detailed below:

US$ million	Ale provisional fair values as reported at 31 December 2018	Fair value adjustments to the provisional allocation in 2019	Total Ale fair values	HVO	Hail Creek	Other	Total
Non-current assets							
Property, plant and equipment	46	(5)	41	1,402	1,701	8	3,152
Intangible assets	426	(153)	273	–	–	1	274
Investments in associates and joint ventures	–	–	–	32	77	–	109
Advances and loans[1]	54	–	54	14	5	–	73
Deferred tax assets	–	14	14	–	–	–	14
	526	(144)	382	1,448	1,783	9	**3,622**
Current assets							
Inventories	90	7	97	50	68	–	215
Accounts receivable[1]	100	–	100	69	114	2	285
Cash and cash equivalents	90	–	90	11	23	1	125
	280	7	287	130	205	3	**625**
Non-controlling interest	(41)	–	(41)	–	–	–	**(41)**
Non-current liabilities							
Borrowings	(189)	–	(189)	–	–	–	(189)
Deferred income	–	–	–	(200)	–	–	(200)
Deferred tax liabilities	(140)	137	(3)	–	–	(2)	(5)
Provisions	(41)	–	(41)	(66)	(69)	–	(176)
	(370)	137	(233)	(266)	(69)	(2)	**(570)**
Current liabilities			–				
Borrowings	(74)	–	(74)	–	–	–	(74)
Accounts payable	(98)	–	(98)	(52)	(166)	–	(316)
Deferred income	–	–	–	(20)	–	–	(20)
Provisions	–	–	–	(9)	(2)	–	(11)
	(172)	–	(172)	(81)	(168)	–	**(421)**
Total fair value of net assets acquired	**223**	**–**	**223**	**1,231**	**1,751**	**10**	**3,215**
Less: cash and cash equivalents acquired	(90)	–	(90)	(11)	(23)	(1)	(125)
Less: deferred consideration	(82)	–	(82)	(82)	–	(4)	(168)
Net cash used in acquisition of subsidiaries	**51**	**–**	**51**	**1,138**	**1,728**	**5**	**2,922**
Acquisition related costs	–	–	–	59	83	–	142

1 There is no material difference between the gross contractual amounts for advances and loans and accounts receivable and their fair value.

ALE Combustiveis
On 31 August 2018, Glencore completed the acquisition of a 78% interest in ALE Combusitveis, a Brazilian fuel distributor, for a cash consideration of $141 million on closing and $82 million due over six years. The investment provides Glencore with a strong platform to participate in the expected significant domestic growth opportunities across the fuels sector in Brazil with the majority of the demand increase expected to be met by imports. As Glencore holds the majority of the voting shares, providing it the ability to appoint a controlling number of directors to the board, Glencore is required to account for ALE using the full consolidation method in accordance with IFRS 10.

The above fair value adjustments to the provisionally reported values primarily relate to the allocation of value between intangible asset and fixed asset classes and deferred taxes. The acquisition accounting for Ale has now been finalised.

If the acquisition had taken place effective 1 January 2018, the operation would have contributed additional revenue of $2,439 million and additional attributable net loss of $15 million for the year ended 31 December 2018. From the date of acquisition, the operation contributed $969 million of revenue and $2 million of attributable net loss for the year ended 31 December 2018.

25. Acquisition and disposal of subsidiaries and other entities continued

Hunter Valley operations

On 4 May 2018, Glencore completed the acquisition of a 49% interest in the HVO coal mine in New South Wales for a consideration of $1,231 million, comprising $1,149 million cash and $82 million of deferred consideration payable over 5 years, $61 million of which is contingent on future coal prices. Under the coal price contingent royalty arrangement, a production based royalty amount is due should actual prevailing prices be in excess of a royalty trigger price of $75/mt, commencing in September 2020 and lasting for a period of 10 years. The contingent portion of the deferred consideration is a level 3 fair value measurement, and was determined using forecasted production estimates and assumed actual coal prices higher than the royalty trigger price over the royalty period. Should production volumes increase/decrease by 10%, the contingent consideration due would increase/decrease by $6 million and for any given quarter should prevailing coal prices be lower than $75/mt (escalating by CPI), no amounts would be due under the price contingent royalty arrangement. HVO lies adjacent to numerous existing Glencore mines in the Hunter Valley and is expected to unlock significant mining and operating synergies. The investment is structured through an unincorporated joint venture with each party's exposure equating to its rights to the assets and obligations for the liabilities of HVO. As a joint operation, the 49% interest is accounted for by recognising the Group's share of HVO's assets, liabilities, revenue and expenses as prescribed by IFRS 11. In conjunction with the acquisition, $59 million of stamp duty and related costs were incurred. The acquisition accounting for HVO has now been finalised, with no adjustments to the previously reported provisional fair values.

If the acquisition had taken place effective 1 January 2018, the operation would have contributed additional revenue of $192 million and additional attributable net income of $29 million for the year ended 31 December 2018. From the date of acquisition, the operation contributed $611 million of revenue and $118 million of attributable net income for the year ended 31 December 2018.

Hail Creek coal mine

On 1 August 2018, Glencore completed the acquisition of an 82% interest in the Hail Creek coal mine and adjacent coal resources, as well as a 71% interest in the Valeria coal resource in central Queensland for a total cash consideration of $1,751 million. Hail Creek is a large-scale, long-life and low-cost mine producing two-thirds premium quality hard coking coal and one-third thermal coal for export. The investment is structured as an unincorporated joint venture with each party's exposure equating to its rights to the assets and obligations for the liabilities of Hail Creek. However, the key decision making powers do not require unanimous consent of the participants. As there is neither control nor joint control over the entire arrangement, Hail Creek is considered a deemed separate entity under IFRS 10 and is accounted for by recognising the Group's share of Hail Creek's assets, liabilities, revenue and expenses as prescribed by IFRS 10. In conjunction with the acquisition, $83 million of stamp duty and related costs were incurred. The acquisition accounting for Hail Creek has now been finalised, with no adjustments to the previously reported provisional fair values.

If the acquisition had taken place effective 1 January 2018, the operation would have contributed additional revenue of $639 million and additional attributable net income of $149 million for the year ended 31 December 2018. From the date of acquisition, the operation contributed $345 million of revenue and $95 million of attributable net income for the year ended 31 December 2018.

25. Acquisition and disposal of subsidiaries and other entities continued

2019 Disposals

In 2019, Glencore disposed of its controlling interest in Terminales Portuarios Chancay S.A.. The carrying value of the assets and liabilities over which control was lost and the net cash received from the disposal are detailed below:

US$ million	Terminales Portuarios Chancay	Other	**Total**
Non-current assets			
Property, plant and equipment	55	–	55
Intangible assets	33	–	33
Advances and loans	2	–	2
Deferred tax asset	1	–	1
	91	–	**91**
Current assets			
Accounts receivable	44	–	44
Cash and cash equivalents	1	–	1
	45	–	**45**
Current liabilities			
Accounts payable	(1)	(3)	(4)
	(1)	(3)	**(4)**
Carrying value of net assets disposed	**135**	**(3)**	**132**
Cash and cash equivalents received	–	(6)	(6)
Retained interest recognised as investment	(150)	–	(150)
Future consideration	(11)	(6)	(17)
Net gain on disposal	**(26)**	**(15)**	**(41)**
Cash and cash equivalents received	–	6	6
Less: cash and cash equivalents disposed	(1)	–	(1)
Net cash (used in)/received from disposal	**(1)**	**6**	**5**

Terminales Portuarios Chancay

In April 2019, Glencore disposed of a 60% interest in Terminales Portuarios Chancay S.A., a Peruvian port, for cash consideration of $11 million. Glencore is no longer able to unilaterally direct the key strategic, operating and capital decisions of Terminales Portuarios Chancay S.A. and was deemed to have disposed of its controlling interest at fair value. The difference to the net carrying value was recognised through the statement of income, with Glencore subsequently accounting for its remaining share using the equity method in accordance with IAS 28 (see note 10).

25. Acquisition and disposal of subsidiaries and other entities continued

2018 Disposals

In 2018, Glencore disposed of its controlling interest in Glencore Manganese France SAS, Glencore Manganese Norway AS and Tahmoor Coal Pty Ltd.

Mototolo

On 1 November 2018, Glencore disposed of its 40% interest of the Mototolo joint venture, a Platinum mine in South Africa, for a cash consideration of $68 million.

The carrying value of the assets and liabilities over which control was lost and the net cash received from these disposals are detailed below:

US$ million	Mototolo	Glencore Manganese and Tahmoor Coal	Others	**Total**
Non-current assets				
Property, plant and equipment	68	87	39	194
	68	87	39	**194**
Current assets				
Inventories	3	27	4	34
Accounts receivable	34	39	6	79
Cash and cash equivalents	7	32	3	42
	44	98	13	**155**
Non-controlling interest	(19)	–	(1)	**(20)**
Non-current liabilities				
Deferred tax liabilities	–	–	(3)	(3)
Provisions	(4)	(37)	(28)	(69)
	(4)	(37)	(31)	**(72)**
Current liabilities				
Accounts payable	(20)	(85)	(24)	(129)
Provisions	(4)	–	–	(4)
	(24)	(85)	(24)	**(133)**
Carrying value of net assets disposed	**65**	**63**	**(4)**	**124**
Cash and cash equivalents received	(68)	(48)	(14)	(130)
Intangible assets (offtake agreement)	–	(36)	–	(36)
Items recycled to the statement of income	197	14	7	218
Future consideration	(57)	–	–	(57)
Transaction costs	–	3	–	3
Net loss/(gain) on disposal	**137**	**(4)**	**(11)**	**122**
Cash and cash equivalents received	68	48	14	130
Less: cash and cash equivalents disposed	(7)	(32)	(3)	(42)
Net cash received from disposal	**61**	**16**	**11**	**88**

26. Financial and capital risk management

Financial risks arising in the normal course of business from Glencore's operations comprise market risk (including commodity price risk, interest rate risk and currency risk), credit risk (including performance risk) and liquidity risk. It is Glencore's policy and practice to identify and, where appropriate and practical, actively manage such risks (for management of "margin" risk within Glencore's extensive and diversified industrial portfolio, refer net present value at risk below) to support its objectives in managing its capital and future financial security and flexibility. Glencore's overall risk management programme focuses on the unpredictability of financial markets and seeks to protect its financial security and flexibility by using derivative financial instruments where possible to substantially hedge these financial risks. Glencore's finance and risk professionals, working in coordination with the commodity departments, monitor, manage and report regularly to senior management and the Board of Directors on the approach and effectiveness in managing financial risks along with the financial exposures facing the Group.

Glencore's objectives in managing its "capital attributable to equity holders" include preserving its overall financial health and strength for the benefit of all stakeholders, maintaining an optimal capital structure in order to provide a high degree of financial flexibility at an attractive cost of capital and safeguarding its ability to continue as a going concern, while generating sustainable long-term profitability. Central to meeting these objectives is maintaining an investment grade credit rating status. Glencore's current credit ratings are Baa1 (stable outlook) from Moody's and BBB+ (stable) from S&P.

Distribution policy and other capital management initiatives

Glencore's cash distribution policy comprises two components: (1) a fixed $1 billion component and (2) a variable element representing a minimum 25% of free cash flow generated by our industrial assets during the year. The actual variable distribution component (minimum 25% pay-out guidance) will reflect prevailing balance sheet position, market conditions and outlook and be confirmed annually in respect of prior period's cash flows. Distributions are expected to be formally declared by the Board annually (with the preliminary full-year results). Distributions, when declared, will be settled equally in May and September of the year they are declared in. In addition and acknowledging the cyclical nature of the industry, in periods of strong earnings and cash generation the Board, considering all relevant factors, could formally declare an additional distribution to be included with the distribution confirmed with respect to the prior year and/or initiate or continue share buy-back programmes. Notwithstanding that the distribution is declared and paid in U.S. dollars, shareholders will be able to elect to receive their distribution payments in Pounds Sterling, Euros or Swiss Francs based on the exchange rates in effect around the date of payment. Shareholders on the JSE will receive their distributions in South African Rand.

Commodity price risk

Glencore is exposed to price movements for the inventory it holds and the products it produces which are not held to meet priced forward contract obligations and forward priced purchase or sale contracts. Glencore manages a significant portion of this exposure through futures and options transactions on worldwide commodity exchanges or in over the counter (OTC) markets, to the extent available. Commodity price risk management activities are considered an integral part of Glencore's physical commodity marketing activities and the related assets and liabilities are included in other financial assets from and other financial liabilities to derivative counterparties, including clearing brokers and exchanges. Whilst it is Glencore's policy to substantially hedge its commodity price risks, there remains the possibility that the hedging instruments chosen may not always provide effective mitigation of the underlying price risk. The hedging instruments available to the marketing businesses may differ in specific characteristics to the risk exposure to be hedged, resulting in an ongoing and unavoidable basis risk exposure. Residual basis risk exposures represent a key focus point for Glencore's commodity department teams who actively engage in the management of such.

26. Financial and capital risk management continued

Value at risk

One of the tools used by Glencore to monitor and limit its primary market risk exposure, principally commodity price risk related to its physical marketing activities, is of a value at risk (VaR) computation. VaR is a risk measurement technique which estimates a threshold for potential loss that could occur on risk positions as a result of movements in risk factors over a specified time horizon, given a specific level of confidence and based on a specific price history. The VaR methodology is a statistically defined, probability-based approach that takes into account market volatilities, as well as risk diversification by recognising offsetting positions and correlations between commodities and markets. In this way, risks can be measured consistently across markets and commodities and risk measures can be aggregated to derive a single risk value.

Glencore uses a VaR approach based on Monte Carlo simulations computed at a 95% confidence level and utilising a weighted data history for a one-day time horizon. Glencore's Board has set an unchanged consolidated VaR limit (one day 95% confidence level) of $100 million representing less than 0.2% of total equity, which the Board reviews annually. There were no breaches of this limit during the year.

Position sheets are regularly distributed and monitored and daily Monte Carlo simulations are applied to the various business groups' net marketing positions to determine potential losses.

Market risk VaR (one-day 95% confidence level) ranges and year-end positions were as follows:

US$ million	**2019**	2018
Year-end position	18	33
Average during the year	27	34
High during the year	43	76
Low during the year	18	16

VaR does not purport to represent actual gains or losses in fair value in earnings to be incurred by Glencore, nor does Glencore claim that these VaR results are indicative of future market movements or representative of any actual impact on its future results. VaR should always be viewed in the context of its limitations; notably, the use of historical data as a proxy for estimating future events, market illiquidity risks and tail risks. Glencore recognises these limitations, and thus complements and continuously refines its VaR analysis by analysing forward looking stress scenarios, benchmarking against an alternative VaR computation based on historical simulations and back testing calculated VaR against the hypothetical portfolio returns arising in the next business day.

Glencore's VaR computation currently covers its business in the key base metals (including aluminium, nickel, zinc, copper and lead), coal, iron ore and oil/natural gas and assesses the open priced positions which are subject to price risk, including inventories of these commodities. Due to the lack of a liquid terminal market, Glencore does not include a VaR calculation for products such as alumina, molybdenum, cobalt, freight and some risk associated with metals' concentrates as it does not consider the nature of these markets to be suited to this type of analysis. Alternative measures are used to monitor exposures related to these products.

Net present value at risk

Glencore's future cash flows related to its forecast Industrial production activities are also exposed to commodity price movements. Glencore manages this exposure through a combination of portfolio diversification, occasional shorter-term hedging via futures and options transactions, insurance products and continuous internal monitoring, reporting and quantification of the underlying operations' estimated cash flows and valuations.

Interest rate risk

Glencore is exposed to various risks associated with the effects of fluctuations in the prevailing levels of market interest rates on its assets and liabilities and cash flows. Matching of assets and liabilities is utilised as the dominant method to hedge interest rate risks; other methods include the use of interest rate swaps and similar derivative instruments. Floating rate debt which is predominantly used to fund fast turning working capital (interest is internally charged on the funding of this working capital) is primarily based on US$ LIBOR plus an appropriate premium. Accordingly, prevailing market interest rates are continuously factored into transactional pricing and terms.

Assuming the amount of floating rate liabilities at the reporting period end were outstanding for the whole year, interest rates were 50 basis points higher/lower and all other variables held constant, Glencore's income and equity for the year ended 31 December 2019 would decrease/increase by $126 million (2018: $135 million).

Interest rate benchmark reform

The Group is closely monitoring the market and the output from the various industry working groups managing the transition to new benchmark interest rates. This includes announcements made by LIBOR regulators including the Bank of England regarding the transition away from GBP LIBOR to the Sterling Overnight Index Average Rate (SONIA) and the Federal Reserve Bank of New York regarding the transition away from USD LIBOR to the Secured Overnight Financing Rate (SOFR). In the UK, the Financial Conduct Authority has made clear that, at the end of 2021, it will no longer seek to persuade, or compel, banks to submit to LIBOR.

26. Financial and capital risk management continued

In response to the announcements, the Group is working to prepare and deliver on an action plan, encompassing treasury, legal, risk management, accounting and IT functions, to enable a smooth transition to alternative benchmark rates. The Group's existing USD LIBOR linked contracts do not include adequate and robust fall back provisions for a cessation of the referenced benchmark interest rate. Different working groups within the finance industry are working on fall back language for different instruments and different IBORs, which the Group is monitoring closely and will look to implement these when appropriate and can be practically implemented by the Group and its financial counterparties.

