GLENCORE

Responsibly sourcing the commodities for everyday life

Annual Report 2018

Our strategy for a sustainable future
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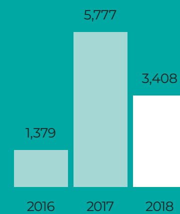
We are one of the world's largest globally diversified natural resource companies, employing around 158,000 people in 150 mining and metallurgical sites, oil production assets and agricultural facilities around the world.

Highlights

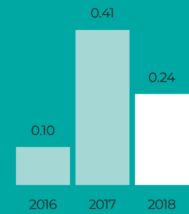
Net income atttributable to equity holders (US$ million)

3,408



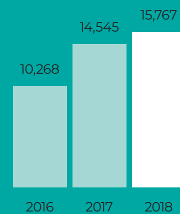
Earnings per share (basic) (US$)

0.24



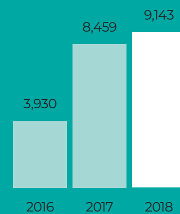
Adjusted EBITDA◊ (US$ million)

15,767



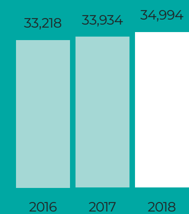
Adjusted EBIT◊ (US$ million)

9,143



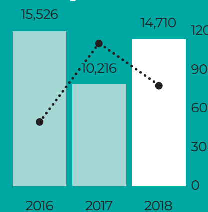
Total borrowings (US$ million)

34,994



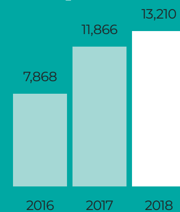
Net debt/ FFO to net debt◊ (US$ millon/%)

14,710



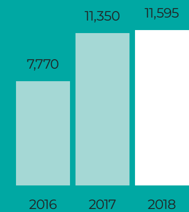
Cash generated by operating activities before working capital changes (US$ millon)

13,210



Funds from operations◊ (US$ millon)

11,595



glencore.com

Front cover: Environmental Advisor Alinta Skewes at Glencore's McArthur River Mine, Australia.

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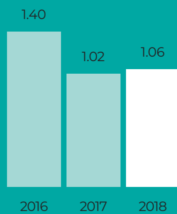
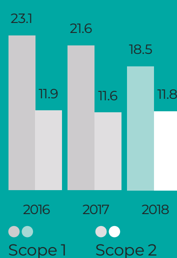
Lost time injury frequency rate (LTIFR)

1.06



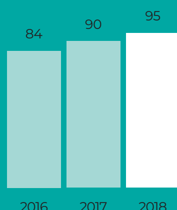
Carbon emissions (million tonnes CO_2)

30.3



Community investment (US$ millon)

95



◊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 214 for definition and reconciliations and note 2 of the financial statements for reconciliation of Adjusted EBIT/EBITDA.

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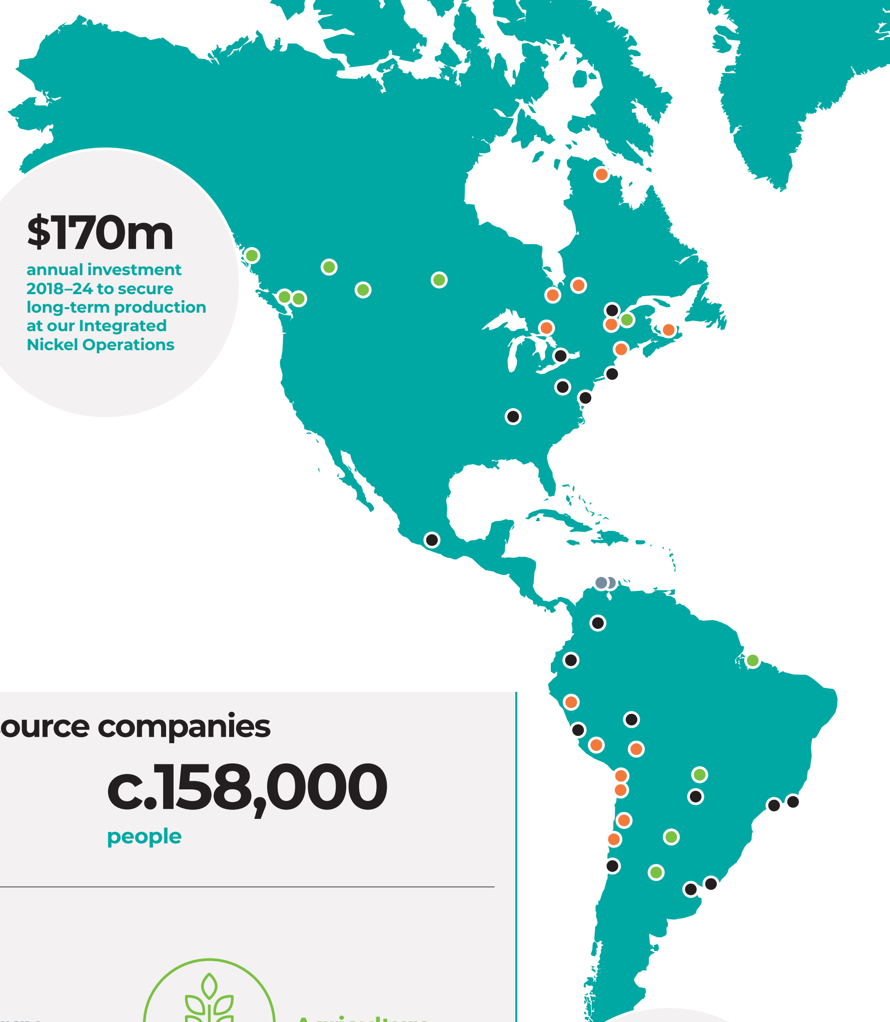
At a glance

We are one of the world's largest natural resource companies. Active at every stage of the commodity supply chain, we are uniquely diversified by geography, product and activity, maximising the value we create for our business and its diverse stakeholders



$170m
annual investment 2018–24 to secure long-term production at our Integrated Nickel Operations

One of the world's largest natural resource companies

150 sites

50 countries

90 offices

c.158,000 people

Three business segments

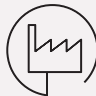
Metals and minerals

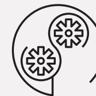
Energy

Agriculture

$200m
to increase Collahuasi copper concentrator throughput capacity to 170ktpd. Commissioning 2021

Active at every stage of the commodity chain





1 Exploration, acquisition and development

2 Extraction and production

3 Processing and refining

4 Blending and optimisation

5 Logistics and delivery

Highly diversified

+90 commodities

3 business segments

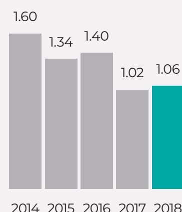
With impressive market insight

40+ years' experience

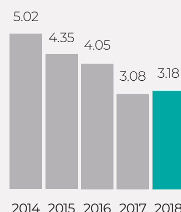
c.3,000 employees in marketing

Focused on sustainability

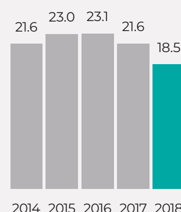
Lost time injury frequency rate (per million hours worked)



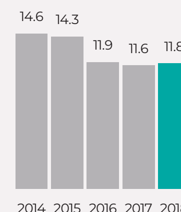
Total recordable injury frequency rate (per million hours worked)



CO_2e Scope 1 (million tonnes)



CO_2 Scope 2 – location based (million tonnes)



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Key
- Metal and minerals sites
- Energy products sites (Number of assets where grouped)
- Agriculture sites
- Corporate offices
- Marketing office/other

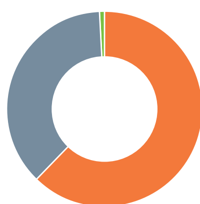
$1.2bn
in downstream oil related investments

c.15Mtpa
increase in high quality coal production from HVO and Hail Creek acquisitions

What makes us different?

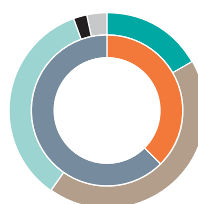
- High-quality, low-cost assets in desirable commodities
- Entrepreneurial culture: employees empowered to make decisions
- Long-term relationships with broad base of suppliers and customers
- Marketing business less correlated to commodity prices
- Maximum flexibility and economies of scale

Adjusted EBITDA 2018 (%)◊



$15.8bn
(2017: $14.6bn)

Revenue◊[1] by region and segment 2018 (%)



Metal and minerals
$83.4bn
(2017: $80.5bn)

Energy products
$139.0bn
(2017: $128.3bn)

Non-current assets[2] by region (%)

$78.0bn
(2017: $78.2bn)

Business segments
- Metals and minerals
- Energy
- Agriculture

Regions
- Americas
- Asia
- Europe
- Africa
- Oceania

1 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.
2 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.

Chief Executive Officer's review

We have delivered both record Adjusted EBITDA and significant cash returns to shareholders in 2018. With our attractive commodities and high margin assets, we look to the future with confidence

A record performance in a challenging environment

We are pleased to report that we have delivered both record Adjusted EBITDA and significant cash returns to shareholders in 2018.

Reflecting the strength of our uniquely diversified business model and commitment of our people, we achieved these results in a challenging operating environment, marked by deteriorating market sentiment as well as some company specific challenges.

The prospect of synchronised global economic growth greeted the start of 2018, supporting positive commodity fundamentals and prices. However, by the end of H1 and into Q3, a strong US dollar, increased volatility and heightened US trade policy tension, began to weigh on broader markets, with widespread concern around sustainability of Chinese growth also resurfacing.

Industrial metals bore the brunt of increasingly negative sentiment in the second half, although average 2018 prices were generally higher year-on-year, e.g. nickel +26%, thermal coal +22% and copper +6%. While most commodities ended the year materially lower than where they started, thermal coal was broadly unchanged, as demand for high quality coals remained robust against a backdrop of limited reinvestment in supply.

Notwithstanding the volatility in commodity prices, like previous years, underlying demand for our key commodities remained generally healthy throughout the year.

The year also brought specific challenges for Glencore, commencing in the form of a number of issues at our copper and cobalt operations in the Democratic Republic of Congo (DRC), including those arising from sanctions imposed on Dan Gertler, Katanga's deliberations with Gécamines over the required recapitalisation of its main operating subsidiary (see note 33), a new mining code introduced in 2018 and the recent appearance of excess levels of uranium in the cobalt hydroxide being produced at Katanga.

Katanga resolved the matter with Gécamines in a constructive manner, while after careful consideration of its legal and commercial options and obligations to a broad stakeholder universe, Glencore settled its dispute with the various entities affiliated with Dan Gertler, in a manner that sought to appropriately address all applicable obligations and concerns.

In contravention of the applicable stabilisation protections afforded by the previous mining code, the new mining code includes significant immediate changes to royalties, various taxation requirements and repatriation of profits. Given the legal risks of non-compliance, our DRC subsidiaries are currently complying with the new code "under protest". We hope to be able to negotiate a reasonable resolution with the DRC government on various key issues during 2019, but remain willing to take the necessary steps to protect our legal rights.

In early July, a Glencore subsidiary received a subpoena from the United States Department of Justice (DOJ) to produce documents and other records with respect to compliance with the Foreign Corrupt Practices Act and United States money laundering statutes. A committee comprising only Independent Non-Executive Directors, led by our Chairman, Tony Hayward, is overseeing the Company's response to the DOJ investigation. We take ethics and compliance seriously and are cooperating with the DOJ.

Creating long-term, sustainable returns for shareholders:

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

Our well positioned portfolio includes copper, cobalt, zinc, vanadium and nickel

Our commodities underpin the **infrastructure and chemistry needed** for a low-carbon world

We aim to prioritise capex towards commodities **essential to the energy and mobility transition**

We are committed to enabling the transition to a low-carbon economy
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Commodity fundamentals still positive

Post the peak in mining sector capex some six years ago, sector reinvestment has remained limited, the growth capex pipeline has contracted and the demand backdrop has been solid.

This underpinned favourable fundamentals for a number of our key commodities, including copper, nickel and thermal coal. In the case of our key base metals, inventory drawdowns have reduced stockpiles to record lows in some instances.

As we move through 2019, should market supply side data prove correct, inventory drawdowns are likely to continue beyond already critical levels for some commodities, in the absence of a material demand slow-down.

Strong financial performance

Higher average commodity prices in 2018 underpinned an 8% increase in Adjusted EBITDA to $15.8 billion. Net income before significant items rose 5% to $5.8 billion, while significant items reduced Net profit attributable to equity holders to $3.4 billion, mainly due to non-cash impairments of $1.6 billion, primarily reflecting impairments of the carrying values of our Mutanda and Mopani assets.

Our performance reflects our continuing efforts to maximise and optimise the cash generating capability of our unique business model.

Our Marketing business reported Adjusted EBIT of $2.4 billion, down 17% compared to 2017. Reasonable market conditions in our Energy Products and Metals and Minerals businesses were hampered by a "basis risk" hedging breakdown related to alumina sourcing into medium-term % LME linked legacy sales contracts as well as cobalt market challenges in H2 2018.

Looking ahead, we maintain our long-term Marketing Adjusted EBIT guidance range of $2.2 to $3.2 billion. We are confident of an improved year-over-year performance, suggesting a 2019 result towards the middle of our guidance range.

Industrial Adjusted EBITDA of $13.3 billion in 2018 was 15% higher than 2017. Our asset portfolio continued to deliver overall competitive all-in unit costs which, despite some minor production challenges during the year, allowed the Company to capitalise on healthy average commodity prices and generate attractive margins.

Enhancing corporate governance and sustainability

We recently established an Ethics, Compliance and Culture committee to provide oversight and leadership of the Group's key ethics, compliance, culture and governance matters.

The new committee will assume responsibility for implementing the new Corporate Governance Code, including, amongst other matters, assessing and monitoring our culture to ensure alignment with our purpose, values and strategy.

We have continued to strengthen our controls and made substantial investments to enhance our compliance programme across the Group. In this regard, we were disappointed by the conduct that led to Katanga's settlement with the OSC. Glencore is working with Katanga to implement the various changes to improve its reporting and control functions and to address some cultural failures that contributed to this conduct.

Our commitment to operate transparently and responsibly is reflected in our ambition to integrate sustainability throughout every aspect of our business. This is a key strategic priority for the Group.

This commitment to sustainability also encompasses our desire to uphold respect for human rights, protect the wellbeing of our people, our host communities and the natural environment, while sharing lasting benefits with the regions where we work and society as a whole.

Sadly, we recorded thirteen fatalities at our operations in 2018, an increase on 2017. This is disappointing and unacceptable. We have created a new position with oversight and responsibility for all of Glencore's industrial mining assets and have appointed Peter Freyberg to this role. Peter brings a wealth of operational experience from his management of our coal assets and will focus his attention on co-ordinating our goals of producing safely, productively and sustainably. Our goal remains one of zero fatalities.

We have also made progress on our post-2020 climate change strategy. Following consultation with the investor signatories of the Climate Action 100+ initiative, we have agreed steps to further our commitment to the transition to a low-carbon economy.

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 copper, cobalt, nickel, vanadium and zinc – commodities that underpin energy and mobility transformation.

We believe this transition is a key part of the global response to the increasing risks posed by climate change, which must pursue the twin objectives of both limiting temperatures in line with the goals of the Paris Agreement and supporting the United Nations Sustainable Development Goals, including universal access to affordable energy.

Conviction to create value

In 2018, we complemented our portfolio with acquisitions (and some non-core disposals) designed to create long-term value for shareholders, a number of which were first announced in 2017. These include:

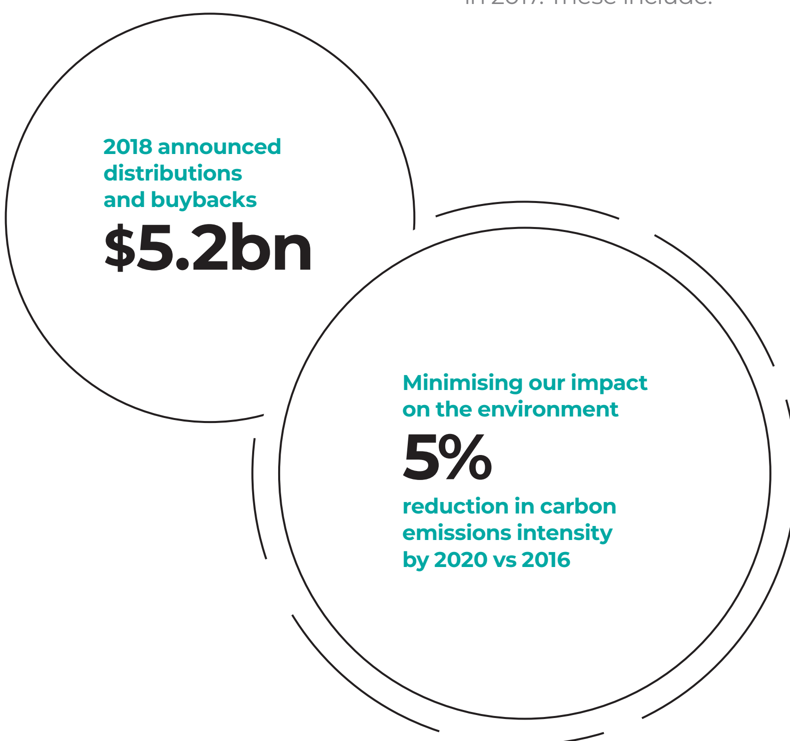
- 49% of Rio Tinto's Hunter Valley Operations (thermal coal) with Yancoal retaining 51%, gaining access to sizeable high quality energy coal resources, operatorship and marketing rights
- 82% of Rio Tinto's interest in the Hail Creek mainly coking coal mine
- 78% in ALE Combustiveis (ALE), Brazil's fourth largest fuel distributor
- Chevron's South African and Botswana mid/down-stream oil business (funded already in the two-stage process, with final ownership transfer expected to Glencore in H1 2019)
- Non-core disposals during the year included our Tahmoor coal mine and our interest in the Mototolo platinum operation

Both Hail Creek and HVO have been successfully integrated into our portfolio and we have identified some $185 million of managed annual cost savings/margin improvements to be realised upon completion of the restructure plans at these assets. These low-cost high-quality assets are expected to play an important role within our coal portfolio in the coming years.

Record shareholder cash returns

Reflecting the strength of our operating cashflow, we announced $5.2 billion of distributions and buybacks in 2018, comprising a $0.20 per share ($2.84 billion) base distribution (in respect of 2017 cash flows), $0.32 billion of share trust purchases and $2 billion of share buy-backs.

Consistent with the continued strong cash flow generation seen in 2018, we are again recommending to shareholders a 2019 base distribution of $0.20 per share (~$2.8 billion), payable in two equal instalments in 2019.



This payment comprises a fixed $1 billion pay-out in respect of Marketing activities and a variable component of ~$1.8 billion, representing ~35% of industrial free cash, compared to our policy minimum of 25%.

Near-term focus on deleveraging and shareholder returns

The dislocation between our current share price levels and the prospects, strength and embedded optionality in our business leads us to conclude that it is difficult to find a better investment than buying back our own shares.

Outside of our base distribution policy, for the balance of our equity cash flows, we currently envisage prioritising:

- Buybacks funded by cash generation
- Net funding: focus on consistently maintaining Readily Marketable Inventories (RMI) at levels below $20 billion
- Net debt: maintain in the $10 billion–$16 billion guidance range, while limiting Net debt/Adjusted EBITDA to around 1x, in the current uncertain economic cycle backdrop

Reflecting this, and taking account of the illustrative annualised free cash that the business generates at current spot commodity prices, we announced on 20 February 2019 a new $2 billion buyback program, which will run until the end of the year. We will proactively look to top this up (in August, or otherwise) as market conditions support, including automatically from a targeted $1 billion of non-core asset disposals in 2019, from a range of candidate assets.

Management changes and succession

2018 has also been a year of change in the management of the Group, notably with the retirement of two of our longstanding Department Heads, Telis Mistakidis in Copper and Stuart Cutler in Ferroalloys, resulting in the most meaningful implementation of our development and succession plans since our IPO.

Telis has been succeeded by Nico Paraskevas and Stuart by Jason Kluk and Ruan van Schalkwyk. With Peter Freyberg's appointment to the role of Head of Industrial Mining Assets, Gary Nagle replaces Peter as Head of Coal Assets, while Japie Fullard succeeds Gary as Head of Ferroalloys assets.

We wish Telis and Stuart well in their retirement. I look forward to working with our new team and colleagues in developing our business in the coming years and nurturing the next generation of leadership at Glencore.

Looking forward

We look ahead with confidence, remaining focused on creating sustainable long-term value for all our shareholders.

Ivan Glasenberg
Chief Executive Officer
28 February 2019

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 16

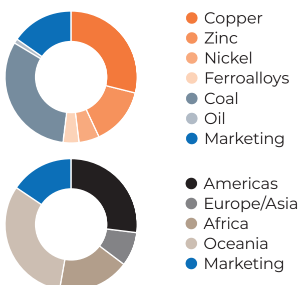
Well positioned for the future

We remain focused on our strategy to sustainably grow total shareholder returns while operating responsibly. We are confident we can offer a differentiated value proposition to investors

Uniquely diversified by commodity, geography and activity

- Fully integrated from mine to customer
- Presence in 50 countries across 150 operating sites
- Producing and marketing more than 90 commodities across three business segments
- Diversified across multiple suppliers and customers

Adjusted EBITDA◊ diversified by commodity and geography (%)



The right commodity mix for changing needs

- Future demand patterns for maturing economies are likely to favour mid and late cycle commodities
- Major producer of later cycle commodities including the enabling materials (copper, cobalt, nickel) that underpin the battery chemistry and infrastructure likely to power electric vehicles and energy storage systems

Volume of commodities required to enable 30% EV sales by 2030

+4.1mt
Copper

+1.1mt
Nickel

+314kt
Cobalt

Well-capitalised, low-cost, high-return assets

- Since 2009, over $40 billion has been invested in industrial assets
- Low-cost long-life assets in many of the world's premier mining districts support sustainable long-term cash flows
- Mine-life extension potential embedded in key commodities

Industrial Adjusted EBITDA mining margins

38%
Metals and minerals, down from 40%

46%
Energy products, up from 41%

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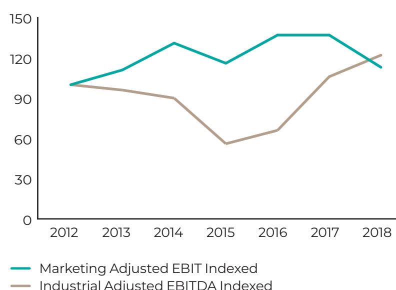
A unique marketing business that extracts value across the entire supply chain

- As a marketer of commodities, we can extract value from the full-range of arbitrage opportunities
- We create value from our 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 balances preservation of capital structure with attractive investment and growth opportunities
- Conviction to create value through partnerships, M&A and organic investment
- Unique ability to source and structure deals using trading and strategic relationships

Investing in M&A

$2.9bn

Including HVO, Hail Creek and a $1bn loan to acquire a South African oil business

Investing in brownfield growth

$1.2bn

Expansionary capital investment in African copper, Zhairem, Integrated Nickel Operations and Koniambo

Significant cash flow generation and distribution potential

- Funds from operations (FFO)◊ up 2% to $11.6 billion in 2018
- FFO/Net debt◊ of 78.8%
- 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 asset free cash flow

Earnings per share

$0.24

down 41%

2019 distribution recommended

$2.8bn

$0.20/share

2019 announced buyback

$2.0bn

Our market drivers

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

Key market drivers

Impact on our industry

How we are responding

1 Future commodity supply

- 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 appears in the economic cycle is difficult to predict and could appear at low points in the economic cycle, creating excess supply in the market

- Over-investment creates oversupply and with it a potentially prolonged period of low commodity prices
- Although commodity prices have increased significantly 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

$38bn

estimated 2018 sector reinvestment compared to a 13 year average of $43bn (estimated)

- Our disciplined approach to capital allocation attempts to ensure that supply and demand forces retain a level of balance
- Given the unpredictability of costs, risks and timing of large-scale greenfield projects we prefer to add supply via targeted capital efficient/low risk brownfield expansions when required

Our zinc production increased by

2%

against a significant global supply shortfall vs demand

Principal risks and uncertainties
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Climate change – looking beyond 2020
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2 Demand for the commodities we produce

- 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 close to
50%
of global demand for most commodities

- Increased levels of industrialisation and urbanisation suggest demand growth rates for commodities may be lower in the future
- Negative demand 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, thermal coal and agricultural products

An extra 1.7 billion people forecast to increase global energy demand
>25%
by 2040 under IEA New Policies Scenario

- 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, our diverse commodity portfolio, supplying 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 initiatives that are expected to power electric vehicles and energy storage systems and this new source of demand

3 Energy and emissions transformation

- 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

- This transition is likely to increase the cost for fossil fuels, impose levies for emissions and increase costs for monitoring and reporting and to reduce demand for fossil fuels
- Third parties, including potential or actual investors, may also introduce policies 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 are likely to have increased market share over the longer run. In particular, many analysts believe that demand for coal may reduce sooner than previously expected

- We continuously 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
- In consultation with the investor signatories of the Climate Action 100+ initiative, we have agreed steps to further our commitment to the transition to a low-carbon economy

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 and helps us generate value

Inputs and resources on which our business model depends

Assets and natural resources

- Our resources and reserves are overall long-life and of a high quality, enhancing the scale and value of our marketing business
- We are a disciplined producer, seeking to align supply with demand and value over volume

Our people and partners

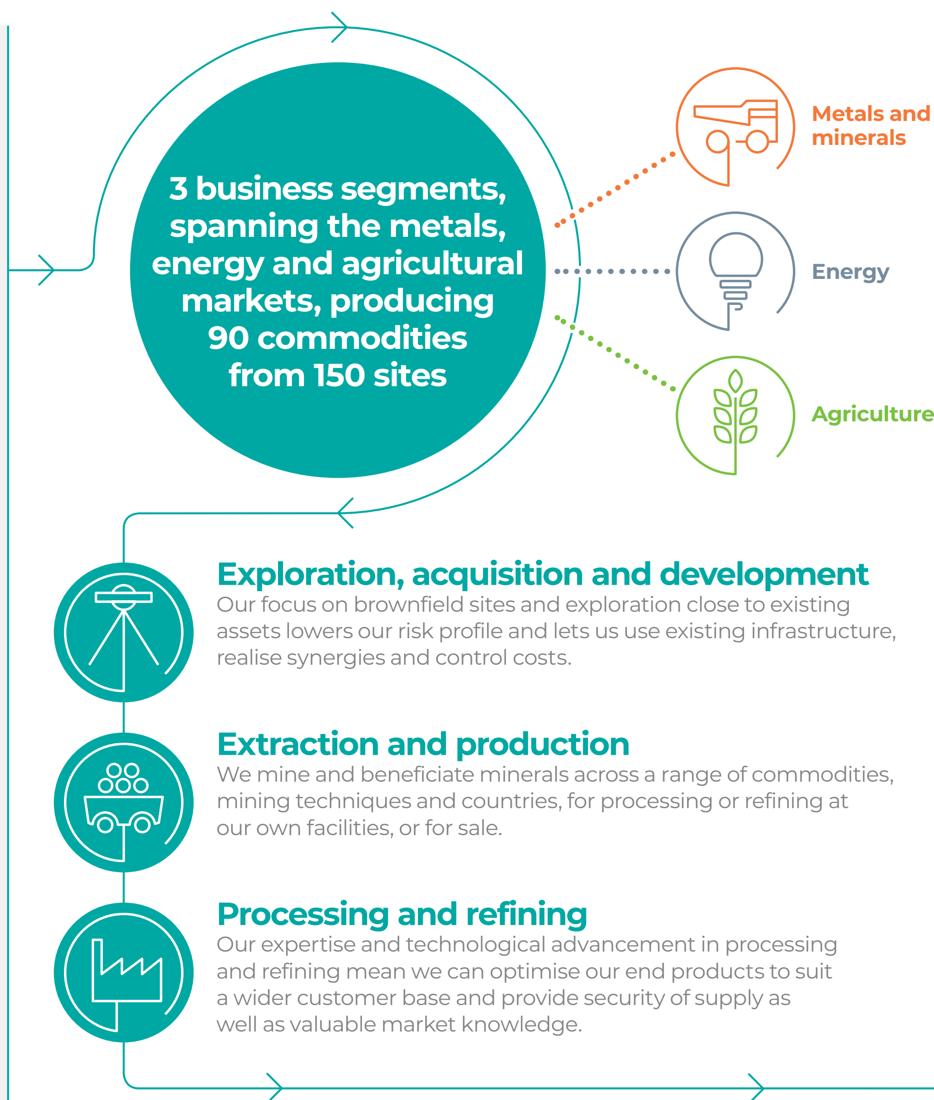
- We have established long-term relationships with a broad range of suppliers and customers across diverse industries and geographies
- c.158,000 employees and contractors spread across 90 sites/offices and six continents

Financial discipline

- We 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



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 business activities are driven to achieve our strategic imperatives and our commitment to developing a sustainable business

Safety

The safety of our people is our top priority. We aim to eliminate fatalities and provide a safe workplace.

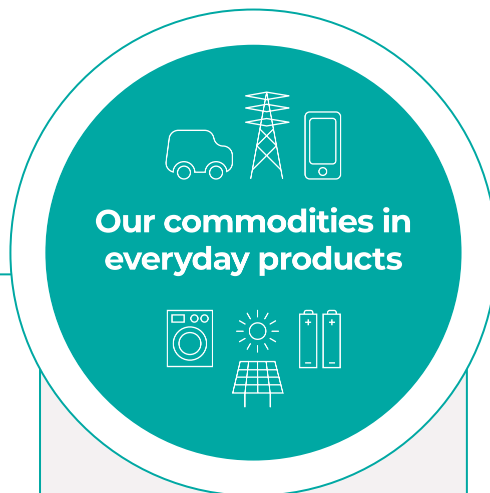
Health

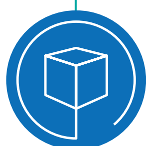
We want to protect and improve the health of our workforce and local communities.

Environment

We aim to minimise any negative environmental impact from our activities and promote efficient use of resources, such as energy and water.

Our marketing business
Page 15





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.

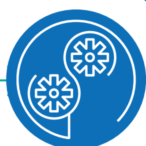
Our marketing business

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

Geographic arbitrage

Product arbitrage

Time arbitrage



Blending and optimisation

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

Safety
3%
increase in total recordable injury frequency rate

Payments to Governments
$5.7bn

Minimising our impact on the environment
-9%
reduction in carbon emissions (scope 1 and scope 2 – location based)

Adjusted EBITDA[A]
$15.8bn

2018 announced distributions/buybacks
$5.2bn

Anti-bribery and corruption

Offering, paying, soliciting or accepting bribes is unacceptable. We work to identify and reduce the risks of bribery and corruption across all our business.