Currency risk

The U.S. dollar is the predominant functional currency of the Group. Currency risk is the risk of loss from movements in exchange rates related to transactions and balances in currencies other than the U.S. dollar. Such transactions include operating expenditure, capital expenditure and to a lesser extent purchases and sales in currencies other than the functional currency. Purchases or sales of commodities concluded in currencies other than the functional currency, apart from certain limited domestic sales at industrial operations which act as a hedge against local operating costs, are ordinarily economically hedged through forward exchange contracts. Consequently, foreign exchange movements against the U.S. dollar on recognised transactions would have an immaterial financial impact. Glencore enters into currency hedging transactions with leading financial institutions.

Glencore's debt related payments (both principal and interest) are primarily denominated in or swapped using hedging instruments into U.S. dollars. Glencore's operating expenses, being a small portion of its revenue base, are incurred in a mix of currencies of which the U.S. dollar, Swiss Franc, Pound Sterling, Canadian dollar, Australian dollar, Euro, Kazakhstan Tenge, Colombian Peso and South African Rand are the predominant currencies.

Glencore has issued Euro, Swiss Franc, Sterling and Yen denominated bonds (see note 20). Cross currency swaps were concluded to hedge the currency risk on the principal and related interest payments of these bonds. These contracts were designated as fair value or cash flow hedges of the associated foreign currency risks. The critical terms of these swap contracts and their corresponding hedged items are matched and the Group expects a highly effective hedging relationship with the swap contracts and the value of the corresponding hedged items to change systematically in opposite direction in response to movements in the underlying exchange rates. The corresponding fair value and notional amounts of these derivatives is as follows:

	Notional amounts		Average FX rates		Carrying amount Assets (Note 28)		Carrying amount Liabilities (Note 28)		Average maturity[1]
US$ million	**2019**	2018	**2019**	2018	**2019**	2018	**2019**	2018	
Cross currency swap agreements									
Cash flow hedges – currency risk									
Eurobonds	1,777	1,117	1.11	1.12	6	53	4	–	2024
Sterling bonds	1,783	2,906	1.79	1.77	–	–	454	785	2021
Australian dollar bonds	–	453	–	0.91	–	3	–	101	–
Swiss franc bonds	256	–	1.02	–	–	–	4	–	2025
Fair value hedges – currency and interest rate risk									
Eurobonds	6,664	6,100	1.24	1.26	128	153	513	435	2022
Yen bonds	81	81	0.01	0.01	10	10	–	–	2022
Sterling bonds	663	–	1.33	–	28	–	–	–	2026
Swiss franc bonds	956	1,148	1.04	1.04	–	–	2	28	2022
	12,180	11,805			172	219	977	1,349	
Interest rate swap agreements									
Fair value hedges – interest rate risk									
US$ bonds	5,670	5,584	–	–	235	11	1	62	2025
	17,850	**17,389**			**407**	**230**	**978**	**1,411**	

1 Refer to note 20 for details.

26. Financial and capital risk management continued

The gross liquidity risk relating to the above cross currency swaps entered into for the purposes of hedging foreign currency and interest rate risks arising from the Group's non-U.S. dollar denominated bonds is presented below. The amounts reflect the expected gross settlement of the U.S. dollar pay leg of these swaps. The inflows from the related foreign currency receive leg of these swaps are not presented in the below table, but would approximate the foreign currency equivalent of the US dollar pay leg. Counterparty settlement date risk related to these swaps is limited, as the Group has entered into margining arrangements for both the outflow and inflow legs of the swap.

US$ million	After 5 years	Due 3–5 years	Due 2–3 years	Due 1–2 years	Due 0–1 year	**Total**
2019	3,099	2,804	1,987	2,688	1,909	**12,487**
2018	1,809	3,722	2,650	1,896	1,738	**11,815**

The carrying amounts of the fair value hedged items are as follows:

	Carrying amount of the hedged item (Note 20)		Of which, accumulated amount of fair value hedge adjustments	
US$ million	**2019**	2018	**2019**	2018
Foreign exchange and interest rate risk				
Eurobonds	6,213	5,748	(154)	(143)
Yen bonds	92	91	–	–
Swiss franc bonds	957	1,122	(1)	(2)
Sterling bonds	672	–	(12)	–
US$ bonds	5,850	5,492	(213)	60
	13,784	**12,453**	**(380)**	**(85)**

Credit risk

Credit risk arises from the possibility that counterparties may not be able to settle obligations due to Glencore within their agreed payment terms. Financial assets which potentially expose Glencore to credit risk consist principally of cash and cash equivalents, receivables and advances, derivative instruments and non-current advances and loans. Glencore's credit management process includes the assessment, monitoring and reporting of counterparty exposure on a regular basis. Glencore's cash and cash equivalents are placed overnight with a diverse group of highly credit rated financial institutions. Margin calls paid are similarly held with credit rated financial institutions. Glencore determines these instruments to have low credit risk at the reporting date. Credit risk with respect to receivables and advances is mitigated by the large number of customers comprising Glencore's customer base, their diversity across various industries and geographical areas, as well as Glencore's policy to mitigate these risks through letters of credit, netting, collateral and insurance arrangements where appropriate. Additionally, it is Glencore's policy that transactions and activities in trade related financial instruments be concluded under master netting agreements or long form confirmations to enable offsetting of balances due to/from a common counterparty in the event of default by the counterparty. Glencore actively and continuously monitors the credit quality of its counterparties through internal reviews and a credit scoring process, which includes, where available, public credit ratings. Balances with counterparties not having a public investment grade or equivalent internal rating are typically enhanced to investment grade through the extensive use of credit enhancement products, such as letters of credit or insurance products. Glencore has a diverse customer base, with no customer representing more than 4.7% (2018: 3.9%) of its trade receivables (on a gross basis taking into account credit enhancements) or accounting for more than 3.5% of its revenues over the year ended 31 December 2019 (2018: 2.6%).

The maximum exposure to credit risk (including performance risk – see below), without considering netting agreements or without taking account of any collateral held or other credit enhancements, is equal to the carrying amount of Glencore's financial assets (see note 27) and physically-settled advances (see notes 11 and 13).

26. Financial and capital risk management continued

Performance risk
Performance risk (part of the broader credit risk subject matter, discussed above) is inherent in contracts, with agreements in the future, to physically purchase or sell commodities with fixed price attributes, and arises from the possibility that counterparties may not be willing or able to meet their future contractual physical sale or purchase obligations to/from Glencore. Glencore undertakes the assessment, monitoring and reporting of performance risk within its overall credit management process. Glencore's market breadth, diversified supplier and customer base as well as the standard pricing mechanism in the vast majority of Glencore's commodity portfolio which does not fix prices beyond three months, with the main exception being coal, where longer-term fixed price contracts are common, ensure that performance risk is adequately mitigated. The commodity industry has trended towards shorter term fixed price contract periods, in part to mitigate against such potential performance risk, but also due to the continuous development of transparent and liquid spot commodity markets, with their associated derivative products and indexes.

Liquidity risk
Liquidity risk is the risk that Glencore is unable to meet its payment obligations when due, or that it is unable, on an ongoing basis, to borrow funds in the market on an unsecured or secured basis at an acceptable price to fund actual or proposed commitments. Prudent liquidity risk management implies maintaining sufficient cash and cash equivalents and availability of adequate committed funding facilities. Glencore has set itself an internal minimum liquidity target to maintain at all times, including via available committed undrawn credit facilities of $3 billion (2018: $3 billion), which has purposely been substantially exceeded in recent years, accounting for the more volatile market backdrop. Glencore's credit profile, diversified funding sources and committed credit facilities, ensure that sufficient liquid funds are maintained to meet its liquidity requirements. As part of its liquidity management, Glencore closely monitors and plans for its future capital expenditure, working capital needs and proposed investments, as well as credit facility refinancing/extension requirements, well ahead of time (see notes 1, 11, 20, 21 and 24).

As at 31 December 2019, Glencore had available committed undrawn credit facilities and cash amounting to $10,141 million (2018: $10,163 million), refer to Other reconciliations section. The maturity profile of Glencore's financial liabilities based on the contractual terms is as follows:

2019

US$ million	After 5 years	Due 3–5 years	Due 2–3 years	Due 1–2 years	Due 0–1 year	**Total**
Borrowings excluding lease liabilities	8,294	6,343	4,000	9,272	7,492	35,401
Expected future interest payments	2,586	866	613	834	925	5,824
Lease liabilities under IFRS 16 – undiscounted	618	289	239	385	569	2,100
Accounts payable	–	–	–	–	26,193	26,193
Other financial liabilities	379	–	–	–	3,722	4,101
Total	**11,877**	**7,498**	**4,852**	**10,491**	**38,901**	**73,619**
Current assets					41,838	41,838

2018

US$ million	After 5 years	Due 3–5 years	Due 2–3 years	Due 1–2 years	Due 0–1 year	**Total**
Borrowings excluding finance lease obligations	7,104	7,134	3,561	8,348	8,460	34,607
Expected future interest payments	2,651	842	621	779	828	5,721
Finance lease obligations under IAS 17 – undiscounted	174	43	83	77	134	511
Accounts payable	–	–	–	–	26,484	26,484
Other financial liabilities	529	–	–	–	3,243	3,772
Total	**10,458**	**8,019**	**4,265**	**9,204**	**39,149**	**71,095**
Current assets					44,268	44,268

27. Financial instruments

Fair value of financial instruments

The following tables present the carrying values and fair values of Glencore's financial instruments. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction in the principal (most advantageous) market at the measurement date under current market conditions. Where available, market values have been used to determine fair values. When market values are not available, fair values have been calculated by discounting expected cash flows at prevailing market interest and exchange rates. The estimated fair values have been determined using market information and appropriate valuation methodologies, but are not necessarily indicative of the amounts that Glencore could realise in the normal course of business.

The financial assets and liabilities are presented by class in the tables below at their carrying values, which generally approximate the fair values with the exception of $37,043 million (2018: $34,994 million) of borrowings, the fair value of which at 31 December 2019 was $37,670 million (2018: $34,863 million) based on observable market prices applied to the borrowing portfolio (a Level 2 fair value measurement).

2019 US$ million	Amortised cost	FVTPL[1]	FVTOCI[2]	**Total**
Assets				
Other investments[3]	–	97	2,290	2,387
Non-current other financial assets (see note 28)	–	25	–	25
Advances and loans	952	116	–	1,068
Accounts receivable	6,691	6,540	–	13,231
Other financial assets (see note 28)	–	2,381	–	2,381
Cash and cash equivalents	1,899	–	–	1,899
Total financial assets	**9,542**	**9,159**	**2,290**	**20,991**
Liabilities				
Borrowings	37,043	–	–	37,043
Non-current other financial liabilities (see note 28)	98	281	–	379
Accounts payable	10,686	14,808	–	25,494
Other financial liabilities (see note 28)	–	3,722	–	3,722
Total financial liabilities	**47,827**	**18,811**	**–**	**66,638**

1 FVTPL – Fair value through profit and loss.
2 FVTOCI – Fair value through other comprehensive income.
3 Other investments of $2,345 million are classified as Level 1 measured using quoted market prices with the remaining balance of $42 million being investments in private companies, classified as Level 2 measured using discounted cash flow models.

2018 US$ million	Amortised cost	FVTPL[1]	FVTOCI[2]	**Total**
Assets				
Other investments[3]	–	67	2,000	2,067
Non-current other financial assets (see note 28)	–	51	–	51
Advances and loans	771	155	–	926
Accounts receivable	6,840	7,515	–	14,355
Other financial assets (see note 28)	–	3,482	–	3,482
Cash and cash equivalents	2,046	–	–	2,046
Total financial assets	**9,657**	**11,270**	**2,000**	**22,927**
Liabilities				
Borrowings	34,994	–	–	34,994
Non-current other financial liabilities (see note 28)	189	340	–	529
Accounts payable	10,856	15,073	–	25,929
Other financial liabilities (see note 28)	–	3,243	–	3,243
Total financial liabilities	**46,039**	**18,656**	**–**	**64,695**

1 FVTPL – Fair value through profit and loss.
2 FVTOCI – Fair value through other comprehensive income.
3 Other investments of $1,979 million are classified as Level 1 measured using quoted market prices with the remaining balance of $88 million being investments in private companies, classified as Level 2 measured using discounted cash flow models.

27. Financial instruments continued

Offsetting of financial assets and liabilities

In accordance with IAS 32 the Group reports financial assets and liabilities on a net basis in the consolidated statement of financial position only if there is a legally enforceable right to set off the recognised amounts and there is intention to settle on a net basis, or to realise the asset and settle the liability simultaneously. The financial assets and liabilities subject to offsetting, enforceable master netting and similar agreements as at 31 December 2019 and 2018 were as follows:

2019	Amounts eligible for set off under netting agreements			Related amounts not set off under netting agreements				
US$ million	Gross amount	Amounts offset	**Net amount**	Financial instruments	Financial collateral	Net amount	**Amounts not subject to netting agreements**	**Total as presented in the consolidated statement of financial position**
Derivative assets[1]	7,334	(6,190)	**1,144**	(365)	(275)	504	**1,237**	**2,381**
Derivative liabilities[1]	(7,959)	6,190	**(1,769)**	365	1,135	(269)	**(1,953)**	**(3,722)**

1 Presented within current other financial assets and current other financial liabilities.

2018	Amounts eligible for set off under netting agreements			Related amounts not set off under netting agreements				
US$ million	Gross amount	Amounts offset	**Net amount**	Financial instruments	Financial collateral	Net amount	**Amounts not subject to netting agreements**	**Total as presented in the consolidated statement of financial position**
Derivative assets[1]	17,135	(14,823)	**2,312**	(341)	(719)	1,253	**1,170**	**3,482**
Derivative liabilities[1]	(16,577)	14,823	**(1,754)**	341	914	(499)	**(1,489)**	**(3,243)**

1 Presented within current other financial assets and current other financial liabilities.

For the financial assets and liabilities subject to enforceable master netting or similar arrangements above, each agreement between the Group and the counterparty allows for net settlement of the relevant financial assets and liabilities when both elect to settle on a net basis. In the absence of such an election, financial assets and liabilities may be settled on a gross basis, however, each party to the master netting or similar agreement will have the option to settle all such amounts on a net basis in the event of default of the other party. Per the terms of each agreement, an event of default includes failure by a party to make payment when due, failure by a party to perform any obligation required by the agreement (other than payment) if such failure is not remedied within periods of 30 to 60 days after notice of such failure is given to the party or bankruptcy.

28. Fair value measurements

Fair values are primarily determined using quoted market prices or standard pricing models using observable market inputs where available and are presented to reflect the expected gross future cash in/outflows. Glencore classifies the fair values of its financial instruments into a three level hierarchy based on the degree of the source and observability of the inputs that are used to derive the fair value of the financial asset or liability as follows:

Level 1 Inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that Glencore can assess at the measurement date, or

Level 2 Inputs other than quoted inputs included in Level 1 that are observable for the assets or liabilities, either directly or indirectly, or

Level 3 Unobservable inputs for the assets or liabilities, requiring Glencore to make market-based assumptions.

Level 1 classifications primarily include futures with a tenor of less than one year and options that are exchange traded, whereas Level 2 classifications primarily include futures with a tenor greater than one year, over the counter options, swaps and physical forward transactions which derive their fair value primarily from exchange quotes and readily observable broker quotes. Level 3 classifications primarily include physical forward transactions which derive their fair value predominantly from models that use broker quotes and applicable market-based estimates surrounding location, quality and credit differentials and financial liabilities linked to the fair value of certain mining operations. In circumstances where Glencore cannot verify fair value with observable market inputs (Level 3 fair values), it is possible that a different valuation model could produce a materially different estimate of fair value.

28. Fair value measurements continued

It is Glencore's policy that transactions and activities in trade related financial instruments be concluded under master netting agreements or long form confirmations to enable balances due to/from a common counterparty to be offset in the event of default, insolvency or bankruptcy by the counterparty.

The following tables show the fair values of the derivative financial instruments including trade related financial and physical forward purchase and sale commitments by type of contract and non-current other financial liabilities as at 31 December 2019 and 2018. Other assets and liabilities which are measured at fair value on a recurring basis are marketing inventories, other investments, cash and cash equivalents. There are no non-recurring fair value measurements.

Financial assets

2019

US$ million	Level 1	Level 2	Level 3	**Total**
Accounts receivable	–	6,540	–	**6,540**
Other financial assets				
Commodity related contracts				
Futures	377	80	–	**457**
Options	14	63	–	**77**
Swaps	80	122	–	**202**
Physical forwards	–	898	317	**1,215**
Financial contracts				
Cross currency swaps	–	175	–	**175**
Foreign currency and interest rate contracts	–	255	–	**255**
Current other financial assets	**471**	**1,593**	**317**	**2,381**
Non-current other financial assets				
Purchased call options over Glencore shares[1]	–	25	–	**25**
Non-current other financial assets	**–**	**25**	**–**	**25**
Total	**471**	**8,158**	**317**	**8,946**

1 Call options over the Company's shares in relation to conversion rights of the $500 million non-dilutive convertible bond, due in 2025. See note 20.

2018

US$ million	Level 1	Level 2	Level 3	**Total**
Accounts receivable	–	6,471	–	**6,471**
Other financial assets				
Commodity related contracts				
Futures	1,353	79	–	**1,432**
Options	15	–	–	**15**
Swaps	149	483	–	**632**
Physical forwards	–	598	552	**1,150**
Financial contracts				
Cross currency swaps	–	219	–	**219**
Foreign currency and interest rate contracts	–	34	–	**34**
Current other financial assets	**1,517**	**1,413**	**552**	**3,482**
Non-current other financial assets				
Purchased call options over Glencore shares[1]	–	51	–	**51**
Non-current other financial assets	**–**	**51**	**–**	**51**
Total	**1,517**	**7,935**	**552**	**10,004**

1 Call options over the Company's shares in relation to conversion rights of the $500 million non-dilutive convertible bond, due in 2025. See note 20.

28. Fair value measurements continued

Financial liabilities

2019

US$ million	Level 1	Level 2	Level 3	**Total**
Accounts payable	–	14,808	–	**14,808**
Other financial liabilities				
Commodity related contracts				
Futures	1,141	151	–	**1,292**
Options	85	11	–	**96**
Swaps	90	179	–	**269**
Physical forwards	–	852	208	**1,060**
Financial contracts				
Cross currency swaps	–	979	–	**979**
Foreign currency and interest rate contracts	–	26	–	**26**
Current other financial liabilities	**1,316**	**2,198**	**208**	**3,722**
Non-current other financial liabilities				
Non-discretionary dividend obligation[1]	–	–	161	**161**
Option over non-controlling interest in Ale[2]	–	–	36	**36**
Deferred consideration	–	–	59	**59**
Embedded call options over Glencore shares[3]	–	25	–	**25**
Non-current other financial liabilities	**–**	**25**	**256**	**281**
Total	**1,316**	**17,031**	**464**	**18,811**

2018

US$ million	Level 1	Level 2	Level 3	**Total**
Accounts payable	–	15,073	–	**15,073**
Other financial liabilities				
Commodity related contracts				
Futures	318	72	–	**390**
Options	93	–	3	**96**
Swaps	45	432	–	**477**
Physical forwards	–	615	247	**862**
Financial contracts				
Cross currency swaps	–	1,349	–	**1,349**
Foreign currency and interest rate contracts	–	69	–	**69**
Current other financial liabilities	**456**	**2,537**	**250**	**3,243**
Non-current other financial liabilities				
Non-discretionary dividend obligation[1]	–	–	188	**188**
Option over non-controlling interest in Ale[2]	–	–	40	**40**
Deferred consideration[2]	–	–	61	**61**
Embedded call options over Glencore shares[3]	–	51	–	**51**
Non-current other financial liabilities	**–**	**51**	**289**	**340**
Total	**456**	**17,661**	**539**	**18,656**

1 A ZAR denominated derivative liability payable to ARM Coal, a partner in one of the Group's principal coal joint operations based in South Africa. The liability arises from ARM Coal's rights as an investor to a share of agreed free cash flows from certain coal operations in South Africa and is valued based on those cash flows using a risk-adjusted discount rate. The derivative liability is settled over the life of those operations (modelled mine life of 25 years as at 31 December 2019) and has no fixed repayment date and is not cancellable within 12 months.

2 See note 25.

3 Embedded call option bifurcated from the 2025 convertible bond. See note 20.

28. Fair value measurements continued

The following table shows the net changes in fair value of Level 3 other financial assets and other financial liabilities:

US$ million	Physical forwards	Options	Other	**Total Level 3**
1 January 2019	305	(3)	(289)	**13**
Total gain/(loss) recognised in cost of goods sold	(105)	–	–	**(105)**
Non-discretionary dividend obligation	–	–	27	**27**
Option over non-controlling interest	–	–	4	**4**
Deferred consideration	–	–	2	**2**
Realised	(91)	3	–	**(88)**
31 December 2019	**109**	**–**	**(256)**	**(147)**
1 January 2018	172	(8)	(513)	**(349)**
Total gain/(loss) recognised in cost of goods sold	207	(3)	–	**204**
Non-discretionary dividend obligation	–	–	325	**325**
Option over non-controlling interest	–	–	(40)	**(40)**
Deferred consideration	–	–	(61)	**(61)**
Realised	(74)	8	–	**(66)**
31 December 2018	**305**	**(3)**	**(289)**	**13**

During the year, no amounts were transferred between Level 1 and Level 2 of the fair value hierarchy and no amounts were transferred into or out of Level 3 of the fair value hierarchy for either other financial assets or other financial liabilities.

Some of the Group's financial assets and financial liabilities are measured at fair value at the end of each reporting period. The following table provides information about how the fair values of these financial assets and financial liabilities are determined, in particular, the valuation techniques and inputs used.

28. Fair value measurements continued

Fair value of financial assets/financial liabilities

US$ million			2019	2018
Futures – Level 1		Assets	**377**	1,353
		Liabilities	**(1,141)**	(318)
Valuation techniques and key inputs:	Quoted bid prices in an active market			
Significant unobservable inputs:	None			
Futures – Level 2		Assets	**80**	79
		Liabilities	**(151)**	(72)
Valuation techniques and key inputs:	Discounted cash flow model Inputs include observable quoted prices sourced from exchanges or traded reference indices in active markets for identical assets or liabilities. Prices are adjusted by a discount rate which captures the time value of money and counterparty credit considerations, as required.			
Significant unobservable inputs:	None			
Options – Level 1		Assets	**14**	15
		Liabilities	**(85)**	(93)
Valuation techniques and key inputs:	Quoted bid prices in an active market			
Significant unobservable inputs:	None			
Options – Level 2		Assets	**63**	–
		Liabilities	**(11)**	–
Valuation techniques and key inputs:	Discounted cash flow model Inputs include observable quoted prices sourced from exchanges or traded reference indices in active markets for identical assets or liabilities. Prices are adjusted by a discount rate which captures the time value of money and counterparty credit considerations, as required.			
Significant unobservable inputs:	None			
Options – Level 3		Assets	**–**	–
		Liabilities	**–**	(3)
Valuation techniques and key inputs:	Standard option pricing model			
Significant unobservable inputs:	Prices are adjusted by volatility differentials. This significant unobservable input generally represents 2%–20% of the overall value of the instruments. A change to a reasonably possible alternative assumption would not result in a material change in the underlying value.			
Swaps – Level 1		Assets	**80**	149
		Liabilities	**(90)**	(45)
Valuation techniques and key inputs:	Quoted bid prices in an active market			
Significant unobservable inputs:	None			
Swaps – Level 2		Assets	**122**	483
		Liabilities	**(179)**	(432)
Valuation techniques and key inputs:	Discounted cash flow model Inputs include observable quoted prices sourced from exchanges or traded reference indices in active markets for identical assets or liabilities. Prices are adjusted by a discount rate which captures the time value of money and counterparty credit considerations, as required.			
Significant unobservable inputs:	None			

28. Fair value measurements continued

US$ million			2019	2018
Physical Forwards – Level 2		Assets	**898**	598
		Liabilities	**(852)**	(615)
Valuation techniques and key inputs:	Discounted cash flow model Inputs include observable quoted prices sourced from exchanges or traded reference indices in active markets for identical assets or liabilities. Prices are adjusted by a discount rate which captures the time value of money, and counterparty credit considerations, such as history of non-performance, collateral held and current market developments, as required.			
Significant unobservable inputs:	None			
Physical Forwards – Level 3		Assets	**317**	552
		Liabilities	**(208)**	(247)
Valuation techniques and key inputs:	Discounted cash flow model			
Significant unobservable inputs:	Valuation of the Group’s commodity physical forward contracts categorised within this level is based on observable market prices that are adjusted by unobservable differentials, as required, including: – Quality; – Geographic location; – Local supply & demand; – Customer requirements; and – Counterparty credit considerations. These significant unobservable inputs generally represent 2%–30% of the overall value of the instruments. The valuation prices are applied consistently to value physical forward sale and purchase contracts, and changing a particular input to reasonably possible alternative assumptions does not result in a material change in the underlying value of the portfolio.			
Cross currency swaps – Level 2		Assets	**175**	219
		Liabilities	**(979)**	(1,349)
Valuation techniques and key inputs:	Discounted cash flow model Inputs include observable quoted prices sourced from exchanges or traded reference indices in active markets for identical assets or liabilities. Prices are adjusted by a discount rate which captures the time value of money and counterparty credit considerations, as required.			
Significant unobservable inputs:	None			
Foreign currency and interest rate contracts – Level 2		Assets	**255**	34
		Liabilities	**(26)**	(69)
Valuation techniques and key inputs:	Discounted cash flow model Inputs include observable quoted prices sourced from exchanges or traded reference indices in active markets for identical assets or liabilities. Prices are adjusted by a discount rate which captures the time value of money and counterparty credit considerations, as required.			
Significant unobservable inputs:	None			
Call options over Glencore shares – Level 2		Assets	**25**	51
		Liabilities	**(25)**	(51)
Valuation techniques and key inputs:	Option pricing model – Current price of Glencore shares; – Strike price; – Maturity date of the underlying convertible debt security; – Risk-free rate; and – Volatility.			
Significant unobservable inputs:	None			

28. Fair value measurements continued

US$ million			2019	2018
Accounts receivable and payable – Level 2		Assets	**6,540**	6,471
		Liabilities	**(14,808)**	(15,073)
Comprised of trade receivables/payables containing an embedded commodity derivative, which are designated and measured at fair value through profit and loss until final settlement.				
Valuation techniques and key inputs:	Discounted cash flow model Inputs include observable quoted commodity prices sourced from exchanges or traded reference indices in active markets for identical assets or liabilities. Prices are adjusted by a discount rate which captures the time value of money and counterparty credit considerations, as required.			
Significant unobservable inputs:	None			
Non-discretionary dividend obligation – Level 3		Assets	**–**	–
		Liabilities	**(161)**	(188)
Valuation techniques:	Discounted cash flow model			
Significant observable inputs:	– Forecast commodity prices; – Discount rates using weighted average cost of capital methodology; – Production models; – Operating costs; and – Capital expenditures. The resultant liability is essentially a discounted cash flow valuation of the underlying mining operation. Increases/decreases in forecast commodity prices will result in an increase/decrease to the value of the liability though this will be partially offset by associated increases/decreases in the assumed production levels, operating costs and capital expenditures, which are inherently linked to forecast commodity prices. The valuation remains sensitive to price and a 10% increase/decrease in commodity price assumptions would result in an $109 million adjustment to the current carrying value.			
Option over non-controlling interest in Ale – Level 3		Assets	**–**	–
		Liabilities	**(36)**	(40)
Valuation techniques and key inputs:	Discounted cash flow model			
Significant unobservable inputs:	The resultant liability is the value of the remaining minority stake in the subsidiary, measured as the higher value of the acquisition date valuation of the shares, and a discounted future earnings based valuation. The valuation is additionally sensitive to movement in the spot exchange rates between the Brazilian Real and US Dollar.			

29. Auditor's remuneration

US$ million	2019	2018
Remuneration in respect of the audit of Glencore's consolidated financial statements	3	3
Other audit fees, primarily in respect of audits of accounts of subsidiaries	18	18
Audit-related assurance services[1]	3	3
Total audit and related assurance fees	**24**	**24**
Taxation compliance services	2	2
Other taxation advisory services	2	2
Other assurance services	2	2
Total non-audit fees	**6**	**6**
Total professional fees	**30**	**30**

1 Audit-related assurance services primarily related to interim reviews of the Group's half-year accounts and quarterly accounts of the Group's publicly listed subsidiaries.

30. Future commitments

Capital expenditure for the acquisition of property, plant and equipment is generally funded through the cash flow generated by the respective industrial entities. As at 31 December 2019, $1,240 million (2018: $1,321 million), of which 89% (2018: 88%) relates to expenditure to be incurred over the next year, was contractually committed for the acquisition of property, plant and equipment.

Certain of Glencore's exploration tenements and licences require it to spend a minimum amount per year on development activities, a significant portion of which would have been incurred in the ordinary course of operations. As at 31 December 2019, $126 million (2018: $86 million) of such development expenditures are to be incurred, of which 37% (2018: 20%) are for commitments to be settled over the next year.

As part of Glencore's ordinary sourcing and procurement of physical commodities and other ordinary marketing obligations, the selling party may request that a financial institution act as either a) the paying party upon the delivery of product and qualifying documents through the issuance of a letter of credit or b) the guarantor by way of issuing a bank guarantee accepting responsibility for Glencore's contractual obligations. Similarly, Glencore is required to post rehabilitation and pension guarantees in respect of some of these future, primarily industrial, long-term obligations. As at 31 December 2019, $9,628 million (2018: $10,842 million) of procurement and $3,953 million (2018: $3,692 million) of rehabilitation and pension commitments have been issued on behalf of Glencore, which will generally be settled simultaneously with the payment for such commodity and rehabilitation and pension obligations.

Astron related commitments

As part of the regulatory approval process pertaining to the acquisition of a 75% shareholding in Astron Energy, Glencore and Astron Energy entered into certain commitments (subject to variation for good cause) with the South Africa Competition Tribunal and the South African Economic Development Department. These commitments include investment expenditure of up to ZAR 6.5 billion ($467 million) over the period to 2024 so as to debottleneck and improve the performance of the Cape Town oil refinery, contribute to the rebranding of certain retail sites and establish a development fund to support small and black-owned businesses in Astron Energy's value chain. In addition, Glencore has agreed to increase the level of BEE shareholding in Astron Energy from 25% to 35% in tranches up to 2026 which will include a minimum additional 3% held by qualifying employee stock ownership plans in 2021.

Acquisition of land by Katanga

On 19 December 2019, Kamoto Copper Company ("KCC") entered into an agreement with La Générale des Carrières et des Mines ("Gécamines"), Katanga Mining Limited's 25% joint venture partner in KCC, to acquire from Gécamines a comprehensive land package covering areas adjacent to KCC's existing mining concessions for $250 million. The land includes multiple blocks for construction of a new long-term tailings facility and the possible exploitation of additional resources that will enhance KCC's ability to more efficiently operate its mines, facilities and other key infrastructure requirements. The acquisition is expected to close during the course of 2020.

31. Contingent liabilities

The amount of corporate guarantees in favour of third parties as at 31 December 2019 was $Nil (2018: $Nil). Also see note 10. The Group is subject to various legal and regulatory proceedings as detailed below. These contingent liabilities are reviewed on a regular basis and where appropriate an estimate is made of the potential financial impact on the Group. As at 31 December 2019 and 2018, it was not feasible to make such an assessment.

Legal and regulatory proceedings

The Group is subject to a number of investigations by regulatory and enforcement authorities

- The United States Department of Justice is investigating the Group with respect to compliance with the Foreign Corrupt Practices Act and United States money laundering statutes related to the Group's business in certain overseas jurisdictions, from 2007.
- The United States Commodity Futures Trading Commission ("CFTC") is investigating whether Glencore and its subsidiaries may have violated certain provisions of the Commodity Exchange Act and/or CFTC Regulations including through corrupt practices in connection with commodities trading.
- The United Kingdom Serious Fraud Office is investigating the Group in respect of suspicions of bribery in the conduct of business of the Group.
- The Brazilian authorities are investigating the Group in relation to "Operation car wash", which relates to bribery allegations concerning Petrobras.

The Group is named in a securities class action suit in the United States District Court of New Jersey in connection with the various investigations.

The Group has engaged external legal counsel and forensic experts to assist the Group in responding to the various investigations and to perform additional investigations at the request of the Investigations Committee covering various aspects of the Group's business.

The timing and amount of any financial obligations (such as fines, penalties or damages, which could be material) or other consequences, including external costs arising from any of the various investigations and the class action suit are not possible to predict and estimate at the end of the reporting period.

Other claims and unresolved disputes that are pending against Glencore, along with the timing of resolution and potential outcome (including any future financial obligations), are not possible to predict and estimate.

As no present obligation exists at 31 December 2019, the recognition criteria of *IAS 37 Provisions, Contingent Liabilities and Contingent Assets* have not been met. Consequently, no liability has been recognised in relation to these matters in the consolidated statement of financial position at the end of the reporting period.

Environmental contingencies

Glencore's operations are subject to various environmental laws and regulations. Glencore is not aware of any material non-compliance with those laws and regulations. Glencore accrues for environmental contingencies when such contingencies are probable and reasonably estimable. Such accruals are adjusted as new information develops or circumstances change. Recoveries of environmental remediation costs from insurance companies and other parties are recorded as assets when the recoveries are virtually certain. At this time, Glencore is unaware of any material environmental incidents at its locations. Any potential liability arising from environmental incidents in the ordinary course of the Group's business would not usually be expected to have a material adverse effect on its consolidated income, financial position or cash flows.

32. Related party transactions

In the normal course of business, Glencore enters into various arm's length transactions with related parties, including fixed price commitments to sell and to purchase commodities, forward sale and purchase contracts, agency agreements and management service agreements. Outstanding balances at period end are unsecured and settlement occurs in cash (see notes 11, 13 and 24). There have been no guarantees provided or received for any related party receivables or payables.