Community and human rights

We foster sustainable growth and respect human rights wherever we operate.

Sustainability framework
Page 37

Our strategy for a sustainable future
Page 16

Strength through combination

Metals and minerals

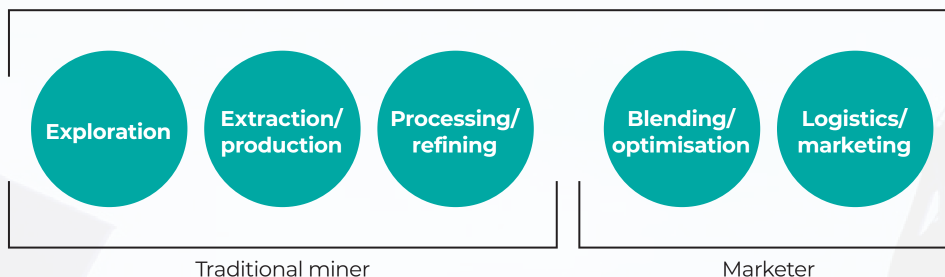
Energy

Agriculture

Our scale and presence both as a producer and marketer of commodities is unrivalled.

We are present at every point of the value chain, from where commodities are sourced to where they are consumed:

- Global scale
- Long-term relationships
- Unique insights
- Differentiated opportunities



4.5mt[1]
Copper metal and concentrates marketed

3.2mt[1]
Zinc metal and concentrates marketed

1.7bn bbl
Crude oil and oil products marketed

1,200
Vessels on the ocean at any one time

7,000+
Long-term relationships with suppliers and customers

1 Estimated metal unit contained.

Strategy and risk

A supportive strategy

Our Marketing Business supports the creation of incremental value from a pool of allocated capital through critical mass, blending, storage and arbitrage opportunities.

Our presence at every stage of the value chain allows us to leverage our scale and diversity.

How we manage risk

We mitigate credit risks through application of measures including credit insurance, letters of credit, security arrangements and bank or corporate guarantees.

We manage market exposure by reducing price risks arising from timing differences to acceptably low levels.

Our policies/procedures seek to ensure we comply with applicable sanctions, laws and regulations.

Principal risks and uncertainties
Page 24

Our marketing business

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

Market insight and customer understanding
Our global scale and presence in more than 90 commodities across 50 countries gives us extensive market knowledge and insight to help us fully understand the needs of our customers.

Anticipating supply and demand
Our integrated marketing and industrial businesses work 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.

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.

Our strategy for a sustainable future

We recognise our ongoing responsibility to not only deliver financial performance but also 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

Strategic objective

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

CEO's review
Page 4

Strategic priorities

1
Integration of sustainability throughout our business

We believe that by being a better 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 taking an approach of 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.

3%
Increase in Total Recordable Injury Frequency Rate in 2018

2
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
Managed Net debt range

3
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 superior 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 all of 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.

+15%
Increase in Industrial Adjusted EBITDA

Strategic priorities

Performance in 2018

1

Integration of sustainability throughout our business

SafeWork programme
Continued to progress our SafeWork programme, an initiative that focuses on eliminating fatalities and occupational diseases.

Regrettably, there were thirteen fatalities during the year. We continue to work towards the elimination of fatalities from our business. Our TRIFR and LTIFR increased by 3% and 4% respectively compared to 2017.

Climate change
On track for meeting group-wide carbon emission intensity reduction target of at least 5% on 2016 levels by 2020.

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 ICMM's 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 2018, we spent $95 million on these programmes (2017: $90 million).

2

Maintain a robust and flexible balance sheet

Conservatively repositioned
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.

Year-end Net debt and FFO/Net debt were $14.7 billion and 78.8% respectively. Net income attributable to equity holders for 2018 was $3.4 billion.

Conviction to create value
Targeted bolt-on acquisitions, low-cost/risk organic growth and recycling of capital enabled capital efficient growth in compelling commodities.

Bonds
Issued $0.625 billion of non-dilutive cash settled convertible bonds due 2025. Issued a six-year CHF 175 million bond. Post-2018 maturities capped at c.$3 billion in any one year.

Credit rating
The Group's credit ratings are currently Baa2 (positive outlook) from Moody's and BBB+ (stable) from Standard & Poor's.

Credit facility
Revolving credit facility refinanced and resized to reflect current funding needs. Committed available liquidity of $10.2 billion at year end covers more than three years of bond maturities.

3

Focus on cost control and operational efficiencies

Industrial
Strong Adjusted EBITDA mining margins of 38% and 46% respectively in our metals and energy operations reflect the benefit of higher prices that more than offset modest inflationary and cost pressures as well as the optimisation of cost structures and efficiencies over the last two years.

Marketing
Achieved $2.4 billion Adjusted EBIT across our marketing business. The benefits of supportive market conditions during the year, particularly in the first half, were partially offset by some customer non-performance in cobalt as well as alumina basis risk exposure.

Supply
Continued our disciplined approach to supply. Partial restart of idled zinc production in 2018. Additional contribution forecast from 2019 with an increase in McArthur River zinc production.

Key performance indicators
Page 22

Principal risks and uncertainties
Page 24

Priorities going forward		KPIs	Principal risks
Sustainability We will continue to implement activities that promote an approach of consistent improvement for sustainability throughout our business to support our commitment to continuously improve our standards of health, safety, environmental and community and human rights performance. As part of our commitment to a low-carbon economy, we will limit our coal production capacity broadly to current levels.	**Transparency** We are committed to operating transparently, responsibly and meeting or exceeding applicable laws or external requirements.	• Safe and healthy workplace – 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	• Health, safety and environment • Climate change • Community relations and human rights
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 are targeting a maximum 2x Net debt/Adjusted EBITDA through the cycle, augmented by an upper Net debt cap of c.$16 billion. In the current uncertain economic cycle backdrop, aiming to limit Net debt/Adjusted EBITDA to around one times.	• Returns to shareholders – Funds from operations, Net funding and Net debt • Value for our shareholders – Adjusted EBIT/EBITDA, Net income attributable to equity holders	• Supply, demand and prices for the commodities we produce • Currency exchange rates • Liquidity • Counterparty credit and performance
Industrial activities Our industrial activities will continue to focus on 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.	• Returns to shareholders – Funds from operations, Net funding and net debt • Value for our shareholders – Adjusted EBIT/EBITDA, Net income attributable to equity holders	• Geopolitical, permits and licence to operate • Laws and enforcement • Operating risk • Cyber risk

Climate change – looking beyond 2020

As one of the world's largest diversified resource companies, Glencore has a key role to play in enabling transition to a low-carbon economy. We do this through our well positioned portfolio that includes copper, cobalt, nickel, vanadium and zinc – commodities that underpin energy and mobility transformation. We believe this transition is a key part of the global response to the increasing risks posed by climate change

We recognise climate change science as set out by the United Nations Intergovernmental Panel on Climate Change. 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)[1] and 4.1[2] of the Paris Agreement ("the Paris Goals") and supporting the United Nations Sustainable Development Goals, including universal access to affordable energy.

To deliver a strong investment case to our shareholders, we must invest in assets that will be resilient to regulatory, physical and operational risks related to climate change.

To meet the growing needs of a lower carbon economy, Glencore aims to prioritise its capital investment to grow production of commodities essential to the energy and mobility transition and to limit its coal production capacity broadly to current levels[3].

1
Paris-consistent strategy/capital discipline

2
Public Scope 1 and 2 targets

3
Review of Progress

4
Alignment with Taskforce on Climate-related Financial Disclosures (TCFD) recommendations

5
Corporate climate change lobbying

Following engagement with investor signatories of the Climate Action 100+ initiative, we are taking the following steps to further our commitment to the transition to a low-carbon economy:

1 As Glencore rebalances its portfolio towards commodities that support the transition to a low-carbon economy, the intensity of Scope 3 emissions is expected to decrease. Starting in 2020, we will disclose our longer-term projections for the intensity reduction of Scope 3 emissions, including mitigation efforts.

Glencore recognises the importance of disclosing to investors how the company ensures that material capital expenditure and investments are aligned 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 be made in our Annual Report.

2 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 in 2020. We will report annually on our progress.

3 Glencore reports annually on the progress in meeting its climate change objectives. The disclosure is included in our Annual Report and supported by further details in the Sustainability Report. We are committed to transparency and will continue to publish data on our climate change performance on our website, including continued 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.

In addition to our reporting under 1 and 2 above, every three years, we will review any changes to the Nationally Determined Contributions (NDCs) in line with the Paris Agreement mechanism, and other relevant policy, economic and technology developments to assess societal progress in the energy transition and to update our scenario-based portfolio assessment.

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

Consistent with TCFD recommendations, as appropriate, Glencore will continue to disclose the metrics, targets and scenarios we use to assess and manage relevant climate-related risks and opportunities.

5 Glencore believes that it is appropriate that we take an active and constructive role in public policy development and to participate in relevant trade associations. Glencore acknowledges "IIGCC Investor Expectations on Corporate Climate Lobbying" and recognises the importance of ensuring that its membership in relevant trade associations does not undermine its support for the Paris Agreement and the Paris Goals.

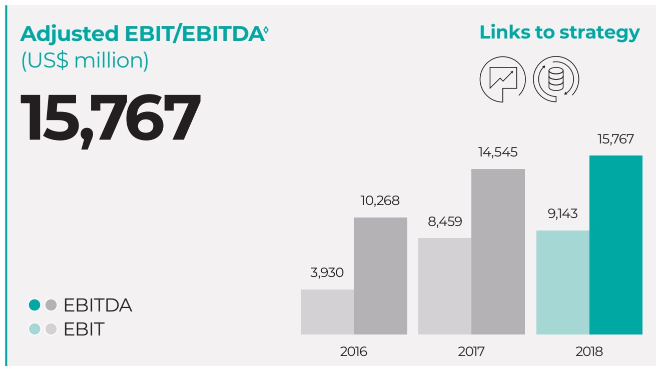
Glencore will consider whether its membership in relevant trade associations aligns with the company's stated positions in this statement. The result of this review, including any material misalignments identified and actions that will be taken, will be made public in 2019.

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, recognising 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, recognising 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."
3 This may include the exercise of our pre-emptive rights to acquire minority stakes of joint-venture partners in our existing operations.

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:



Definition

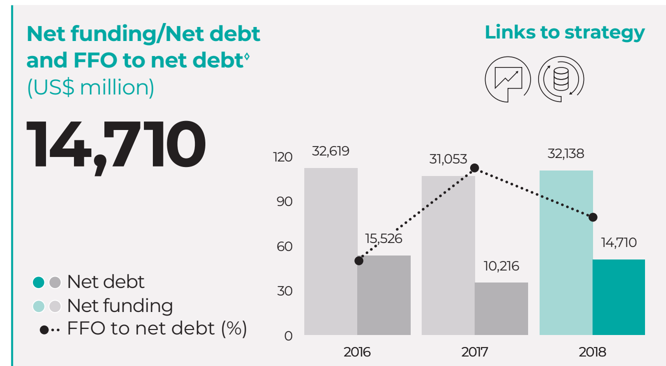
Adjusted EBIT/EBITDA provide insight into our overall business performance (a combination of cost management, seizing market opportunities and growth), and are the corresponding flow drivers towards our objective of achieving industry-leading returns.

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.

2018 performance

Adjusted EBITDA was $15.8 billion and Adjusted EBIT was $9.1 billion, increases of 8% in each case compared to 2017, primarily driven by generally higher commodity prices, higher production in copper, zinc and coal, including ramp-ups at Katanga and Lady Loretta (Mount Isa) and the acquired coal joint venture interests.



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.

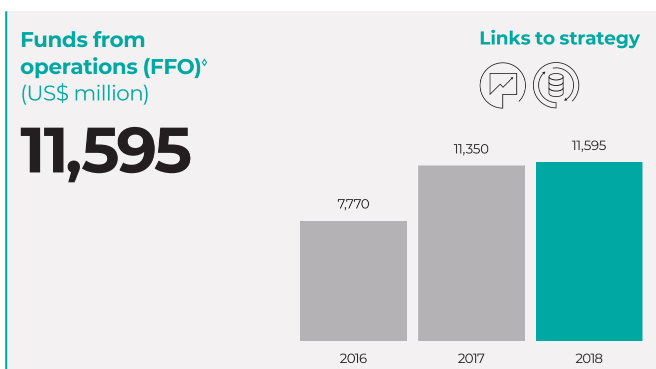
The relationship of FFO to net debt is an indication of our financial flexibility and strength.

2018 performance

Net funding as at 31 December 2018 increased by $1.1 billion to $32.1 billion, while Net debt (net funding less readily marketable inventories) increased by $4.5 billion over the year to $14.7 billion.

Such increases reflected ~$3.8 billion disbursements on business acquisitions (HVO, Hail Creek, oil downstream business) yet to contribute to FFO on a full 12 months basis, plus enhanced returns to shareholders.

FFO to Net debt reduced from 111% to 78%, remaining at healthy levels, reflecting the timing of business acquisition cash flows.



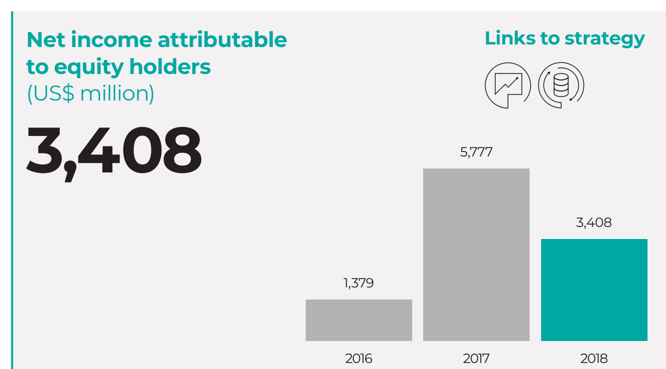
Definition

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, related Proportionate adjustments and Significant items, as appropriate.

2018 performance

FFO of $11.6 billion was 2% up on 2017, reflecting the improved Adjusted EBITDA noted above, offset by higher tax payments on 2017 earnings assessed in 2018.



Definition

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

2018 performance

Net income attributable to equity holders declined in 2018 compared to 2017, primarily reflecting the impact of non-cash impairments in the carrying values of our Mutanda and Mopani copper assets, due to various updated regulatory, technical, tax and other key assumptions, all of which combined to reduce expected future cash flows.

Announced distributions and buybacks in 2018 totalled $5.2 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 214 for definition and reconciliations.

Strategic priorities

Integration of sustainability throughout our business

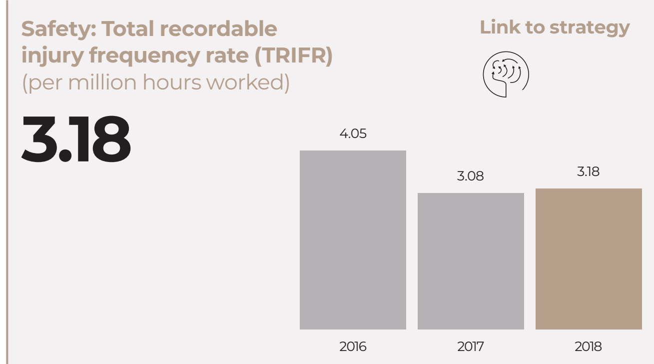
Maintain a robust and flexible balance sheet

Focus on cost control and operational efficiencies

Our strategy for a sustainable future
Page 16

Financial review
Page 52

Non-financial key performance indicators:



Definition

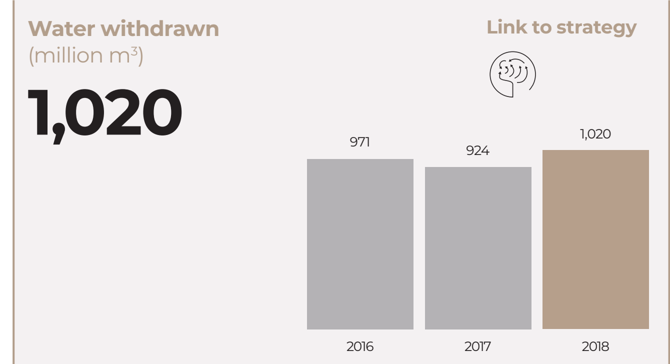
We believe that every work-related incident, illness and injury is preventable and we are committed to providing a safe workplace.

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.

2018 performance

We are saddened to report that in 2018 thirteen people lost their lives at our operations (2017: nine people). All loss of life is unacceptable and we are determined to eliminate fatalities across our Group.

Our TRIFR is 3.18 per million hours worked, an increase of 3% on the 3.08 recorded in 2017.



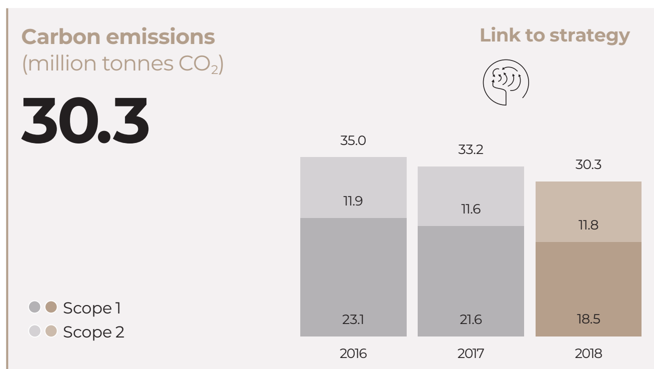
Definition

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.

2018 performance

In 2018, we withdrew 1,020 million m^3 of water (2017: 924 million m^3). The increase of water withdrawal is fully attributable to our portfolio expansion (i.e. incorporation of Volcan). 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.



Definition

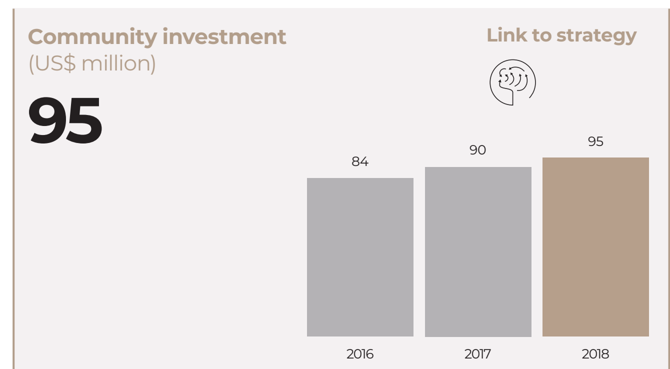
Our CO_2 emissions reporting is separated into Scope 1 and Scope 2 – location-based emissions. Scope 1 (measured in CO_2e) includes emissions from combustion in owned or controlled boilers, furnaces and vehicles/vessels and coal seam emissions (direct emissions).

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.

2018 performance

During 2018, we emitted 18.5 million tonnes CO_2e of Scope 1. The improvement over 2017 is mainly as a result of lower coal seam emissions in our Australian coal operations.

We emitted 11.8 million tonnes CO_2 of Scope 2 – location based. The small year-on-year increase in Scope 2 emissions is due to newly acquired assets, volume increases and production ramp-ups which outweighed reductions from site closures and divestitures.



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.

2018 performance

In 2018, the funds we made available for community investments were $95 million, an increase on the amount invested in 2017 ($90 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. The 2016 data includes Glencore Agriculture; 2017 and 2018 data excludes Glencore Agriculture.

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. Risk management is one of the core responsibilities of the Board and its Audit and HSEC Committees, and it is central to the decision making process. Our principal risks and uncertainties – whether under our control or not – are highly dynamic and our assessment and our responses to them are critical to our future business and prospects

Our risk management framework identifies and manages risk in a way that is supportive of our strategic priorities of opportunistically deploying capital, while protecting our future financial security and flexibility. Our approach towards risk management is framed by our ongoing understanding of the risks that we are exposed to, our risk appetite and how these risks change over time.

The Board assesses and approves our overall risk appetite, monitors our risk exposure and sets the Group-wide limits, which are reviewed on an ongoing basis. This process is supported by the Audit and HSEC Committees, whose roles include evaluating and monitoring the risks inherent in their respective areas as described on pages 104–106. The current assessment of our principal risks, according to exposure and impact, is detailed on the following pages. 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 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 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 26.

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
- 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)

Changes in principal risks

We believe that our principal risks have remained the same although our assessment of their possible negative effect and the scale of impact has altered. In particular we believe that geopolitical and compliance impacts have increased. Also, pressure for divestment from coal and coal producing companies continues to grow. In formulating a more focused set of risks, we have (i) combined "Reductions in commodity prices" and "Fluctuations in supply of or demand for commodities" into "Supply, demand and prices of commodities"; and (ii) incorporated "Skills availability and retention" into "Operating".

2018 developments

Highest impact risks

Significant changes were:

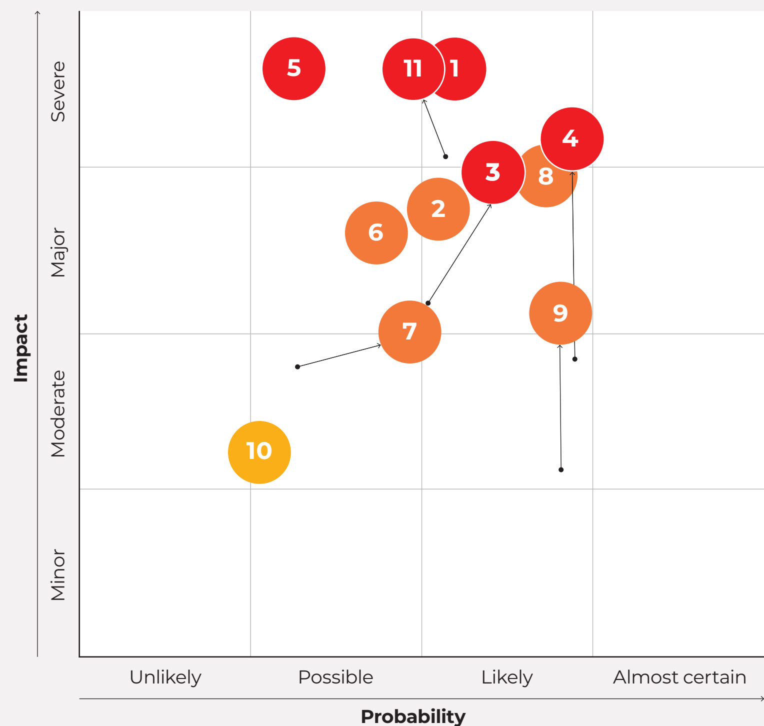
1. Supply, demand and prices of commodities: there has been considerable volatility in commodity prices over the past 12 months. Any significant downturn in the current commodity price environment, especially in copper, coal or zinc would have a severe drag on our financial performance. Additionally, the potential effects of new trade barriers could reduce demand for certain of our commodities or restrict our supplies. As a result, this continues to be the Group's foremost risk.
2. Currency exchange rates: 2018 reflected a generally stronger US dollar versus producer country currencies. While beneficial over the short term to our locally denominated operating costs, this can be indicative of challenges in world economic conditions and resulting risks to commodities' demand and prices. Additionally, rates can change for reasons

unlinked to commodities, which could result in mismatched impact of pricing and currency movements, resulting in income volatility.

3. Geopolitical, permits and licences to operate: this risk has become more prominent in 2018, particularly in light of the various developments in the DRC.
4. Laws and enforcement: the DoJ investigation has considerably heightened the importance of this risk, together with other relevant examples, including sanctions imposition by US authorities.
5. Liquidity: while our net debt and net funding are relatively stable, and cash flow coverage is healthy, we remain cognisant that access to credit is vital and that debt markets can be volatile.
6. Cyber: actual and attempted attacks on organisations continued to be prevalent. Over time, we have invested in our security platforms and data protection, and we continue to develop our approach and responses to this evolving risk.
7. Health, Safety, Environment: a serious failure in HSE management could result in an emergency or catastrophe within the business, which could result in injuries or fatalities and also impact employees safety, production and Glencore's reputation. In particular, catastrophic hazards such as tailings dam failures and collapses of pit walls or underground structures represent significant unquantifiable risks. Despite our efforts, our safety performance, particularly as to fatalities, continues to be challenging, mainly reflecting the location and nature of many of our operations.

In response to the above challenges, capital expenditure remains at controllable levels and initiatives continue to ensure we operate at optimal working capital levels. The Group is committed to maintaining a strong BBB/Baa investment grade rating balance sheet, which should support growth and shareholder returns regardless of the commodity price environment, noting also the additional principal risks which the Group faces.

2018 developments and overview of principal risks and uncertainties



Key

Risk impact
● Moderate ● Major ● Severe

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 ● Climate change
10 ● Community relations and human rights
11 ● Health, Safety, Environment

Indicates change in 2018

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 2019. 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 regulatory investigations 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 237.

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, the interests are mostly taken as being referred to in analysing these risks, and "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 2018 financial statements
- A reference to the sustainability report is our 2018 sustainability report to be published in April 2019

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 2018: 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 to be hedged, when possible. Additionally, we seek to ensure this risk is minimised through scale of operations and diversity of product.

Risk description
The revenue and earnings of substantial parts of our industrial 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. These reasons also include 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. Furthermore, changes in expected supply and demand conditions impact the expected future prices (and thus the price curve) of each commodity.

Comments/impacts to the Group
A significant downturn in the price of commodities generally results in a decline in our cash flow and profitability, and could potentially result in impairment and balance sheet constraints. It is especially harmful to profitability in the industrial activities, which are more directly exposed to price risk due to the higher level of fixed costs. 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 below. 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 US/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.

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 “greening” of the global economy.

This risk is currently prevalent in various commodities, such as steel, coal and oil. In particular, many analysts believe that demand for coal will reduce sooner than previously expected due to significant cost reductions in renewable and alternate capacity.

The dependence of the Group (especially our industrial business) on commodity prices, supply and demand of commodities, make this the Group’s foremost risk. See the Chief Executive Officer’s review on page 4 and the financial review on page 52.

Mitigating factors
Achieving operational efficiencies and enhanced focus on cost control.

Diversification of our portfolio of commodities, geographies, currencies, assets and liabilities. Maintaining a global portfolio of customers and contracts.

Preparing for shifts in commodity demand by putting a special focus on the parts of the business that will potentially grow with the anticipated increase of electric vehicles and battery production and closely monitor fossil fuel (particularly thermal coal) demands.

See the Chief Executive Officer’s review on page 4 and the financial review on page 52.

2 Currency exchange rates

Risk movement in 2018: Stable

Link to strategic priorities

Risk appetite
Low. Where possible foreign exchange (“FX”) exposure to non-operating foreign exchange risk are to be hedged.

Risk description
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 62.

Comments/impacts to the Group
Currency fluctuations tend to move in inverse correlation to commodity prices and supply and demand fundamentals as noted above, such that decreases in commodity prices are generally associated with increases in the US dollar relative to local producer currencies and vice versa. If this occurs then it is detrimental to us through higher equivalent US dollar operating costs at the relevant operations. This negative, however, would usually be offset to some extent by the increases in commodity prices which had influenced this change.

Mitigating factors
The FX inverse correlation described above usually provides a natural partial 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 2018: Increase

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
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 – resource nationalism continues to be a challenging issue in many countries. 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.

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.

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.

Comments/impacts to the Group
Policies or laws in the countries in which we do business may change in a manner that may be adverse for us, even those with stable political environments e.g. many governments have sought additional sources of revenue by increasing rates of taxation, royalties or resource rent taxes or may increase sustainability obligations.

We have no control over changes to policies, laws and taxes.

In 2018 our operations have been subject to significant tax increases in the DRC (see below) and Zambia. Some other tax authorities have taken a tougher approach to engaging with the Group which has in some cases led to litigation. See also 4 below.

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.

In July 2018, a New DRC Mining Code came into effect. The New DRC Mining Code introduced amongst other measures (1) a cap on a Company's ability to repatriate excess capital earned above its initial investment amount; (2) significantly higher taxes and royalties; and (3) potential state ownership in certain projects of up to 10%.

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

See map on pages 2–3 which sets out our global operational footprint.

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 below). 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 2018, we also published our third Payments to Governments report. This detailed total government contributions in 2017 of over $4 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).

4 Laws and enforcement

Risk movement in 2018: Increase

Link to strategic priorities

Risk appetite

Medium. The Group maintains programmes which seek to ensure that we comply with or exceed the laws and external requirements applicable to our operations and products. However, some of our industrial activities are located in countries that are categorised as developing, complex or having political or social climates and/or where corruption is generally understood to exist.

Risk description

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 may be uncertain so that we may be unable to enforce our understanding of our rights. Successful lawsuits based upon damage resulting from operations could lead to the imposition of substantial penalties, the cessation of operations, compensation and remedial and/or preventative orders. Moreover, the costs associated with legal compliance, including 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 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 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 or accidental transactions difficult to detect. In addition, some of our industrial activities are located in countries, where corruption is generally seen. 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.

Comments/impacts to the Group

During the year:

1. Following the designation by the US Government ("USG") of Dan Gertler and affiliated companies as Specially Designated Nationals ("SDNs"), thereby imposing blocking sanctions on them and companies owned 50% or more by them, the Group had to consider whether it was able to satisfy contractual obligations to make royalty and pas-de-porte payments in respect of KCC and Mutanda. Following litigation processes and negotiations, these obligations are now being satisfied other than in US dollars and without the involvement of US persons, which Glencore believes appropriately addresses all applicable sanctions regulations.
2. United Company Rusal plc was designated by the USG as a SDN, which led to Mr Glasenberg resigning from his position as a director of Rusal and required careful monitoring of the trading relationship with Rusal.
3. A dispute between Katanga Mining Limited ("KML") and La Generales des Carrieres et des Mines ("Gecamines") led to a $5.6 billion recapitalisation of KCC and additional settlement costs totalling $248 million, see note 33 of the financial statements.
4. On 3 July 2018, a subsidiary received a subpoena from the US Department of Justice (DOJ) to produce documents and other records with respect to compliance by the Group with the Foreign Corrupt Practices Act and US money laundering statutes. The requested documents related to our business in Nigeria, the DRC and Venezuela from 2007.

   In the event that the DOJ investigation identifies wrong doing, the costs to the Group, whether by way of legal fees, penalties, ongoing monitoring, reputational or otherwise, could be material.
5. The Ontario Securities Commission ("OSC") approved a settlement pursuant to which KML, a subsidiary, acknowledged that it had (i) misstated its financial position and results; (ii) failed to maintain adequate disclosure and internal controls; (iii) failed to disclose material weaknesses in its internal controls; and (iv) failed to adequately describe the heightened risks associated with its operating environment, specifically the elevated risk of corruption in the DRC and its reliance on individuals and entities associated with Dan Gertler. Adverse findings were also made against certain of its former directors and officers ("FDOs").