All transactions between Glencore and its subsidiaries are eliminated on consolidation along with any unrealised profits and losses between its subsidiaries, associates and joint ventures. In 2019, sales and purchases with associates and joint ventures amounted to $3,727 million (2018: $1,690 million) and $4,923 million (2018: $4,211 million) respectively.

Remuneration of key management personnel

Glencore's key management personnel are the members of the Board of Directors, CEO, CFO and other senior management. The remuneration of Directors and other members of key management personnel recognised in the consolidated statement of income including salaries and other current employee benefits amounted to $18 million (2018: $16 million). There were no other long-term benefits or share-based payments to key management personnel (2018: $Nil). Further details on remuneration of Directors are set out in the Directors' remuneration report on page 110.

33. Principal subsidiaries with material non-controlling interests

Non-controlling interest is comprised of the following:

US$ million	2019	2018
Volcan	1,217	1,608
Kazzinc	1,298	1,356
Koniambo	(3,607)	(3,177)
Katanga (see KML and KCC debt restructuring notes below)	159	11
Other[1]	(105)	(153)
Total	**(1,038)**	**(355)**

1 Other comprises various subsidiaries in which no individual balance attributable to non-controlling interests is material.

2019 KML Debt Restructuring

On 19 December 2019, Katanga Mining Limited ("KML"), the entity publically listed on the Toronto Stock Exchange which in turn owns a 75% interest in KCC (see below) completed a $5.8 billion (Canadian $7,678 million) rights offering fully underwritten by Glencore. The proceeds raised under the rights offering were used to repay loans extended to KML by Glencore, such that, Glencore did not commit any new funds to KML. Following the capital raise, Glencore's voting interest increased from 86.3% to 99.5%.

Under IFRS 10, changes in a parent's ownership interests in a subsidiary that do not result in the parent losing control of the subsidiary are equity transactions (i.e. transactions with owners in their capacity as owners) whereby the carrying amounts of the controlling and non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiary. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognised directly in equity and attributed to the owners of the parent. As a result of the essentially 'debt for equity' conversion, an amount of $378 million was recognised directly in 'other equity reserves' (see note 16).

2018 KCC Debt Restructuring

Kamoto Copper Company ("KCC"), the 75% owned Katanga (in turn then 86% held by Glencore) group entity carrying out mining activities in the DRC, had a significant net deficit balance sheet position that was required to be recapitalised under DRC law by 31 December 2017. Notwithstanding the various discussions with KCC's state-owned minority partner, La Générale des Carrières et des Mines ("Gécamines") in this regard, in April 2018, Gécamines commenced legal proceedings in the DRC to dissolve KCC, following KCC's failure to address its capital deficiency.

In June 2018, an agreement was reached with Gécamines to regularise the capital deficiency by converting $5.6 billion of existing intercompany debt owed by KCC to Katanga Mining Limited ("KML") Group (eliminated on consolidation) into equity. To ensure Gécamines' 25% interest was not diluted (contractually required), $1.4 billion (25%) of the total debt converted to equity was effectively transferred from KML to Gécamines.

Under IFRS 10, changes in a parent's ownership interest in a subsidiary that do not result in the parent losing control of the subsidiary are equity transactions (i.e. transactions with owners in their capacity as owners) whereby the carrying amounts of the controlling and non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiary. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognised directly in equity and attributed to the owners of the parent. As a result of the debt for equity conversion / transaction, the transferred portion of the converted debt resulted in a $1,207 million loss being recognised directly in 'other equity reserves', offset by a gain of an equal amount recognised in the 'non-controlling interests' equity reserve account.

In addition, it was agreed to:

- pay Gécamines $150 million to settle various historical commercial disputes;
- fund, on behalf of Gécamines, $41 million of outstanding unpaid invoices for contractors in charge of an earlier replacement reserves program; and
- waive KCC's right to $57 million of exploration and drilling expenditures incurred on behalf of Gécamines.

These amounts, totalling $248 million, have been expensed in the consolidated financial statements.

Notes to the financial statements
continued

33. Principal subsidiaries with material non-controlling interests continued

Summarised financial information in respect of Glencore's subsidiaries that have material non-controlling interest as at 31 December 2019, reflecting 100% of the underlying subsidiary's relevant figures, is set out below.

US$ million	Kazzinc	Koniambo	Katanga	Volcan
31 December 2019				
Non-current assets	4,229	1,648	5,340	4,230
Current assets	1,133	369	1,261	255
Total assets	**5,362**	**2,017**	**6,601**	**4,485**
Non-current liabilities	785	11,857	1,674	1,778
Current liabilities	287	106	1,285	555
Total liabilities	**1,072**	**11,963**	**2,959**	**2,333**
Net assets	**4,290**	**(9,946)**	**3,642**	**2,152**
Equity attributable to owners of the Company	2,992	(6,339)	3,483	935
Non-controlling interest	1,298	(3,607)	159	1,217
Non-controlling interest %	30.3%	51.0%	0.5%	76.7%
2019				
Revenue	2,917	315	1,386	756
Expenses	(2,458)	(1,159)	(2,302)	(1,259)
Net profit/(loss) for the year	**459**	**(844)**	**(916)**	**(503)**
Profit/(loss) attributable to owners of the Company	320	(414)	(765)	(117)
Profit/(loss) attributable to non-controlling interests	139	(430)	(151)	(386)
Other comprehensive income attributable to owners of the Company	–	–	–	–
Other comprehensive income attributable to non-controlling interests	–	–	–	–
Total comprehensive income/(loss) for the year	**459**	**(844)**	**(916)**	**(503)**
Dividends paid to non-controlling interests	(196)	–	–	–
Net cash inflow/(outflow) from operating activities	750	(172)	(115)	178
Net cash outflow from investing activities	(427)	(39)	(509)	(172)
Net cash (outflow)/inflow from financing activities	(325)	219	828	(33)
Total net cash (outflow)/inflow	**(2)**	**8**	**204**	**(27)**

33. Principal subsidiaries with material non-controlling interests continued

US$ million	Kazzinc	Koniambo	Katanga	Volcan
31 December 2018				
Non-current assets	4,623	1,718	4,488	4,738
Current assets	972	338	899	387
Total assets	**5,595**	**2,056**	**5,387**	**5,125**
Non-current liabilities	855	11,044	6,354	1,910
Current liabilities	260	115	984	553
Total liabilities	**1,115**	**11,159**	**7,338**	**2,463**
Net assets	**4,480**	**(9,103)**	**(1,951)**	**2,662**
Equity attributable to owners of the Company	3,124	(5,926)	(1,962)	1,054
Non-controlling interest	1,356	(3,177)	11 [1]	1,608
Non-controlling interest %	30.3%	51.0%	13.7%	76.7%
2018				
Revenue	3,169	–	1,269	800
Expenses	(2,737)	(533)	(2,033)	(950)
Net profit/(loss) for the year	**432**	**(533)**	**(764)**	**(150)**
Profit/(loss) attributable to owners of the Company	301	(261)	(587)	(35)
Profit/(loss) attributable to non-controlling interests	131	(272)	(177) [1]	(115)
Other comprehensive income attributable to owners of the Company	–	–	–	–
Other comprehensive income attributable to non-controlling interests	–	–	–	–
Total comprehensive income/(loss) for the year	**432**	**(533)**	**(764)**	**(150)**
Dividends paid to non-controlling interests	(211)	–	–	(13)
Net cash inflow from operating activities	979	–	48	259
Net cash outflow from investing activities	(319)	(215)	(377)	(217)
Net cash (outflow)/inflow from financing activities	(854)	205	296	(81)
Total net cash outflow	**(194)**	**(10)**	**(33)**	**(39)**

1 Glencore has an 86.3% interest in Katanga Mining Limited, which in turn has a 75% interest in Kamoto Copper Company (KCC), the entity engaged in copper mining activities. The "non-controlling interest" balance includes $321 million and the "profit/(loss) attributable to non-controlling interests" balance includes negative $84 million, related to non-controlling interest arising at the KCC level.

34. Principal operating, finance and industrial subsidiaries and investments

	Country of incorporation	% interest 2019	% interest 2018	Main activity
Principal subsidiaries				
Industrial activities				
Minera Alumbrera Limited[1]	Antigua	50.0	50.0	Copper production
Cobar Group	Australia	100.0	100.0	Copper production
Compania Minera Lomas Bayas	Chile	100.0	100.0	Copper production
Complejo Metalurgico Altonorte S.A.	Chile	100.0	100.0	Copper production
Compania Minera Antapaccay S.A.	Peru	100.0	100.0	Copper production
Pasar Group	Philippines	78.2	78.2	Copper production
Glencore Recycling Inc	USA	100.0	100.0	Copper production
Mopani Copper Mines plc	Zambia	73.1	73.1	Copper production
Sable Zinc Kabwe Limited	Zambia	–	100.0	Copper production
Polymet Mining Corp.	Canada	71.7	29.0	Copper production
Katanga Mining Limited[2]	Canada	99.5	86.3	Copper/Cobalt production
Mutanda Group	DRC	100.0	100.0	Copper/Cobalt production
Mount Isa Mines Limited	Australia	100.0	100.0	Copper/Zinc/Lead production
Kazzinc Ltd	Kazakhstan	69.7	69.7	Copper/Zinc/Lead production
Zhairemsky GOK JSC	Kazakhstan	69.7	69.7	Copper/Zinc/Lead production
Vasilkovskoye Gold	Kazakhstan	69.7	69.7	Gold production
African Carbon Producers (Pty) Ltd	South Africa	100.0	100.0	Char production
African Fine Carbon (Pty) Ltd	South Africa	100.0	100.0	Char production
Char Technology (Pty) Ltd	South Africa	100.0	100.0	Char production
Sphere Minerals Limited	Australia	100.0	100.0	Iron Ore exploration
Britannia Refined Metals Limited	UK	100.0	100.0	Lead production
Access World Group	Switzerland	100.0	100.0	Logistics services
Murrin Murrin Group	Australia	100.0	100.0	Nickel production
Koniambo Nickel S.A.S.[3]	New Caledonia	49.0	49.0	Nickel production
Glencore Nikkelverk AS	Norway	100.0	100.0	Nickel production
McArthur River Mining Pty Ltd	Australia	100.0	100.0	Zinc production
Nordenhammer Zinkhütte GmbH	Germany	100.0	100.0	Zinc production
Asturiana de Zinc S.A.	Spain	100.0	100.0	Zinc production
Volcan Companja Minera S.A.A.[4]	Peru	23.3	23.3	Zinc production
AR Zinc Group	Argentina	100.0	100.0	Zinc/Lead production
Portovesme S.r.L.	Italy	100.0	100.0	Zinc/Lead production
Empresa Minera Los Quenuales S.A.	Peru	97.6	97.6	Zinc/Lead production
Sinchi Wayra Group	Bolivia	100.0	100.0	Zinc/Tin production

1 This investment is treated as a subsidiary as the Group is entitled to elect the chairman of the Board who has the casting vote where any vote is split equally between the four board positions. Minera Alumbrera Limited's principal place of business is Argentina.

2 Publicly traded on the Toronto Stock Exchange under the symbol KAT.TO and principal place of business is DRC. Glencore owns 60,870,439,242 (2018: 1,435,848,228) shares.

3 The Group has control of Koniambo Nickel S.A.S. as a result of the ability to direct the key activities of the operation and to appoint key management personnel provided by the terms of the financing arrangements underlying the Koniambo project.

4 The Group has control of Volcan Compania Minera S.A.A. as a result of the ability to control the entity through the voting of its 63.0% of the voting shares (Class A); the economic interest is diluted by the outstanding non-voting shares (Class B).

34. Principal operating, finance and industrial subsidiaries and investments continued

	Country of incorporation	**% interest 2019**	% interest 2018	Main activity
Industrial activities				
Oakbridge Pty Limited	Australia	78.0	78.0	Coal production
Rolleston Coal Holdings Pty Limited	Australia	100.0	100.0	Coal production
Mangoola Coal Operations Pty Limited	Australia	100.0	100.0	Coal production
Mt Owen Pty Limited	Australia	100.0	100.0	Coal production
NC Coal Company Pty Limited	Australia	100.0	100.0	Coal production
Ravensworth Operations Pty Ltd	Australia	100.0	100.0	Coal production
Ulan Coal Mines Ltd	Australia	100.0	90.0	Coal production
Prodeco group	Colombia	100.0	100.0	Coal production
Izimbiwa Coal (Pty) Ltd[5]	South Africa	49.9	49.9	Coal production
Umcebo Mining (Pty) Ltd[6]	South Africa	48.7	48.7	Coal production
Tavistock Collieries (Pty) Ltd	South Africa	100.0	100.0	Coal production
Glencore Exploration Cameroon Ltd.	Bermuda	100.0	100.0	Oil production
Glencore Exploration (EG) Ltd.	Bermuda	100.0	100.0	Oil production
Petrochad (Mangara) Limited	Bermuda	100.0	100.0	Oil exploration/production
Astron Energy South Africa	South Africa	75.0	–	Oil refining / distribution
Astron Energy Botswana (Pty) Ltd	Botswana	100.0	–	Oil distribution
Marketing activities and other operating and finance				
Xstrata Limited	UK	100.0	100.0	Holding
Glencore Australia Investment Holdings Pty Ltd	Australia	100.0	100.0	Holding
Glencore Operations Australia Pty Limited	Australia	100.0	100.0	Holding
Glencore Queensland Limited	Australia	100.0	100.0	Holding
Glencore Investment Pty Ltd	Australia	100.0	100.0	Holding
Glencore Australia Holdings Pty Ltd	Australia	100.0	100.0	Finance
Glencore Finance (Bermuda) Ltd	Bermuda	100.0	100.0	Finance
ALE Combustiveis	Brazil	80.3	78.0	Oil distribution
Topley Corporation	B.V.I.	100.0	100.0	Ship owner
Glencore Canada Financial Corp	Canada	100.0	100.0	Finance
Chemoil Energy Limited	Hong Kong	100.0	100.0	Oil storage and bunkering
Glencore Finance (Europe) Limited	Jersey	100.0	100.0	Finance
Finges Investment B.V.	Netherlands	100.0	100.0	Finance
Glencore (Schweiz) AG	Switzerland	100.0	100.0	Finance
Glencore Group Funding Limited	UAE	100.0	100.0	Finance
Glencore Funding LLC	USA	100.0	100.0	Finance
Glencore Australia Oil Pty Limited	Australia	100.0	100.0	Operating
Glencore Canada Corporation	Canada	100.0	100.0	Operating
Glencore Singapore Pte Ltd	Singapore	100.0	100.0	Operating
ST Shipping & Transport Pte Ltd	Singapore	100.0	100.0	Operating
Glencore AG	Switzerland	100.0	100.0	Operating
Glencore International AG	Switzerland	100.0	100.0	Operating
Glencore Commodities Ltd	UK	100.0	100.0	Operating
Glencore Energy UK Ltd	UK	100.0	100.0	Operating
Glencore UK Ltd	UK	100.0	100.0	Operating

5 Although Glencore holds less than 50% of the voting rights, it has the ability to exercise control over Izimbiwa through the ability to direct the key activities of the operations and to appoint key management personnel provided by the terms of the shareholder's agreement.

6 Although Glencore holds less than 50% of the voting rights, it has the ability to exercise control over Umcebo as a result of shareholder agreements which provide Glencore the ability to control the Board of Directors.