   KML agreed to make voluntary payments to the OSC totalling C$30m and to submit to a review by an independent consultant of its metal accounting. The FDOs have been subjected to fines and costs orders and director and officer bans of up to C$2.5m and six years.
6. In December 2018, investigations were commenced relating to transactions in Brazil with Petrobras by a number of trading companies, including Glencore.
7. Other investigations concerning Glencore which commenced during the year include an investigation by PRC authorities into shipments of lead materials into China.
8. See Risk 3 opposite concerning adverse tax matters.

Mitigating factors

We seek to ensure compliance through our commitment to complying with or exceeding the laws and external requirements 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 104. The Group has dedicated Legal and Compliance resources in place and internal policies, procedures and control with compliance to assist Group businesses. Furthermore, the Group conducts training and awareness, with active monitoring. However, there can be no assurance that such policies, procedures and controls will adequately protect the Group against fraud, corruption, sanctions breaches or other unlawful activities.

In response to the heightened risks, the Board has established a committee that focuses on monitoring ethics and compliance, and seeking to ensure that business practices are aligned with the Company's culture, see page 100.

External risks continued

5 Liquidity

Risk movement in 2018: 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
Our failure to access funds (liquidity) would severely limit our ability to engage in desired activities.

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.

Comments/impacts to the Group
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.

This is particularly the case during the current period when the US Federal Reserve and European Central Bank are adopting tighter monetary policies, which could lead to the credit markets contracting and becoming more expensive.

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

Note 28 details the fair value of our financial assets and liabilities.

Mitigating factors
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 Baa2 (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. This financial policy facilitates access to funds, even in periods of market volatility.

The Financial Review on page 52 sets out the Group's Net Funding and Net Debt in 2018. However, it should be noted that the credit ratings agencies apply a haircut to the value of our RMI, such that their calculated net debt is higher.

We remain cognisant that access to credit is vital and that market conditions can change rapidly. As such, we have over the years reduced our bond portfolio significantly and optimised our bond debt maturity profile to no more than c.$3 billion of bonds maturing per annum.

As at 31 December 2018, the Group had available undrawn committed credit facilities and cash amounting to $10.2 billion (31 December 2017: $12.8 billion), comfortably ahead of our $3 billion minimum prescribed level.

Business risks

6 Counterparty credit and performance

Risk movement in 2018: Stable

Link to strategic priorities

Risk appetite
Low. Where possible, credit exposure is covered through credit mitigation products.

Risk description
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.

Comments/impacts to the Group
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 or hedging counterparties may find themselves unable to honour their contractual obligations due to financial distress or other reasons

Mitigating factors
We monitor the credit quality of our counterparties and seek to reduce the risk of customer non-performance by requiring credit support from creditworthy financial institutions including making extensive use of credit enhancement products, such as letters of credit, bank guarantees and insurance policies. 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 2018: 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

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 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 they may be exposed to other hazardous conditions.

Comments/impacts to the Group

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.

Infrastructure availability remains a key risk, e.g. availability of continuous high-voltage power to our copper operations in the Democratic Republic of Congo. We are continuing to monitor the progress of long-term power solutions via the Inga dam refurbishment.

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.

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

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.

Details of the significant impairments recorded during the year are contained in note 6. Deterioration in the price outlook or operating difficulties may result in additional impairments.

One of the key factors in our success is a good and trustworthy relationship with our people. 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 47.

Business risks continued

8 Cyber

Risk movement in 2018: 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
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 cyber-crime.

A cyber security 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 exposures.

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

Comments/impacts to 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.

On 25 May 2018, the General Data Protection Regulation (GDPR) came into force across the European Union (EU) and the European Economic Area (EEA) which required us to verify that our systems and processes are compliant.

Our IT security monitoring platforms frequently detect attempts to breach our networks and systems. During 2018, none of these events resulted in a material breach of our IT environment nor resulted in a material business impact.

Mitigating factors
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 cyber security threats.

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

Our IT Security Council sets the global cyber security strategy, conducts regular risk assessments and designs cyber security 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 Climate change

Risk movement in 2018: Increase

Link to strategic priorities

Risk appetite
High. Our business involves producing and consuming fossil fuels along with processing minerals which inevitably entails emitting harmful emissions.

Risk description
Climate change is a material issue that affects our business and creates both risks and opportunities. As a significant producer and consumer of energy products, energy is a key input and cost to our business as well as being a material source of our carbon emissions. Proposals for a transition to a low-carbon economy and its associated public policy development, may increase costs for fossil fuels, impose levies for emissions and increase costs for monitoring and reporting and to reduce demand for our energy products. Third parties, including potential or actual investors, may also introduce policies adverse to the Company due to its interest in fossil fuels.

A number of national governments have already introduced, or are contemplating the introduction of regulatory responses to greenhouse gas emissions. This includes countries where we have assets such as Australia, Canada and Chile, as well as customer markets such as China, India and Europe.

Climate change may increase physical risks to our industrial assets, largely driven from water related risks such as flooding or water scarcity.

Comments/impacts to the Group
Many developed countries are pledging to stop using fossil fuels (specifically coal) in power generation. 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.

As a result of these factors, some other market participants and analysts have a more bearish view (some strongly so) in relation to coal and oil and believe that many fossil fuel assets could become “stranded”, i.e. no longer capable of operating for an economic return with the capital invested being irretrievably lost. Some investors may not invest in our shares or divest their holdings due to our significant operations in fossil fuels.

This is particularly relevant for us as the world’s largest producer of seaborne thermal coal and a significant marketer of fossil fuels.

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.

Mitigating factors
Through our sustainability programme, we strive to ensure emissions and climate change issues are identified, understood and monitored in order to meet international best practice standards and ensure regulatory compliance.

We openly and transparently disclose our energy and carbon emissions footprint. This supports our identification, understanding and monitoring of emissions and climate change issues.

We seek to manage our coal business tightly around cash generation, including ensuring that ongoing/further investment has relatively quick cost pay-backs so as to mitigate “stranded-assets” risk.

We review and analyse high-level climate change trends, including regulatory compliance and physical and reputational impacts for our operating regions. We monitor revisions to energy and carbon scenarios and their potential impact on our business.

Following engagement with investor signatories of the Climate Action 100+ initiative, we have furthered our commitment to a low-carbon economy, amongst others by limiting our coal production capacity broadly to current levels. Please refer to pages 20–21 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 need to put in place to meet our group-wide carbon emission intensity reduction target of 5% on 2016 levels by 2020. 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.

Further information is available at:
glencore.com/sustainability/climate-change

Sustainability risks continued

10 Community relations and human rights

Risk movement in 2018: 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
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.

Comments/impacts to the Group
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.

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. We take a cross-functional approach to understanding and managing our socio-economic contributions to deliver shared value while managing our impact on society.

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.

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

11 Health, safety, environment

Risk movement in 2018: Increase

Link to strategic priorities

Risk appetite
Low. It is our policy to ensure we comply with or exceed the health, safety and environmental laws and external requirements applicable to our operations and products.

Risk description
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.

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

Our operations are often sited 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.

Comments/impacts to the Group
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.

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, organisational cultures and workforce. As a result, we need to take a flexible local approach to transforming our workforces' safety and health attitudes and culture.

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.

We regret that we recorded thirteen fatalities at our operations in 2018.

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.

We monitor catastrophic risks, in particular, across our portfolio and operate emergency response programmes.

Compliance with international and local regulations and standards is a requirement.

We remain focused on the significant risks facing our industry arising from operational catastrophes such as the tailings dam collapses in Canada (Mount Polley) and in Brazil (Samarco and Brumadinho) in the last five years, and mine wall collapses at our operations in DRC and Colombia. Tailing dams in particular remain a significant risk and will be a greater area of focus via our dam safety assurance programme, regular surveillance/inspections and verification of all corrective actions taken. We seek to learn from these events, and proactively assess our exposure to similar incidents and implement measures to avoid these.

Considerable ongoing investment continues in the Group's SafeWork health and safety programme.

See also the Sustainability review on page 36 and the HSEC Committee report on page 112.

Further details will also be published in our 2018 sustainability report.

Sustainability

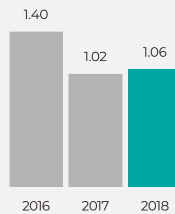
Our approach to sustainability reflects our commitment to operate transparently and responsibly. It also encompasses our desire to protect the wellbeing of our people, our host communities and the natural environment, while sharing lasting benefits with the regions where we operate and society as a whole

Overview

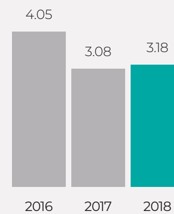
We recognise that the success of our business and the creation of financial value is dependent on our responsibility to make a positive contribution to society while creating lasting benefits for stakeholders in a manner that is responsible, transparent and respective to the rights of all.

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

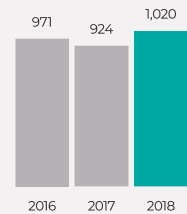
Lost time injury frequency rate (per million hours worked)



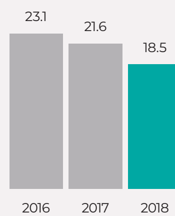
Total recordable injury frequency rate (per million hours worked)



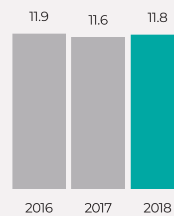
Water withdrawn (million m³)



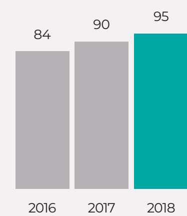
CO_2e Scope 1 (million tonnes)



CO_2 Scope 2 – location based (million tonnes)



Community investment (US$ million)



Oversight and ultimate responsibility for our Group sustainability strategy and framework, as well as its implementation across the Group, rests with the Board HSEC Committee (the Committee). The CEO, principally through the support of the Group's senior management team, is responsible for implementing and executing the sustainability strategy.

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

Further details on this strategy, our approach to its implementation, 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):

- Our approach to sustainability
- Sustainability report and highlights
- Data book and GRI references
- Payments to governments report
- Modern slavery statement

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

External commitments

We are signatories to the United Nations Global Compact (UNGC), aligning our strategies and operations with its principles, which cover human rights, labour, environment and anti-corruption. The UNGC also encourages participants to support the Sustainable Development Goals (SDGs), with an emphasis on collaboration and innovation.

We welcome the SDGs and the advent of a systematic global approach to society's overall development. We believe that we can play a role in supporting our host governments to meet the SDGs.

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 UN's 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 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.

Performance overview

Achieved | On track | Not achieved

Material topic	2015–2020 strategic priority	Performance indicator	2017	2018	Status
Catastrophic hazard management	• No major or catastrophic environmental incidents	Number of health and safety incidents (major and catastrophic)	9	13	Not achieved
		Number of environmental incidents (major and catastrophic)	0	0	Achieved
		Total number of catastrophic and major incidents	9	13	Not 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 figures as baseline of 5.02[1] • Year on year reduction in the number of new cases of occupational disease	Fatalities at managed operations	9	13	Not achieved
		Lost time injury frequency rate	1.02	1.06	On track
		Total recordable injury frequency rate	3.1	3.2	On track
		New occupational disease cases	46	32	Achieved
		Number of HPRIs reported	368	434	Achieved
Climate change	• 5% (minimum) carbon emission intensity reduction on 2016 baseline by 2020	CO_2e Scope 1 (million tonnes)	21.6	18.5	On track
		CO_2 Scope 2 – Location based (million tonnes)	11.6	11.8	On track
		Total energy use (petajoules)	202	208	On track
		Carbon emissions intensity (tGHG/tCu)	4.38	4.09	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 (%)	n/a	n/a	On track
Human rights and grievance mechanisms	• No serious human rights incidents	Serious human rights incidents	0	0	On track
Community engagement and social commitment compliance	• Implement our social value creation strategy • Distribute the community leadership Programme Toolkit	Community investment spend ($ million)	90	95	On track
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			On track

1 Baseline figures include Glencore Agriculture.

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, cadmium, sulphuric acid, lead and precious metals.

Risk management and assurance

The identification, assessment and mitigation of risk determines our approach to sustainability management. All of our assets apply our risk management framework and its supporting guidelines.

We align our framework with international standards. The framework provides a harmonised approach to managing our health, safety, environment, community, human rights and reputational risks, as well as those linked to the management of financial and legal issues.

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.

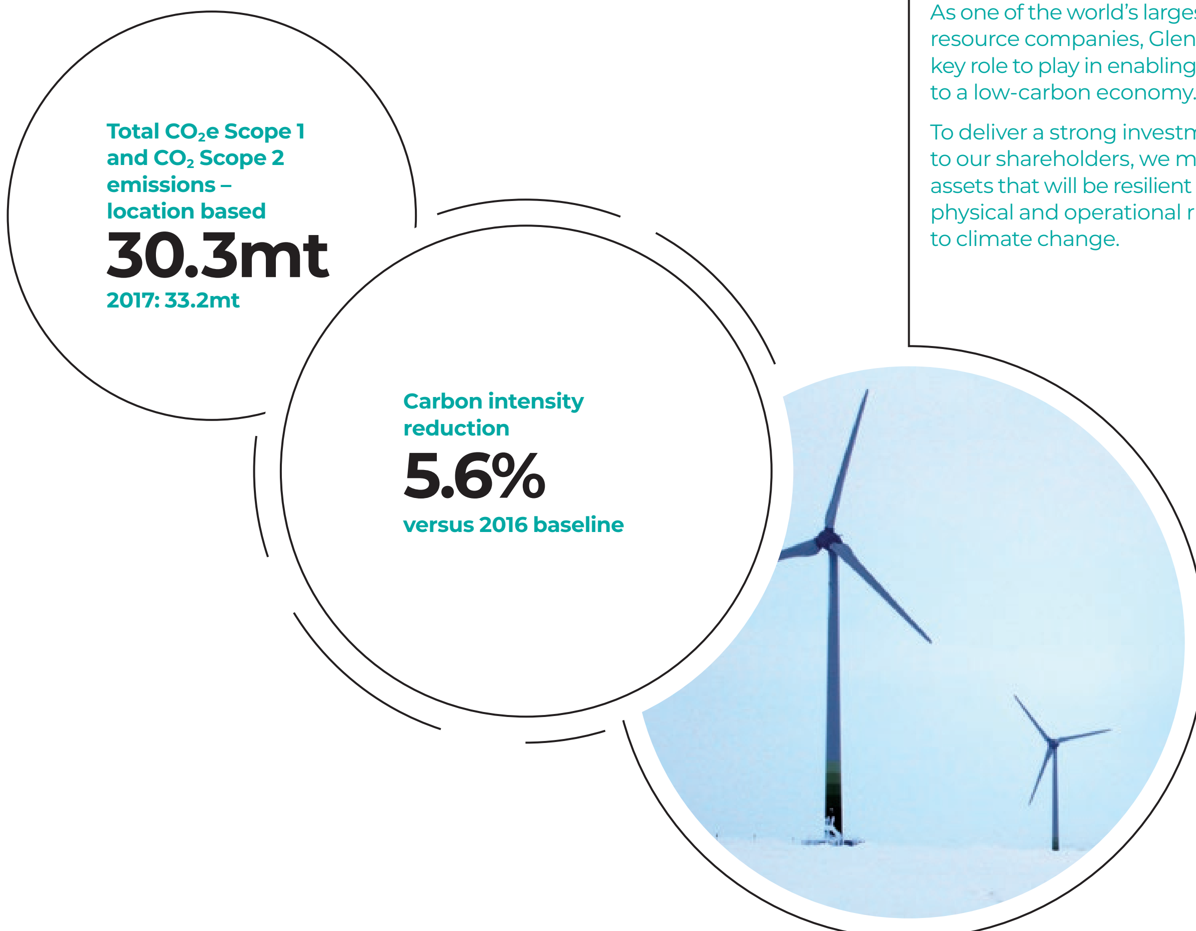
Our internal HSEC assurance programme has a primary focus on our systematic management of the catastrophic hazards and their relevant controls and critical controls. Internal and external senior subject matter experts participate in this programme and the Committee receives reports on its findings. We actively follow up and verify these findings.

The assurance programme is contributing to improving standards and performance group-wide.

Creating long-term, sustainable returns

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

To deliver a strong investment case to our shareholders, we must invest in assets that will be resilient to regulatory, physical and operational risks related to climate change.



Materiality assessment

We focus our approach to reporting on our sustainability performance and progress on the topics identified as being material to our development, performance and position as well as for our future prospects.

We undertake a sustainability-related materiality assessment every two years. This assessment 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.

Our material topics for the 2017–18 period are:

- Catastrophic hazard management
- Workplace safety and health
- Climate change
- Water and effluents
- Waste and air emissions
- Human rights and grievance mechanisms
- Community engagement and social commitment compliance
- Our people

Engaging with our stakeholders

We engage with all relevant stakeholder groups to build meaningful relationships and understand their expectations and aspirations. Through recognising the importance of open and transparent engagement, we are able to minimise our negative societal impact, optimise the value we bring to local communities, and maintain our licence to operate.

We engage on a broad variety of topics with a wide range of stakeholders with diverse interests and opinions. Our stakeholders include our employees and contractors, host communities, civil society, unions, governments, business partners, non-governmental organisations, investors and the media.

We reach out to our stakeholders at local, national, regional and international levels. We hold transparent negotiations with union officials and our employees receive regular briefings on health and safety matters. Many of our assets hold 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, we are working with policy makers directly and through trade associations, on issues related to clean energy, carbon reporting and carbon pricing, recognising that governments and industry must work together to establish policy frameworks that deliver the optimal balance of social, environmental and economic considerations appropriate for individual nations.

Our material topics

Catastrophic hazard management

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 having substantial financial cost.

We are actively identifying, monitoring and mitigating the catastrophic hazards within our business.

We require hazards that could lead to catastrophic or fatal events to be controlled at all times. We ensure that those who might be directly exposed have appropriate awareness of such hazards, along with other legitimate stakeholders.

The Board receives regular updates on this area and actively encourage an approach of ongoing improvement.

Workplace health and safety

The health and safety of our people is our top priority. Our ambition is to become a health and safety leader, and to create a workplace without fatalities, injuries or occupational diseases.

We take a proactive, preventative approach towards health and safety. Our aim is to establish a positive safety culture that supports all of our workforce being empowered to have the authority to stop work if they consider a workplace or situation unsafe. We believe that all occupational fatalities, diseases and injuries are preventable.

An important tool in improving safety at our operations has been the recording of high potential risk incidents (HPRIs).

The reporting of HPRIs represents a positive part of our strategy to reduce fatalities and, as such, we do not target a reduction in this metric. They support the identification of activities that we need to prioritise in order to advance further our safety performance.

During 2018, the majority of our HPRIs related to mobile equipment, ground/strata failure, lifting and cranage, working at height, fire and explosion, energy and electrical safety. For each of these hazards, we have developed protocols that detail the actions necessary to identify and mitigate the associated risk.

We encourage our workforce to recognise the need to record and report HPRIs through the promotion of a risk-based safety culture.

We are saddened to report that we have not met our goal of zero fatalities. In 2018, thirteen people lost their lives at our operations, compared to nine during 2017. All loss of life is unacceptable and we are determined to eliminate fatalities across our Group.

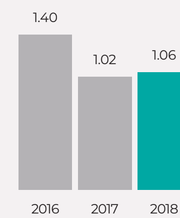
Our lost time injury frequency rate (LTIFR) reflects the total number of lost time injuries per million hours worked and does not include restricted work injuries or fatalities. Our LTIFR is recorded when an employee or contractor is unable to work following an incident; days recorded begin on the first rostered shift that the worker is absent after the day of the injury.

In 2018, our LTIFR was 1.06 per million hours worked (2017: 1.02). Despite our LTIFR increasing slightly (4%) year-on-year, we are continuing to embed our SafeWork programme, build capacity throughout our business and we remain committed towards achieving a fatality and injury-free work place. Each commodity department has in place a safety work plan that reflects the specific production process for their operations. We are continuing our efforts to establish a sustainable culture of safety in our work places that contribute towards our long-term goal of reducing employee and contractor lost-time injuries by 50% by the end of 2020 against a 2015 figure of 1.34.

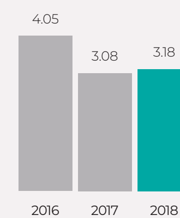
The total recordable injury frequency rate (TRIFR) is the sum of fatalities, lost time injuries, restricted work injuries and medical treatment injuries per million hours worked. The metric represents all injuries that require medical treatment beyond first aid.

Our 2018 TRIFR of 3.18 is regrettably a 3% increase on 2017's rate of 3.08. However, we are continuing to support the changes that are necessary to deliver the progressive improvement required to achieve our long-term goal of achieving a 50% reduction in TRIFR by the end of 2020, using our 2014 TRIFR of 5.02 as the baseline.

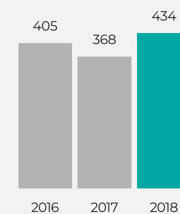
Lost time injury frequency rate (per million hours worked)



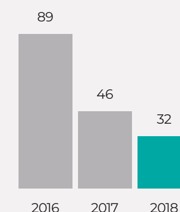
Total recordable injury frequency rate (per million hours worked)



Number of HPRIs reported



New occupational disease cases



2016 data includes Glencore Agriculture; 2017 and 2018 excludes Glencore Agriculture.

Climate change

The impact on our business

As a significant energy products producer and consumer, we are aware that energy is a key input and cost to our business as well as being a material source of our carbon emissions. We are working to mitigate the physical impacts of climate change where we can and consider resource efficiency when making operational decisions. Wherever we operate, we seek to optimise our energy and carbon footprint.

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 and 4.1ii of the Paris Agreement (the "Paris Goals") and supporting the United Nations Sustainable Development Goals, including universal access to affordable energy.

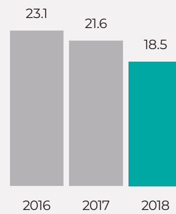
We believe the measures implemented by national and intra-national governments, as well as public sentiment, will drive public policy developments and programmes that restrict global greenhouse gas emissions (GHGs).

This is likely to affect our business and represents both risks and opportunities that we need to manage. We support a least-cost pathway to achieving climate change goals that considers the cost and consequences of all available policy options and does not hinder socio-economic development.

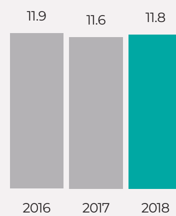
Addressing climate change across our business

To address the impacts, opportunities and risks relating to climate change within our business, our internal cross-functional and cross-commodity working group, led by our Chairman with Board oversight, considers and examines climate change issues.

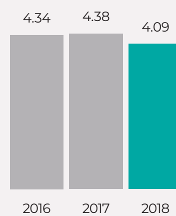
CO_2e Scope 1
(million tonnes)



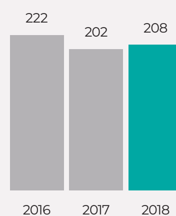
CO_2 Scope 2 – location based
(million tonnes)



Emissions intensity
(tGHG/tCu)



Total energy use
(petajoules)



This working group is overseeing the ongoing integration of carbon emissions and energy into our annual business planning process and the mapping to 2020 of our forward projected energy and carbon footprint. Its work is feeding into a detailed review of our carbon emissions and energy profile. It includes an assessment of potential mitigation and abatement projects, and underpins the basis of our internal Marginal Abatement Cost Curve (MACC).

How we are taking action

We use renewable energy sources where possible; renewable sources deliver 12% of our total energy needs (2017: 14%). 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.

We play an active role in engaging with governments and other interested stakeholders to develop strategies for reducing the impact of climate change. We actively support the development of low emission technologies and some renewable energy sources.

We are investing in a number of low carbon energy projects that address direct and indirect emissions from our operations. They include treatment of fugitive emissions from coal processing and ventilation and a large-scale carbon capture and storage demonstration project in Australia.

Reporting on our emissions

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.

During 2018, we emitted 18.5 million tonnes CO_2e of Scope 1 (direct emissions) from our consumed fuel (2017: 21.6 million tonnes). This figure includes emissions from reductants used in our metallurgical smelters. It also includes CO_2e of methane emissions from our operations, which is around 25% of our Scope 1 emissions. The reduction in Scope 1 emissions is mainly due to lower coal seam emissions at our Australian coal operations.

In 2018, we emitted 11.8 million tonnes CO_2 of Scope 2 location-based (indirect emissions) (2017: 11.6 million tonnes). We apply appropriate country-by-country grid emission factors to all of our purchased electricity, regardless of specific renewable electricity contracts. The increase of our Scope 2 emissions is based on our new assets and overall production increases/ramp-ups which outweigh any reductions as a result of site closures and divestitures.

Our Scope 3 emissions include those from a broad range of sources, including the use of the fossil fuels that we have sold to our customers and shipping transportation by our time-chartered vessels. We report our Scope 3 emissions in our 2018 Sustainability Report.

Our 2018 carbon emissions intensity, measured in terms of tonnes of greenhouse gases emitted per tonne of copper equivalent industrial production (tGHG/tCu), is 4.09tGHG/tCu (2017: 4.38tGHG/tCu; 2016: 4.34tGHG/tCu[1]). Lower coal seam emissions due to the closure of underground assets in Australia drove this reduction. Expected mine planning changes at certain assets including Mutanda are likely to increase emissions intensity temporarily. However, we believe that we are on track to achieve our group-wide carbon emission-intensity reduction target of at least 5% on 2016 levels by 2020.

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.

Our *Climate Change Considerations for our Business* publication analyses the robustness of our portfolio against climate-related scenarios and provides an assessment of the risks and opportunities available to Glencore in a low-carbon economy.

In response to the guidance produced by the TCFD, we have provided a cross-reference table below. The table references the sections in this report and other publications that meet the guidance of the TCFD.

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

Recommendation	Reference
Governance: Disclose the organisation's governance around climate-related risks and opportunities	
(a) Describe the Board's oversight of climate-related risks and opportunities.	Board Committees: **Page 100** Risk – Board leadership: **Page 103**
(b) Describe management's role in assessing and managing climate-related risks and opportunities.	Board activities during 2018: **Page 101** HSEC Committee report: **Page 112**
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.	Principal risks and uncertainties/climate change: **Page 33**
(b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	Principal risks and uncertainties/climate change: **Page 33**
(c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	*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.	Approach to risk management: **Page 104** *2017 Climate Change Considerations for Our Business*: **Page 14**
(b) Describe the organisation's processes for managing climate-related risks.	Addressing climate change across our business: **Page 42**
(c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	Principal risks and uncertainties: **Page 33** Reporting on our emissions: **Page 42**
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.	Reporting on our emissions: **Page 42**
(b) Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Reporting on our emissions: **Page 42** Key performance indicators: **Page 23**
(c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	Addressing climate change across our business: **Page 42**

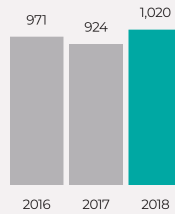
1 The 2016 and 2017 carbon intensity have been updated in accordance with the Greenhouse gas protocol in order to account for acquisitions and divestments.

Water and effluents

Water is an essential component of our business activities. We recognise that water is a shared and finite resource and we are conscious of the increasing concerns of our local stakeholders and other local water users regarding ongoing availability of water, security of access and the potential for impacts on water supply.

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. 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.

Water withdrawn
(million m^3)



In 2018, we withdrew 1,020 million m^3 of water (2017: 924 million m^3). The increase is mainly due to the inclusion of the Volcan zinc assets.

We publicly report to the CDP Water Disclosure programme.

Waste and air emissions

Most of the waste that Glencore generates is mineral and includes tailings, slag and rock. Our assets have rigorous management systems to dispose of waste while preventing environmental contamination. We reuse as much waste as possible.

Our metal and coal assets generate tailings (residues of mineral processing), which are stored in purpose-built tailings storage facilities (TSF). Our assets evaluate natural phenomena such as flooding and seismic activity and incorporate these considerations into their TSF designs where relevant.

Piloting water catchment assessments

Our Horne Smelter is progressing a pilot project on the International Council for Mining & Metals' (ICMM) catchment-based approach to water management.

Catchment-based water management is a comprehensive, systematic approach to identifying, evaluating and responding to local water-related risks through the lifecycle of an asset as well as capturing an asset's impact on other local water users.

The project is supporting an improved understanding of water, better investment planning and prioritisation and stakeholder engagement.

The site will initiate a water management action plan that aligns with the Mining Association of Canada's water stewardship protocol.

The learnings of this project will be shared group-wide.

Our TSFs are heavily regulated, undergo regular inspections, and are monitored continuously for integrity and structural stability. We require the design, construction, operation, and closure of our TSFs and associated dams to comply with internationally-recognised engineering standards and in line with our management plans. Since 2016, our approach has been built around a Dam Safety Assurance Programme with a foundational assessment against more than 100 criteria in dam safety and governance best practice. This Programme sets out clear and consistent requirements for maintenance procedures and annual inspections, and details assurance processes to be followed. We work in partnership with a leading external expert, Klohn Crippen Berger ("KCB"). The Programme improves our identification and minimisation or elimination of potential health, safety, environmental, social or business risks associated with our TSFs.

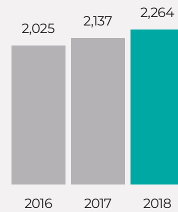
We conduct risk assessments on our TSFs to evaluate the risks associated with a TSF failure, and to identify the associated preventing and mitigating controls. We carry out regular surveillance and quarterly to annual TSF safety inspections to assess the compliance of the TSFs with regulations and engineering standards. Any corrective actions taken following a safety audit are subject to verification. A full corporate audit of technical and governance procedures is carried out by KCB every 12–18 months.

The slight increase in waste produced during 2018 was primarily due to increased stripping ratios at a number of assets and the ramp-up of some assets after completion of optimisation projects.

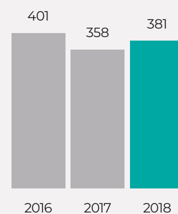
Our operations emit emissions such as sulphur dioxide (SO_2), dust and nitrogen oxide as well as generate waste, which can affect the environment and nearby communities.

We monitor all material emissions and continuously look for ways to reduce those that pollute the air around us. Wherever we operate, we comply with relevant regulatory limits and/or international standards for air emissions regarding SO_2.

Total amount of hazardous and non-hazardous mineral waste generated
(million tonnes)



Sulphur dioxide emissions
(thousand tonnes)



Our open cut operations emit dust from excavation and movement of material. We monitor dust levels at affected communities and minimise dust in a number of ways.

Human rights and grievance mechanisms

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 and stems from our values.

Our Code of Conduct also explicitly aligns our security procedures with the UN Voluntary Principles on Security and Human Rights (Voluntary Principles). We also endorse the Voluntary Principles within our public Group Human Rights Policy.

As a member of the Voluntary Principles Initiative, we are working with the member governments, companies and NGOs to develop further our approach towards human rights. We have implemented the Voluntary Principles at our assets with a high risk of human rights breaches since 2013.

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.

At operations with a relatively high risk of breaches of security-related, human rights, we require our own employees and private security contractors to undergo specific training on human rights, aligned with the Voluntary Principles. Where possible, we also provide awareness-raising sessions on the Voluntary Principles to public security forces deployed on our concessions.

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.

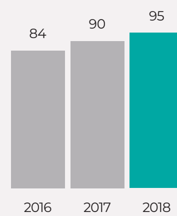
During 2018, we received 1,057 complaints from the communities living around our operations (2017: 1,063 complaints). The majority of the complaints received related to Chad E&P, Mount Isa and Mangoola primarily regarding access to property (Chad), air emissions (Mount Isa) and noise (Mangoola). We take all complaints seriously and continuously look for new ways to minimise our impacts.

Community engagement and social commitment compliance

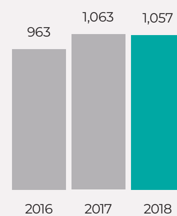
The communities surrounding our operations are our neighbours, employees, business partners and future workforce. Through our commitment to two-way dialogue with our local communities, we aim to secure a broad base of support for our activities. We aim to foster sustainable growth where we operate. We work with communities to deliver socio-economic development through investment in infrastructure, procurement, health and education projects.

We contribute to society throughout our value chain, via employment, procurement, enterprise development, infrastructure and social investment programmes.

Community investment (US$ million)



Community complaints



Our community development programmes are an integral part of our community and stakeholder engagement strategies. We design our programmes to help reduce dependency on our operations, encourage self-reliance and contribute to sustainable growth in our host regions.

We are continuing our Community Leadership Programme (CLP) training for our assets' general managers and site-based community practitioners. During 2018, we held CLP training sessions in Australia and Peru; a European training session took place in February 2019.

In 2018, we spent $95 million on community development programmes (2017: $90 million).

Product stewardship

Our products are vital to today's society, creating devices used daily, all over the world. Our goal is to provide competitively priced commodities that meet our customers' needs and contribute to global society, while addressing any associated health, societal and environmental risks.

We work with experts, industry consortia and our peers to study the properties and impacts of our products throughout their lifecycles, to spread understanding of our products. We engage with a broad range of stakeholders, including civil society, governments and our customers, to promote responsible commodity sourcing.

In 2018, 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).

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 people are our greatest asset and we offer them diverse opportunities and support for their development throughout their careers at Glencore, with competitive rewards and benefits.

We emphasise our grievance procedures and their importance, and aim to ensure the wellbeing and protection of our entire workforce.

A Corporate Human Resource Framework provides a holistic guidance to our Human Resource Managers.

In 2018, we updated and redistributed our Corporate Human Resources Policies, ensuring we fulfil our Duty of Care to our employees and contractors.

Our progress in 2018

Our rankings as an Employer of Choice continue to improve as we tackle issues more transparently and timely. We aim to proactively engage with young talents and prospective employees.

In 2018, we updated and redistributed our marketing content and material, reinforcing our Employer Value Proposition to ensure attraction and retention of top talent.

We are proud that according to Universum Global's ranking of Employers of Choice, we continue to improve our standing within the Swiss market and gained four points amongst business students. We were recognised again on the list of the Top 100 Employers in Switzerland as well as being ranked as one of the Best Employers in Switzerland thanks to our employees providing their personal opinions on working at our HQ in Baar.

Diversity

Diversity is at the core of Glencore and it is applied from our varied commodities and portfolios, to our global operations, and at our offices internationally. We support the International Labour Organization Declaration on Fundamental Principles and Rights at Work. We recognise and uphold our people's rights to a safe work environment, freedom of association, collective representation, fair compensation, job security and developmental opportunities.

Glencore is committed to developing and uplifting members of the communities in which it operates. Our Alloys team in South Africa have enrolled more artisans than any other group in the industry, having invested more than $18 million in the past five years. Upon successful completion of the programme, participants are able to access employment in any sector relevant to their training, including mining, construction, and manufacturing.

More than 25 Glencore employees were nominated for a place on the list of *Top 100 Women in Mining*. Ultimately, four of our female employees joined the list of leaders pioneering initiatives to improve worldwide diversity and foster women's professional development within our industry.

Our South African Coal assets have introduced a Women's Development Programme called We Lead – a mentoring programme focused on supporting and advocating for female colleagues.

Union relations

2018 saw the end of 230 days of negotiations at our Oaky Creek Coal mine in Australia. It also saw the beginning of active engagement with IndustriALL, a global union federation.

In accordance with local labour laws, regular labour negotiations with South American unions occur every three years. Our last negotiations at Lomas Bayas took place at the end of 2014 where a collective bargaining agreement for 38 months was agreed. In November 2017 we entered into negotiations and were able to complete them under the new legislation, without disruption, by early January 2018.

Wellbeing

The safe work culture is inherent to Glencore. We strive for a trained, competent, and motivated workforce and continue to promote and support health and wellness programmes for all our workers and surrounding communities.

At Antapaccay, we developed a Leadership Programme for staffing levels, supervisors, superintendents and managers with the intention to promote and underpin the practice of reaching targeted goals by encouraging the appropriate behaviours and attitudes and developing key attributes, such as leadership, teamwork, communication, and drive for results, among others. The programme reached a participation rate of 96% and achieved a total satisfaction rate of 93%.

"Tamatumani" – a second start for the Inuit

Raglan Mine's programme named Tamatumani ("second start" in Inuktitut) was recognised for its commitment to training and workforce development of our Inuit employees. The programme intends to offer permanent employment opportunities within our operations to the Inuit, while fostering development of their individual skills, and promote the economic development of Nunavik. Our Tamatumani programme implements several initiatives favouring harmonisation of cultures within the company.

Outlook – Our focus for 2019

Talent

Throughout 2019, we will continue to focus on talent attraction and retention to ensure the continued success of our business. We will also introduce the launch of our Corporate Scholarship Programme, focusing on mining engineers to address the predicted shortage of such qualifications in the years ahead.

Employer Branding

We maintain the emphasis on our Employer Brand Proposition being Dedicated – Driven – Diversified. The upgraded Employer Branding will be launched in Q1 of 2019 along with updated campaigns whereby, amongst many other activities, our own employees are given the opportunity to speak about their experience at Glencore.

HR Governance and Strategy

We will continue to place an emphasis on strengthening our HR governance on the basis of our Corporate HR Framework, measuring ourselves against our KPIs.

The new UK Corporate Governance Code will form an important part and basis of the HR Governance from 2019 onwards.

Our values

Our values reflect our purpose, our priorities and the ways by which we conduct ourselves. They are the fundamental basis of our sustainability management system, along with our Code of Conduct and our Group Policies.

Safety

Our first priority in the workplace is to protect the health and wellbeing of all our people. We take a proactive approach to health and safety; our goal is continuous improvement in the prevention of occupational disease and injuries.

Entrepreneurialism

Our approach fosters the highest level of professionalism, personal ownership and entrepreneurial spirit in all our people while never compromising on their safety and wellbeing. This is important to our success and the superior returns we aim to achieve for all our stakeholders.

Simplicity

We aim to achieve our key deliverables efficiently as a path to industry-leading returns, while maintaining a clear focus on excellence, quality, sustainability and continuous improvement in everything we do.

Responsibility

We recognise that our work can have an impact on our society and the environment. We care about our performance in relation to environmental protection, human rights, and health and safety.

Openness

We value open relationships and communication based on integrity, co-operation, transparency and mutual benefit, with our people, our customers, our suppliers, governments and society in general.

Ethics and Compliance

Glencore's success is founded on a reputation, built over many years, as being an honest and reliable business partner. By upholding our commitment to ethical business practices, we seek to maintain this reputation and meet our long-term objectives through being regarded as a business partner of choice.

Our Approach

We seek to maintain a culture of ethical behaviour and compliance throughout the Group, rather than simply performing the minimum required by laws and regulations. We will 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 compliance programme that includes a range of policies, procedures, guidelines, training and awareness, monitoring and investigations. 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 compliance policies, procedures and guidelines, in addition to complying with applicable laws and regulations. When we enter into joint ventures where we are not the operator, we strive to influence our partners to adopt similar policies to ours.

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. These updates cover all focus areas (including anti-corruption, sanctions and money laundering) and include topics such as team and programme structure, policies, procedures and guidelines, as well as updates on the training and awareness activities the Group facilitates. We also report to the Board on material investigations and reports into our Raising Concerns programme.

We have also established an Ethics, Compliance and Culture Committee with effect from 1 January 2019 which further oversees the operation and implementation of our compliance programme.

The Group has a Business Ethics Committee (BEC) which comprises Glencore's CEO, CFO, and General Counsel, senior management and members of the compliance team. The BEC considers compliance issues relevant to the Group and reviews and approves our policies, procedures and guidelines. The BEC reports to the Board through the relevant committees. The BEC approves policies, procedures and guidelines which are then implemented by our compliance function.

Group Policy Framework and Compliance Structure

Our policy framework encompasses our values, Code of Conduct and policies, procedures and guidelines on various compliance topics including anti-corruption, sanctions, anti-money laundering, the prevention of fraud, market abuse, the prevention of the facilitation of tax evasion, competition law, data protection and conflicts of interest. This framework reflects our commitment to uphold good business practices and to meet or exceed applicable laws and external requirements. We emphasise their importance in our business activities, including recruitment and induction. Training and awareness on our policies, procedures and guidelines, as well as strong leadership, are critical components of our compliance programme. They ensure our employees understand the behaviour expected of them and provide guidance on how they can identify and practically approach legal and ethical dilemmas in their daily work lives.

Employees can access the compliance policies, procedures and guidelines through various channels, including via the compliance team, the Group intranet or local intranet of the specific asset at which they work. Our managers and supervisors are responsible for ensuring employees understand and comply with the policies and procedures. We monitor and test their implementation on a regular basis. Employees and contractors who have access to a work computer must confirm their awareness and understanding of our compliance requirements electronically every year. Certain 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 policy framework.

We employ compliance officers (generally based in Glencore's major offices in Baar, London, Rotterdam, New York and Singapore), regional compliance officers (responsible for implementation of the programme in specific geographical jurisdictions) and compliance coordinators (who sit in individual offices and/or assets across the globe). Compliance officers are full time compliance employees who provide dedicated compliance support to the business. Regional compliance officers manage implementation of the compliance programme at a regional level and provide guidance to the business and to local compliance coordinators. Local compliance coordinators, guided by the corporate and regional compliance teams, take on a compliance role in addition to their primary role. Where necessary, in certain of our assets, we appoint compliance coordinators on a full-time basis. To ensure the effective implementation of our compliance programme worldwide,

we nominate and appoint qualified and appropriate individuals for compliance coordinator roles, given the nature and risks identified at our operations and offices following a formal nomination and appointment procedure. These compliance coordinators support our employees in day-to-day business considerations, particularly those seeking advice on ethical, lawful behaviour or policy implementation. Employees may access the contact details of our compliance officers and coordinators via the Group intranet and their local intranet.

Risk Assessments

We conduct local office/asset compliance risk assessments at appropriate intervals to understand and record compliance risks faced by the business as well as the controls necessary to mitigate them. We account for changes and external factors affecting the business which may create compliance risk. A group compliance risk register is maintained to identify, assess and evaluate compliance risks. These risks are considered when drafting policies and procedures applicable to the business. In the performance of local office/asset risk assessments, regional compliance officers must review relevant documents and conduct risk interviews as part of site visits.

Training and Awareness

Our employees receive induction sessions and ongoing training on a range of compliance issues. In 2018, 33,944 employees and contractors (2017: 31,737) completed our Code of Conduct e-learning which includes guidance on raising concerns. In addition, 27,510 (2017: 22,872) completed e-learning training our global 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.

We tailor our trainings and make them relevant for our employees and contractors by including real-life hypothetical scenarios which illustrate how legal and ethical dilemmas might manifest themselves in their daily work activities.

The target audience of the Code of Conduct e-Learning is employees with regular access to a work computer and the training on anti-corruption targets those whose function may require them to interact with third parties. For those employees who do not have regular access to a work computer, we provide training in other ways including induction sessions, pre-shift general training and toolbox talks. In addition, compliance officers and compliance coordinators conduct face-to-face training for relevant employees to raise awareness about compliance risks related to their functions and to train them on Glencore's compliance policies, procedures and guidelines.

Monitoring

As part of the Group compliance programme, we conduct monitoring on a risk-based basis to test and verify compliance with the Group policies, procedures and guidelines and with the laws and regulations applicable to Glencore's marketing and industrial activities. This entails performing periodic and ad hoc testing reviews in accordance with the corporate testing and monitoring plans, analysing documents and procedures and, in the case of findings, collaborating with the relevant marketing office or industrial operation to determine the most appropriate course of action, including any required corrective action.

Bribery and corruption

Glencore's Global Anti-Corruption Policy is available on the Group website. It contains our clear position on bribery and corruption: the offering, paying, authorising, soliciting or accepting of bribes is unacceptable. We conduct analysis for corruption risks within our businesses and work towards addressing these risks through policies, procedures, guidelines, training and awareness, monitoring and controls.

Certain of our operations screen potential new employees before hiring using a risk-based approach. Recruitment is required to take place in line with the Corporate Recruiting Policy and guidance for avoiding corruption risks in the hiring process, including guidance in relation to the hiring of relatives of public officials. It is prohibited to recruit or employ current or former public officials or their relatives in consulting roles, secondments or employment in order to influence a public official in his or her official capacity for the purpose of obtaining an advantage.

As per our Global Anti-Corruption Policy, facilitation payments should not be made. We also 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. Any of our officers, employees or 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 that such gifts and entertainment satisfy the general principles set out in the Global 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 approval procedures in place which provide specific requirements for certain types of gifts and entertainment and certain operations, including our procedure for gifts and entertainment for public officials which applies whenever an employee of our marketing operations intends to arrange entertainment, travel, accommodation or a gift for a public official and the value of the courtesy exceeds a specific threshold.

In addition to our standard "Know Your Counterparty" programme, the Group has implemented the Third Party Due Diligence Procedure which seeks to ensure that our third party relationships which present the highest corruption risk are conducted in accordance with applicable laws and regulations and our Global Anti-Corruption Policy. The procedure sets out a detailed process whereby circumstances that may pose a corruption risk are, on a risk basis, reviewed, addressed and taken into consideration when deciding whether and on which conditions to proceed with a

third party relationship, particularly intermediaries, joint-ventures and service providers. The procedure also requires, where necessary, for ongoing monitoring and review of the relationships to ensure compliance with our Global Anti-Corruption Policy.

We report on an annual basis in respect of 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.

Sanctions

Glencore is committed to respecting, upholding and complying with all sanctions applicable to our business and to all transactions in which we engage, regardless of our role or location. The applicability and scope of the applicable sanctions can differ per transaction, jurisdiction and other factors. Our Global Sanctions Policy sets forth our approach to sanctions and how we work toward complying with applicable sanctions and appropriately manage sanctions risk. The Glencore Sanctions Procedure outlines the steps and procedures we take to ensure compliance with the Global Sanctions Policy.

Reporting Misconduct

Everybody working for Glencore (including suppliers) must promptly raise any situations in which the Glencore Code of Conduct, its underlying policies or the law appear to be breached with a supervisor or manager locally.

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, the concern can be raised via Glencore's "Raising Concerns" web platform at **glencore.com/raising-concerns/**.

The website allows any stakeholder to raise concerns on an anonymous basis. Additionally, there are telephone numbers for raising concerns, which are published on the Raising Concerns website.

In 2018, we received a total of 215 (2017: 183 and 2016: 153) reports regarding situations in which Group policies appeared to be breached and which were brought to the attention of the Raising Concerns Programme.

Discipline

In accordance with our Code of Conduct, anybody working for Glencore who breaches the law, the Code of Conduct, or other policies or procedures may face disciplinary action including dismissal. In 2018, Glencore dismissed 399 employees (2017: 284 and 2016: 318) for breaching the Code of Conduct. The dismissals predominantly related to failures to follow safety instructions or policies, or misappropriation of company property.

Non-Financial Information Statement

We aim to comply with the Non-Financial Reporting Directive requirements. The table below sets out were relevant information is located in this report:

Reporting requirement	Policies	Reference in 2018 annual report
1. Environmental Matters	• Sustainability Policy • Code of Conduct	• Climate change, **page 20** • Climate change risk, **page 33** • Health, safety, environment risk, **page 35** • Sustainability report, **page 36**
2. Employees	• SafeWork program • Conflict of Interest Program • Sustainability Policy • Diversity Policy • Corporate Anti-Discrimination and Harassment Policy • Corporate Recruiting Policy • Code of Conduct	• Operating risk, **page 31** • Our people, **page 47**
3. Human Rights	• Human Rights Policy • Annual Modern Slavery Statement • Sustainability Policy • Code of Conduct	• Community relations and human rights risk **page 34** • Sustainability report, **page 36**
4. Social Matters	• Sustainability Policy • Code of Conduct	• Community relations and human rights risk, **page 34** • Sustainability report, **page 36** • Our people, **page 47**
5. Anti-corruption and anti-bribery	• Global Anti-Corruption Policy • Third Party Due Diligence Procedure • Code of Conduct	• Laws and enforcement risk, **page 29** • Ethics and Compliance, **page 49**
6. Business model		• Business model, **page 12**
7. Principal Risk and Uncertainties		• Principal risk and uncertainties, **page 24**
8. Non-financial key performance indicators		• Non-financial key performance indicators, **page 23**

Financial review

Asset restarts and cash-generative mine acquisitions contributed to Adjusted EBITDA of $15.8bn. Net debt established within our self-imposed cap supports shareholder returns well in excess of minimum levels

Strong financial performance

Adjusted EBITDA was $15.8 billion, up 8% compared to 2017, supported by favourable fundamentals and volume increases from asset acquisitions and restarts.

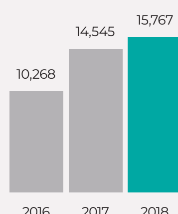
Net income decreased mainly due to non-cash impairments. Current cash generation supported shareholder returns of $5.2 billion announced in 2018, with similar levels announced for 2019.

Group Adjusted EBITDA
$15.8bn
2017: $14.5bn

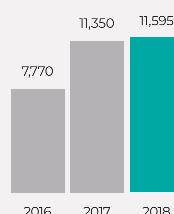
Funds from operations
$11.6bn
2017: $11.4bn

Returns to shareholders
$5.2bn
announced

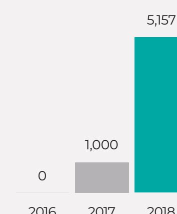
Adjusted EBITDA (US$ million)



Funds from operations (US$ million)



Returns to shareholders (US$ million)



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 year, the Glencore Agri joint venture continued its transition to a fully independent stand-alone group through bedding down of its independent governance structure and the firm establishment of its own stand-alone capital structure and credit profile. As a result of its increasing independence and Glencore's management evaluating the segment's financial performance on a net return basis as opposed to an Adjusted EBITDA basis, the financial results of Glencore Agri are no longer adjusted and presented on a proportionate consolidation basis, but rather are presented on a basis consistent with its underlying IFRS treatment (equity accounting). Applicable comparative balances have been restated to reflect these changes.

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 used to improve 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 below) are items of income and expense, which, due to their 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 214.

Highlights

US$ million	2018	2017	Change %
Key statement of income and cash flows highlights[2]:			
Net income attributable to equity holders	3,408	5,777	(41)
Adjusted EBITDA◊	15,767	14,545[1]	8
Adjusted EBIT◊	9,143	8,459[1]	8
Earnings per share (Basic) (US$)	0.24	0.41	(41)
Funds from operations (FFO)[2]◊	11,595	11,350[1]	2
Cash generated by operating activities before working capital changes	13,210	11,866	11
Purchase and sale of property, plant and equipment – net[3]◊	4,899	3,789[1]	29

US$ million	31.12.2018	31.12.2017	Change %
Key financial position highlights:			
Total assets	128,672	135,593	(5)
Net funding[3]◊	32,138	31,053[1]	3
Net debt[3]◊	14,710	10,216[1]	44
Ratios:			
FFO to Net debt[3]◊	78.8%	111.1%[1]	(29)
Net debt to Adjusted EBITDA◊	0.93x	0.70x[1]	33

Adjusted EBITDA/EBIT◊

Adjusted EBITDA by business segment is as follows:

	2018			2017 Restated[1]			
US$ million	Marketing activities	Industrial activities	Adjusted EBITDA	Marketing activities	Industrial activities	Adjusted EBITDA	Change %
Metals and minerals	1,767	8,478	10,245	2,029	8,281	10,310	(1)
Energy products	795	5,312	6,107	1,054	3,599	4,653	31
Agricultural products	21	–	21	99	–	99	(79)
Corporate and other	(91)	(515)	(606)	(175)	(342)	(517)	17
Total	**2,492**	**13,275**	**15,767**	**3,007**	**11,538**	**14,545**	**8**

Adjusted EBIT by business segment is as follows:

	2018			2017 Restated[1]			
US$ million	Marketing activities	Industrial activities	Adjusted EBIT	Marketing activities	Industrial activities	Adjusted EBIT	Change %
Metals and minerals	1,742	4,053	5,795	2,005	4,496	6,501	(11)
Energy products	742	3,209	3,951	990	1,424	2,414	64
Agricultural products	21	–	21	99	–	99	(79)
Corporate and other	(91)	(533)	(624)	(175)	(380)	(555)	12
Total	**2,414**	**6,729**	**9,143**	**2,919**	**5,540**	**8,459**	**8**

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting), previously proportionately accounted, refer to APMs section for reconciliations.
2 Refer to basis of presentation above.
3 Refer to page 56.

◊ 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 214 for definition and reconciliations and note 2 of the financial statements for reconciliation of Adjusted EBIT/EBITDA and capital expenditure.

Financial results

Net income attributable to equity holders decreased from $5,777 million in 2017 to $3,408 million in 2018 and EPS similarly decreased from $0.41 per share to $0.24 per share, as the net positive impacts of generally higher commodity prices and increased production compared to prior year, were offset by impairments, mainly in our African copper portfolio, owing to increased costs and regulatory and operational challenges.

Adjusted EBITDA of $15,767 million and Adjusted EBIT of $9,143 million, were both 8% improvements on 2017, primarily resulting from higher commodity prices and production increases, offset by cost inflation, lower grades for some by-products and reduced third-party smelting profitability. Market sentiment and its influence on commodity prices represented a tale of two halves; relatively buoyant market conditions over H1 2018 were tempered by US/China trade uncertainty and the somewhat related concerns on the sustainability of Chinese growth over H2. Notwithstanding these macro influences, we saw notable year-over-year average price increases for cobalt (30%), nickel (26%), coal (GC Newc. 21%) and copper (6%), although year-end prices (except coal) were mostly significantly lower than the yearly average. The positive impact on Adjusted EBITDA of the higher prices and increased copper and cobalt production, notably from Katanga,

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	2018	2017 Restated[1]
Adjusted EBIT◊	9,143	8,459
Net finance and income tax expense in relevant material associates and joint ventures[2]	(529)	(498)
Proportionate adjustment Volcan[2]	(72)	–
Net finance costs	(1,514)	(1,451)
Income tax expense[3]	(1,761)	(1,572)
Non-controlling interests	498	570
Income attributable to equity holders of the Parent pre-significant items	**5,765**	**5,508**
Earnings per share (Basic) pre-significant items (US$)◊	0.41	0.39
Significant items◊		
Share of Associates' significant items[4]	(40)	(6)
Mark-to-market valuation on certain coal hedging contracts[5]	–	225
Unrealised intergroup profit elimination adjustments[5]	237	(523)
(Loss)/gain on disposals and investments[6]	(139)	1,309
Other (expense)/income – net[7]	(764)	34
Impairments[8]	(1,643)	(628)
Income tax expense[3]	(302)	(187)
Non-controlling interests' share of significant items[9]	294	45
Total significant items	**(2,357)**	**269**
Income attributable to equity holders of the Parent	**3,408**	**5,777**
Earnings per share (Basic) (US$)	0.24	0.41

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting), previously proportionately accounted, refer to APMs section for reconciliations.
2 Refer to note 2 of the financial statements and to APMs section for reconciliations.
3 Refer to other reconciliations section for the allocation of the total income tax expense between pre-significant and significant items.
4 Recognised within share of income from associates and joint ventures, see note 2 of the financial statements.
5 Recognised within cost of goods sold, see note 2 of the financial statements.
6 Refer to note 4 of the financial statements and to APMs section for reconciliations.
7 Recognised within other expense – net, see note 5 of the financial statements and to APMs section for reconciliations.
8 Refer to note 6 of the financial statements and to APMs section for reconciliations.
9 Recognised within non-controlling interests, refer to APMs section.

following its successful restart and ramp-up from December 2017, was tempered by increasing commodity linked input costs, such as oil and reagents and some overall inflationary cost pressures in the industry. The latter, including where general country inflation ran high (e.g. Argentina), was somewhat offset by a strengthening US dollar (on average) against many of our key producer country currencies. Average year-over-year increases in the US dollar against the Kazakhstani Tenge and the Australian dollar were 6% and 3% respectively.

The Metals and minerals Adjusted EBITDA mining margin was consistent with prior year at 38%, while Energy was at 46%, up from 41% in 2017, reflecting higher coal prices and the incremental contribution from the HVO and Hail Creek acquisitions.

Marketing Adjusted EBITDA and EBIT decreased 17% to $2,492 million and $2,414 million respectively:

- Metals and minerals Adjusted Marketing EBIT was down 13% over 2017, primarily on account of various challenging market dynamics within the alumina and cobalt markets in H2, outweighing generally healthy underlying demand and supportive physical commodity market conditions. During the year, extreme aluminium and alumina market volatility created an anomalous dislocation between the two markets' pricing relationship (basis risk), causing losses on sourcing the required alumina to meet certain "% LME" linked legacy sales contracts. This alumina basis risk exposure reduces significantly from 2019. In cobalt, we experienced some customer contractual non-performance and cyclically weak fundamentals in H2
- Energy products Adjusted Marketing EBIT was down 25% compared to 2017, reflecting the strong 2017 base, oil forward curves being in backwardation for almost all of the year, thereby reducing trading opportunities, and a more cautious approach to coal marketing opportunities from an expected risk/return perspective (11% lower thermal volumes)
- Glencore Agri's standalone Adjusted EBITDA was down 23% compared to 2017, primarily due to poor crop sizes in Australia and Argentina, continued industry margin pressures and a decline in the sugar price. Glencore's attributable share of profits was $21 million (being the Agricultural products Adjusted Marketing EBIT), down 79% on 2017

- Industrial Adjusted EBITDA increased by 15% to $13,275 million (Adjusted EBIT was $6,729 million, compared to $5,540 million in 2017). As noted above, the increase was primarily driven by stronger average year-over-year commodity prices, increased copper and coal production, offset by cost increased/inflation (net of FX benefits)

Significant items

Significant items are items of income and expense which, due to their 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 2018, Glencore recognised a net expense of $2,357 million (2017: a net income of $269 million) in significant items comprised primarily of:

- A $40 million expense (2017: $6 million) representing Glencore's share of significant expenses recognised directly by our associates, primarily impairment charges recognised within Century and Glencore Agri
- A loss on disposals and investments of $139 million (2017: a gain of $1,309 million) see note 4. In 2018, the loss primarily relates to the disposal of our interest in the Mototolo platinum joint venture in South Africa, mainly on account of recycling foreign currency translation reserves to the statement of income. In 2017, the gain primarily relates to the disposal of Zinc Africa ($232 million), an oil storage business (HG Storage, $674 million) and a royalty portfolio ($210 million)
- Other expenses – net $764 million (2017: other income of $34 million) see note 5. Balance primarily comprises:
  - $270 million (2017: $78 million) relating to the costs incurred in settling Katanga's capital deficiency and various historical commercial disputes with Gécamines ($248 million) and a settlement with the Ontario Securities Commission ($22 million). The recapitalisation of KCC concluded in June 2018 with the conversion of $5.6 billion of intercompany debt into equity, with $1.4 billion of that share capital passed onto Gécamines to maintain its 25% interest in KCC. Also see note 33. In 2017, Glencore recognised the cumulative effect ($78 million) of certain accounting issues that resulted in Katanga restating it 2014–2015 results
  - $142 million (2017: $Nil) of acquisition related expenses incurred in connection with the acquisition of HVO and Hail Creek (see note 25). The expenses are primarily stamp duty and property transfer related taxes
  - $139 million (2017: $290 million) of mark-to-market gains on equity investments/derivative positions accounted for as held for trading
  - $58 million (2017: $80 million) of net foreign exchange losses
  - $86 million (2017: $75 million) relating to certain legal matters. In 2018, $24 million of legal costs were incurred in relation to the DOJ investigation initiated in July 2018 (see note 31) and $62 million in respect of costs related to claims brought against the Group by the Strategic Fuel Fund Association of South Africa. The 2017 balance is a cost estimate for potential settlement of claims brought against the Group related to an operation disposed in 2005
  - $325 million (2017: $Nil) relating to costs and liabilities that the Group assumed following the termination of a 50:50 consortium arrangement with Qatar Investment Authority and the consortium's investment in OSJC Rosneft
- Impairments of $1,643 million (2017: $628 million) see note 6. 2018 impairments relate primarily to the Mopani copper operations in Zambia ($803 million), the Mutanda copper operations in the DRC ($600 million) and loans extended under prepayment and other arrangements ($191 million). 2017 impairments related mainly to Chad oil ($278 million), Cameroon oil ($81 million) and junior loans extended to a coal terminal facility ($149 million). The 2017 impairments were partially offset by a reversal of $243 million related to the Equatorial Guinea oil operations

Net finance costs

Net finance costs were $1,514 million in 2018, a 4% increase compared to $1,451 million in the comparable period, primarily attributable to higher average base rates (mainly US$ LIBOR) over the year, with interest expense increasing 8% to $1,742 million and interest income rising 36% to $228 million.

Income taxes

An income tax expense of $2,063 million was recognised during 2018, compared to an income tax expense of $1,759 million in 2017. Adjusting for a net $302 million (2017: $187 million) income tax expense related to significant items (primarily currency translation effects and tax losses not recognised less tax benefits from impairments), the 2018 pre-significant items income tax expense was $1,761 million (2017: $1,572 million). The 2018 effective tax rate, pre-significant items, was 30.9%, broadly in-line with 30.5% in 2017.