34. Principal operating, finance and industrial subsidiaries and investments continued

	Country of incorporation	**% interest 2019**	% interest 2018	Main activity
Principal joint ventures[7]				
Glencore Agriculture Limited	Jersey	49.9	49.9	Agriculture business
Clermont Coal Joint Venture[8]	Australia	37.1	25.1	Coal production
BaseCore Metals LP	Canada	50.0	50.0	Copper production
Compania Minera Dona Ines de Collahuasi	Chile	44.0	44.0	Copper production
El Aouj Joint Venture	Mauritania	50.0	50.0	Iron Ore production
Principal joint operations and other unincorporated arrangement[9]				
Wandoan Joint Venture	Australia	75.0	75.0	Coal exploration
Bulga Joint Venture	Australia	68.3	68.3	Coal production
Cumnock Joint Venture	Australia	90.0	90.0	Coal production
Hail Creek Joint Venture	Australia	84.7	82.0	Coal production
Hunter Valley Operations Joint Venture	Australia	49.0	49.0	Coal production
Liddell Joint Venture	Australia	67.5	67.5	Coal production
Oaky Creek Coal Joint Venture	Australia	55.0	55.0	Coal production
Rolleston Joint Venture	Australia	75.0	75.0	Coal production
United Wambo Joint Venture	Australia	47.5	–	Coal production
ARM Coal (Pty) Ltd.	South Africa	49.0	49.0	Coal production
Goedgevonden Joint Venture	South Africa	74.0	74.0	Coal production
Ernest Henry Mining Pty Ltd	Australia	70.0	70.0	Copper production
Merafe Pooling and Sharing Joint Venture	South Africa	79.5	79.5	Ferroalloys production
Kabanga Joint Venture	Tanzania	50.0	50.0	Nickel production
Rhovan Pooling and Sharing Joint Venture	South Africa	74.0	74.0	Vanadium production
Principal associates				
Carbones del Cerrejon LLC	Colombia	33.3	33.3	Coal production
Port Kembla Coal Terminal Limited	Australia	13.0	13.0	Coal terminal
Newcastle Coal Shippers Pty Ltd	Australia	34.7	33.1	Coal terminal
Wiggins Island Coal Export Terminal	Australia	25.0	20.0	Coal terminal
Richards Bay Coal Terminal Company Limited	South Africa	19.3	20.2	Coal terminal
Century Aluminum Company[10]	USA	47.0	47.2	Aluminium production
PT CITA Mineral Investindo Tbk[11]	Indonesia	18.0	–	Aluminium production
HG Storage International Limited	Jersey	49.0	49.0	Oil storage
Noranda Income Fund	Canada	25.0	25.0	Zinc production
Trevali Mining Company	Canada	25.5	25.6	Zinc production
Compania Minera Antamina S.A.	Peru	33.8	33.8	Zinc/Copper production
Recylex S.A.	France	29.8	29.9	Zinc/Lead production
Other investments				
United Company Rusal plc[12]	Jersey	–	8.8	Aluminium production
EN+ GROUP PLC[12]	Russia	10.6	–	Aluminium production
OAO NK Russneft[13]	Russia	25.0	25.0	Oil production

7 The principal joint arrangements are accounted for as joint ventures as the shareholder agreements do not provide the Group the ability to solely control the entities.
8 The Group's effective 37.1% economic interest in Clermont Coal is held through GS Coal Pty Ltd, a 50:50 joint venture with Sumitomo Corporation.
9 Classified as joint operations under IFRS 11, as these joint arrangements convey a direct right to a share of the underlying operations' assets, liabilities, revenues and expenses. The Hail Creek interest is an 'other unincorporated arrangement' accounted for similar to a joint operation.
10 Represents the Group's economic interest in Century, comprising 42.9% (2018: 42.9%) voting interest and 4% non-voting interest (2018:4.3%). Century is publicly traded on NASDAQ under the symbol CENX.
11 The investment has been classified as an associate with the Group intending to close on an additional 12% equity interest in 2020, which will bring the total equity interest to 30%.
12 In January 2019, Glencore agreed to exchange its interest in United Company Rusal plc into a 10.6% interest in EN+ GROUP PLC.
13 Although the Group holds more than 20% of the voting rights in Russneft, it is unable to exercise significant influence over the financial and operating policy decisions of Russneft.

Simplicity

A culture of continuous improvement

Catherine Amyot
Metallurgist – CEZinc, Canada

Catherine's fascination with engineering led her to CEZinc as an intern, later returning as a qualified metallurgist. She finds the culture of continuous improvement complements her ambitious nature.

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Additional information

Alternative performance measures

Alternative performance measures are denoted by the symbol ◊

When assessing and discussing the Group's reported financial performance, financial position and cash flows, Glencore makes reference to Alternative performance measures (APMs), which are not defined or specified under the requirements of IFRS, but are derived from the financial statements prepared in accordance with IFRS. The APMs are consistent with how the business performance is measured and reported within the internal management reporting to the Board and management and assist in providing meaningful analysis of the Group's results both internally and externally in discussions with the financial analyst and investment community.

The Group uses APMs to aid the comparability of information between reporting periods and segments and to aid the understanding of the activity taking place across the Group by adjusting for items that are of an infrequent nature and by aggregating or disaggregating (notably in the case of relevant material associates and joint ventures accounted for on an equity basis) certain IFRS measures. APMs are also used to approximate the underlying operating cash flow generation of the operations (Adjusted EBITDA).

Investments in the extractive industry are typically significant and the initial spend generally occurs over several years, "upfront", prior to the operations generating cash. As a result, the investments are sometimes made with partners and an assessment to approximate the operating cash flow generation/pay-back of the investment (Adjusted EBITDA) is required. Against this backdrop, the key APMs used by Glencore are Adjusted EBITDA, Net funding/Net debt and the disaggregation of the equivalent key APMs of our relevant material associates and joint ventures ("Proportionate adjustment") to enable a consistent evaluation of the financial performance and returns attributable to the Group.

Adjusted EBITDA is a useful approximation of the operating cash flow generation by eliminating depreciation and amortisation adjustments. Adjusted EBITDA is not a direct measure of our liquidity, which is shown by our cash flow statement and needs to be considered in the context of our financial commitments.

Proportionate adjustments are useful to enable a consistent evaluation of the financial performance and returns available to the Group, irrespective of the differing accounting treatments required to account for our minority/joint ownership interests of our relevant material investments.

Net funding is an aggregation of IFRS measures (Borrowings less cash and cash equivalents) and Net debt is Net funding less Readily marketable inventories and provides a measure of our financial leverage and, through Net debt to Adjusted EBITDA relationships, provides an indication of relative financial strength and flexibility.

APMs used by Glencore may not be comparable with similarly titled measures and disclosures by other companies. APMs have limitations as an analytical tool, and a user of the financial statements should not consider these measures in isolation from, or as a substitute for, analysis of the Group's results of operations; and they may not be indicative of the Group's historical operating results, nor are they meant to be a projection or forecast of its future results.

Listed below are the definitions and reconciliations to the underlying IFRS measures of the various APMs used by the Group.

Proportionate adjustment

For internal reporting and analysis, management evaluates the performance of Antamina copper/zinc mine (34% owned), Cerrejón coal mine (33% owned) and Collahuasi copper mine (44% owned) under the proportionate consolidation method reflecting Glencore's proportionate share of the revenues, expenses, assets and liabilities of these investments.

In November 2017, Glencore completed the acquisition of additional shares in Volcan, thereby increasing its total economic interest from 7.7% to 23.3% (compared to its 63% voting interest). For internal reporting and analysis, management evaluates the performance of Volcan under the equity method, reflecting the Group's relatively low 23.3% economic ownership in this fully ring-fenced listed entity, with its stand-alone, independent and separate capital structure. The impact is that we reflect 23.3% of Volcan's net income in the Group's Adjusted EBIT/EBITDA and its results are excluded from all other APM's including production data.

See reconciliation of revenue and relevant material associates' and joint ventures' Adjusted EBIT to "Share of net income from associates and joint ventures" below.

APMs derived from the statement of income

Revenue

Revenue represents revenue by segment (see note 2 of the financial statements), as reported on the face of the statement of income plus the relevant Proportionate adjustments. See reconciliation table below.

US$ million	2019	2018 Restated[1]
Revenue – Marketing activities	194,188	202,674
Revenue – Industrial activities	42,743	44,069
Intersegment eliminations	(19,672)	(23,576)
Revenue – segmental	**217,259**	**223,167**
Proportionate adjustment material associates and joint ventures – revenue	(2,904)	(3,443)
Proportionate adjustment Volcan – revenue	756	800
Revenue – reported measure	**215,111**	**220,524**

1 Adjusted to present mark-to-market movements on physical forward sales contracts within revenue (see note 1).

Share of income from material associates and joint ventures

US$ million	2019	2018
Associates' and joint ventures' Adjusted EBITDA	1,754	2,212
Depreciation and amortisation	(745)	(726)
Associates' and joint ventures' Adjusted EBIT	1,009	1,486
Impairment, net of tax[1]	(435)	–
Net finance costs	5	7
Income tax expense	(342)	(536)
	(772)	(529)
Share of income from relevant material associates and joint ventures	**237**	**957**
Share of income from other associates	(123)	86
Share of income from associates and joint ventures[2]	**114**	**1,043**

1 Industrial activities segment comprises an impairment of $435 million, net of taxes of $213 million relating to Cerrejón, resulting from lower API2 coal price assumptions and reduced production estimates, including in relation to updated mine-life approval expectations.

2 Comprises share in losses of $58 million (2018: gain of $14 million) from Marketing activities and share in earnings of $172 million (2018: $1,029 million) from Industrial activities.

Adjusted EBIT/EBITDA

Adjusted EBIT/EBITDA provide insight into our overall business performance (a combination of cost management, seizing market opportunities and growth), and are the corresponding flow drivers towards our objective of achieving industry-leading returns.

Adjusted EBIT is the net result of revenue less cost of goods sold and selling and administrative expenses, plus share of income from associates and joint ventures, dividend income and the attributable share of Adjusted EBIT of relevant material associates and joint ventures, which are accounted for internally by means of proportionate consolidation, excluding Significant items, see definition below.

Adjusted EBITDA consists of Adjusted EBIT plus depreciation and amortisation, including the related Proportionate adjustments. See reconciliation table below.

US$ million	2019	2018 Restated[1]
Reported measures		
Revenue	215,111	220,524
Cost of goods sold	(210,434)	(211,468)
Selling and administrative expenses	(1,391)	(1,381)
Share of income from associates and joint ventures	114	1,043
Dividend income	49	21
	3,449	**8,739**
Adjustments to reported measures		
Share of associates' significant items	219	40
Share of associates' significant items – Volcan	73	–
Movement in unrealised inter-segment profit elimination	(468)	(237)
Proportionate adjustment material associates and joint ventures – net finance, impairment and income tax expense	772	529
Proportionate adjustment Volcan – net finance, income tax expense and non-controlling interests	106	72
Adjusted EBIT	**4,151**	**9,143**
Depreciation and amortisation	7,161	6,325
Proportionate adjustment material associates and joint ventures – depreciation	745	726
Proportionate adjustment Volcan – depreciation	(456)	(427)
Adjusted EBITDA	**11,601**	**15,767**

1 Adjusted to present mark-to-market movements on physical forward sales contracts within revenue (see note 1).

Alternative performance measures

continued

Significant items

Significant items of income and expense which, due to their nature and variable financial impact or the expected infrequency of the events giving rise to them, are separated for internal reporting and analysis of Glencore's results to aid in an understanding and comparative basis of the underlying financial performance. Refer to reconciliation below.

Reconciliation of net significant items 2019

US$ million	Gross significant charges	Non-controlling interests' share	Significant items tax	**Equity holders' share**
Share of Associates' significant items[1]	(219)	–	–	(219)
Share of Associates' significant items – Volcan	(73)	–	–	(73)
Movement in unrealised inter-segment profit elimination[1]	468	–	(46)	422
Net loss on disposals of non-current assets[2]	(43)	–	–	(43)
Other expense – net[3]	(173)	–	–	(173)
Impairments[4]	(2,408)	286	232	(1,890)
Impairments – net, related to material associates and joint ventures[5]	(435)	–	–	(435)
Tax significant items in their own right[6]	–	–	(435)	(435)
Total significant items	**(2,883)**	**286**	**(249)**	**(2,846)**

1 See note 2 of the financial statements.
2 See note 4 of the financial statements.
3 See note 5 of the financial statements.
4 See note 6 of the financial statements.
5 See Proportionate adjustment reconciliation above.
6 Tax expenses related to foreign exchange fluctuations ($12 million) and tax losses not recognised ($543 million), net of tax credits related to the recognition of temporary differences arising from retrospective changes in tax restructuring regulations ($120 million), see note 7 of the financial statements.

Reconciliation of net significant items 2018

US$ million	Gross significant charges	Non-controlling interests' share	Significant items tax	**Equity holders' share**
Share of Associates' significant items[1]	(40)	–	–	(40)
Movement in unrealised inter-segment profit elimination[1]	237	–	(23)	214
Net loss on disposals of non-current assets[2]	(139)	–	–	(139)
Other expense – net[3]	(764)	58	–	(706)
Impairments[4]	(1,643)	236	191	(1,216)
Tax significant items in their own right[5]	–	–	(470)	(470)
Total significant items	**(2,349)**	**294**	**(302)**	**(2,357)**

1 See note 2 of the financial statements.
2 See note 4 of the financial statements.
3 See note 5 of the financial statements.
4 See note 6 of the financial statements.
5 Tax expenses related to foreign exchange fluctuations ($130 million) and tax losses not recognised ($340 million), see note 7 of the financial statements.

Net income attributable to equity shareholder pre-significant items

Net income attributable to equity shareholders pre-significant items is a measure of our ability to generate shareholder returns. The calculation of tax items to be excluded from Net income, includes the tax effect of significant items and significant tax items themselves. Refer to reconciliation below.

US$ million	**2019**	2018
(Loss)/income attributable to equity holders of the Parent	(404)	3,408
Significant items	2,846	2,357
Income attributable to equity holders of the Parent pre-significant items	**2,442**	**5,765**

APMs derived from the statement of financial position

Net funding/Net debt and Net debt to Adjusted EBITDA

Net funding/debt demonstrates how our debt is being managed and is an important factor in ensuring we maintain investment grade credit rating status and a competitive cost of capital. Net debt is defined as total current and non-current borrowings less cash and cash equivalents, readily marketable inventories and related Proportionate adjustments. Consistent with the general approach in relation to our internal reporting and evaluation of Volcan, its consolidated net debt has also been adjusted to reflect the Group's relatively low 23.3% economic ownership (compared to its 63.0% voting interest) in this still fully ring-fenced listed entity, with its standalone, independent and separate capital structure. Furthermore, the relationship of Net debt to Adjusted EBITDA provides an indication of financial flexibility. See reconciliation table below.

Readily marketable inventories (RMI)

RMI comprising the core inventories which underpin and facilitate Glencore's marketing activities, represent inventories, that in Glencore's assessment, are readily convertible into cash in the short term due to their liquid nature, widely available markets and the fact that price risk is primarily covered either by a forward physical sale or hedge transaction. Glencore regularly assesses the composition of these inventories and their applicability, relevance and availability to the marketing activities. As at 31 December 2019, $16,810 million (2018: $17,428 million) of inventories were considered readily marketable. This comprises $10,516 million (2018: $11,449 million) carried at fair value less costs of disposal and $6,294 million (2018: $5,979 million) carried at the lower of cost or net realisable value. Total readily marketable inventories includes $148 million (2018: $171 million) related to the relevant material associates and joint ventures (see note 2) presented under the proportionate consolidation method, comprising inventory carried at lower of cost or net realisable value. Given the highly liquid nature of these inventories, which represent a significant share of current assets, the Group believes it is appropriate to consider them together with cash equivalents in analysing Group net debt levels and computing certain debt coverage ratios and credit trends.

Net funding/net debt at 31 December 2019

US$ million	Reported measure	Proportionate adjustment material associates and joint ventures	Proportionate adjustment Volcan	**Adjusted measure**
Non-current borrowings	29,067	95	(576)	28,586
Current borrowings	7,976	31	(221)	7,786
Total borrowings	**37,043**	**126**	**(797)**	**36,372**
Less: cash and cash equivalents	(1,899)	(143)	36	(2,006)
Net funding	**35,144**	**(17)**	**(761)**	**34,366**
Less: Readily marketable inventories	(16,662)	(148)	–	(16,810)
Net debt	**18,482**	**(165)**	**(761)**	**17,556**
Adjusted EBITDA				**11,601**
Net debt to Adjusted EBITDA				**1.51**

Net funding/net debt at 31 December 2018

US$ million	Reported measure	Proportionate adjustment material associates and joint ventures	Proportionate adjustment Volcan	**Adjusted measure**
Non-current borrowings	26,424	91	(588)	25,927
Current borrowings	8,570	16	(193)	8,393
Total borrowings	**34,994**	**107**	**(781)**	**34,320**
Less: cash and cash equivalents	(2,046)	(199)	63	(2,182)
Net funding	**32,948**	**(92)**	**(718)**	**32,138**
Less: Readily marketable inventories	(17,257)	(171)	–	(17,428)
Net debt	**15,691**	**(263)**	**(718)**	**14,710**
Adjusted EBITDA				**15,767**
Net debt to Adjusted EBITDA				**0.93**

Capital expenditure ("Capex")

Capital expenditure is expenditure capitalised as property, plant and equipment. For internal reporting and analysis, Capex includes related Proportionate adjustments. See reconciliation table below.

US$ million	**2019**	2018
Capital expenditure – Marketing activities	438	89
Capital expenditure – Industrial activities	5,349	5,077
Capital expenditure – segmental	**5,787**	**5,166**
Proportionate adjustment material associates and joint ventures – capital expenditure	(609)	(577)
Proportionate adjustment Volcan – capital expenditure	190	188
Capital expenditure – reported measure	**5,368**	**4,777**

Alternative performance measures
continued

APMs derived from the statement of cash flows

Net purchase and sale of property, plant and equipment

Net purchase and sale of property, plant and equipment is cash purchase of property, plant and equipment, net of proceeds from sale of property, plant and equipment. For internal reporting and analysis, Net purchase and sale of property, plant and equipment includes proportionate adjustments. See reconciliation table below.

2019 US$ million	Reported measure	Proportionate adjustment material associates and joint ventures	Proportionate adjustment Volcan	**Adjusted measure**
Purchase of property, plant and equipment	(4,712)	(603)	180	(5,135)
Proceeds from sale of property, plant and equipment	178	–	(9)	169
Net purchase and sale of property, plant and equipment	**(4,534)**	**(603)**	**171**	**(4,966)**

2018 US$ million	Reported measure	Proportionate adjustment material associates and joint ventures	Proportionate adjustment Volcan	**Adjusted measure**
Purchase of property, plant and equipment	(4,687)	(539)	188	(5,038)
Proceeds from sale of property, plant and equipment	136	3	–	139
Net purchase and sale of property, plant and equipment	**(4,551)**	**(536)**	**188**	**(4,899)**

Funds from operations (FFO) and FFO to Net debt

FFO is a measure that reflects our ability to generate cash for investment, debt servicing and distributions to shareholders. It comprises cash provided by operating activities before working capital changes, less tax and net interest payments plus dividends received and related Proportionate adjustments. Furthermore, the relationship of FFO to net debt is an indication of our financial flexibility and strength. See reconciliation table below.