Cash flow and net funding/debt

Net funding

US$ million	31.12.2018	31.12.2017 Restated[1]
Total borrowings as per financial statements	34,994	33,934
Proportionate adjustment – net funding[1]	(810)	(757)
Cash and cash equivalents	(2,046)	(2,124)
Net funding◊	**32,138**	**31,053**

Cash and non-cash movements in net funding

US$ million	31.12.2018	31.12.2017 Restated[1]
Cash generated by operating activities before working capital changes	13,210	11,866
Coal related hedging included above (via statement of income)	–	(225)
Proportionate adjustment – Adjusted EBITDA[2]	1,893	2,124
Share in earnings from other associates included within EBITDA	(6)	(1)
Net interest paid[2]	(1,200)	(1,162)
Tax paid[2]	(2,406)	(1,337)
Dividends received from associates[2]	104	85
Funds from operations◊	**11,595**	**11,350**
Net working capital changes[3]	1,526	(5,152)
Acquisition and disposal of subsidiaries – net[3]	(2,834)	32
Exchangeable loan provided for a conditional acquisition of an oil refinery/downstream business	(1,044)	–
Purchase and sale of investments – net[3]	(3)	(342)
Purchase and sale of property, plant and equipment – net[3]	(4,899)	(3,789)
Net margin (calls)/receipts in respect of financing related hedging activities	(507)	1,255
Acquisition of non-controlling interests in subsidiaries	(58)	(561)
Distributions paid and transactions of own shares – net	(5,144)	(1,175)
Coal related hedging (refer above)	–	225
Cash movement in net funding	**(1,368)**	**1,843**
Foreign currency revaluation of borrowings and other non-cash items	283	(2,212)
Total movement in net funding	**(1,085)**	**(369)**
Net funding◊, beginning of the year	(31,053)	(30,684)
Net funding◊, end of period	**(32,138)**	**(31,053)**
Less: Readily marketable inventories[2]	17,428	20,837
Net debt◊, end of period	**(14,710)**	**(10,216)**

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting), previously proportionately accounted, refer to APMs section for reconciliations.
2 Refer to APMs section for definition and reconciliations.
3 Refer to Other reconciliations section.

Assets, leverage and working capital

Total assets were $128,672 million as at 31 December 2018, compared to $135,593 million as at 31 December 2017, a period over which, current assets decreased from $49,294 million to $44,268 million, due to reductions in inventories and receivables, primarily as a result of generally lower year-over-year 31 December spot commodity prices. Non-current assets decreased from $85,867 million to $84,404 million, including $848 million of negative mark-to-market adjustments (recognised in other comprehensive income), primarily in relation to our investment in Rusal and Russneft (see note 10).

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 increased by $1,085 million to $32,138 million, whereas net debt (net funding less readily marketable inventories) increased by $4,494 million to $14,710 million. The increase in net funding included disbursing on the remaining announced business acquisitions which completed in H2 2018 ($1.7 billion Hail Creek coal acquisition and the $1.0 billion loan extended to acquire Chevron's South African oil refinery and associated downstream activities), not yet funded with underlying funds from operations. Such timing, along with a greater reduction in accounts payable over accounts receivable during the year and increased shareholder returns (distributions and buy-backs), led to the $4,494 million increase in net debt. Funds from operations, despite the lagging $1,069 million increase in taxes paid, was 2% above 2017, comfortably covering the $4,899 million of net capital expenditure and $5,144 million in distributions to shareholders and non-controlling interests.

The ratio of Net debt to Adjusted EBITDA was 0.93 times in 2018 compared to 0.70 times in 2017, and the ratio of FFO to Net debt was 78.8% in 2018 compared to 111.1% in 2017.

Business and investment acquisitions and disposals

Net outflows from business acquisitions were $2,895 million (2017: $871 million), primarily comprising the acquisitions of a 49% interest in the HVO coal joint venture, adjacent to 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 a prospective business partner under an exchangeable loan arrangement to acquire Chevron's South African oil business. The transaction is expected to close in H1 2019.

The net outflow in 2017 is primarily due to the acquisition of an additional interest in Volcan ($653 million), the acquisition of the remaining 31% interest of Mutanda not previously owned ($524 million), an increase in our interest in Katanga to 86.3% from 75.3% ($38 million) and a $300 million investment in Yancoal. These were offset by disposals and ongoing smaller stake retentions in HG Storage ($502 million), Zinc Africa ($222 million) and BaseCore Metals ($150 million).

Liquidity and funding activities

In 2018, the following significant financing activities took place:

- In March 2018, Glencore signed new one-year revolving credit facilities for a total amount of $9,085 million, refinancing the $7,335 million one-year revolving credit facilities signed in May 2017. Funds drawn under the facilities bear interest at US$ LIBOR plus a margin of 40 basis points. Glencore also voluntarily reduced the medium term facility size from $5,425 million to $5,115 million

  As at 31 December 2018, the facilities comprise:

  - a $9,085 million one year revolving credit facility with a 12-month term-out borrower's option (to May 2020) and a 12-month extension option
  - a $5,115 million medium-term revolving credit facility (to May 2022)
- In March 2018, Glencore issued a $500 million non-dilutive cash settled guaranteed convertible bond due 2025. Concurrent with the placing of the bond, Glencore purchased cash-settled call options on an equivalent number of Glencore shares to economically hedge the exposure to the potential exercise of the conversion rights embedded in the bond. In September 2018, an additional $125 million was issued under this arrangement on the same terms
- In October 2018, Glencore issued a 6-year CHF 175 million, 1.25% coupon bond

As at 31 December 2018, Glencore had available committed undrawn credit facilities and cash amounting to $10.2 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 Baa2 (positive 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. In the current uncertain economic cycle backdrop, Glencore aims to limit the Net debt/Adjusted EBITDA ratio to around one times.

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, such level being comfortably not exceeded during the period. Glencore uses a VaR approach based on Monte Carlo simulations computed at a 95% confidence level with a weighted data history for a one day time horizon.

Average market risk VaR (1 day 95%) during 2018 was $34 million, representing less than 0.1% of equity. Average VaR during 2017 was $25 million.

First tranche of proposed distribution	2019
Applicable exchange rate reference date (Johannesburg Stock Exchange (JSE))	Close of business (UK) 11 April
Applicable exchange rate announced on the JSE	12 April
Last day to effect removal of shares cum distribution between Jersey and JSE registers at commencement of trade	12 April
Last time to trade on JSE to be recorded in the register for distribution	23 April
Ex-distribution date (JSE)	24 April
Ex-distribution date (Jersey)	25 April
Distribution record date for JSE	Close of business (SA) 26 April
Distribution record date in Jersey	Close of business (UK) 26 April
Deadline for return of currency elections form (Shareholders on Jersey Register only)	29 April
Removal of shares between the Jersey and JSE registers permissible from	29 April
Applicable exchange rate reference date (Jersey)	1 May
Annual General Meeting (shareholder vote to approve aggregate 2019 distribution)	9 May
H1 distribution payment date	23 May

Distributions

The Directors have recommended a 2018 financial year cash distribution of $0.20 per share amounting to $2.8 billion, excluding any distribution on own shares and ignoring any issuance of shares which may take place prior to the record dates. Payment will be effected as a $0.10 per share distribution in May 2019 (see above) and a $0.10 per share distribution in September 2019 (in accordance with the Company's announcement of the 2019 Distribution timetable also made on 20 February 2019).

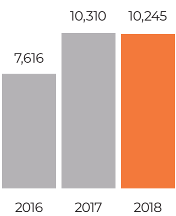
The distribution is proposed to be effected as a reduction of the capital contribution reserves of the Company. As such, this distribution would be exempt from Swiss withholding tax. As at 31 December 2018, Glencore plc had CHF 35 billion of such capital contribution reserves in its statutory accounts. The distribution is subject to shareholders' approval at its AGM on 9 May 2019.

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 as stated above. 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.

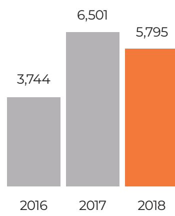
Metals and minerals

We produce and market a diverse range of metals and minerals – such as copper (Cu), cobalt (Co), zinc (Zn), nickel (Ni) and ferroalloys – and also market aluminium/alumina and iron ore from third parties

Adjusted EBITDA
(US$ million)



Adjusted EBIT
(US$ million)



Mining margin
38%
Strong cash flow generation/ conversion

Marketing Adjusted EBIT
$1.7bn
Robust demand for our commodities amid tightening supply

Copper marketing volumes up
13%
2017: 4.0mt

Own source Cu production up
11%
2017: 1,310kt

Own mineral resources
Reserve Life (approx. years)

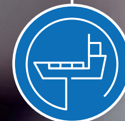
Copper	Zinc	Nickel
20	19	18

In-house smelting/refining capability
(Kt)

Copper metal	Zinc metal	Lead metal
1,560	1,390	425

Ferrochrome	Nickel metal
2,339	139

Headcount
c.130,000
Employees & contractors



Market knowledge

40+ years' experience

Industrial Assets in **20** countries

70 operating sites

Inputs

Sustainably producing the metals and minerals which play an essential role in modern life

Outputs

Safe working

Fatalities
12
2017: 9

TRIFR
3.35
2017: 3.23

LTIFR
0.97
2017: 0.99

Socio economic contribution
($)

Community support initiatives
89m

Public infrastructure
14m

Own source production
(Kt)

Copper	Cobalt	Zinc
1,454	42	1,068
Lead	**Nickel**	**Ferrochrome**
273	124	1,580

Marketed volumes
(tonnes of metal and concentrates)

Copper	Zinc
4.5m	3.2m
Lead	**Nickel**
0.9m	199k
Ferroalloys	**Alumina/aluminium**
8.3m	10.2m

Highlights

Adjusted EBITDA of $10.2 billion was broadly unchanged from 2017. An increased contribution from Industrial Assets, reflecting the assets' leverage to higher commodity prices and the continued ramp-up at Katanga, was offset by a 13% decrease in Marketing Adjusted EBITDA, hampered by challenging alumina (basis risk) and cobalt market conditions in H2 2018.

Katanga's successful restart was a significant contributor to the improved Industrial performance, with African Copper recording Adjusted EBITDA of $1.3 billion, a near doubling over last year.

The improved copper results were offset by a lower contribution from zinc, the base period including some $76 million related to the sold African assets. Across the portfolio, Adjusted EBITDA mining margin was a steady and healthy 38%, similar to the level achieved in 2017.

US$ million	**Marketing activities**	**Industrial activities**	**2018**	Marketing activities	Industrial activities	2017
Revenue◊	51,980	31,385	83,365	51,017	29,448	80,465
Adjusted EBITDA◊	1,767	8,478	10,245	2,029	8,281	10,310
Adjusted EBIT◊	1,742	4,053	5,795	2,005	4,496	6,501
Adjusted EBITDA margin	3.4%	27.0%	12.3%	4.0%	28.1%	12.8%

Market conditions

Selected average commodity prices

	2018	2017	Change %
S&P GSCI Industrial Metals Index	362	341	6
LME (cash) copper price ($/t)	6,527	6,173	6
LME (cash) zinc price ($/t)	2,919	2,893	1
LME (cash) lead price ($/t)	2,239	2,315	(3)
LME (cash) nickel price ($/t)	13,118	10,414	26
Gold price ($/oz)	1,269	1,258	1
Silver price ($/oz)	16	17	(6)
Metal Bulletin cobalt price 99.3% ($/lb)	33	25	32
Metal Bulletin ferrochrome China import charge chrome 50% Cr index, CIF Shanghai, duty unpaid (¢/lb)	90	101	(11)
Iron ore (Platts 62% CFR North China) price ($/DMT)	66	71	(7)

Currency table

	Spot 31 Dec 2018	Spot 31 Dec 2017	**Average 2018**	Average 2017	Change in average %
AUD : USD	0.70	0.78	0.75	0.77	(3)
USD : CAD	1.36	1.26	1.30	1.30	–
USD : COP	3,254	2,986	2,956	2,952	–
EUR : USD	1.15	1.20	1.18	1.14	4
GBP : USD	1.28	1.35	1.33	1.28	4
USD : CHF	0.98	0.97	0.98	0.98	–
USD : KZT	381	333	345	326	6
USD : ZAR	14.35	12.38	13.25	13.31	–

Marketing

Highlights

Marketing Adjusted EBITDA was 13% lower year over year at $1.8 billion. Trading conditions were particularly challenging in H2 on account of two key factors: (1) a "basis risk" breakdown related to required sourcing of alumina (which rallied during the period in excess of the aluminium metal proxy %-based hedging) for supply into such "% of LME" legacy sales contracts; and (2) cobalt market challenges in the form of some customer contractual non-performance and cyclically weak fundamentals. The alumina basis risk exposure reduces significantly from 2019.

In general, underlying industrial demand remained solid through 2018, with destocking evident in some of our core commodities, notably copper and nickel.

Financial information

US$ million	**2018**	2017	Change %
Revenue◊	51,980	51,017	2
Adjusted EBITDA◊	1,767	2,029	(13)
Adjusted EBIT◊	1,742	2,005	(13)

Selected marketing volumes sold

	Units	**2018**	2017	Change %
Copper metal and concentrates[1]	mt	4.5	4.0	13
Zinc metal and concentrates[1]	mt	3.2	2.8	14
Lead metal and concentrates[1]	mt	0.9	1.0	(10)
Gold	moz	2.0	2.0	–
Silver	moz	81.4	89.1	(9)
Nickel	kt	199	204	(2)
Ferroalloys (incl. agency)	mt	8.3	8.7	(5)
Alumina/aluminium	mt	10.2	10.7	(5)
Iron ore	mt	79.6	47.7	67

1 Estimated metal unit contained.

Our commodities in everyday life: Copper

Chile mined more than
28%
of 2018 mine supply[2]

China imported
9.4Mt
of copper in 2018[2]

China's share of 2018 copper demand
c.50%

What and where

Copper is the 26th most abundant element in the Earth's crust and typically occurs in mineralised form as a sulphide, oxide or carbonate. In rare instances, it also exists in its "native" pure form. It often occurs alongside other metals including gold, molybdenum, cobalt and zinc.

Copper is an excellent conductor of electricity and heat, while being malleable and resistant to corrosion. Copper's end uses can be grouped by construction (c.30%), consumer goods (25%), electrical networks (25%), transport (10%) and industrial machinery (10%)[1].

The majority of copper resources are found in regions where there has been significant plate tectonic activity, often leading to volcanic or earthquake events[1]. These regions are typically known as "copperbelts", with key examples being the Andean (South America), Central African, Australian and South Western (USA) copperbelts.

From the ground to finished metal

Today, copper-bearing ore bodies typically grade below one percent contained copper and are mined using open pit (majority) and underground mining methods.

The mined ore is generally processed as a sulphide (c.80%) or oxide (c.20%).

In the sulphide route, ore is crushed, ground, and then "floated" and dried to produce a copper concentrate with a typical grade of c.25–30% contained copper. This is smelted and refined to produce high purity copper.

In the oxide route, ore is crushed, ground and then treated with either stirred tanks or stacked onto impervious membranes called leach pads. Both methods dissolve the copper into solution with sulphuric acid (leaching). The solution is purified through solvent extraction, after which electrolysis (electrowinning) is utilised to produce high purity copper.

Recycling copper

Copper ranks amongst the most recyclable metals as it retains its chemical and physical properties through the recycling process.

Today, copper scrap accounts for approximately 20% of global refined copper supply[2].

Copper scrap is produced at various points along the supply chain; at smelters, refineries and at the point of direct use.

The future of copper demand

From air conditioners and electronics through to renewable sources, grid storage and the electric car revolution, copper has a vast range of household and industrial uses.

It is the preferred metal in many of these applications because of its superior electrical conductivity, and ability to heat up and cool down quickly.

The recent alignment of environmental considerations, political mandates, technological progress and consumer experience is expected to underpin future copper demand via the looming transformation of energy and mobility.

In the transition to a low-carbon economy, copper has a key role to play in energy storage systems and the infrastructure that will underpin electric vehicles.

It is estimated that 4.1Mtpa of copper will be required to enable a 30% EV share of global cars sales by 2030[3]. Copper will be required in generation, grid infrastructure and storage along with charging infrastructure.

As early as 2020, forecast demand from the EVs will consume an additional c.390ktpa of copper – equivalent to a large mining operation[3].

Annual copper required by 2030[3]

4.1Mt

Market supply and demand outlook for copper

Demand growth for copper continued to be healthy in 2018, driven by emerging markets, in particular China, which now accounts for approximately 50% of world refined copper consumption. Sentiment was strong in H1 2018, with the copper price reaching a high of $7,262/t in early June. During H2, global growth sentiment was negatively impacted by escalation and uncertainty surrounding the ongoing US/China and other trade disputes. Fundamental demand however remained positive, with year-over-year refined copper demand growth of approximately 3% in 2018. China continues to invest in primary smelting capacity, with TCs/RCs (treatment charges) in 2018 reducing to levels not seen in the last five years, on strong competition for concentrates. In addition, cathode premiums increased during the year, with 2019 benchmarks settling significantly above 2018 levels, reflecting the decreasing trend in copper exchange warehouse stocks to historic lows by the end of 2018, in terms of days of consumption.

Mine supply disruptions were not a significant factor in 2018 when compared to prior years, however mine supply growth is being constrained by a limited pipeline of projects. Looking ahead, global supply is expected to continue to be impacted by ageing assets, declining ore grades, limited sector reinvestment, the diminished project pipeline and some threat of mine disruption. Recycling continues to be an important source of supply, with regulations on scrap and the recycling industry affecting flows. In the near term, Chinese scrap import regulations are expected to result in the increased import of cathodes and concentrates, effectively diverting such from other markets with, as yet, only a marginal increase in scrap conversion/replacement outside China. Given this dynamic and a healthy expected demand outlook, the copper market could enter into a period of substantial and sustained supply deficits.

In the longer term, copper markets are expected to continue to experience solid growth rates, driven by population growth and rising living standards in emerging economies. In addition, the energy and mobility evolution, from power generation and distribution to energy storage and vehicles, is anticipated to become an increasingly important sector for copper.

3.0%

2018E copper demand growth[2]

0.3%

2019F mine supply growth[2]

Sources:
1 Deutsche Bank "A User Guide to Commodities – the AC to DC of Copper" 27 July 2016.
2 Wood Mackenzie, Long-term Copper Outlook, Q3 2018.
3 CRU Consulting, Mobility and Energy Futures Perspectives towards 2035, December 2017.

Our commodities in everyday life: Zinc

China mined
35%
of 2018 zinc mine supply

2018 global zinc mine supply growth
2.5%
2018 forecast one year ago: 5.1%

China's share of 2018 zinc demand
48%

What and where

Zinc is the 25th most abundant element in the Earth's crust and can be found in several mineralised forms. It often occurs alongside other metals including lead, silver, copper and gold.

Zinc's most significant application is in the manufacture of galvanised steel (>50%) to protect against corrosion. Other uses include the production of brass, die casting and batteries.

Most importantly, zinc is essential for all living organisms.

Zinc use dates back to the Roman Empire where it was used to make brass and today it is the fourth most common metal in use behind iron, aluminium and copper.

China is the world's largest mined zinc producer at 35% of global supply, followed by Peru at c.11% and Australia at 8.5%. USA supply ranks fourth at 6%, followed by India at c.6%.

From the ground to finished metal

Zinc bearing ore bodies typically grade c.5–15% zinc and are predominantly (c.64%) mined underground, but also using open pit and combined methods[1]. The majority of mined ore is a zinc sulphide known as Zinc Blende.

Over 90% of zinc is produced using hydrometallurgical processes[1]. Ore is crushed, ground, and then "floated" and dried to produce a zinc concentrate. This is roasted to remove sulphur, then leached using sulphuric acid and passed through an electrolysis circuit to form high purity zinc.

Pyrometallurgical techniques are used when the ore has a high lead content. Zinc and lead oxides are smelted in a furnace and then refined to produce high purity zinc and lead.

Recycling zinc

Zinc is readily recyclable. Between 30% to 40% of zinc supply is sourced from secondary or recycled zinc[2].

Zinc is collected and recycled through all stages from the production of galvanised sheet through to the recycling of end of life products, where around 60% of zinc is recovered and recycled.

Secondary zinc is largely derived from two major sources. "Old scrap" such as galvanised steel is a major source of recyclable feedstock while "New scrap" is recovered from the processing, manufacturing and fabrication phases.

The future of zinc demand

Urbanisation and industrialisation of developing economies will likely remain the major driver of global zinc consumption.

Although the growth outlook for developing economies has moderated in recent years in line with significant fixed asset investment, particularly in China, continuing urbanisation and industrialisation will continue to support growth in zinc consumption.

Led by South-East Asia, the regional economy is forecast to triple in size by 2040[1] along with an increase in the urban population by 150 million people. As a consequence galvanising is expected to remain the dominant first-use of zinc.

However, in the coming years, new potential end-uses are emerging. These include the use of zinc as a micro-nutrient in agricultural fertilizers along with the potential large scale application of zinc-air batteries in renewable energy storage systems.

On the supply side, matching longer-term supply growth with demand is dependent on environmental approvals in China as well as a price environment that encourages development of currently unapproved mine projects.

Galvanising share of zinc demand[2]

>50%

Market supply and demand outlook for zinc

In 2018, the zinc price averaged $2,919/t, a slight increase over $2,893/t in 2017. The price was supported by a combination of relatively stable global demand growth and tightness in the metal market.

Global mine supply increased year over year (but is still lower than 2015 levels), driven by ex-China growth. In China, per the National Bureau of Statistics ("NBS"), 2018 mine production dropped by 148kt (-5%), driven in part by environmental controls at Chinese mines. Rest of the World ("ROW") mine supply increased strongly – latest figures from the International Lead and Zinc Study group (ILZSG), as at November 2018, indicate ROW mine production increased by 422kt (5.7%).

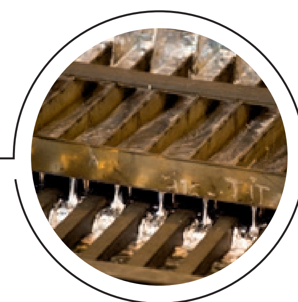
Despite the year-over-year growth in global mine supply, metal production decreased slightly, in part also due to environmental controls at Chinese smelters, specifically in how they dispose of their residues. Per NBS, total Chinese metal production decreased by 189kt (-3.2%) and ROW smelters (ILZSG, November 2018) increased by 108kt (1.6%).

Therefore, a concentrates surplus has started to build and spot TCs on a CIF China basis have increased from $38/dmt on average in 2017 to $69/dmt in 2018.

As global metal production declined, zinc stocks on LME and SHFE have been drawn by 53kt (29%) and 49kt (71%), respectively, to meet demand. The drop in SHFE stocks and strong SHFE price opened up an arbitrage window in China, with zinc consumers turning to metal imports, up 5.8% year over year to a record 715kt.

Lead recorded a slightly lower average price in 2018, down to $2,239/t from $2,315/t (3%), due in part to higher metal production in China, up by 458kt (9.8%) in 2018 per NBS.

Such lead metal production was absorbed by demand, as Chinese metal imports continued to increase in 2018, up to 128kt (a 65% increase year over year), and the concentrates market remained tight, where spot TCs dropped to historical lows, averaging $23/dmt in 2018 vs $26/dmt in 2017 on a CIF China basis.



$2.5tr

Estimated annual global cost of corrosion[2]

up to

170 years

zinc's corrosion protection[3]

Sources:
1 Citi, A guide to the world of metals and mining, 13 September 2011.
2 Wood Mackenzie.
3 International Zinc Association.

Our commodities in everyday life: Nickel

2013–2018

1.9%

mine supply compound annual growth rate

2013–2018

5.6%

nickel demand compound annual growth rate

2019F growth in Chinese battery nickel demand

54%

What and where

Nickel is the 5th most common element on Earth[1] and is often found with iron, copper and smaller amounts of cobalt, gold, silver and platinum group metals (PGMs).

Today, nickel's primary use is in the manufacture of stainless steel and other alloys. Stainless steel is used in a variety of industries, including chemical and food processing equipment, transportation and construction. Nickel use in alloys stems from its resistance to corrosion, strength and heat resistant properties.

More recently, and with the rapidly emerging electric vehicle revolution, nickel has a growing application within battery technologies as a key constituent of cathode materials. Battery engineers are working hard to increase the proportion of nickel used given the metal's ability to improve battery performance.

From the ground to finished metal

Laterite (oxide) ores are the source of two-thirds of nickel production today. Sulphide ores are responsible for the remaining third, although their share of production is rapidly diminishing such that sulphides will likely account for less than 30% of total nickel production by 2020.

Approximately 80% of oxide ore is treated using a pyrometallurgical flowsheet, of which 60% is nickel pig iron (NPI) and 40% ferronickel/nickel matte. The remaining 20% of oxide ore is treated using a hydro-metallurgical flowsheet (i.e. leaching).

NPI as a production route to stainless steel accelerated from 2007 on the back of high nickel prices, as China sourced large tonnages of low-grade lateritic nickel supplies from Indonesia and the Philippines to feed unused blast furnaces.

As the production flowsheet improved, blast furnaces were gradually replaced with electric arc furnaces (EAFs). NPI is mixed with chromium and other materials to produce 200 and 300 series stainless steel.

Recycling nickel

Like many other metals, nickel is fully recyclable. Nickel along with nickel containing alloys can be returned to their original state or converted into different forms such as recovery of nickel from batteries for use in new stainless steel. Approximately 68% of nickel from consumer products is recycled.

The future of nickel demand

Like zinc, urbanisation and industrialisation of developing economies has been a major driver of nickel demand in recent years, predominantly in the form of stainless steel.

Today, stainless steel accounts for around 70% of primary nickel consumption[1] in a 2.4 million tonne market[2].

The importance of stainless steel as a key nickel demand driver will lessen significantly in the coming years as battery production for electric vehicles and energy storage systems scales up in line with the completion of new lithium ion battery manufacturing capacity. Electric vehicle battery demand alone is forecast to exceed 1,500 GWh by the end of next decade[3]. This compares with less than 50 GWh of estimated EV battery demand at the end of 2018.

In the transition to a low-carbon economy, nickel has a key role to play in the battery chemistry that is expected to power electric vehicles and renewable energy storage systems.

It is estimated that an additional 1.1Mtpa of nickel will be required to enable a 30% electric vehicle share of global cars sales by 2030[4].

Forecast EV battery demand by 2030

>1,500 GWh

Market supply and demand outlook for nickel

In 2018, primary nickel consumption significantly exceeded supply, as strong demand growth in stainless, batteries, special steels and nickel based alloys, offset supply gains.

Nickel demand was particularly strong during H1, when growth was elevated across all regions and market segments. In stainless, the combined strength of Chinese and Indonesian austenitic output growth resulted in an estimated 6% global growth rate. Nickel usage in special steels and nickel based alloys outperformed our expectations, driven by elevated order intake from the oil and gas, petrochemical and aerospace industries. Primary nickel demand in batteries also accelerated through 2018, with estimated annual growth exceeding 35%. Overall we estimate primary nickel demand in 2018 of 2.4Mt, representing a 6.5% increase on 2017.

On the supply side, production issues and general supply disruptions prompted widespread underperformance in non-nickel pig iron ("NPI") supply. This was however offset by NPI output growth, reflecting the ramp up of Indonesian NPI capacity and Chinese NPI output. Global nickel output in 2018 is estimated at 2.2Mt, marking a c.6% increase on 2017, masking a 2% decline in non-NPI supply.

Overall, based on our estimates, primary nickel demand significantly exceeded supply by nearly more than 170,000kt for a third consecutive year bringing cumulative deficits over the last three years to well over 400,000kt. This market imbalance was further evident in rapidly decreasing global inventory levels and strong premium levels for all primary nickel products excluding ferronickel. Even applying a conservative estimate for 2019 demand, the near-term outlook is for continued deficits and further draws in primary nickel stocks.

170kt
2018E market deficit

6.5%
2018E primary nickel demand growth

Sources:
1 Nickel Institute – nickelinstitute.org
2 Glencore estimate.
3 BNEF, 16 October 2018, "The Dirt on Clean Electric Cars".
4 CRU "Mobility and Energy Future – Perspectives towards 2035", prepared for Glencore by CRU Consulting.

Our commodities in everyday life: Cobalt

Non-DRC share of 2018 cobalt mine supply

29%

China produces

80%

of the world's cobalt sulphate for batteries

DRC share of global cobalt reserves

49%

What and where

Cobalt is considered a critical raw material and technology enabler, where its key unique properties of hardness and temperature resilience are deployed for use in gas turbines, high temperature alloys, industrial catalysts and energy storage.

Most importantly, cobalt is a key ingredient in the battery chemistry expected to underpin the energy and mobility transformation that is required for the transition to a low-carbon economy.

Cobalt is relatively abundant and widely scattered in the Earth's crust. However, it is only found in economically exploitable quantities in just a few countries, including those in Central Africa, Australia, Cuba, Canada and Russia.

Around 49% of the world's reserves are found in the Democratic Republic of Congo which is also responsible for close to 60% of annual mine supply[1]. Geologically, cobalt is normally associated with copper and nickel mineralisation.

From the ground to commercial product

Historically cobalt was a finished metal market, however, growth in battery demand has shifted the commercial product increasingly towards intermediates such as cobalt hydroxide, which are amenable to battery cathode applications.

Several methods exist to separate cobalt from copper and nickel, depending on the concentration of cobalt and the composition of the ore.

Cobalt deposits can be sulphides, oxides or mixed ores.

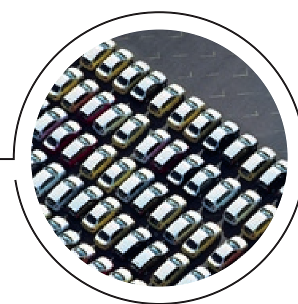
At our DRC operations we produce cobalt hydroxide, while our Australian and Canadian nickel operations produce cobalt metal.

Recycling cobalt

Cobalt is readily recovered from both the production and manufacturing processes of NiMH and Li-ion rechargeable batteries as well as hard metal and cemented carbide tools.

End of life products such as catalysts, rechargeable batteries and aerospace alloys are also an important recycling feedstock.

In the coming years, the recovery of cobalt from electric vehicle and energy storage system batteries is forecast to become an increasingly important large source of supply.



The future of cobalt demand

Battery demand is the cornerstone of the cobalt growth story.

Given the rising investment in electric vehicles and energy storage systems as a disruptive technology, an increasing number of industry analysts are mapping the demand outlook for cobalt.

We have commissioned our own analysis where CRU's electric vehicle study estimated annual cobalt demand will exceed 300kt by 2030 if the world aims to meet the Electric Vehicles Initiative target of 30% EV market share in that year[2].

This compares to current global cobalt production of c.110kt.

Meeting this forecast demand growth profile will be challenging for supply, requiring a significant increase in mine production output and recycling over the next decade.

While efforts continue to reduce the proportion of cobalt in the battery cathode, it appears that cobalt will continue to play a critical role (thermal stability) in electric vehicle battery technologies for the foreseeable future and across an appropriate investment horizon.

Annual cobalt required by 2030

>300kt

Market supply and demand outlook for cobalt

Prices for cobalt metal reached their highest levels in ten years in 2018, moving above $95,000/t during the first half. This was driven by demand from consumers aiming to secure cobalt for use in Li-ion batteries and mitigate risks of future supply.

During the second half of the year, global sentiment was negatively affected by the escalation of trade disputes, increasing supply and the enforcement of environmental policies that temporarily limited the use of refining capacity in China. Cobalt prices declined, ending 2018 below 60,000/t.