2019 US$ million	Reported measure	Proportionate adjustment material associates and joint ventures	Proportionate adjustment Volcan	**Adjusted measure**
Cash generated by operating activities before working capital changes	10,346	–	–	10,346
Addback EBITDA of relevant material associates and joint ventures	–	1,754	(232)	1,522
Non-cash adjustments included within EBITDA	–	7	6	13
Adjusted cash generated by operating activities before working capital changes	10,346	1,761	(226)	11,881
Income taxes paid	(2,301)	(544)	31	(2,814)
Interest received	200	2	(1)	201
Interest paid	(1,604)	(8)	43	(1,569)
Dividends received from associates and joint ventures	942	(776)	–	166
Funds from operations (FFO)	**7,583**	**435**	**(153)**	**7,865**
Net debt				**17,556**
FFO to net debt				**44.8%**

2018 US$ million	Reported measure	Proportionate adjustment material associates and joint ventures	Proportionate adjustment Volcan	**Adjusted measure**
Cash generated by operating activities before working capital changes	13,210	–	–	13,210
Addback EBITDA of relevant material associates and joint ventures	–	2,212	(319)	1,893
Non-cash adjustments included within EBITDA	–	(6)	–	(6)
Adjusted cash generated by operating activities before working capital changes	13,210	2,206	(319)	15,097
Income taxes paid	(1,740)	(725)	59	(2,406)
Interest received	183	4	–	187
Interest paid	(1,419)	(6)	38	(1,387)
Dividends received from associates and joint ventures	1,139	(1,039)	4	104
Funds from operations (FFO)	**11,373**	**440**	**(218)**	**11,595**
Net debt				**14,710**
FFO to net debt				**78.8%**

Available committed liquidity[1]

US$ million	2019	2018
Cash and cash equivalents – reported	1,899	2,046
Proportionate adjustment – cash and cash equivalents	107	136
Headline committed syndicated revolving credit facilities	14,425	14,200
Amount drawn under syndicated revolving credit facilities	(5,615)	(5,623)
Amounts drawn under U.S. commercial paper programme	(675)	(596)
Total	**10,141**	**10,163**

1 Presented on an adjusted measured basis.

Cash flow related adjustments 2019

US$ million	Reported measure	Proportionate adjustment material associates and joint ventures	Proportionate adjustment Volcan	**Adjusted measure**
Funds from operations (FFO)	7,583	435	(153)	7,865
Working capital changes	2,088	122	(35)	2,175
Net cash used in acquisitions of subsidiaries	(123)	–	–	(123)
Net cash received from disposal of subsidiaries	5	–	1	6
Purchase of investments	(125)	–	–	(125)
Proceeds from sale of investments	119	–	–	119
Purchase of property, plant and equipment	(4,712)	(603)	180	(5,135)
Proceeds from sale of property, plant and equipment	178	–	(9)	169
Margin receipt in respect of financing related hedging activities	529	–	–	529
Acquisition of non-controlling interests in subsidiaries	(24)	–	–	(24)
Return of capital/distributions to non-controlling interests	(305)	–	–	(305)
Purchase of own shares	(2,318)	–	–	(2,318)
Disposal of own shares	6	–	–	6
Distributions paid to equity holders of the Parent	(2,710)	–	–	(2,710)
Cash movement in net funding	**191**	**(46)**	**(16)**	**129**

Cash flow related adjustments 2018

US$ million	Reported measure	Proportionate adjustment material associates and joint ventures	Proportionate adjustment Volcan	**Adjusted measure**
Funds from operations (FFO)	11,373	444	(222)	11,595
Working capital changes	1,325	164	37	1,526
Net cash used in acquisitions of subsidiaries	(2,922)	–	–	(2,922)
Net cash received from disposal of subsidiaries	88	–	–	88
Exchangeable loan provided for the acquisition of Astron Energy	(1,044)	–	–	(1,044)
Purchase of investments	(19)	–	–	(19)
Proceeds from sale of investments	16	–	–	16
Purchase of property, plant and equipment	(4,687)	(539)	188	(5,038)
Proceeds from sale of property, plant and equipment	136	3	–	139
Margin payments in respect of financing related hedging activities	(507)	–	–	(507)
Acquisition of non-controlling interests in subsidiaries	(58)	–	–	(58)
Return of capital/distributions to non-controlling interests	(343)	13	–	(330)
Purchase of own shares	(2,005)	–	–	(2,005)
Disposal of own shares	27	–	–	27
Distributions paid to equity holders of the Parent	(2,836)	–	–	(2,836)
Cash movement in net funding	**(1,456)**	**85**	**3**	**(1,368)**

Reconciliation of tax expense 2019

US$ million	Total
Adjusted EBIT, pre-significant items	4,151
Net finance costs	(1,713)
Adjustments for:	
Net finance income from material associates and joint ventures	5
Proportional adjustment and net finance costs – Volcan	82
Share of income from other associates pre-significant items	(96)
Profit on a proportionate consolidation basis before tax and pre-significant items	**2,429**
Income tax expense, pre-significant items	(369)
Adjustments for:	
Tax expense from material associates and joint ventures	(342)
Tax credit from Volcan	(29)
Tax expense on a proportionate consolidation basis	**(740)**
Applicable tax rate	**30.5%**

US$ million	Pre-significant tax expense	Significant items tax[1]	Total tax expense
Tax expense on a proportionate consolidation basis	740	142	882
Adjustment in respect of material associates and joint ventures – tax	(342)	213	(129)
Adjustment in respect of Volcan – tax	(29)	(106)	(135)
Tax expense on the basis of the income statement	**369**	**249**	**618**

1 See table above.

Reconciliation of tax expense 2018

US$ million	Total
Adjusted EBIT, pre-significant items	9,143
Net finance costs	(1,514)
Adjustments for:	
Net finance cost from material associates and joint ventures	7
Proportional adjustment and net finance costs – Volcan	83
Share of income from other associates pre-significant items	(126)
Profit on a proportionate consolidation basis before tax and pre-significant items	**7,593**
Income tax expense, pre-significant items	(1,761)
Adjustments for:	
Tax expense from material associates and joint ventures	(536)
Tax credit from Volcan	(5)
Tax expense on a proportionate consolidation basis	**(2,302)**
Applicable tax rate	**30.3%**

US$ million	Pre-significant tax expense	Significant items tax[1]	Total tax expense
Tax expense on a proportionate consolidation basis	2,302	302	2,604
Adjustment in respect of material associates and joint ventures – tax	(536)	–	(536)
Adjustment in respect of Volcan – tax	(5)	–	(5)
Tax expense on the basis of the income statement	**1,761**	**302**	**2,063**

1 See table above.

Metals and minerals

Production from own sources – Total[1]

		Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Copper	kt	390.6	320.7	342.3	352.8	355.4	1,371.2	1,453.7	(6)	(9)
Cobalt	kt	13.7	10.9	10.4	13.1	11.9	46.3	42.2	10	(13)
Zinc	kt	282.1	262.3	273.6	273.3	268.3	1,077.5	1,068.1	1	(5)
Lead	kt	76.8	73.9	73.6	72.3	60.2	280.0	273.3	2	(22)
Nickel	kt	32.9	27.1	28.3	34.0	31.2	120.6	123.8	(3)	(5)
Gold	koz	229	202	221	199	226	848	1,003	(15)	(1)
Silver	koz	8,541	7,620	7,870	8,243	8,285	32,018	34,880	(8)	(3)
Ferrochrome	kt	435	402	397	231	408	1,438	1,580	(9)	(6)
Coal	mt	32.7	33.2	35.0	35.8	35.5	139.5	129.4	8	9
Oil (entitlement interest basis)	kbbl	1,270	1,145	1,095	1,398	1,880	5,518	4,626	19	48

Production from own sources – Copper assets[1]

			Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Collahuasi[2]	**Copper in concentrates**	**kt**	**69.2**	**57.3**	**54.7**	**64.5**	**72.3**	**248.8**	**246.0**	**1**	**4**
	Silver in concentrates	**koz**	**893**	**699**	**538**	**731**	**910**	**2,878**	**3,244**	**(11)**	**2**
Antamina[3]	**Copper in concentrates**	**kt**	**39.9**	**35.9**	**38.8**	**39.1**	**37.6**	**151.4**	**150.6**	**1**	**(6)**
	Zinc in concentrates	**kt**	**28.8**	**24.7**	**26.7**	**24.3**	**26.7**	**102.4**	**138.1**	**(26)**	**(7)**
	Silver in concentrates	**koz**	**1,309**	**1,180**	**1,343**	**1,224**	**1,304**	**5,051**	**5,550**	**(9)**	**–**
Other South America (Antapaccay, Lomas Bayas)											
Antapaccay	Copper in concentrates	kt	52.3	47.0	53.5	49.6	47.5	197.6	205.4	(4)	(9)
	Gold in concentrates	koz	27	18	26	18	23	85	132	(36)	(15)
	Silver in concentrates	koz	406	381	455	402	338	1,576	1,523	3	(17)
Lomas Bayas	Copper metal	kt	19.8	19.9	20.1	19.7	19.2	78.9	72.8	8	(3)
Alumbrera	Copper in concentrates	kt	–	–	–	–	–	–	17.4	(100)	–
	Gold in concentrates and in doré	koz	–	–	–	–	–	–	120	(100)	–
	Silver in concentrates and in doré	koz	–	–	–	–	–	–	156	(100)	–
Punitaqui	Copper in concentrates	kt	0.3	–	–	–	–	–	3.1	(100)	(100)
	Gold in concentrates	koz	–	–	–	–	–	–	4	(100)	–
	Silver in concentrates	koz	4	–	–	–	–	–	43	(100)	(100)
	Total Copper metal	**kt**	**19.8**	**19.9**	**20.1**	**19.7**	**19.2**	**78.9**	**72.8**	**8**	**(3)**
	Total Copper in concentrates	**kt**	**52.6**	**47.0**	**53.5**	**49.6**	**47.5**	**197.6**	**225.9**	**(13)**	**(10)**
	Total Gold in concentrates and in doré	**koz**	**27**	**18**	**26**	**18**	**23**	**85**	**256**	**(67)**	**(15)**
	Total Silver in concentrates and in doré	**koz**	**410**	**381**	**455**	**402**	**338**	**1,576**	**1,722**	**(8)**	**(18)**

Production by quarter – Q4 2018 to Q4 2019

continued

Metals and minerals

Production from own sources – Copper assets[1] continued

			Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Australia (Mount Isa, Ernest Henry, Townsville, Cobar)											
Mount Isa, Ernest Henry, Townsville, Cobar											
	Copper metal	kt	44.0	23.8	40.2	41.3	45.8	151.1	151.5	–	4
	Copper in concentrates	kt	4.3	–	–	–	–	–	10.9	(100)	(100)
	Gold	koz	22	27	27	28	18	100	74	35	(18)
	Silver	koz	237	284	321	304	245	1,154	854	35	3
	Silver in concentrates	koz	21	–	–	–	–	–	50	(100)	(100)
Mount Isa, Ernest Henry, Townsville – total production including third party feed											
	Copper metal	*kt*	*57.5*	*38.1*	*60.3*	*60.9*	*61.2*	*220.5*	*206.6*	*7*	*6*
	Copper in concentrates	*kt*	*4.3*	–	–	–	–	–	*10.9*	*(100)*	*(100)*
	Gold	*koz*	*43*	*34*	*34*	*36*	*36*	*140*	*135*	*4*	*(16)*
	Silver	*koz*	*329*	*296*	*335*	*363*	*395*	*1,389*	*1,140*	*22*	*20*
	Silver in concentrates	*koz*	*21*	–	–	–	–	–	*50*	*(100)*	*(100)*
Cobar	Copper in concentrates	kt	12.2	10.4	11.6	10.4	11.1	43.5	48.0	(9)	(9)
	Silver in concentrates	koz	123	106	120	116	119	461	495	(7)	(3)
	Total Copper metal	**kt**	**44.0**	**23.8**	**40.2**	**41.3**	**45.8**	**151.1**	**151.5**	**–**	**4**
	Total Copper in concentrates	**kt**	**16.5**	**10.4**	**11.6**	**10.4**	**11.1**	**43.5**	**58.9**	**(26)**	**(33)**
	Total Gold	**koz**	**22**	**27**	**27**	**28**	**18**	**100**	**74**	**35**	**(18)**
	Total Silver	**koz**	**381**	**390**	**441**	**420**	**364**	**1,615**	**1,399**	**15**	**(4)**
Total Copper department – excl. African Copper											
	Copper	**kt**	**242.0**	**194.3**	**218.9**	**224.6**	**233.5**	**871.3**	**905.7**	**(4)**	**(4)**
	Zinc	**kt**	**28.8**	**24.7**	**26.7**	**24.3**	**26.7**	**102.4**	**138.1**	**(26)**	**(7)**
	Gold	**koz**	**49**	**45**	**53**	**46**	**41**	**185**	**330**	**(44)**	**(16)**
	Silver	**koz**	**2,993**	**2,650**	**2,777**	**2,777**	**2,916**	**11,120**	**11,915**	**(7)**	**(3)**
African Copper (Katanga, Mutanda, Mopani)											
Katanga	Copper metal	kt	49.8	57.2	52.5	59.4	65.4	234.5	152.4	54	31
	Cobalt[4]	kt	4.6	3.5	2.6	4.8	6.2	17.1	11.1	54	35
Mutanda	Copper metal	kt	46.9	28.0	25.7	31.5	18.0	103.2	199.0	(48)	(62)
	Cobalt[4]	kt	8.1	6.4	7.0	7.2	4.5	25.1	27.3	(8)	(44)
Mopani	Copper metal	kt	16.1	10.1	10.3	1.2	–	21.6	59.3	(64)	(100)
	Copper in concentrates	kt	–	–	4.0	3.3	3.3	10.6	–	n.m.	–
African Copper – total production including third party feed											
Mopani	*Copper metal*	*kt*	*31.1*	*21.3*	*27.5*	*2.5*	–	*51.3*	*119.5*	*(57)*	*(100)*
	Copper in concentrates	*kt*	–	–	*4.0*	*3.3*	*3.3*	*10.6*	–	*n.m.*	–
	Total Copper metal	**kt**	**112.8**	**95.3**	**88.5**	**92.1**	**83.4**	**359.3**	**410.7**	**(13)**	**(26)**
	Total Copper in concentrates	**kt**	**–**	**–**	**4.0**	**3.3**	**3.3**	**10.6**	**–**	**n.m.**	**–**
	Total Cobalt[4]	**kt**	**12.7**	**9.9**	**9.6**	**12.0**	**10.7**	**42.2**	**38.4**	**10**	**(16)**
Total Copper department											
	Copper	**kt**	**354.8**	**289.6**	**311.4**	**320.0**	**320.2**	**1241.2**	**1,316.4**	**(6)**	**(10)**
	Cobalt	**kt**	**12.7**	**9.9**	**9.6**	**12.0**	**10.7**	**42.2**	**38.4**	**10**	**(16)**
	Zinc	**kt**	**28.8**	**24.7**	**26.7**	**24.3**	**26.7**	**102.4**	**138.1**	**(26)**	**(7)**
	Gold	**koz**	**49**	**45**	**53**	**46**	**41**	**185**	**330**	**(44)**	**(16)**
	Silver	**koz**	**2,993**	**2,650**	**2,777**	**2,777**	**2,916**	**11,120**	**11,915**	**(7)**	**(3)**

Metals and minerals

Production from own sources – Zinc assets[1]

			Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Kazzinc											
	Zinc metal	kt	**41.9**	**40.3**	**48.7**	**45.0**	**38.5**	**172.5**	**201.2**	**(14)**	**(8)**
	Lead metal	kt	**9.6**	**7.9**	**11.3**	**8.2**	**4.2**	**31.6**	**46.9**	**(33)**	**(56)**
	Lead in concentrates	kt	**2.8**	**2.8**	–	–	–	**2.8**	**8.7**	**(68)**	**(100)**
	Copper metal[5]	kt	**14.1**	**11.1**	**8.1**	**12.1**	**12.7**	**44.0**	**52.4**	**(16)**	**(10)**
	Gold	koz	**173**	**150**	**161**	**146**	**177**	**634**	**643**	**(1)**	**2**
	Silver	koz	**1,357**	**959**	**1,019**	**1,354**	**1,214**	**4,546**	**6,210**	**(27)**	**(11)**
	Silver in concentrates	koz	**98**	**88**	**4**	–	–	**92**	**303**	**(70)**	**(100)**
Kazzinc – total production including third party feed											
	Zinc metal	*kt*	*76.9*	*74.5*	*76.3*	*66.2*	*76.3*	*293.3*	*309.7*	*(5)*	*(1)*
	Lead metal	*kt*	*35.8*	*32.4*	*35.5*	*31.3*	*29.8*	*129.0*	*149.5*	*(14)*	*(17)*
	Lead in concentrates	*kt*	*2.8*	*2.8*	–	–	–	*2.8*	*8.7*	*(68)*	*(100)*
	Copper metal	*kt*	*19.3*	*16.5*	*11.6*	*17.1*	*19.9*	*65.1*	*70.0*	*(7)*	*3*
	Gold	*koz*	*254*	*206*	*233*	*260*	*263*	*962*	*934*	*3*	*4*
	Silver	*koz*	*5,195*	*4,946*	*5,533*	*6,594*	*6,056*	*23,129*	*20,571*	*12*	*17*
	Silver in concentrates	*koz*	*98*	*88*	*4*	–	–	*92*	*303*	*(70)*	*(100)*
Australia (Mount Isa, McArthur River)											
Mount Isa	Zinc in concentrates	kt	89.5	81.8	80.7	88.6	75.3	326.4	278.2	17	(16)
	Lead in concentrates	kt	39.2	41.0	40.6	42.6	33.8	158.0	125.9	25	(14)
	Silver in concentrates	koz	1,369	1,525	1,422	1,463	1,108	5,518	4,643	19	(19)
McArthur River	Zinc in concentrates	kt	78.6	69.1	70.0	61.7	70.4	271.2	254.3	7	(10)
	Lead in concentrates	kt	16.5	14.1	13.3	11.9	16.0	55.3	49.9	11	(3)
	Silver in concentrates	koz	588	424	403	323	525	1,675	1,719	(3)	(11)
	Total Zinc in concentrates	kt	**168.1**	**150.9**	**150.7**	**150.3**	**145.7**	**597.6**	**532.5**	**12**	**(13)**
	Total Lead in concentrates	kt	**55.7**	**55.1**	**53.9**	**54.5**	**49.8**	**213.3**	**175.8**	**21**	**(11)**
	Total Silver in concentrates	koz	**1,957**	**1,949**	**1,825**	**1,786**	**1,633**	**7,193**	**6,362**	**13**	**(17)**
North America (Matagami, Kidd)											
Matagami	Zinc in concentrates	kt	8.7	11.2	10.1	11.9	10.6	43.8	35.2	24	22
	Copper in concentrates	kt	1.4	1.3	1.6	1.4	1.3	5.6	5.4	4	(7)
Kidd	Zinc in concentrates	kt	12.6	13.6	17.6	20.6	15.8	67.6	65.9	3	25
	Copper in concentrates	kt	8.1	8.0	8.0	7.9	9.6	33.5	33.6	–	19
	Silver in concentrates	koz	357	258	435	400	561	1,654	1,893	(13)	57
	Total Zinc in concentrates	kt	**21.3**	**24.8**	**27.7**	**32.5**	**26.4**	**111.4**	**101.1**	**10**	**24**
	Total Copper in concentrates	kt	**9.5**	**9.3**	**9.6**	**9.3**	**10.9**	**39.1**	**39.0**	–	**15**
	Total Silver in concentrates	koz	**357**	**258**	**435**	**400**	**561**	**1,654**	**1,893**	**(13)**	**57**

Production by quarter – Q4 2018 to Q4 2019
continued

Metals and minerals

Production from own sources – Zinc assets[1] continued

		Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Other Zinc: South America (Argentina, Bolivia, Peru)[6]										
Zinc in concentrates	kt	22.0	21.6	19.8	21.2	31.0	**93.6**	95.2	(2)	41
Lead metal	kt	3.5	–	–	–	–	**–**	13.9	(100)	(100)
Lead in concentrates	kt	5.2	8.1	8.4	9.6	6.2	**32.3**	28.0	15	19
Copper in concentrates	kt	1.0	1.0	0.8	0.5	0.4	**2.7**	4.5	(40)	(60)
Silver metal	koz	190	–	–	–	–	**–**	744	(100)	(100)
Silver in concentrates	koz	1,473	1,592	1,655	1,808	1,851	**6,906**	6,989	(1)	26
Total Zinc department										
Zinc	kt	253.3	237.6	246.9	249.0	241.6	**975.1**	930.0	5	(5)
Lead	kt	76.8	73.9	73.6	72.3	60.2	**280.0**	273.3	2	(22)
Copper	kt	24.6	21.4	18.5	21.9	24.0	**85.8**	95.9	(11)	(2)
Gold	koz	173	150	161	146	177	**634**	643	(1)	2
Silver	koz	5,432	4,846	4,938	5,348	5,259	**20,391**	22,501	(9)	(3)

Metals and minerals

Production from own sources – Nickel assets[1]

			Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Integrated Nickel Operations (Sudbury, Raglan, Nikkelverk)											
	Nickel metal	kt	16.2	13.3	15.5	16.1	14.9	**59.8**	59.5	1	(8)
	Nickel in concentrates	kt	0.1	0.1	0.2	0.1	0.1	**0.5**	0.5	–	–
	Copper metal	kt	3.8	3.9	3.1	4.1	4.7	**15.8**	14.4	10	24
	Copper in concentrates	kt	7.4	5.8	9.3	6.8	6.5	**28.4**	27.0	5	(12)
	Cobalt metal	kt	0.2	0.2	0.2	0.2	0.1	**0.7**	0.9	(22)	(50)
	Gold	koz	7	7	7	7	8	**29**	29	–	14
	Silver	koz	116	124	155	118	110	**507**	464	9	(5)
	Platinum	koz	14	17	16	15	3	**51**	58	(12)	(79)
	Palladium	koz	29	26	32	29	25	**112**	119	(6)	(14)
	Rhodium	koz	1	1	1	1	1	**4**	4	–	–
Integrated Nickel Operations – total production including third party feed											
	Nickel metal	*kt*	*23.2*	*22.6*	*23.0*	*23.1*	*23.4*	*92.1*	*90.8*	*1*	*1*
	Nickel in concentrates	*kt*	*0.2*	*0.1*	*0.2*	*0.1*	*0.2*	*0.6*	*0.6*	–	–
	Copper metal	*kt*	*5.5*	*5.4*	*4.5*	*5.8*	*6.3*	*22.0*	*20.6*	*7*	*15*
	Copper in concentrates	*kt*	*9.2*	*6.7*	*9.8*	*8.6*	*7.7*	*32.8*	*31.7*	*3*	*(16)*
	Cobalt metal	*kt*	*1.3*	*1.0*	*1.0*	*1.2*	*1.2*	*4.4*	*4.2*	*5*	*(8)*
	Gold	*koz*	*11*	*10*	*12*	*10*	*11*	*43*	*42*	*2*	–
	Silver	*koz*	*176*	*187*	*211*	*189*	*162*	*749*	*696*	*8*	*(8)*
	Platinum	*koz*	*21*	*21*	*23*	*21*	*19*	*84*	*82*	*2*	*(10)*
	Palladium	*koz*	*59*	*49*	*65*	*61*	*53*	*228*	*220*	*4*	*(10)*
	Rhodium	*koz*	*1*	*1*	*1*	*2*	*1*	*5*	*5*	–	–
Murrin Murrin											
	Total Nickel metal	kt	9.8	8.7	7.4	10.8	9.7	**36.6**	35.5	3	(1)
	Total Cobalt metal	kt	0.8	0.8	0.6	0.9	1.1	**3.4**	2.9	17	38
Murrin Murrin – total production including third party feed											
	Total Nickel metal	*kt*	*10.9*	*9.8*	*8.6*	*11.7*	*10.6*	*40.7*	*39.7*	*3*	*(3)*
	Total Cobalt metal	*kt*	*0.8*	*0.8*	*0.9*	*0.9*	*1.1*	*3.7*	*3.2*	*16*	*38*
Koniambo	**Nickel in ferronickel**	kt	6.8	5.0	5.2	7.0	6.5	**23.7**	28.3	(16)	(4)
Total Nickel department											
	Nickel	kt	32.9	27.1	28.3	34.0	31.2	**120.6**	123.8	(3)	(5)
	Copper	kt	11.2	9.7	12.4	10.9	11.2	**44.2**	41.4	7	–
	Cobalt	kt	1.0	1.0	0.8	1.1	1.2	**4.1**	3.8	8	20
	Gold	koz	7	7	7	7	8	**29**	29	–	14
	Silver	koz	116	124	155	118	110	**507**	464	9	(5)
	Platinum	koz	14	17	16	15	3	**51**	58	(12)	(79)
	Palladium	koz	29	26	32	29	25	**112**	119	(6)	(14)
	Rhodium	koz	1	1	1	1	1	**4**	4	–	–

Production by quarter – Q4 2018 to Q4 2019

continued

Metals and minerals

Production from own sources – Ferroalloys assets[1]

		Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Ferrochrome[7]	kt	435	402	397	231	408	1,438	1,580	(9)	(6)
Vanadium pentoxide	mlb	5.5	5.1	5.1	5.6	4.4	20.2	20.2	–	(20)

Total production – Custom metallurgical assets[1]

		Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Copper (Altonorte, Pasar, Horne, CCR)										
Copper metal	kt	103.2	113.3	109.8	100.8	109.0	432.9	438.8	(1)	6
Copper anode	kt	103.7	123.4	137.3	117.7	132.3	510.7	479.3	7	28
Zinc (Portovesme, San Juan de Nieva, Nordenham, Northfleet)										
Zinc metal	kt	205.5	203.3	200.5	197.3	204.6	805.7	799.6	1	–
Lead metal	kt	51.5	45.7	50.3	43.9	50.6	190.5	186.3	2	(2)

Energy products

Production from own sources – Coal assets[1]

		Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Australian coking coal	mt	2.1	2.6	1.7	1.8	3.1	9.2	7.5	23	48
Australian semi-soft coal	mt	1.4	1.0	2.3	1.8	1.3	6.4	3.9	64	(7)
Australian thermal coal (export)	mt	14.4	14.9	16.1	16.8	16.4	64.2	59.4	8	14
Australian thermal coal (domestic)	mt	2.4	1.8	2.2	2.2	2.4	8.6	9.4	(9)	–
South African thermal coal (export)	mt	4.1	3.8	2.9	3.4	2.9	13.0	17.3	(25)	(29)
South African thermal coal (domestic)	mt	3.0	3.3	4.1	3.7	2.8	13.9	10.0	39	(7)
Prodeco	mt	3.0	3.6	3.7	4.0	4.3	15.6	11.7	33	43
Cerrejón[8]	mt	2.3	2.2	2.0	2.1	2.3	8.6	10.2	(16)	–
Total Coal department	**mt**	**32.7**	**33.2**	**35.0**	**35.8**	**35.5**	**139.5**	**129.4**	**8**	**9**

Oil assets

		Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	**2019**	2018	Change 2019 vs 2018 %	Change Q4 19 vs Q4 18 %
Glencore entitlement interest basis										
Equatorial Guinea	kbbl	451	436	423	439	597	1,895	1,827	4	32
Chad	kbbl	819	709	672	884	1,106	3,371	2,799	20	35
Cameroon	kbbl	–	–	–	75	177	252	–	n.m.	n.m.
Total Oil department	**kbbl**	**1,270**	**1,145**	**1,095**	**1,398**	**1,880**	**5,518**	**4,626**	**19**	**48**
Gross basis										
Equatorial Guinea	kbbl	2,168	2,051	2,113	2,166	2,906	9,236	8,818	5	34
Chad	kbbl	1,119	969	919	1,209	1,511	4,608	3,827	20	35
Cameroon	kbbl	–	–	–	216	514	730	–	n.m.	n.m.
Total Oil department	**kbbl**	**3,287**	**3,020**	**3,032**	**3,591**	**4,931**	**14,574**	**12,645**	**15**	**50**

1 Controlled industrial assets and joint ventures only. Production is on a 100% basis except for joint ventures, where the Group's attributable share of production is included.
2 The Group's pro-rata share of Collahuasi production (44%).
3 The Group's pro-rata share of Antamina production (33.75%).
4 Cobalt contained in concentrates and hydroxides.
5 Copper metal includes copper contained in copper concentrates and blister.
6 South American production excludes Volcan Compania Minera.
7 The Group's attributable 79.5% share of the Glencore-Merafe Chrome Venture.
8 The Group's pro-rata share of Cerrejón production (33.3%).

Resources and reserves

The resource and reserve data in the following tables comprise summary extracts of the Glencore Resources and Reserves report as at 31 December 2019, as published on the Glencore website on 4 February 2020. The Glencore Resources and Reserves report was publicly reported, as appropriate for individual components, in accordance with the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code), the 2016 edition of the South African Code for Reporting of Mineral Resources and Mineral Reserves (SAMREC), the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves (2014 edition) and the Petroleum Resources Management System (PRMS) for reporting of oil and natural gas reserves and resources.

Data is reported as at 31 December 2019, unless otherwise noted. For comparison purposes, data for 2018 has been included. Metric units are used throughout, and all data is presented on a 100% asset basis with the exception of Oil assets which are shown on a working interest basis. All tonnage information has been rounded to reflect the relative uncertainty in the estimates; there may therefore be small differences in the totals.

Metals and minerals: Copper

Copper mineral resources

		Measured Mineral Resources		Indicated Mineral Resources		Measured and Indicated Resources		Inferred Mineral Resources	
Name of operation	Commodity	**2019**	2018	**2019**	2018	**2019**	2018	**2019**	2018
African copper									
Katanga	(Mt)	16	16	249	259	265	276	163	165
	Copper (%)	3.58	3.58	3.69	3.60	3.68	3.60	3.8	3.78
	Cobalt (%)	0.57	0.57	0.54	0.54	0.54	0.54	0.45	0.44
Mutanda	(Mt)	368	404	96	263	464	667	17	119
	Copper (%)	1.39	1.36	0.97	0.79	1.31	1.14	0.72	0.65
	Cobalt (%)	0.55	0.47	0.44	0.25	0.53	0.38	0.53	0.15
Mopani	(Mt)	207	208	76	76	283	285	76	76
	Copper (%)	2.08	2.08	1.99	1.99	2.06	2.06	2.06	2.06
	Cobalt (%)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Collahuasi	(Mt)	857	870	4,534	4,458	5,391	5,328	4,806	5,052
	Copper (%)	0.80	0.84	0.81	0.81	0.81	0.82	0.73	0.74
	Molybdenum (%)	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02
Antamina	(Mt)	344	347	650	707	994	1,054	1,295	1,236
	Copper (%)	0.84	0.87	0.86	0.86	0.86	0.87	1.02	0.99
	Zinc (%)	0.67	0.65	0.75	0.77	0.72	0.73	0.60	0.60
	Silver (g/t)	9	10	11	11	10	11	11	12
	Molybdenum (%)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Other South America	(Mt)	659	677	1,971	2,063	2,629	2,741	703	797
	Copper (%)	0.44	0.44	0.43	0.42	0.43	0.42	0.31	0.30
	Gold (g/t)	0.11	0.11	0.04	0.04	0.06	0.05	0.02	0.03
	Silver (g/t)	0.7	0.7	0.8	0.8	0.8	0.7	0.2	0.2
Australia	(Mt)	108	116	167	168	275	284	160	161
	Copper (%)	1.79	1.77	1.39	1.37	1.5	1.53	1.09	1.1
	Gold (g/t)	0.06	0.09	0.23	0.23	0.16	0.17	0.06	0.06
	Silver (g/t)	0.7	0.6	0.4	0.4	0.5	0.5	0.6	0.7
Other projects[1]	(Mt)	853	534	2,318	1,915	3,171	2,449	3,023	2,596
(El Pachon, West Wall, Polyment)	Copper (%)	0.50	0.67	0.45	0.50	0.47	0.54	0.39	0.41

1 The above listed Copper projects also include other metallic content, as noted in the Resources and Reserves report published on 4 February 2020.

Copper ore reserves

Name of operation	Commodity	Proved Ore Reserves 2019	Proved Ore Reserves 2018	Probable Ore Reserves 2019	Probable Ore Reserves 2018	Total Ore Reserves 2019	Total Ore Reserves 2018
African copper							
Katanga	(Mt)	9	9	115	124	124	133
	Copper (%)	3.56	3.56	3.18	3.15	3.20	3.18
	Cobalt (%)	0.56	0.55	0.53	0.51	0.53	0.52
Mutanda	(Mt)	48	80	82	52	130	132
	Copper (%)	1.36	1.69	1.59	1.79	1.51	1.73
	Cobalt (%)	0.62	0.70	0.75	0.59	0.70	0.66
Mopani	(Mt)	110	111	31	33	1.41	144
	Copper (%)	1.90	1.90	1.85	1.90	1.89	1.90
Collahuasi	(Mt)	486	448	2,569	2,683	3,055	3,131
	Copper (%)	1.03	1.10	0.90	0.90	0.92	0.93
	Molybdenum (%)	0.021	0.023	0.026	0.026	0.025	0.026
Antamina	(Mt)	224	235	205	254	430	489
	Copper (%)	0.92	0.96	0.91	0.87	0.91	0.91
	Zinc (%)	0.80	0.78	1.12	1.09	0.95	0.94
	Silver (g/t)	9	10	11	11	10	11
	Molybdenum (%)	0.027	0.027	0.021	0.021	0.024	0.024
Other South America	(Mt)	484	504	707	739	1,192	1,243
	Copper (%)	0.44	0.45	0.49	0.47	0.46	0.46
	Gold (g/t)	0.10	0.10	0.05	0.05	0.07	0.07
	Silver (g/t)	0.8	0.8	1.2	1.3	1.0	1.1
Australia	(Mt)	22	32	58	53	81	85
	Copper (%)	2.34	2.11	1.36	1.43	1.63	1.68
	Gold (g/t)	0.22	0.26	0.31	0.28	0.29	0.27
	Silver (g/t)	2.8	2.0	0.6	0.7	1.2	1.2
Other projects[1]	(Mt)	157	–	106	–	264	–
(Polymet)	Copper (%)	0.29	–	0.29	–	0.29	–

1 The above listed Copper projects also include other metallic content, as noted in the Resources and Reserves report published on 4 February 2020.