Given its broad range of applications, cobalt is expected to experience good demand growth in its traditional markets going forward whilst battery sector demand is likely to rise at double-digit rates, leading to strong and sustained consumption growth.

The significant increases in anticipated demand will require further investment in mine supply and recycling capacity. We estimate that mine supply in 2018 increased by around 15% year on year, predominantly in the DRC.

110kt

current annual cobalt production

Sources:
1 USGS Mineral Commodity Summary 2018, World Mine Production and Reserves.
2 CRU "Mobility and Energy Future – Perspectives towards 2035", prepared for Glencore by CRU Consulting.

Other marketing highlights

Ferroalloys

In 2018, ferrochrome demand was underpinned by a strong stainless steel market, for which global production is estimated to have grown by 6% year over year. Chinese domestic ferrochrome production was affected by temporary shutdowns as a result of environmental inspections in mid-2018, but was able to regain lost volume during the second half of the year. Ferrochrome prices reflected this supply dynamic, with firmness driven by environmental shutdowns giving way to price declines in H2 when Chinese units returned incrementally to the market.

The vanadium market was supported throughout the year by stricter environmental regulations in China, strong demand across product applications and continued stock drawdown. Prices reached all-time highs in Q4 in anticipation of the implementation of the new alloyed rebar standard in China.

Alumina/Aluminium

In recent years, the aluminium market was shaped by the impacts of Chinese industrial and environmental policy. In 2018, however, the greater impact was US policy, in the form of sanctions against Rusal, the second-largest aluminium producer, and the introduction of tariffs on aluminium imports from certain countries.

2018 was one of the most volatile years for aluminium prices. The LME price, stable at around $2,150/t at the beginning of the year, surged upon announcement of US sanctions against Rusal in April to above $2,500/t. However, the price dropped to $1,846/t (below its 2017 average) towards the end of 2018, anticipating the removal of Rusal sanctions. The uncertainty over the ongoing US/China trade war has led to negative market sentiment on the demand side. Nevertheless, the Western aluminium market is still in deficit, further reducing global inventories, with premiums at year end towards the high end of recent ranges.

In February, the world's largest alumina refinery, Alunorte, was instructed to cut production by 50% due to alleged environmental issues. Furthermore, the US sanctions on Rusal led to a huge spike in alumina prices, peaking above $700/t. The high prices induced a rise in Chinese alumina exports, becoming a net exporter for the first time. Overall, the global alumina market stabilised, ending the year at $408/t, comparable with its opening price, but the mid-year spike meant an average price 34% higher than 2017.

While the Chinese government launched strict supply-side environmental restrictions in 2017, the focus in 2018 clearly shifted towards supporting the slowing domestic economy and, as such, the annual winter production cuts were less severe than expected. Instead, closures of Chinese aluminium smelters were more likely triggered by commercial drivers, associated with inflated raw material prices.

Iron ore

Iron ore prices were largely stable in the year, averaging $66/t. Within this, premiums for higher-quality material strengthened and penalties for impurities increased. Chinese winter steel production cuts, announced towards the end of 2018, were less severe than expected, which improved demand for lower grade iron ore. Iron ore inventories in China started then to decrease and the market showed indications of rebalancing, with the year-end price around $71/t.

Industrial activities

Highlights

As noted above, Industrial Adjusted EBITDA increased year over year by 2% to $8.5 billion, primarily reflecting the impact of higher prices and increased own sourced production, offset by fuel, energy and consumables related inflationary cost increases (net of modest FX benefits), lower grades for some by-products and reduced third-party smelting profitability. Copper Africa's Adjusted EBITDA ($1.3 billion) doubled compared to prior year, following the successful restart of Katanga's processing operations in late 2017 which contributed an incremental ~150,000 tonnes of copper. In addition, Lady Loretta (Australia zinc), which had been on care and maintenance since 2015, contributed meaningful production in H2, following its restart in 2018. Offsetting this, 2017 included some $76 million of Adjusted EBITDA relating to the now sold African zinc assets and our Volcan "share of earnings" in 2018 was negative.

Across the portfolio, the Adjusted EBITDA mining margin was steady and healthy at 38%, with further scale and productivity improvements expected in 2019 as the annualised ramp-up impact of Katanga and Lady Loretta take hold. Countering this is an expected step-down in Mutanda's production to circa 100,000 tonnes per year, on the basis of the updated understanding of oxide and transitional ore reserves, pending a decision down the track on whether and how to proceed with investment into the processing of sulphide reserves/resources.

Financial information

US$ million	2018	2017	Change %
Revenue◊			
Copper assets			
Africa (Katanga, Mutanda, Mopani)	4,493	2,695	67
Collahuasi[1]	1,426	1,303	9
Antamina[1]	1,179	1,199	(2)
Other South America (Alumbrera, Lomas Bayas, Antapaccay)	2,113	2,394	(12)
Australia (Mount Isa, Ernest Henry, Townsville, Cobar)	1,941	1,965	(1)
Custom metallurgical (Altonorte, Pasar, Horne, CCR)	7,190	7,957	(10)
Intergroup revenue elimination	(142)	(295)	n.m.
Copper	**18,200**	**17,218**	**6**
Zinc assets			
Kazzinc	3,163	3,075	3
Australia (Mount Isa, McArthur River)	1,481	1,362	9
European custom metallurgical (Portovesme, San Juan de Nieva, Nordenham, Northfleet)	1,189	1,273	(7)
North America (Matagami, Kidd, Brunswick, CEZ Refinery)	2,474	1,790	38
Other Zinc (Argentina, Bolivia, Peru, Rosh Pinah[2], Perkoa[2])	468	695	(33)
Zinc	**8,775**	**8,195**	**7**
Nickel assets			
Integrated Nickel Operations (Sudbury, Raglan, Nikkelverk)	1,462	1,323	11
Australia (Murrin Murrin)	748	598	25
Nickel	**2,210**	**1,921**	**15**
Ferroalloys	**2,197**	**2,111**	**4**
Aluminium/Alumina	**3**	**3**	**–**
Metals and minerals revenue◊	**31,385**	**29,448**	**7**

1 Represents the Group's share of these JVs.
2 Disposed of in August 2017.

US$ million	Adjusted EBITDA◊			Adjusted EBIT◊		
	2018	2017	Change %	**2018**	2017	Change %
Copper assets						
Africa	1,323	668	98	296	63	370
Collahuasi[1]	902	803	12	633	551	15
Antamina[1]	923	934	(1)	656	675	(3)
Other South America	936	1,088	(14)	234	546	(57)
Australia	424	524	(19)	92	186	(51)
Custom metallurgical	222	343	(35)	41	194	(79)
Copper	**4,730**	**4,360**	**8**	**1,952**	**2,215**	**(12)**
Adjusted EBITDA mining margin[2]	40%	42%				
Zinc assets						
Kazzinc	1,160	1,203	(4)	747	769	(3)
Australia	667	645	3	387	371	4
European custom metallurgical	196	169	16	91	78	24
North America	249	359	(31)	138	260	(47)
Volcan	(36)	–	n.m.	(36)	–	n.m.
Other Zinc	81	244	(67)	(42)	152	n.m.
Zinc	**2,317**	**2,620**	**(12)**	**1,285**	**1,630**	**(21)**
Adjusted EBITDA mining margin[2]	37%	41%				
Nickel assets						
Integrated Nickel Operations	592	555	7	158	99	60
Australia	206	78	162	157	12	n.m.
Nickel	**798**	**633**	**26**	**315**	**111**	**184**
Adjusted EBITDA margin	36%	33%				
Ferroalloys	**670**	**655**	**2**	**542**	**528**	**3**
Aluminium/Alumina	**(38)**	**5**	**n.m.**	**(42)**	**5**	**n.m.**
Iron ore	**1**	**8**	**n.m.**	**1**	**7**	**n.m.**
Metals and minerals Adjusted EBITDA/EBIT◊	**8,478**	**8,281**	**2**	**4,053**	**4,496**	**(10)**
Adjusted EBITDA mining margin[2]	38%	40%				

1 Represents the Group's share of these JVs.
2 Adjusted EBITDA mining margin is Adjusted EBITDA (excluding custom metallurgical assets and Volcan) divided by Revenue (excluding custom metallurgical assets, Volcan and intergroup revenue elimination) i.e. the weighted average EBITDA margin of the mining assets. Custom metallurgical assets include the Copper custom metallurgical assets and Zinc European custom metallurgical assets and the Aluminium/Alumina group, as noted in the table above. Given the increased Zinc North America smelting/processing revenue and its relatively small and declining margin contribution/weighting, its revenues and Adjusted EBITDA have also been excluded.

US$ million	2018 Sustaining	2018 Expansion	2018 Total	2017 Sustaining	2017 Expansion	2017 Total
Capital expenditure◊						
Copper assets						
Africa	510	422	932	352	381	733
Collahuasi[1]	263	25	288	214	45	259
Antamina[1]	201	7	208	180	–	180
Other South America	397	31	428	308	46	354
Australia	233	7	240	218	12	230
Custom metallurgical	204	–	204	161	–	161
Copper	**1,808**	**492**	**2,300**	**1,433**	**484**	**1,917**
Zinc assets						
Kazzinc	165	171	336	121	52	173
Australia	279	–	279	256	–	256
European custom metallurgical	114	–	114	74	–	74
North America	100	11	111	65	13	78
Other Zinc	116	–	116	77	–	77
Zinc	**774**	**182**	**956**	**593**	**65**	**658**
Nickel assets						
Integrated Nickel Operations	160	182	342	131	102	233
Australia	22	1	23	14	–	14
Koniambo	–	215	215	–	241	241
Nickel	**182**	**398**	**580**	**145**	**343**	**488**
Ferroalloys	**159**	**1**	**160**	**163**	**4**	**167**
Aluminium/Alumina	–	–	–	**2**	**–**	**2**
Capital expenditure◊	**2,923**	**1,073**	**3,996**	**2,336**	**896**	**3,232**

1 Represents the Group's share of these JVs.

Production data

Production from own sources – Total[1]

		2018	2017	Change %
Copper	kt	1,453.7	1,309.7	11
Cobalt	kt	42.2	27.4	54
Zinc	kt	1,068.1	1,090.2	(2)
Lead	kt	273.3	272.5	–
Nickel	kt	123.8	109.1	13
Gold	koz	1,003	1,033	(3)
Silver	koz	34,879	37,743	(8)
Ferrochrome	kt	1,580	1,531	3

Production from own sources – Copper assets[1]

		2018	2017	Change %
African Copper (Katanga, Mutanda, Mopani)				
Copper metal	kt	410.7	238.7	72
Cobalt[2]	kt	38.4	23.9	61
Collahuasi[3]				
Copper in concentrates	kt	246.0	230.5	7
Silver in concentrates	koz	3,244	3,103	5
Antamina[4]				
Copper in concentrates	kt	150.6	142.6	6
Zinc in concentrates	kt	138.1	128.1	8
Silver in concentrates	koz	5,550	6,579	(16)
Other South America (Alumbrera, Lomas Bayas, Antapaccay)				
Copper metal	kt	72.8	78.1	(7)
Copper in concentrates	kt	225.9	245.3	(8)
Gold in concentrates and in doré	koz	256	348	(26)
Silver in concentrates and in doré	koz	1,722	1,821	(5)
Australia (Mount Isa, Ernest Henry, Townsville, Cobar)				
Copper metal	kt	151.5	164.6	(8)
Copper in concentrates	kt	58.9	65.9	(11)
Gold	koz	74	67	10
Silver	koz	1,399	1,721	(19)
Total Copper department				
Copper	**kt**	**1,316.4**	**1,165.7**	**13**
Cobalt	**kt**	**38.4**	**23.9**	**61**
Zinc	**kt**	**138.1**	**128.1**	**8**
Gold	**koz**	**330**	**415**	**(20)**
Silver	**koz**	**11,915**	**13,224**	**(10)**

Production from own sources – Zinc assets[1]

		2018	2017	Change %
Kazzinc				
Zinc metal	kt	201.2	210.5	(4)
Lead metal	kt	46.9	52.9	(11)
Lead in concentrates	kt	8.7	4.7	85
Copper metal[5]	kt	52.4	49.7	5
Gold	koz	643	585	10
Silver	koz	6,210	5,780	7
Silver in concentrates	koz	303	132	130
Australia (Mount Isa, McArthur River)				
Zinc in concentrates	kt	532.5	436.0	22
Lead in concentrates	kt	175.8	156.4	12
Silver in concentrates	koz	6,362	7,114	(11)
North America (Matagami, Kidd)				
Zinc in concentrates	kt	101.1	123.7	(18)
Copper in concentrates	kt	39.0	47.3	(18)
Silver in concentrates	koz	1,893	2,271	(17)
Other Zinc: South America (Argentina, Bolivia, Peru)[6]				
Zinc in concentrates	kt	95.2	99.8	(5)
Lead metal	kt	13.9	13.6	2
Lead in concentrates	kt	28.0	41.2	(32)
Copper in concentrates	kt	4.5	3.4	32
Silver metal	koz	744	637	17
Silver in concentrates	koz	6,989	7,775	(10)
Other Zinc: Africa (Rosh Pinah, Perkoa)				
Zinc in concentrates	kt	–	92.1	(100)
Lead in concentrates	kt	–	3.7	(100)
Silver in concentrates	koz	–	157	(100)
Total Zinc department				
Zinc	**kt**	**930.0**	**962.1**	**(3)**
Lead	**kt**	**273.3**	**272.5**	–
Copper	**kt**	**95.9**	**100.4**	**(4)**
Gold	**koz**	**643**	**585**	**10**
Silver	**koz**	**22,501**	**23,866**	**(6)**

Production from own sources – Nickel assets[1]

		2018	2017	Change %
Integrated Nickel Operations (INO) (Sudbury, Raglan, Nikkelverk)				
Nickel metal	kt	59.5	57.0	4
Nickel in concentrates	kt	0.5	0.5	–
Copper metal	kt	14.4	15.6	(8)
Copper in concentrates	kt	27.0	28.0	(4)
Cobalt metal	kt	0.9	0.8	13
Gold	koz	29	32	(9)
Silver	koz	464	653	(29)
Platinum	koz	58	75	(23)
Palladium	koz	119	136	(13)
Rhodium	koz	4	6	(33)
Murrin Murrin				
Nickel metal	kt	35.5	34.1	4
Cobalt metal	kt	2.9	2.7	7
Koniambo				
Nickel in ferronickel	kt	28.3	17.5	62
Total Nickel department				
Nickel	**kt**	**123.8**	**109.1**	**13**
Copper	**kt**	**41.4**	**43.6**	**(5)**
Cobalt	**kt**	**3.8**	**3.5**	**9**
Gold	**koz**	**29**	**32**	**(9)**
Silver	**koz**	**464**	**653**	**(29)**
Platinum	**koz**	**58**	**75**	**(23)**
Palladium	**koz**	**119**	**136**	**(13)**
Rhodium	**koz**	**4**	**6**	**(33)**

Production from own sources – Ferroalloys assets[1]

		2018	2017	Change %
Ferrochrome[7]	kt	1,580	1,531	3
Vanadium Pentoxide	mlb	20.2	20.9	(3)

Total production – Custom metallurgical assets[1]

		2018	2017	Change %
Copper (Altonorte, Pasar, Horne, CCR)				
Copper metal	kt	438.8	526.8	(17)
Copper anode	kt	479.3	535.7	(11)
Zinc (Portovesme, San Juan de Nieva, Nordenham, Northfleet)				
Zinc metal	kt	799.6	788.0	1
Lead metal	kt	186.3	193.8	(4)
Silver	koz	10,087	13,656	(26)

1 Controlled industrial assets and joint ventures only. Production is on a 100% basis, except as stated.
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.

Operating highlights

Copper assets

Own sourced copper production of 1,453,700 tonnes was 144,000 tonnes (11%) higher than in 2017, mainly reflecting the restart of Katanga's processing operations in late 2017, partly offset by the completion of open-pit mining at Alumbrera.

Africa

Own sourced copper production of 410,700 tonnes was 172,000 tonnes higher than in 2017, reflecting the staged recommissioning of Katanga's processing operations.

Cobalt production of 38,400 tonnes was 14,500 tonnes (61%) higher than in 2017, mainly relating to Katanga. Katanga's current cobalt production is being temporarily stockpiled on site, pending introduction of a long-term solution to remove excess uranium levels in such cobalt.

Collahuasi

Attributable copper production of 246,000 tonnes was 15,500 tonnes (7%) higher than in 2017, reflecting improved head grades and recoveries, following commissioning of 24 flotation cells.

Antamina

Attributable copper production of 150,600 tonnes was 6% ahead of 2017, and zinc production of 138,100 tonnes was 8% ahead, in each case reflecting expected variations in head grades.

Other South America

Copper production of 298,700 tonnes was down 24,700 tonnes (8%) on 2017, mainly reflecting the cessation of open pit operations at Alumbrera (15,900 tonnes) and disposal of Punitaqui (2,400 tonnes).

Australia

Own sourced copper production of 210,400 tonnes was 20,100 tonnes (9%) lower than in 2017, mainly reflecting smelter maintenance earlier in 2018 and mining issues which have subsequently been resolved.

Custom metallurgical assets

Copper cathode production of 438,800 tonnes was 88,000 tonnes (17%) lower than in 2017, reflecting reduced production at Pasar following its acid plant failure in early 2018, with subsequent maintenance, and lower feedstock availability in North America.

For similar reasons, copper anode production of 479,300 tonnes was 56,400 tonnes (11%) lower than in 2017, in addition to Altonorte's planned plant turnaround.

Zinc assets

Own sourced zinc production of 1,068,100 tonnes was in line with 2017, reflecting the offsetting impacts of the disposals of the African zinc assets in August 2017 and the restart of mining at Lady Loretta in mid-2018.

Lead production of 273,300 tonnes was in line with 2017, reflecting stronger production in Australia (due to Lady Loretta) offset by mine planning changes at Aguilar in Argentina.

Kazzinc

Own sourced zinc production of 201,200 tonnes was 9,300 tonnes (4%) below 2017, relating to a safety-related interruption and investigation at one of the mines. Total production including third party feed was 309,700 tonnes, in line with the prior year.

Own sourced lead production of 55,600 tonnes was 2,000 tonnes (3%) below 2017, mainly relating to mine planning changes at Zhairem and the above noted interruption. Total metal production including third party feed was 149,500 tonnes, in line with the prior year.

Own sourced copper production of 52,400 tonnes was up 5% on 2017, reflecting higher recoveries at the smelter due to efficiency improvements.

Gold production of 643,000 ounces was 58,000 ounces (10%) higher than in 2017, mainly reflecting commissioning of the Dolinnoye mine, which contributed some 40,000 ounces, and higher grades and recoveries at the Vasilkovsky mine.

Australia

Zinc production of 532,500 tonnes was up 96,500 tonnes (22%) on 2017, mainly relating to the restart of mining operations at Lady Loretta (Mount Isa), together with an increased production contribution from McArthur River.

Lead production of 175,800 tonnes was up 19,400 tonnes (12%) on 2017, mainly due to Lady Loretta, plus higher production from McArthur River as noted above.

North America

Zinc production of 101,100 tonnes was down 22,600 tonnes (18%) on 2017, while copper production of 39,000 tonnes was 8,300 tonnes (18%) down. These reflected expected lower grades at both operations and a decline in mined ore production associated with the transition to deeper areas in the orebodies, as the operations approach end of life.

South America

Zinc production of 95,200 tonnes was 5% down on 2017, mainly relating to mine plan changes implemented at Aguilar (Argentina) and in Bolivia, partly offset by an improved performance from Peru. Lead production of 41,900 tonnes was down 12,900 tonnes (24%) mainly due to Aguilar, as noted above.

European custom metallurgical assets

Zinc metal production of 799,600 tonnes was in line with 2017. Lead metal production of 186,300 tonnes was down 7,500 tonnes (4%), due to planned maintenance.

Nickel assets

Own sourced nickel production of 123,800 tonnes was 14,700 tonnes (13%) higher than in 2017, mainly reflecting Koniambo running two production lines throughout the year.

Integrated Nickel Operations (INO)

Own sourced nickel production of 60,000 tonnes was 2,500 tonnes (4%) higher than the prior year. Metallurgical mix and timing of deliveries from smelter to refinery are expected to result in higher own sourced (versus third party) production in 2019.

Murrin Murrin

Own sourced nickel production of 35,500 tonnes was 1,400 tonnes (4%) higher than in 2017, which was affected by the periodic statutory shutdown.

Koniambo

Production of 28,300 tonnes was 10,800 tonnes (62%) higher than in 2017, reflecting the plant running as a two-line operation throughout the year. Ongoing work on the processing plant is expected to enable progressive capacity expansion, targeting full capacity by 2021/22.

Ferroalloys assets

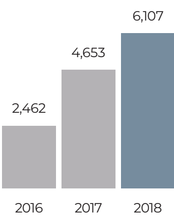
Attributable ferrochrome production of 1,580,000 tonnes was in line with 2017, while vanadium pentoxide production of 20.2 million pounds was also in line.

Energy products

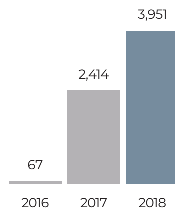
Acquisitions in 2018 helped to balance our coal portfolio further towards higher energy and hard coking coals

We funded the acquisition of downstream oil assets in South Africa and Botswana, with completion expected in H1 2019

Adjusted EBITDA
(US$ million)



Adjusted EBIT
(US$ million)



Crude oil marketed (bbl)
944m
2017: 1,209m

Coal adjusted EBITDA mining margin
46%
Healthy cash generation

Major coal acquisitions:
$2.9bn

Oil downstream business funding:
$1.0bn

Vessels
1,000+

Mine life
(years approx.)
14

Headcount
c.25,000
Employees & contractors

Market knowledge

40+
years experience

Industrial Assets in
6
countries

26
operating sites

Inputs

Sustainably producing the energy products which play an essential role in modern life

Outputs

Own source production
(mt/mbbl)

Coal
129.4

Oil
4.6

Marketed volumes
(mt/mbbl)

Coal
98.6

Crude oil
944

Safe working

Fatalities
1
2017: Nil

TRIFR
2.58
2017: 2.56

LTIFR
1.38
2017: 1.12

Socio economic contribution
($)

Community support initiatives
6m

Public infrastructure
5m

Highlights

Energy products Adjusted EBITDA of $6.1 billion was up 31% over 2017. The increase was predominantly due to significantly stronger year-over-year coal prices within our industrial assets, aided by incremental EBITDA from the acquisitions of a 49% interest in HVO in May 2018 and an 82% interest in Hail Creek in August 2018 and the roll-off in 2017 of the remaining price hedged coal tonnes. Oil prices were supportive to our E&P assets, and the drilling campaign in Chad delivered higher year-over-year production. Marketing Adjusted EBITDA was down 25% owing to subdued arbitrage opportunities, lower volumes and the base effect of the strong 2017 performance.

Adjusted EBITDA mining margins improved to 46% from 41% in the comparable period for the reasons noted above.

US$ million	Marketing activities	Industrial activities	2018	Marketing activities	Industrial activities	2017
Revenue◊	126,348	12,660	139,008	118,199	10,067	128,266
Adjusted EBITDA◊	795	5,312	6,107	1,054	3,599	4,653
Adjusted EBIT◊	742	3,209	3,951	990	1,424	2,414
Adjusted EBITDA margin	0.6%	42.0%	4.4%	0.9%	35.8%	3.6%

Market conditions

Selected average commodity prices

	2018	2017	Change %
S&P GSCI Energy Index	224	178	26
Coal API4 ($/t)	100	84	19
Coal Newcastle (6,000) ($/t)	107	88	22
Oil price – Brent ($/bbl)	72	55	31

Marketing

Highlights

Adjusted EBIT of $742 million was down $248 million (25%) year over year, reflecting the strong 2017 base, oil forward curves being in backwardation for almost all of the year, thereby reducing trading opportunities, and a more cautious approach to coal marketing opportunities from an expected risk/return perspective (11% lower thermal volumes).

Financial information

US$ million	2018	2017	Change %
Revenue◊	126,348	118,199	7
Adjusted EBITDA◊	795	1,054	(25)
Adjusted EBIT◊	742	990	(25)

Selected marketing volumes sold

	Units	2018	2017	Change %
Thermal coal[1]	mt	94.4	106.3	(11)
Metallurgical coal[1]	mt	3.6	2.3	57
Coke[1]	mt	0.6	0.6	–
Crude oil	mbbl	944	1,209	(22)
Oil products	mbbl	760	853	(11)

1 Includes agency volumes.

Our commodities in everyday life: Thermal coal

2017 hard coal production

6.8bn t

2017 Chinese coal production

3.5bn t

Average 2018 NEWC price increase

+22%

Physical properties

Coal is a fossil fuel formed from the altered remnants of prehistoric vegetation that originally amassed in wetland areas. Natural processes and movements in the earth's crust eventually buried this vegetation. High pressures and temperatures slowly transformed the vegetation over hundreds of millions of years into peat and then into lignite that was eventually transformed into progressively harder coals such as sub-bituminous coals, bituminous coals and eventually anthracite.

Coal can be found in many countries around the world and more than 50 of them mine it commercially for consumption in more than 80 countries. In 2017, more than 6.8 billion tonnes of hard coal along with 830 million tonnes of lignite was mined. China was the world's largest coal producer at 3.49bn tonnes, followed by India (c.715Mt), USA (c.700Mt), Indonesia (c.490Mt) and Australia (c.480Mt)[1]

The role of thermal coal

Different types of coal have different uses. The most significant of these are in electricity and heat generation, production of steel, manufacturing of cement and production of liquid fuels.

Today, more than 38% of the World's electricity is generated from coal and over 70% of global steel production is sourced from processes that primarily use coking coal.

In its primary role as a source of power and heat generation (consuming c.5.4 billion tonnes or c.70% of 2017 coal production)[1], thermal coal provides a secure, reliable and affordable source of energy that underpins sustainable economic and social development for developing economies.

Coal also benefits many stakeholders around the world from the jobs, royalties, export revenues and infrastructure that mining provides.

Modern coal combustion technologies are capable of reducing emissions of SOx and NOx below levels emitted by existing gas power stations. Particulate capture technologies are capable of capturing better than 99.5% of particulate emissions. Modern high efficiency, low emissions (HELE) power stations can significantly reduce the pollutants released from coal combustion.

Carbon capture and storage (CCS) technology has been used for many decades; applying this technology to coal plants can capture up to 90% of CO_2 emissions.

Support for this technology is essential to delivering reductions in global CO_2 emissions.

The future of thermal coal

Industrialisation and urbanisation of developing economies, particularly in Asia, will continue to drive growth in global energy, electricity, steel and cement.

The South-East Asian economy is expected to triple in size and its energy needs are expected to grow by almost two thirds by 2040[2].

Coal is expected to continue to be a key input to industrial processes as a competitive, safe, secure and reliable baseload source of energy for this time horizon.

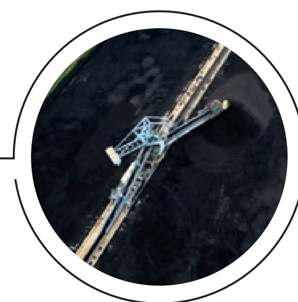
This is supported by the policy commitments made in the Paris Agreement, the platform for the world to transition to a low-carbon economy in response to the risks posed by climate change, and by relevant subsequent analysis of coal demand, particularly in Asia.

All credible climate scenarios with the objective to limit global temperature increases in line with the Paris Agreement recognise that the deployment of CCS is essential across all fossil fuel processes to achieve emissions reduction and climate goals.

The transition from subcritical technologies to HELE power plants through to CCS will require greater global financial support to accelerate deployment and provide the necessary emissions reductions.

SE Asia Energy demand growth by 2040

~66%



Market supply and demand outlook for thermal coal

2018 global seaborne thermal coal demand grew by more than 60Mt (6.5%) from 2017, dominated by the Pacific and sub-continent markets, rising 8.8%. Indian and Chinese thermal electricity demand growth was 4.9% and 6.0% respectively, supporting demand growth for imported thermal coal. In Asia-Pacific markets, excluding China and India, import demand was buoyed by 8.9GW of newly commissioned coal fired power stations to meet demand for low cost base load electricity. More than 50GW of new coal fired generation capacity is currently under construction in the region. Demand growth in the Mediterranean offset declines in the rest of Europe and the Americas, keeping demand outside of Asia flat overall.

Australian export coal supply recovered from a weather-affected 2017 to be up 6% year over year, however there remains few new projects under development, which should limit export growth going forward. Russian supply increased by 5.8%, mainly delivered to Asia, while higher prices during H2 supported swing supply growth from the US and capacity expansion in Indonesia. Growth from Indonesia continued to be dominated by low-energy coals, which contributed to an oversupply of these products. Similarly, over 60% of US export supply growth was from higher sulphur or lower energy products, which have limited destination markets. Price falls for these lower energy coals during H2 has put some of this Indonesian and US coal supply under margin pressure.

In April 2018, the Korean government raised per tonne import taxes on coal, which favours an increased demand for higher energy coal. The continued long-term decline in energy content of export coals from Indonesia and Australia and lack of investment in new supply capacity, ensured that, by historical standards, market prices for high-energy coals stayed relatively higher compared to lower energy coals. At the end of 2018, market index prices for Newcastle and API4 were 1.1% higher than the end of 2017, compared to end of 2018 prices for Newcastle 5500nar coal and 4700nar coal from Indonesia, which fell respectively 23% and 31% year over year.

up to

90%

CO_2 emissions capture through HELE and CCS

<2°C

Long-term Paris Agreement target

Sources:
1 IEA Coal Information 2018.
2 IEA World Energy Outlook 2018.

Coking coal

Global steel production increased 4.7% year over year, with 73% of steel being produced via blast furnace using coking coal. Globally, pig iron production from blast furnaces increased by 1.5% in the seaborne import markets, excluding China. While Australian supply recovered to meet the coking coal demand growth, supply declines from China, Mozambique and Russia kept markets tight throughout 2018, such that prices for premium HCC averaged 10% above 2017 levels.

Oil

After a sustained period of oil price gains since mid-2017, the direction remained one of steadily rising oil prices, from $67/bbl at the beginning of the year to a peak of $86/bbl at the start of Q4. The strong rally reflected the prospect of material supply shortages, led by anticipation of a steep fall in Iranian output ahead of reintroduction of US sanctions and the numerous challenges in Venezuela. Oil prices fell rapidly in Q4, as part of the previously discussed broader "risk asset" market sell off. The associated strong US dollar increases the cost of oil for emerging markets which, in turn, often threatens to derail demand.

Worries about oversupply soon followed, as strong US oil output growth, together with the OPEC+'s (including co-operating non-OPEC producers) earlier production boost, led to inventories building. In December, OPEC+ initiated a round of production cuts to support oil prices.

Amidst the selloff, volatility surged, with near-dated Brent implied volatility at over 40%, when for most of the year it hovered around 25%. The Brent curve dropped back into contango, when for the most of the year it was comfortably backwardated. The backward crude structure in 2018 compared to 2017 had a dampening effect on our traded volumes.

Refinery margins came under more pressure during the year, largely due to the weakness in light ends product margins, notably gasoline. The surge in US crude production has seen the global crude slate becoming lighter, and while refineries upgrade units in preparation for the new IMO2020 marine fuel standard, they have been producing more light ends products at the expense of heavy products. This has led to tightness in the heavy complex and a divergence in margins of light and heavy products.

Industrial activities

Highlights

Energy Products' Adjusted EBITDA of $5.3 billion was 48% higher than in 2017, largely due to the improved price environment, with positive contributions also from the HVO and Hail Creek acquisitions and the roll-off in 2017 of the earlier economic hedges.

Prodeco's results were down significantly as it invests near term in mine development activities, expected to increase the operation's medium-term volume productivity and earnings prospects.

Higher prices resulted in an improved oil contribution. The quarterly sequential increase in Q4 production augurs well for continued volume growth, following recommencement of a Chad drilling programme in H2 2017.

Looking forward, the full year effects of the 2018 coal acquisitions and the expected increase in Prodeco's production, drive an expected increase in 2019 consolidated production to around 145 million tonnes of coal. Furthermore, the expected H1 2019 acquisition completion of a 75% interest in the Cape Town oil refinery is expected to contribute positively to Oil's reported results going forward.

Financial information

US$ million	2018	2017	Change %
Net revenue◊			
Coal operating revenue			
Coking Australia	1,286	1,088	18
Thermal Australia	6,309	4,892	29
Thermal South Africa	1,629	1,500	9
Prodeco	1,112	1,199	(7)
Cerrejón[1]	838	789	6
Impact of corporate coal economic hedging	–	(380)	n.m.
Coal operating revenue	**11,174**	**9,088**	**23**
Coal other revenue			
Coking Australia	9	3	200
Thermal Australia	1,070	672	59
Thermal South Africa	79	17	365
Prodeco	2	6	(67)
Cerrejón[1]	–	1	(100)
Coal other revenue (buy-in coal)	**1,160**	**699**	**66**
Coal total revenue			
Coking Australia	1,295	1,091	19
Thermal Australia	7,379	5,564	33
Thermal South Africa	1,708	1,517	13
Prodeco	1,114	1,205	(8)
Cerrejón[1]	838	790	6
Impact of corporate coal economic hedging	–	(380)	n.m.
Coal total revenue	**12,334**	**9,787**	**26**
Oil	**326**	**280**	**16**
Energy products revenue◊	**12,660**	**10,067**	**26**

1 Represents the Group's share of this JV.

Energy products continued

US$ million	Adjusted EBITDA◊			Adjusted EBIT◊		
	2018	2017	Change %	**2018**	2017	Change %
Coking Australia	673	541	24	529	249	112
Thermal Australia	3,206	1,999	60	2,043	876	133
Thermal South Africa	685	577	19	389	289	35
Prodeco	208	359	(42)	32	192	(83)
Cerrejón[1]	387	387	–	197	210	(7)
Coal result prior to hedging	**5,159**	**3,863**	34	**3,190**	**1,816**	**76**
Impact of corporate coal economic hedging	–	(380)	n.m.	–	(380)	n.m.
Total coal	**5,159**	**3,483**	**48**	**3,190**	**1,436**	**122**
Adjusted EBITDA margin[2]	46%	41%				
Oil	**153**	**116**	**32**	**19**	**(12)**	**n.m.**
Adjusted EBITDA margin	47%	41%				
Energy products Adjusted EBITDA/EBIT◊	**5,312**	**3,599**	**48**	**3,209**	**1,424**	**125**
Adjusted EBITDA margin – pre economic hedge	46%	41%				
Adjusted EBITDA margin – post economic hedge	46%	38%				

1 Represents the Group's share of this JV.
2 Coal EBITDA margin is calculated on the basis of Coal operating revenue before corporate hedging, as set out in the preceding table.

US$ million	**2018**			2017		
	Sustaining	**Expansion**	**Total**	Sustaining	Expansion	Total
Capital expenditure						
Australia (thermal and coking)	240	103	343	153	73	226
Thermal South Africa	176	31	207	162	26	188
Prodeco	254	1	255	175	1	176
Cerrejón[1]	81	–	81	54	–	54
Total Coal	**751**	**135**	**886**	**544**	**100**	**644**
Oil	**157**	**–**	**157**	**98**	**–**	**98**
Capital expenditure◊	**908**	**135**	**1,043**	**642**	**100**	**742**

1 Represents the Group's share of this JV.

Production data

Coal assets[1]

		2018	2017	Change %
Australian coking coal	mt	7.5	6.1	23
Australian semi-soft coal	mt	3.9	4.0	(3)
Australian thermal coal (export)	mt	59.4	49.1	21
Australian thermal coal (domestic)	mt	9.4	7.5	25
South African thermal coal (export)	mt	17.3	18.7	(7)
South African thermal coal (domestic)	mt	10.0	10.0	–
Prodeco	mt	11.7	14.6	(20)
Cerrejón[2]	mt	10.2	10.6	(4)
Total Coal department	mt	**129.4**	**120.6**	**7**

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 Cerrejón production (33.3%).

Oil assets

		2018	2017	Change %
Glencore entitlement interest basis				
Equatorial Guinea	kbbl	1,827	2,529	(28)
Chad	kbbl	2,799	2,524	11
Total Oil department	kbbl	**4,626**	**5,053**	**(8)**
Gross basis				
Equatorial Guinea	kbbl	8,818	11,914	(26)
Chad	kbbl	3,827	3,450	11
Total Oil department	kbbl	**12,645**	15,364	**(18)**

Operating highlights

Coal assets

Attributable coal production of 129.4 million tonnes was 8.8 million tonnes (7%) higher than in 2017, reflecting the recovery in Australia from weather-related and industrial action disruption and the acquisitions of interests in HVO and Hail Creek, partly offset by lower production at Prodeco as equipment was reallocated to additional overburden removal and mine development activities. 2019 production guidance increase to ~145 million tonnes reflects a full year's contribution from HVO and Hail Creek, and some planned ramp up and business improvement initiatives at existing operations.

Australian coking

Production of 7.5 million tonnes was 1.4 million tonnes (23%) higher than in 2017, reflecting recovery from industrial action, in particular at Oaky North, and the offsetting impacts of the Tahmoor disposal and Hail Creek acquisition.

Australian thermal and semi-soft

Production of 72.7 million tonnes was 12.1 million tonnes (20%) up on 2017, reflecting production constraints in the base period (both weather-related and industrial action) and the incremental tonnes from Glencore's acquired interest in the HVO joint venture.

South African thermal

Production of 27.3 million tonnes was down 1.4 million tonnes (5%) on 2017. Adjusting for the technical accounting deconsolidation of Wonderfontein (~4 million tonnes), underlying production was up by approximately 10%, mainly reflecting productivity increases at the Tweefontein and Izimbiwa complexes.

Prodeco

Production of 11.7 million tonnes was down 2.9 million tonnes (20%) on 2017, due to a reallocation of mining equipment from current production to mine development in order to secure longer-term production and operating costs. Reflective of work progression, H2 production of 6.2 million tonnes was 14% higher than H1.

Cerrejón

Attributable production of 10.2 million tonnes was broadly in line with 2017.

Oil assets

Entitlement interest production of 4.6 million barrels was 0.4 million barrels (8%) below that recorded in 2017, reflecting the Equatorial Guinea fields being in a period of natural decline, partly offset by an 11% increase in Chad production, up 0.3 million barrels following the recommencement of a drilling programme in H2 2017.

Agricultural products

Glencore Agriculture provides logistics, shipping and handling services for producers principally in Canada and Australia. It has a worldwide network of crush plants, marketing and distribution offices

Grain sold
(100% basis)
43.2mt

Oil/oilseeds sold
(100% basis)
31.1mt

Glencore Agri Adjusted EBITDA
(100% basis)
$484m
2017: $631m

Glencore's share of earnings
$21m
2017: $99m

Change in presentation of reported financial results

During the year, the Glencore Agri joint venture continued its transition to a fully independent stand-alone group through bedding down of its independent governance structure and the firm establishment of its own stand-alone capital structure and credit profile, including the removal of all, but one (see note 10) of the Group's legacy guarantee arrangements. As a result of its increasing independence and Glencore's management evaluating the segment's financial performance on a net return basis as opposed to an Adjusted EBITDA basis, the financial results of Glencore Agri are no longer adjusted and presented on a proportionate consolidation basis, but rather are presented on a basis consistent with its underlying IFRS treatment (equity accounting). Applicable 2017 comparative segmental balances have been restated to reflect these changes; the underlying IFRS treatment was consistent in both years.

Highlights

Poor crop sizes in Australia, Argentina and Brazil (sugarcane), dry spells in Europe over the summer and trade tensions between the US and China, impacted volumes and compressed margins in various distribution chains. In addition to a smaller sugarcane crop, the price fell by 25% on average year over year. Our Canadian handling operations performed well, as we continue to compete effectively in a well-supplied market through best-in-class efficiency and service. Overall Glencore Agri saw a 23% reduction in standalone Adjusted EBITDA and Glencore's attributable share of profits decreased by 79% to $21 million.

US$ million	2018	2017	Change %
Adjusted EBITDA◊	484	631	(23)
Glencore's attributable 50% share of income◊	21	99	(79)

Market conditions

Selected average commodity prices

	2018	2017	Change %
S&P GSCI Agriculture Index	292	290	1
CBOT wheat price (US¢/bu)	496	436	14
CBOT corn no.2 price (US¢/bu)	368	359	3
CBOT soya beans (US¢/bu)	932	976	(5)
ICE sugar # 11 price (US¢/lb)	12	16	(25)

Selected marketing volumes sold

Million tonnes	2018	2017	Change %
Grain	43.2	45.3	(5)
Oil/Oilseeds	31.1	29.6	5
Cotton and sugar	1.5	1.2	25

Processing/production data[1]

	Units	2018	2017	Change %
Farming	kt	257	360	(29)
Crushing and long-term toll agreement	kt	8,571	8,877	(3)
Biodiesel	kt	759	735	3
Wheat and rice milling	kt	1,090	1,097	(1)
Sugarcane processing	kt	4,458	4,884	(9)
Total agricultural products	kt	**15,135**	**15,953**	**(5)**

1 Reported on a 100% basis.

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Directors and officers

Directors

Anthony Hayward
Chairman (61)

E H I N

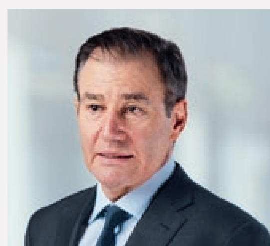
Chairman since May 2013; he joined the Board in 2011 as the Senior Independent Director.

Experience
Dr Hayward is managing partner of St James's Asset Management and Chairman of several private equity firms.

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 (62)

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. He is currently a non-executive director of Rosneft (MCX:ROSN).

Martin Gilbert
Senior Independent Director (63)

A I R

Senior Independent Director since May 2018; appointed in May 2017

Experience
Mr Gilbert is co-chief executive of Standard Life Aberdeen plc (LON:SLA). Mr Gilbert was a co-founder of Aberdeen Asset Management, which was established in 1983.

Mr Gilbert sits on the board of directors of the Institute of International Finance. He is also a member of the international advisory panel of the Monetary Authority of Singapore and the international advisory board of British American Business. He was appointed chairman of the Prudential Regulation Authority's practitioner panel in December 2013. He was the deputy chairman of Sky plc (LON:SKY) until October 2018.

Mr Gilbert was educated in Aberdeen, has an MA in Accountancy and an LLB and is a Chartered Accountant.

Peter Coates AO
Non-Executive Director (73)

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
Before joining Glencore's coal unit as senior executive in 1994, Mr Coates worked in senior positions in a range of resource companies. He joined Xstrata in 2002 as CEO of Xstrata's coal business, when Glencore sold its Australian and South African coal assets to Xstrata, and stepped down in December 2007.

He was non-executive chairman of Xstrata Australia (08–09), Minara Resources Ltd from (08–11) and Santos Ltd from (09–13 and 15–18). 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.

Officers

Steven Kalmin
Chief Financial Officer (48)

Appointed as Chief Financial Officer in June 2005.

Experience
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 the 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 (54)

Appointed Company Secretary in September 2011.

Experience
He was formerly company secretary and general counsel of Informa plc and before that a partner of CMS in London specialising in corporate law. Mr Burton holds a B.A. degree in Law from Durham University.

He was admitted as a Solicitor in England and Wales in 1990.

Leonhard Fischer
Non-Executive Director (56)

A I N R

Appointed in April 2011.

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 (74)

R N

Appointed in June 2013.

Experience

Mr Mack is the chairman of Lantern Credit and a non-executive director of Lending Club (NYSE:LC), 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 (69)

A E N

Appointed in January 2018.

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 Commission of Inquiry into the S.A. Public Investment Corporation.

Ms Marcus is a graduate of the University of South Africa.

Patrice Merrin
Non-Executive Director (70)

E H I

Appointed in June 2014.

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 Kew Media Group Inc. (TSE:KEW) and Samuel, Son & Co. Limited. She has been a director and then chairman of CML Healthcare, of Enssolutions, NB Power, and Arconic. Ms Merrin was 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.

Notes

All the Directors are non-executive apart from Mr Glasenberg. The non-executive Directors are designated as independent apart from Mr Coates. Committee membership is as follows:

- A Audit
- E Ethics, Compliance and Culture
- H Health, Safety, Environment and Communities (HSEC)
- I Investigations
- N Nomination
- R Remuneration
- (teal circle) denotes Committee chair

Board diversity
Page 99

Chairman's introduction

2018 was a mixed year for our Company. While we delivered strong financial results and record cash returns to shareholders, at the same time we were faced with some material challenges

Dear shareholders

I am pleased to present our corporate governance report for 2018.

On the financial side, although the prices of most commodities ended the year significantly lower than at the beginning, average prices were stronger than the prior year. This, combined with volume growth in copper and coal, was the main driver behind an 8% increase in Adjusted EBITDA of $15.8 billion which in turn enabled us to make total cash returns (including distributions, share buy backs and share trust purchases) in excess of $5.2 billion, while net debt increased to $14.7 billion, mainly to fund current year business acquisitions. During the last year we have grown the business through delivery of major brownfield capital projects and corporate transactions on both the buy-side and sell-side.

Our world-class portfolio of assets and marketing business stands us in good stead for the uncertain market conditions in the year ahead.

Your Board has overseen several headwinds for the Group last year, including:

1. Regulatory Investigations

- The investigation by the Ontario Securities Commission (OSC) concerning Katanga, which began in 2017, concluded in December with the execution of a settlement agreement by Katanga and certain of its current and former officers and directors. As part of that settlement, Katanga made a voluntary payment of $22 million to the OSC. Katanga also acknowledged that it had misstated its financial position and results, failed to maintain adequate disclosure controls and adequate internal controls and failed to adequately describe certain risks concerning corruption in the DRC and reliance on associates of Dan Gertler. The Board was disappointed in the conduct that led to this outcome and we have implemented significant remedial actions as a consequence
- In July we received a subpoena from the US Department of Justice (DOJ) to produce documents and other records with respect to compliance with the Foreign Corrupt Practices Act and US money laundering statutes. In 2017, the Board established a separate committee to oversee the OSC investigation from Glencore plc's perspective. Following receipt of the DOJ subpoena, this committee was reconstituted as the Investigations Committee with an expanded remit to include management and oversight of the DOJ investigation so that it is entirely separate from the Group's executives, who have no decision making power concerning the investigation

2. DRC Matters

There were three significant matters which the Board had to address in connection with the DRC:

- Katanga's dispute with its DRC government-owned partner Gécamines which led to a $5.6 billion recapitalisation of the operating vehicle (KCC) and settlement costs for Katanga totalling $248 million
- The introduction of a new DRC Mining Code which provides for substantially increased taxes, royalties and other onerous provisions in contravention of pre-existing stabilisation terms
- Litigation processes with affiliates of Dan Gertler concerning the effect of US sanctions on Dan Gertler and his affiliates on pre-existing payment obligations to those entities

3. Rusal and En+

- In April the US Government designated Rusal and En+ as SDNs. Glencore had in place various contracts with Rusal for the purchase of Aluminium and Alumina. It had also previously

signed a non-binding term sheet with En+ regarding swapping shares in Rusal for an interest in En+. Glencore took various measures to mitigate any risks to its business as a result of the Rusal and EN+ designation, including determining not to proceed with the EN+ exchange at that time

Given the number and scale of these challenges, the Board worked closely with management in order to ensure that suitable solutions could be found in order to deal with the relevant issues appropriately in order to achieve outcomes in the long-term interests of the Group.

During last year, a new 2018 UK Corporate Governance Code was published which is now in force. Most of the changes appear to us to be sensible and in particular the Board looks forward to a new and broader focus on the Group's values, culture and purpose, and the greater employee and other stakeholder engagement that the Code calls for. As a result of these changes and the Board's greater focus on ethics and compliance issues, we have established a new permanent committee of the Board, the Ethics, Compliance and Culture Committee.

The new Code also requires greater disclosure of a number of issues. The 2019 Annual Report will reflect all of these changes.

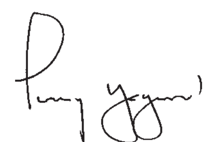
The Board continues to strengthen and evolve. We again wish to thank Peter Grauer for his five-year service to the Board which ended last year. Martin Gilbert has been appointed as the Senior Independent Director, bringing to that role his long experience as both a leading career asset manager and his significant non-executive director experience. In addition, Gill Marcus has brought to the Board her long experience as first a political activist and latterly as a senior South African government minister and official. Our latest external Board evaluation process, which has just been completed, confirmed the effective operation of the Board whose size and composition I believe allows it to function in an effective manner for the benefit of the Group and all its stakeholders.

We are also acutely aware of the obvious interest in management succession. In addition to previous changes to the leadership of our aluminium team, we have also this year seen the appointments of new heads of the assets for copper, coal and ferroalloys and new heads of marketing in copper and ferroalloys. Perhaps most significantly, Peter Freyberg has been appointed to a new position of responsibility for all of the Group's industrial mining assets. The Nomination Committee is appropriately extending its remit under the new Code with regard to management succession.

The HSEC Committee has continued its considerable work on sustainability matters. Certain challenges remain at the forefront, particularly safety. Last year the number of fatalities at our operations rose to thirteen. While we do operate various difficult assets in challenging locations, this is an unacceptable performance. Although the Committee has overseen various developments in order to improve our safety performance, clearly these have not been sufficient and accordingly, we are looking at new ways to achieve a step change in performance. The Committee has already begun to engage with Peter Freyberg in order to support him in ensuring that real change is achieved.

Considerable work has also been ongoing in relation to our carbon strategy. As one of the world's largest diversified resource companies, Glencore has a key role to play in enabling transition to a low-carbon economy. We do this through our well-positioned portfolio that includes copper, cobalt, nickel, vanadium and zinc – commodities that underpin energy and mobility transformation. We believe this transition is a key part of the global response to the increasing risks posed by climate change. We have engaged with investor signatories of the Climate Action 100+ initiative on the additional steps we are taking to further our commitment to this critical transition (further details on page 21). As an early supporter of the voluntary guidance on consistent climate related financial disclosures produced by the Taskforce on Climate-related Financial Disclosures, we continue to disclose the metrics, targets and scenarios we use to assess and manage relevant climate-related risks and opportunities. We also recognise 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 goals of the Paris Agreement.

While our Group continues to face legacy challenges, your Board believes that our people, our industrial assets and marketing businesses are industry-leading and we continue to have confidence in the long-term prospects of the Group for the benefit of all of its stakeholders.



Anthony Hayward
Chairman
28 February 2019

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

Overview

This governance report sets out how Glencore has applied the main principles of the 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, except for provision A.4.1., which requires the Board to appoint one of the Independent Non-Executive Directors to be the Senior Independent Director. The position was vacant between the time of Mr Peter Grauer's departure in March 2018 and the appointment of Mr Martin Gilbert as Senior Independent Director in May 2018 and during Mr Gilbert's leave of absence from 16 May to 10 October 2018.

Ms Gill Marcus was appointed as a Non-Executive Director on 1 January 2018. Mr Peter Grauer retired on 3 March 2018. Since then the Board has comprised seven Non-Executive Directors (including the Chairman) and one Executive Director. A list of the current Directors, with their brief biographical details and other significant commitments, is provided in the previous pages.

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.

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. 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 and CFO have line of sight across the Group. The CEO is further supported by the Group's senior management team principally comprising the General Counsel, the heads of the businesses and the head of strategy. 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.

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	Audit of 4	Remuneration of 2	Nomination of 3	HSEC of 5
Anthony Hayward[1]	6	–	–	2	5
Peter Coates	6	–	–	–	5
Leonhard Fischer	6	4	2	3	–
Martin Gilbert[2]	4	3	1	–	–
Ivan Glasenberg	5	–	–	–	4
Peter Grauer[1]	1	1	–	1	–
John Mack	6	–	2	3	–
Gill Marcus	6	4	–	3	–
Patrice Merrin[2]	6	1	1	–	5

1 Mr Grauer retired from the Board on 3 March 2018 and was present for all Board and Committee meetings until that date. Subsequently, Dr Hayward was appointed as Chair of the Nomination Committee.
2 Mr Gilbert was granted a leave of absence between 16 May 2018 and 10 October 2018. During this period Ms Merrin attended the Audit and Remuneration Committee meetings in his place.

In addition, there were another three limited agenda meetings of the Board.

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

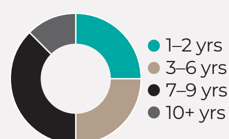
Other Non-Executive Directors

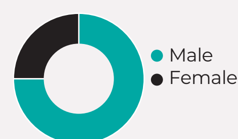
- Challenging the Chief Executive Officer and senior management constructively
- Bringing an independent mindset and a variety of backgrounds and experience around the Board table
- Providing leadership and challenge as chairs or members of the Board Committees, which (except HSEC) comprise only Non-Executive 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





	Tony Hayward British	Ivan Glasenberg[1] S. African	Martin Gilbert British	Leonhard Fischer German	Peter Coates Australian	John Mack American	Gill Marcus S. African	Patrice Merrin Canadian
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	●	●	●	●	●	●	●	●

1 Mr Glasenberg was appointed CEO and Director of Glencore International AG in 2002, and Glencore plc in 2011.

Senior Independent Director

Martin 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 Peter Coates, due to his employment by the Group during 2013, they are all regarded by the Company 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.

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 such 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 2018, 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, the Board assesses 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, Health, Safety, Environmental and Communities ("HSEC"). 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 chairman of each Committee leads a discussion concerning the Committee's activities since the previous Board meeting.

In addition, the Board has established a fifth permanent Committee, the Ethics, Compliance and Culture ("ECC") Committee, which began its work in 2019. The ECC Committee takes responsibility for ethics and compliance in lieu of the audit committee, and will also oversee the Group's culture and related matters.

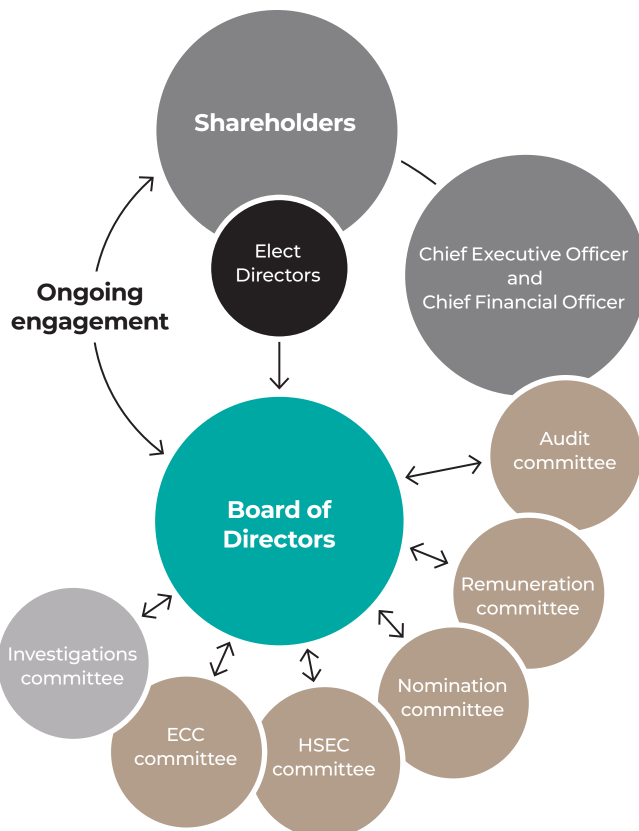
A report for 2018 from each Chairman of the permanent Committees is set out later in this Corporate governance report.

All 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 review its terms of reference to ensure they reflect the Board's expectations as to the Committee's role.

In July 2018, following receipt of a subpoena from the US Department of Justice, the Board established an Investigations Committee to direct the Company's response. This Committee also took over the responsibilities of the committee established in 2017 to monitor the investigation by the Ontario's Secretaries Commission into allegations concerning Katanga Mining Limited, which led to the settlement by Katanga in December 2018, as reported on page 29.

Corporate Governance



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 below.

The Board and its Committees have standing agenda items to cover their proposed business at their scheduled meetings. The Chairman 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. 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 2018 is set out on the next page.

Appointment and re-election of Directors

All Directors will be offering themselves for re-election at the 2019 AGM.

All of the Non-Executive Directors have service agreements or 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.

Board activities during 2018

Below are details of the main topics which were reviewed, discussed, and when required, approved by the Board during 2018:

Regular updates

- Chairman's report
- Reports from Committee Chairmen
- 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
- 2019 budget/2020–22 business plan
- Dividend & buyback programmes
- Financial statements
- Group risk appetite
- Group risk management framework

Strategy

- Strategic objectives
- Balance sheet and shareholder returns
- M&A reviews

Health, Safety & Environment

- Fatalities, major incidents and other safety issues
- Environmental incidents reports
- Human Rights and Communities reports
- Carbon/Climate reports

Governance & Stakeholders

- Annual report
- AGM and voting results
- Investor relations reports
- Analysts updates
- Corporate governance framework

Legal, Regulatory & Compliance

- Group policies
- Legal matters updates and investigations
- Regulatory & Compliance updates
- Group Compliance Programme
- *Raising Concerns* reports

Other activities

- Board and Directors' performance
- Chairman's performance
- Succession planning

Directors are also given the opportunity to visit Group operations and discuss aspects of the business with employees, and regularly meet the heads of the Group's main departments and other senior executives. As well as internal briefings, Directors attend appropriate external seminars and briefings.

Meetings with heads of commodities and other senior Group functions take place alongside scheduled Board meetings. In addition, in order to better familiarise themselves with the industrial activities, regular site visits take place. During 2018 three operations were visited.

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 training

New Directors receive a full, formal and tailored induction on joining the Board, including meetings with senior management.

The induction process for Gill Marcus in 2018 provided a comprehensive introduction to the Group, its businesses and the markets in which it operates; the opportunity to meet with Glencore employees, particularly senior management; and a clear appreciation of the Company's principal risks. In addition, training was provided on the roles and responsibilities of a UK listed company director and the Company's Code of Conduct.

Board effectiveness

In the final quarter of 2018 an evaluation was conducted by Spencer Stuart, an external board review specialist.

The evaluation took place against the backdrop of a difficult year which has included major regulatory investigations and several challenges concerning the Group's DRC assets.

The Board was assessed as performing well, with confidence also in the effectiveness of its Audit and HSEC Committees (its main risk and oversight committees). The evaluation was carried out while the Board has been assessing what changes should be put in place to properly address the requirements of the new UK Corporate Governance Code and therefore the recommendations of the review partly reflect the conclusions of those deliberations – see details on the next page.

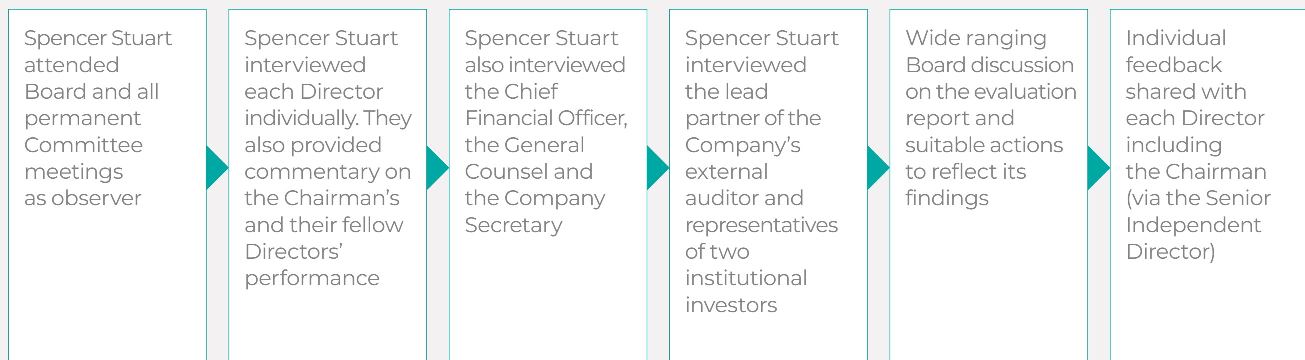
External Board evaluation 2018

The Board is subject to an independent external performance evaluation every three years. Evaluations for 2016 and 2017 were conducted internally.

The Company engaged Spencer Stuart to conduct the review which took place in Q4 2018.

The evaluation covered a broad range of areas

Overview of the process



Outcome and outlook

Operation of Board and Committees

- Board and main Committees performing effectively
- Incremental improvements to operation and performance discussed and agreed
- Increased scope of some Committees to reflect the requirements of the new Code

Increased focus on compliance and culture

- Since January 2019, a dedicated Board Committee (the Ethics Compliance and Culture Committee) has been established to oversee compliance, business ethics and corporate culture
- Co-operating with DoJ on its subpoena

Improving engagement with stakeholders

- Appointing Engagement Directors who will be responsible for oversight of engagement with the Group's global workforce
- Review engagement with other key stakeholders

Succession planning

- Board succession plan now concentrating on the Directors who will reach the maximum recommended tenure
- CEO and senior executives succession planning to ensure appropriate transition of executives

Engagement with investors

- Maintain open and regular dialogue with investors and stakeholders
- Consider increased engagement from Senior Independent Director and Committee Chairmen

Risk – Board leadership

The Board provides leadership and oversight on risk management. Specifically it:

1

provides a robust assessment of the principal risks facing the Group

The Board has 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. 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 24–35.

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 26.

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 regular 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 104–106.

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, as described on page 47.

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 30% of senior management and boards of FTSE100 companies by 2020. While we support the aims of diversity, we do not believe that a one size fits all policy is appropriate. 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 Principle C.2 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 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.