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Additional information

Metals and minerals: Zinc

Zinc mineral resources

		Measured Mineral Resources		Indicated Mineral Resources		Measured and Indicated Resources		Inferred Mineral Resources	
Name of operation	Commodity	**2019**	2018	**2019**	2018	**2019**	2018	**2019**	2018
Kazzinc									
Kazzinc Polymetallic	(Mt)	130	92	93	92	223	185	149	157
	Zinc (%)	2.6	4.0	1.3	1.5	2.1	2.7	2	2
	Lead (%)	0.8	1.4	0.4	0.4	0.6	0.9	1	1
	Copper (%)	0.4	0.3	0.2	0.2	0.3	0.3	0.1	0.1
	Silver (g/t)	14	20	12	15	13	17	23	22
	Gold (g/t)	1.1	0.5	0.9	0.8	1.0	0.7	1	1
Kazzinc Gold (Vasilkovsky)	(Mt)	70	78	44	46	113	124	0.1	–
	Gold (g/t)	2.1	2.1	1.7	1.7	1.9	1.9	1.0	–
Australia									
Mount Isa	(Mt)	131	110	284	308	414	419	226	220
	Zinc (%)	7.6	7.4	6.9	7.0	7.1	7.0	6	6
	Lead (%)	4.3	4.4	3.4	3.4	3.6	3.7	3	3
	Silver (g/t)	82	85	61	62	68	67	61	65
McArthur River	(Mt)	107	108	56	64	163	172	–	–
	Zinc (%)	9.6	9.7	10.3	10.1	9.8	9.8	–	–
	Lead (%)	4.1	4.2	4.9	5.1	4.4	4.6	–	–
	Silver (g/t)	41	42	52	55	45	47	–	–
North America									
Zinc North America	(Mt)	21.8	21.7	32	34	54	55	70	70
	Zinc (%)	4.4	4.2	4.5	4.8	4.5	4.5	4	4
	Lead (%)	0.5	0.5	0.6	0.5	0.6	0.7	1	1
	Copper (%)	1.4	1.5	0.6	0.7	0.9	1.0	1	1
	Silver (g/t)	45	46	116	112	87	87	134	133
	Gold (g/t)	0.5	0.4	0.3	0.4	0.4	0.4	0.2	0.2
Copper North America	(Mt)	75	75	255	255	330	330	120	120
	Copper (%)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Gold (g/t)	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Volcan									
Lead/zinc/silver deposits	(Mt)	33	37	66	55	99	92	228	212
	Zinc (%)	6.3	6.3	5.2	5.2	5.6	5.6	2.9	2.7
	Lead (%)	1.5	1.2	1.5	1.2	1.5	1.2	1.1	0.9
	Silver (g/t)	107	109	87	79	93	93	78	76
Copper deposits	(Mt)	18.4	18.4	34.3	34.3	53	53	148	148
	Gold (g/t)	–	–	–	–	–	–	0.2	0.2
	Copper (%)	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Other Zinc	(Mt)	14.6	15.9	24	22	38	38	76	73
	Zinc (%)	5.8	6.0	4.2	4.8	4.8	5.3	6	7
	Lead (%)	1.5	1.7	1.3	1.4	1.4	1.5	1	1
	Copper (%)	0.4	0.3	0.3	0.4	0.3	0.4	0.2	0.1
	Silver (g/t)	138	134	130	138	133	137	83	89

Zinc ore reserves

Name of operation	Commodity	Proved Ore Reserves 2019	Proved Ore Reserves 2018	Probable Ore Reserves 2019	Probable Ore Reserves 2018	Total Ore Reserves 2019	Total Ore Reserves 2018
Kazzinc							
Kazzinc Polymetallic	(Mt)	78	76	13.4	16.8	91	93
	Zinc (%)	3.4	3.9	4.5	4.4	3.6	4.0
	Lead (%)	1.0	1.4	0.5	0.7	0.9	1.3
	Copper (%)	0.2	0.1	0.5	0.6	0.2	0.2
	Silver (g/t)	14	18	19	27	15	19
	Gold (g/t)	0.6	0.3	0.9	0.7	0.7	0.4
Kazzinc Gold (Vasilkovsky)	(Mt)	42	51	44	47	86	98
	Gold (g/t)	2.2	2.1	1.8	1.8	2.0	1.8
Australia							
Mount Isa	(Mt)	29	22	50	75	79	97
	Zinc (%)	7.5	8.1	7.3	7.0	7.4	7.2
	Lead (%)	3.9	4.1	3.4	3.3	3.6	3.5
	Silver (g/t)	74	75	62	60	66	62
McArthur River	(Mt)	71	73	27	35	98	108
	Zinc (%)	9.5	9.4	8.0	8.1	9.1	9.0
	Lead (%)	4.3	4.3	4.0	4.3	4.2	4.3
	Silver (g/t)	42	43	42	46	42	44
North America	(Mt)	5.7	5.8	1.0	3.0	7	9
	Zinc (%)	4.42	3.93	5.1	6.1	4.5	4.7
	Copper (%)	1.59	1.79	1.9	1.3	1.6	1.6
	Silver (g/t)	43	42	43	32	43	39
	Gold (g/t)	0.22	0.09	–	0.4	0.2	0.2
Volcan	(Mt)	10.1	15.8	22.6	18.5	32.7	34.3
	Zinc (%)	5.3	4.1	4.5	4.0	4.8	4.0
	Lead (%)	0.9	0.8	1.1	1.0	1.1	0.9
	Silver (g/t)	99	74	92	76	94	73
Other Zinc	(Mt)	5.2	5.6	11.3	11.2	16.6	16.8
	Zinc (%)	6.0	5.2	3.5	3.9	4.3	4.4
	Lead (%)	1.4	1.7	1.1	1.0	1.2	1.2
	Copper (%)	0.2	0.2	0.2	0.3	0.2	0.2
	Silver (g/t)	145	124	118	103	126	110

Resources and reserves
continued

Metals and minerals: Nickel

Nickel mineral resources

Name of operation	Commodity	Measured Mineral Resources 2019	Measured Mineral Resources 2018	Indicated Mineral Resources 2019	Indicated Mineral Resources 2018	Measured and Indicated Resources 2019	Measured and Indicated Resources 2018	Inferred Mineral Resources 2019	Inferred Mineral Resources 2018
INO	(Mt)	10.8	12.2	37.6	37.5	48.4	49.6	42	39
	Nickel (%)	2.77	2.74	2.48	2.50	2.54	2.56	1.7	1.7
	Copper (%)	1.06	1.19	1.90	1.92	1.72	1.74	1.9	2.0
	Cobalt (%)	0.06	0.06	0.06	0.06	0.06	0.06	0.04	0.04
	Platinum (g/t)	0.79	0.94	0.96	0.92	0.92	0.93	1.0	1.0
	Palladium (g/t)	1.53	1.67	1.59	1.56	1.58	1.58	1.6	1.6
Murrin Murrin	(Mt)	144.5	138.4	75.5	75.5	220.0	214.0	17	17
	Nickel (%)	1.01	1.01	0.99	0.99	1.00	1.01	0.9	0.9
	Cobalt (%)	0.073	0.075	0.084	0.084	0.077	0.078	0.07	0.07
Koniambo	(Mt)	11.7	12.8	41.7	43.6	53.5	56.4	82	83
	Nickel (%)	2.48	2.48	2.41	2.40	2.42	2.42	2.5	2.5
Other Nickel	(Mt)	13.8	13.8	23.4	23.4	37.2	37.2	21	21
(Kabanga)	Nickel (%)	2.49	2.49	2.72	2.72	2.63	2.63	2.6	2.6
	Copper (%)	0.34	0.34	0.36	0.36	0.35	0.35	0.3	0.3
	Cobalt (%)	0.21	0.21	0.19	0.19	0.20	0.20	0.2	0.2
	Platinum (g/t)	0.16	0.16	0.42	0.42	0.32	0.32	0.3	0.3
	Palladium (g/t)	0.19	0.19	0.28	0.28	0.25	0.25	0.3	0.3

Nickel ore reserves

Name of operation	Commodity	Proved Ore Reserves 2019	Proved Ore Reserves 2018	Probable Ore Reserves 2019	Probable Ore Reserves 2018	Total Ore Reserves 2019	Total Ore Reserves 2018
INO	(Mt)	8.4	10.3	21.6	21.7	29.9	32.0
	Nickel (%)	1.92	1.96	2.30	2.28	2.20	2.17
	Copper (%)	0.81	0.96	0.92	0.92	0.89	0.94
	Cobalt (%)	0.04	0.04	0.05	0.05	0.05	0.05
	Platinum (g/t)	0.60	0.70	0.52	0.52	0.55	0.58
	Palladium (g/t)	1.01	1.16	0.97	0.95	0.98	1.02
Murrin Murrin	(Mt)	103.6	83.1	37.8	18.5	141.4	101.7
	Nickel (%)	1.033	1.05	1.04	1.05	1.03	1.05
	Cobalt (%)	0.080	0.082	0.103	0.078	0.086	0.081
Koniambo	(Mt)	11.5	11.7	30.3	30.1	41.8	41.8
	Nickel (%)	2.24	2.27	2.18	2.20	2.19	2.22

Metals and minerals: Ferroalloys

Ferroalloys mineral resources

Name of operation	Commodity	Measured Mineral Resources 2019	Measured Mineral Resources 2018	Indicated Mineral Resources 2019	Indicated Mineral Resources 2018	Measured and Indicated Resources 2019	Measured and Indicated Resources 2018	Inferred Mineral Resources 2019	Inferred Mineral Resources 2018
Western Chrome Mines									
Western Chrome Mines	(Mt)	55.121	51.951	61.11	57.00	116.23	108.95	101.8	107.6
	Cr_2O_3 (%)	42.09	42.10	41.5	41.4	41.8	41.7	42	42
Tailings	(Mt)	–	–	–	–	–	–	2.8	2.6
	Cr_2O_3 (%)	–	–	–	–	–	–	17	17
Eastern Chrome Mines									
Eastern Chrome Mines	(Mt)	66.172	61.743	49.23	45.67	115.40	107.41	186.4	156.5
	Cr_2O_3 (%)	40.04	40.18	40.4	40.2	40.2	40.2	39	38
Tailings	(Mt)	–	–	–	–	–	–	4.6	4.2
	Cr_2O_3 (%)	–	–	–	–	–	–	20	19
Vanadium	(Mt)	51.6	48.36	34.90	37.67	86.06	86.04	91	93
	V_2O_5 (%)	0.48	0.48	0.5	0.5	0.5	0.5	0.5	0.5

Ferroalloys ore reserves

Name of operation	Commodity	Proved Ore Reserves 2019	Proved Ore Reserves 2018	Probable Ore Reserves 2019	Probable Ore Reserves 2018	Total Ore Reserves 2019	Total Ore Reserves 2018
Western Chrome Mines	(Mt)	17.791	17.418	6.65	7.94	24.44	25.36
	Cr_2O_3 (%)	30.79	30.84	28.0	28.2	30.0	30.0
Eastern Chrome Mines	(Mt)	24.554	22.961	8.68	10.03	33.23	32.99
	Cr_2O_3 (%)	33.23	33.20	33.6	34.2	33.3	33.5
Vanadium	(Mt)	23.10	23.94	9.5	11.5	32.6	35.4
	V_2O_5 (%)	0.47	0.47	0.4	0.5	0.5	0.5

Metals and minerals: Aluminium/Alumina

Alumina mineral resources

Name of operation	Commodity	Measured Mineral Resources 2019	Measured Mineral Resources 2018	Indicated Mineral Resources 2019	Indicated Mineral Resources 2018	Measured and Indicated Resources 2019	Measured and Indicated Resources 2018	Inferred Mineral Resources 2019	Inferred Mineral Resources 2018
Aurukun	(Mt)	95	94	334	322	429	416	3	3
	Al_2O_3 (%)	53.4	53.4	49.9	50.0	50.6	50.7	49.3	49.5

Resources and reserves
continued

Metals and minerals: Iron Ore

Iron ore mineral resources

Name of operation	Commodity	Measured Mineral Resources 2019	Measured Mineral Resources 2018	Indicated Mineral Resources 2019	Indicated Mineral Resources 2018	Measured and Indicated Resources 2019	Measured and Indicated Resources 2018	Inferred Mineral Resources 2019	Inferred Mineral Resources 2018
El Aouj Mining Company S.A.	(Mt)	470	470	1,435	1,435	1,905	1,905	2,520	2,520
	Iron (%)	36	36	36	36	36	36	35	35
Sphere Mauritania S.A.	(Mt)	215	215	190	190	405	405	251	251
(Askaf)	Iron (%)	36	36	35	35	36	36	35	35
Sphere Lebtheinia S.A.	(Mt)	–	–	2,180	2,180	2,180	2,180	560	560
	Iron (%)	–	–	32	32	32	32	32	32
Jumelles Limited	(Mt)	2,300	2,300	2,500	2,500	4,800	4,800	2,100	2,100
(Zanaga)	Iron (%)	34	34	30	30	32	32	31	31

Iron ore reserves

Name of operation	Commodity	Proved Ore Reserves 2019	Proved Ore Reserves 2018	Probable Ore Reserves 2019	Probable Ore Reserves 2018	Total Ore Reserves 2019	Total Ore Reserves 2018
El Aouj Mining Company S.A.	(Mt)	380	380	551	551	931	931
	Iron (%)	35	35	35	35	35	35
Jumelles Limited	(Mt)	770	770	1,290	1,290	2,070	2,070
(Zanaga)	Iron (%)	37	37	32	32	34	34

Energy products: Coal

Coal resources

Name of operation	Commodity	Measured Coal Resources 2019	Measured Coal Resources 2018	Indicated Coal Resources 2019	Indicated Coal Resources 2018	Inferred Coal Resources 2019	Inferred Coal Resources 2018
Australia							
New South Wales	Coking/Thermal Coal (Mt)	3,745	3,608	3,669	3,974	7,591	7,615
Queensland	Coking/Thermal Coal (Mt)	3,849	3,157	5,279	5,401	8,925	8,545
South Africa	Thermal Coal (Mt)	2,346	2,409	839	844	344	350
Prodeco	Thermal Coal (Mt)	190	205	147	148	60	70
Cerrejón	Thermal Coal (Mt)	3,250	3,100	1,250	1,200	600	700
Canada projects							
(Suska, Sukunka)	Coking/Thermal Coal (Mt)	45	45	113	113	130	130

Coal reserves

Name of operation	Commodity	Coal Reserves Proved 2019	Coal Reserves Probable 2019	Marketable Coal Reserves Proved 2019	Marketable Coal Reserves Probable 2019	Total Marketable Coal Reserves 2019	Total Marketable Coal Reserves 2018
Australia							
New South Wales	Thermal Coal (Mt)	1,142	681	830	481	1.318	1,260
	Coking Coal (Mt)	2	8	2	5	7	8
Queensland	Thermal Coal (Mt)	822	394	763	348	1,073	1,149
	Coking Coal (Mt)	178	92	125	48	168	150
South Africa	Thermal Coal (Mt)	652	240	406	137	543	577
Prodeco	Thermal Coal (Mt)	95	40	95	40	135	150
Cerrejón	Thermal Coal (Mt)	200	140	190	130	330	375

Energy products: Oil

Net reserves (Proven and Probable)[1]

Working Interest Basis

	Equatorial Guinea Oil mmbbl	Equatorial Guinea Gas bcf	Chad Oil mmbbl	Chad Gas bcf	Cameroon Oil mmbbl	Cameroon Gas bcf	Total Oil mmbbl	Total Gas bcf	Total Combined mmboe
31 December 2018	15	154	102	–	3	–	**120**	**154**	**147**
Revisions	–	(3)	2	–	–	–	**2**	**(3)**	**(1)**
Production	(2)	–	(4)	–	(0.3)	–	**(6)**	**–**	**(6)**
31 December 2019	13	151	100	–	3	–	**114**	**151**	**142**

Net contingent resources (2C)[1]

Working Interest Basis

	Equatorial Guinea Oil mmbbl	Equatorial Guinea Gas bcf	Chad Oil mmbbl	Chad Gas bcf	Cameroon Oil mmbbl	Cameroon Gas bcf	Total Oil mmbbl	Total Gas bcf	Total Combined mmboe
31 December 2018	23	454	61	–	4	–	**88**	**454**	**166**
31 December 2019	23	454	61	–	4	–	**88**	**454**	**166**

1 "Net" reserves or resources are equivalent to Glencore's working interest in the asset/property.

Shareholder information

Glencore plc is registered in Jersey, is headquartered in Switzerland and has operations around the world.

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Our website contains further information on our business and for shareholders including as to share transfer and distributions:
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