Katanga – OSC Investigations

In November 2017, Glencore announced the existence of a formal investigation launched by the Ontario Securities Commission ("OSC") into Katanga Mining Limited ("Katanga"), following the completion by Katanga of an internal review of certain of its historic accounting and the restatement of Katanga's financial statements.

In December 2018, Katanga and the OSC entered into a settlement agreement as described on page 29.

Since the start of the investigation, Glencore has implemented various structural and control changes across its wider copper department to enhance and strengthen its financial processes and procedures. Additionally, It has also improved its compliance programme across the Group.

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. It is assisted by the work of the Audit Committee for oversight 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 Group General Counsel, in his capacity of Head of Compliance, reports at each scheduled meeting of the ECC Committee (formerly to the Audit Committee) on all material compliance risks and matters.

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 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 and HSEC Committees were responsible in 2018 for ensuring that the significant risks identified are properly managed. From 2019, the ECC Committee assumes the compliance and ethics remit.

Group functions

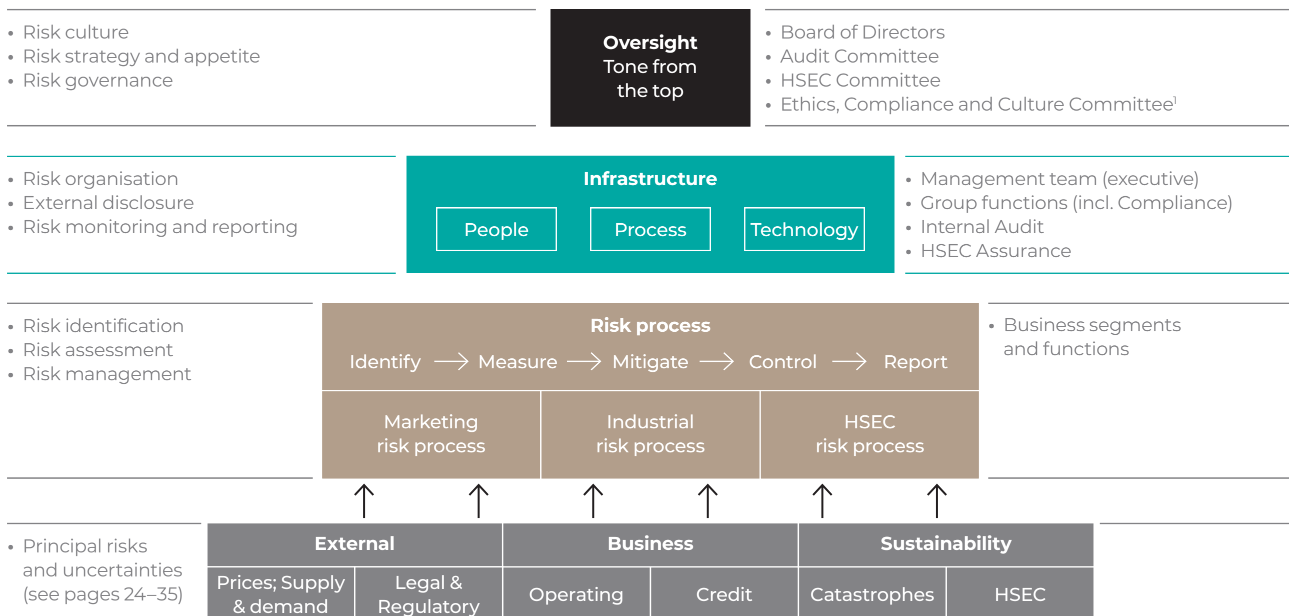
Group functions (Risk Management, Compliance, Legal and Sustainable Development) support the Business Risk Owners and senior management in mitigating risk across the Group.

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 business risk registers, emerging risks, operational changes, new investments and capital projects.

Risk Management Framework



1 Effective from 1 January 2019.

The key results from this process are 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.

The management teams at each industrial operation are responsible for implementing processes that identifies, assesses and manages risk.

Any significant risks are reported to Management and the Audit or HSEC Committee 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 below and will be published in the Group's sustainability report for 2018.

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 107 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 suggest that an open account exposure may be warranted.

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.

A Group compliance risk register is maintained by Group Compliance to identify, assess and evaluate compliance risks. The risks identified in the Group compliance risk register are considered when drafting policies and procedures applicable to the business. Group Compliance conducts local/office compliance risk assessments at appropriate intervals to understand and record compliance risks faced by individual operations as well as the controls necessary to mitigate them.

Group Compliance accounts for changes and external factors affecting the business which may create compliance risk, and avoids preconceptions regarding control effectiveness or integrity of employees or third parties.

Furthermore, the Group conducts training and awareness, with active monitoring.

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.

Dealing with requirements arising from recent regulatory reform, Glencore continued to implement the requirements of financial regulatory reform, including:

- The European Market Abuse Regulation (MAR) which affects the protection and disclosure of inside information and the prevention of market manipulation
- The Dodd-Frank Act, the European Market Infrastructure Regulation (EMIR) and the Swiss Financial Market Infrastructure Act (FMIA) which affect in particular the areas of risk mitigation (trade confirmation timeframes, portfolio reconciliation, portfolio compression and dispute resolution) and trade reporting

Upcoming financial regulatory reform proposals or requirements include:

- Further requirements under EMIR including mandatory clearing and margining requirements
- Further requirements under FMIA including trade reporting, risk mitigation, margin requirements and mandatory clearing
- MIFID II including EU authorisations and position limits

The impact of certain aspects of these and other 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 Activity 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 and senior members of the Investor Relations team and an array of business heads. 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.

AGM

The Company's next AGM is due to be held in Zug on 9 May 2019. 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.

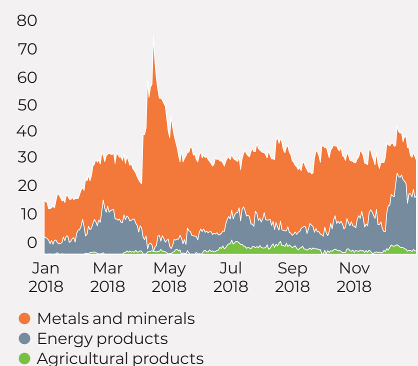
Last year, the Board approved the Audit Committee's recommendation of a one day, 95% VaR limit of $100 million for 2018, consistent with the previous year. This limit is subject to review and approval on an annual basis. The purpose of this Group limit is to assist senior management in controlling the Group's overall risk profile, within this tolerance threshold. During 2018 Glencore's reported average daily VaR was approximately $33 million, with an observed high of $76 million and a low of $16 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 2019.

VaR development ($m)



Audit Committee report

Chairman
Leonhard Fischer

Other members
Martin Gilbert
Gill Marcus

Mr Fischer and Ms Marcus served throughout the year. Mr Gilbert was granted a leave of absence from the Board between May and October 2018. During that period, Ms Merrin served as member of the Committee. Mr Peter Grauer retired in March 2018, and participated in one meeting prior to this date. All are considered to be Independent Non-Executive Directors and deemed to be financially literate by virtue of their business experience. Additionally, all Committee members are considered by the Board to have recent and relevant financial experience and have competence in accounting. The Committee held four scheduled meetings during the year, which all the then current Committee members attended. John Burton is Secretary to the Committee.

Governance processes

The Audit 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 private 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, responsibilities and main activities

The primary function of the Audit Committee is to assist the Board in fulfilling its responsibilities with regard to financial reporting, external and internal audit, 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 Glencore's internal financial and compliance controls and internal controls and risk management systems
- Considering the output from the Group-wide processes used to identify, evaluate and mitigate 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
- Determining 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
- Reviewing reports on the operation of the Group's Compliance programme, including material reports under the Group's Raising Concerns whistleblowing programme

Risk analysis

The Committee receives reports and presentations at each meeting on management of marketing and other risks (excluding sustainability risks which are reviewed by the HSEC Committee) 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 related to the financial statements

The Committee assesses whether suitable accounting policies including the implementation of new accounting standards – IFRS 9 'Financial Instruments' and IFRS 15 'Revenue from Contracts with Customers' have been adopted and whether management has made appropriate estimates and judgements. They also review 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. DRC Developments

The Committee considered the impacts of the 2018 Mining Code, which became effective on 10 July 2018, including the provisions relating to mining permits and renewals, royalties and taxation and additional regulatory controls. The Committee noted that Glencore has advised the DRC authorities that immediate introduction of the 2018 Mining Code is in breach of the pre-existing stabilisation provisions. The Group will comply with the code's provisions "under protest" to avoid penalties for non compliance while it investigates its various options.

2. Acquisitions and disposals

Accounting for acquisitions involves significant management judgements and estimates. In 2018, the Committee analysed the accounting treatment of the Hail Creek and HVO (coal), Volcan (zinc), and ALE Combustiveis (oil downstream) acquisitions and the dissolution of the QIA and Rosneft strategic partnership.

3. 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. 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 DRC and Zambia were subject to particular scrutiny. The Committee discussed with the external auditor their work in respect of impairment review, which was a key area of focus for them.

4. 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.

5. 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.

Compliance

The Committee monitored the effectiveness of Compliance controls through the reports it received from management at every meeting. These reports focus on key compliance risks to the Group, such as anti-corruption, sanctions and money-laundering. They also cover updates to the Group Compliance programme, including its policies, procedures and guidelines, as well as updates on the training and awareness activities across the Group.

These responsibilities have now been transferred to the new Ethics, Compliance and Culture Board Committee.

Internal Audit

The Committee monitored the internal audit function as described under Internal Audit on page 106.

External Audit

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 benefit of lead audit partner rotation

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.

Provision of non-audit services by the external auditor

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) where 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 2018, 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.

Reappointment of the external auditor

Deloitte has been the auditor of the listed entity since its IPO in 2011. In 2018, a lead audit engagement partner rotation occurred.

Since Mr Fischer will step down from the Board by the 2020 AGM, a new chairman of the Audit Committee will be appointed, probably with effect from that date. The Audit Committee has concluded that an audit tendering process should be led by its new chair. Accordingly following that appointment the Committee will determine the timetable for a tender process.

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.

Leonhard Fischer
Chairman of the
Audit Committee
28 February 2019

Nomination Committee report

Chairman
Anthony Hayward

Other members
John Mack
Leonhard Fischer
Gill Marcus

Mr Mack, Mr Fischer and Ms Marcus served on the Committee throughout the year. Dr Hayward was appointed as Chairman of the Committee in May 2018 and attended two meetings during the year. Mr Peter Grauer retired in March 2018, and participated in one meeting prior to this date. The Committee only comprises Independent Non-Executive Directors. The Committee met three times during the year and all members attended these meetings, when eligible. 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. 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

Main activities

The Committee focused on two main tasks during this year. Firstly, prior to the notice of 2018 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 2018 AGM.

Secondly, the Committee considered the composition of the Board and refreshment. The Committee continued its work on succession planning.

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.

Anthony Hayward
Chairman of the Nomination Committee
28 February 2019

Health, Safety, Environment & Communities (HSEC) report

Chairman
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, except for one meeting that Mr Glasenberg could not attend. 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 in 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
- Continued its work on reducing fatalities, especially at the higher risk assets. For this purpose it received a report on, reviewed and made recommendations in respect of, each fatality
- Provided leadership for catastrophic hazard management which is the most important non-financial risk management issue 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 2019
- 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, and
- Considered a variety of other material HSEC issues such as resettlement programmes, incident reporting and health strategy

Peter Coates
Chairman of the HSEC Committee
28 February 2019

Directors' remuneration report

For the year ended 31 December 2018

Chairman
John Mack

Other members
Leonhard Fischer
Martin Gilbert

Introduction

On behalf of the Remuneration Committee, I am pleased to present our Directors' Remuneration Report for the year ended 31 December 2018. Consistent with prior years, we have sought to make this report as short, simple and straightforward as possible.

This report is prepared in full compliance with applicable UK rules, unless stated otherwise. Accordingly, over the following pages, we have set out details of the implementation of our reward policy in 2018 including the governance surrounding pay decisions, members of the Committee and its advisers and details of what was paid to Directors during the year.

At the 2018 AGM, shareholders approved the Directors' Remuneration Report (excluding the Directors' Remuneration Policy) with a vote of almost 99% in favour.

The Committee continues to ensure that the Directors' Remuneration Policy and its implementation are attractive to shareholders in reflecting good governance, reasonable terms and complete transparency.

John Mack
Remuneration Committee Chairman
28 February 2019

Basis of reporting

We have prepared this Remuneration 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 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 reviewed and 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.

Part A – Directors' Remuneration Policy

The Directors' Remuneration Policy was approved by shareholders at the 2017 AGM and the Company continues to abide by its terms. The Policy will be put to a shareholder vote the earlier of once every three years or when an amendment to the Policy is proposed or required. As the Policy is not being put forward for shareholder approval at the 2019 AGM, it has not been included in this Annual Report. A summary is set out below and it is reproduced in full on our website at: **glencore.com/who-we-are/governance**.

Summary of Directors' Remuneration Policy

General Policy for Executive Directors

To facilitate the attraction, motivation and retention of Executive Directors and other senior executives of high calibre and enable them to implement the Group's strategy and achieve its objectives. In practice, the CEO has continued to waive participation in bonus or LTI arrangements.

Base salary

Provides market competitive fixed remuneration. The Committee has not increased the salary level for any Executive Director since May 2011.

Benefits

To provide appropriate supporting non-monetary benefits. Benefits received by Mr Glasenberg comprise salary loss (long-term sickness) and accident insurance/travel insurance with a cost limit of $20,000 p.a.

Pension

Provides basic retirement benefits which reflects local market practice. Mr Glasenberg participates in the standard pension scheme for all Baar (Switzerland) -based employees with an annual cap on the cost of provision of retirement benefits of $150,000 p.a.

Annual Bonus Plan (STI)

Supports the delivery of short-term operational, financial and strategic goals. The Committee has set a maximum annual bonus level of 200% of base salary.

Long-Term Incentives
Glencore Performance Share Plan incentivises the creation of shareholder value over the longer-term. The Committee has set a maximum annual grant level of 200% of base salary.

Significant Personal Shareholdings
Aligns the interests of executives and shareholders. The Committee has set a formal shareholding requirement for Executive Directors of 300% of salary. The CEO has a beneficial ownership of over 8% of the Company's issued share capital.

Chairman and Non-Executive Director fees
Reflects time commitment, experience, global nature and size of the Company. Chairman receives a single inclusive fee. Senior Independent Director and Non-Executive Directors receive a base fee. Additional fees are paid for chairing or membership of a Board committee. Non-Executive Directors are not eligible for any other remuneration or benefits of any nature.

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 continues to waive entitlement to all variable elements, 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 set out below was set at a modestly 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 2018, Mr Glasenberg's base salary was paid in US dollars and his benefits and pension contributions were paid in Swiss francs, as described in this report.

Fixed	• Consists of base salary, benefits and pension • Base salary is applicable to both 2017 and 2018 • 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			

Executive Directors' contracts
The table below summarises the key features of the service contract for Ivan Glasenberg, the only person who served as an Executive Director during the year.

All Non-Executive Directors' contracts and letters of appointment will be available for inspection on the terms to be specified in the Notice of 2019 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
The Executive Director's external appointments are noted on page 94. He assigns to the Group the compensation received in relation to each appointment. The appropriateness of these appointments 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 2018, which were unchanged from 2017 except for the addition of fees for membership of the Investigations Committee, are as follows:

US$'000	
Directors	
Chairman	1,150
Senior Independent Director	200
Non-Executive Director	135
Committee Fees:	
Remuneration	
Chairman	45
Member	25
Audit	
Chairman	60
Member	35
Nomination	
Chairman	40
Member	20
HSEC	
Chairman	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 John Mack, Leonhard Fischer and Martin Gilbert has had a long career in the management of large financial services 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 99.

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) for, 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 2018 were $13,921 (2017: $4,872). FIT's fees were charged on the basis of the firm's standard terms of business for advice provided. FIT provided no other services to the Group in the year.

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 2017 to 2018.

	2018 US$m	2017 US$m
Distributions and buy-backs	4,841	998
Net income attributable to equity holders	3,408	5,777
Total remuneration	5,063	4,656

The figures presented have been calculated on the following bases:

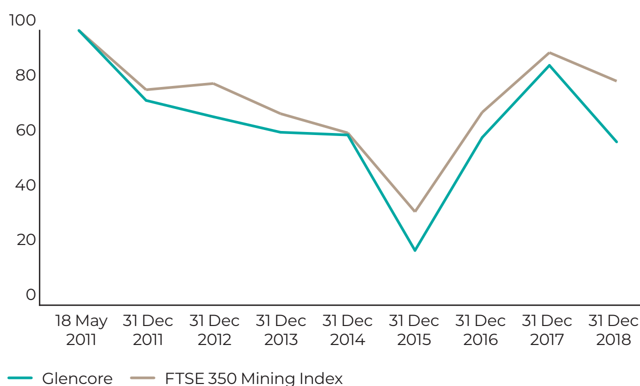
- **Distributions and buy-backs** – distributions paid and shares bought back during the year
- **Net income attributable to equity holders** – our reported net income in respect of the financial year. The Committee believes it is a good indicator of ongoing relative statutory performance
- **Total remuneration** – 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 2018, 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



		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]
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 2018. 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.

Percentage change in pay of Chief Executive Officer and comparative ratios

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. In addition, the UK Investment Association's 2016 Remuneration Principles recommend disclosure as to how the remuneration out-turn for a Company's CEO compares with that of a) its median employee and b) its Executive Committee. 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 comparisons or ratios have been made.

Most recent shareholder voting outcomes

The votes cast to approve the Directors' remuneration report, for the year ended 31 December 2017 at the 2018 AGM were:

Votes "For"	Votes "Against"	Votes "Withheld[1]"
Directors' Remuneration Report		
98.94%	1.06%	
(10,489,162,726)	(112,257,632)	(87,366,733)

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 of policy in 2018

There have been no changes to the Directors' remuneration policy in 2018 and none is envisaged for 2019.

Implementation Report – Audited Information

Single figure table	Salary		Benefits		Annual Bonus		Long-term incentives		Pension		Total	
US$'000	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Ivan Glasenberg	1,447	1,447	4	4	–	–	–	–	52	62	1,503	1,513

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.

Non-Executive fees

The emoluments of the Non-Executive Directors for 2018 were as follows:

Name	**Total 2018 US$'000**	Total 2017 US$'000
Non-Executive Chairman		
Anthony Hayward	1,150	1,150
Non-Executive Directors		
Peter Coates	260	260
Leonhard Fischer	280	240
Martin Gilbert[1]	157	127
Peter Grauer[2]	48	275
William Macaulay[3]	n/a	57
John Mack	200	200
Patrice Merrin	224	175
Gill Marcus[4]	190	n/a

1 Appointed on 5 May 2017. Leave of absence 16 May–10 October 2018.
2 Retired on 3 March 2018.
3 Retired on 14 April 2017.
4 Appointed with effect from 1 January 2018.

The aggregate fees for all Non-Executive Directors for 2018 were $2,509,000 (2017: $2,484,000).

The total emoluments of all Directors for 2018 (including pension contributions for Mr Glasenberg) were $4,012,000 (2017: $3,997,000).

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 formal share ownership guideline for Executive Directors of 300% 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
Remuneration Committee Chairman
28 February 2019

Directors' report

For the year ended 31 December 2018

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 2018. 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. On 31 January 2018 the Company delisted its shares from the Hong Kong Stock Exchange.

Financial results and distributions

The Group's financial results are set out in the financial statements section of this Annual Report.

A total distribution of US$0.20 per share was paid in two instalments in 2018.

The Board is recommending to shareholders an aggregate distribution of US$0.20 per share in respect of the 2018 financial year as further detailed on page 58.

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.

Taxation policy

Our Tax Policy: **glencore.com/group-tax-policy** and our second 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 operates on 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 47–48.

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 2018, 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 2018 are given below:

Name	Number of Glencore Shares	Percentage of Total Voting Rights
Executive Directors		
Ivan Glasenberg	1,211,957,850	8.69
Non-Executive Directors		
Anthony Hayward	244,907	0.00
Peter Coates	1,585,150	0.01
Leonhard Fischer	–	–
Martin Gilbert	50,000	0.00
Peter Grauer[1]	129,792	0.00
John Mack	750,000	0.00
Gill Marcus	–	–
Patrice Merrin	43,997	0.00

1 Retired from the Board on 3 March 2018. Figures provided at date of retirement.

No Director has any other interest in the share capital of the Company whether pursuant to any share plan or otherwise.

No changes in Directors' interests of those in office at the date of this report have occurred between 31 December 2018 and 28 February 2019.

Share capital and shareholder rights

As at 31 January 2019, 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 632,503,005 shares are held in treasury and 140,406,542 shares are held by Group employee benefit trusts.

Major interests in shares

Taking into account the information available to Glencore as at 31 January 2019, 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	8.75
Ivan Glasenberg	1,211,957,850	8.69
BlackRock Inc	820,422,580	5.88
Daniel Maté	454,136,143	3.25
Aristotelis Mistakidis	450,175,134	3.23
Harris Associates	429,121,654	3.08

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 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 July 2018, the Company started a $1 billion buy-back programme, which was extended by a further $1 billion in September 2018. Under the programme, the Company purchased 422,113,105 of its own ordinary shares in 2018, and an additional 83,900,992 shares between 1 January 2019 and 26 February 2019. The authority to purchase own shares was approved by the shareholders on 2 May 2018. The Directors will seek a similar authority at the Company's AGM to be held in 2019.

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 52.

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 paragraph C2.2 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 26 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 ought to have taken as a director in order to make himself 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.

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
28 February 2019

Directors' report
For the year ended 31 December 2018 continued

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

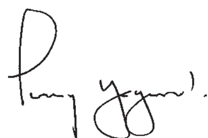
There are no disclosures to be made in respect of the other numbered parts of LR 9.8.4.

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 2018 were approved on the date below by the Board of Directors.

Signed on behalf of the Board:



Anthony Hayward
Chairman
28 February 2019

Ivan Glasenberg
Chief Executive Officer

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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:

- give a true and fair view of the state of affairs of Glencore plc and its subsidiaries (together "the Group") as at 31 December 2018 and of the Group's profit 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 35.

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 public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We confirm that the non-audit services prohibited by the FRC's Ethical Standard were not provided to the Group.

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: • United States Department of Justice investigation; • Impairments; • 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 2017. The 'Katanga Mining Limited Restatements' key audit matter as included in our 2017 Audit Report was removed as that matter was concluded in the prior year. We identified the 'United States Department of Justice investigation' as a current year key audit matter following the receipt by the Group in July 2018 of a subpoena in connection with the United States Foreign Corrupt Practices Act and Anti-money laundering statutes.
Materiality	We determined materiality for the Group to be $250 million (2017: $200 million), based on a normalised 3-year average 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 87% of the Group's net assets, 96% of the Group's revenue and 98% of the Group's adjusted EBITDA (refer to segment information in note 2).
Significant changes in our approach	Aside from the changes in key audit matters noted above, there were no significant changes to our audit approach when compared to 2017.

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 them and their identification of any material uncertainties to the Group's ability to continue to do so 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.

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 24 to 35 that describe the principal risks and explain how they are being managed or mitigated;
- the directors' confirmation on page 103 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 26 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.

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.

United States Department of Justice investigation

Description of key audit matter

The Group's businesses in Nigeria, Venezuela and the Democratic Republic of the Congo ("DRC") are currently under investigation by the United States ("US") Department of Justice ("DoJ") with respect to non-compliance with the US Foreign Corrupt Practices Act ("FCPA") and Anti-money laundering ("AML") regulations from 2007 to present.

Glencore's activities in Nigeria within this period are limited primarily to oil offtake agreements.

Its activities in Venezuela over the period which is subject to the investigation cover certain oil offtake contracts with the Venezuelan national oil company, Petróleos de Venezuela ("PDVSA"). Glencore is currently one of a number of defendants in a court case brought by the PDVSA Litigation Trust.

The group holds significant investments in copper and cobalt operations in the DRC through Katanga Mining Limited ("Katanga") and Mutanda Mining SPRL ("Mutanda"), initially acquired in 2007. In 2017, the group increased its stake in these entities, ending any shareholder relationships with a former shareholder, who became a Specially Designated National ("SDN") subject to US sanctions in the latter half of 2016. The Group continues to honour legally binding royalty agreements with an associated company of the former shareholder.

Each of these jurisdictions are considered high risk political environments resulting in a higher risk of non-compliance with the US FCPA and AML legislation.

On receipt of the subpoena, the Glencore plc Board of Directors reconstituted the existing Investigations Committee (the "Committee") to assess the implications of the investigation and to oversee the Company's response to the DoJ's investigation. This Committee has engaged external independent legal counsel in the US to lead the investigation, who has in turn appointed forensic accountants to assist in the investigation.

There is a risk that a material provision will be required to settle the DoJ investigation which is not recorded in the current year's financial statements.

As at 31 December 2018, the company has disclosed a contingent liability under IAS 37: Provisions, Contingent Liabilities and Contingent Assets that the timing of the completion of the investigations, the outcome and the subsequent discussions with the authorities are uncertain. At present, it is not possible to reliably estimate the timing or amount of any potential settlement or fines, which could be material. Please refer to note 31.

We also refer readers to page 96 for the Board discussions on this matter.

How the scope of our audit responded to the key audit matter

The audit procedures performed in response to the DoJ investigation included the following:

- Reviewed the scope and work plan of external legal counsel and the appointed forensic accountants and, in consultation with relevant Deloitte experts, assessed the competence, capabilities and objectivity of management's experts and whether their scope of work and approach is appropriate and comprehensive enough to address the requirements of the investigation;
- Held regular discussions with representatives of the Board Oversight Committee, Glencore's Head of Legal and Compliance and external legal counsel to understand the status of the investigation and findings to date and information provided to the DoJ. We also enquired of any known or likely non-compliance identified and any potential provisions required;
- Requested legal confirmations on any known or probable exposures as a result of the investigation; and
- Obtained management's current assessment of whether or not there is a material exposure that is probable and whether the quantification of the potential exposure at year-end is possible, and challenged the validity, completeness and appropriateness of the contingent liability disclosures in the financial statements.

Key observations

Based on the results of our procedures, we concluded that the timing of the completion of the investigations, the outcome and the subsequent discussions with the DoJ are uncertain. At present, it is not possible to reliably estimate the timing or amount of any potential settlement or fines, which could be material. We concurred that the recognition, measurement and disclosure of any potential exposure in relation to the US Department of Justice investigation is in line with IAS 37 Provisions, Contingent Liabilities and Contingent Assets.

Impairments

Description of key audit matter	How the scope of our audit responded to the key audit matter
The carrying value of the Group's non-current assets within the scope of IAS 36 Impairment of assets ("IAS 36") includes intangible assets, property, plant and equipment, non-financial instrument advances and loans, and investments in associates and joint ventures, and amounted to $79,238 million at 31 December 2018. The volatility in expected future prices of certain commodities key to the Group (particularly oil, copper, cobalt, zinc and coal), foreign exchange rates, production levels, operating costs, discount rates and macro-economic developments require management to closely monitor non-current asset carrying values. Given the nature of the Group's industrial assets, developments concerning geology, production or distribution of the Group's products, or changes in local income and mining taxes or royalties may also trigger a need to consider impairment. 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, the enactment of the 2018 Mining Code in the DRC ("2018 DRC Mining Code") – which increases tax and royalty rates, introduces new taxes and includes a potential restriction over the repatriation of funds out of the country – was identified as an impairment indicator affecting Glencore's investments in the DRC. In addition, changes in Zambian tax legislation and delays on ramp up of development projects were identified as impairment indicators for the Mopani operation. The outcome of impairment assessments could vary significantly were different assumptions applied. Refer to "Key sources of estimation uncertainty" within note 1, sensitivity disclosures within note 6, as well as the Audit Committee Report on page 109. As a result, we have identified a fraud risk due to the significant estimation uncertainty and subjectivity in certain judgements and key assumptions applied by management in the impairment assessment, including the potential for management bias. Impairments amounting to $600 million and $803 million were recognised on the Mutanda and Mopani operations, respectively. In addition, $49 million of other impairments were recognised in various other industrial assets in relation to specific items within Property, Plant and Equipment.	We reviewed management's assessment of impairment risk and their assessment of the indicators of impairment and challenged the significant assumptions used. We performed a walkthrough of management's impairment analysis process and assessed the design and implementation of key controls within this process. We sought to identify additional potential indicators of impairment through our review of operational performance and financial results as well as the impact of any significant regulatory changes. Where indicators of impairment (or impairment reversals) were identified, we utilised Deloitte valuation and mining specialists to assess the appropriateness of management's underlying model inputs and significant assumptions. In performing our challenge, we considered the risk of management bias in the assumptions and estimates. We challenged the significant inputs and assumptions used in impairment and impairment reversal testing for intangible assets, property, plant and equipment, and investments in associates and joint ventures. Our challenge included comparing inputs and significant assumptions as noted above, to third party forecasts and Deloitte developed discount rates. Production assumptions were compared to life of mine plans where applicable as well as reserves and resources estimates. Operating costs and production levels were also compared to the current period actual results, management approved budgets and life of mine models. Further, we assessed whether macro assumptions had been applied on a consistent basis across the Group. We challenged management's sensitivity analysis by performing independent sensitivity analyses on selected assets, including those which were not identified as having indicators of impairment but have a higher risk of impairment due to lower available headroom in fair value models, volatility in key pricing assumptions, or the existence of operational circumstances which may indicate potential for impairment. Specifically, for the operations impacted by the 2018 DRC Mining Code, we applied various scenarios and interpretations of the legislation to challenge management's assumed position. For Mopani, we applied various scenarios to evaluate a range of potential outcomes on the probability of successful ramp-up and execution of development projects. With respect to non-financial instrument advances and loans of $1,588 million, our procedures included challenging their recoverability by reviewing supporting agreements and obtaining evidence of current performance to identify potential indicators of impairment. 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.

Key observations

Based on the results of our testing, we concluded that management's assessment of impairment indicators was appropriate. Where there were impairment indicators, our procedures found that the impairment models were in line with the underlying mine plans and supported by acceptable inputs and assumptions. We concluded that the key pricing, foreign exchange and discount rate assumptions were in line with third party evidence and our specialists' acceptable ranges.

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 $219,754 million (2017: $205,476 million). Refer to note 1 for the revenue accounting policies. IFRS 15 *Revenue from Contracts with Customers* ("IFRS 15") replaced all the previous revenue standards and interpretations in IFRS with a revised framework for revenue recognition. Identifying the point of control transfer and fulfilment of performance obligations is a key judgement in determining the timing of revenue recognition. We presume a risk of material misstatement due to fraud related to revenue recognition. The identification of revenue recognition as a key audit matter primarily relates to the following: Marketing operations: We identified a risk that the capture of trades and their key contractual terms within the trade book is incomplete or inaccurate, 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 a 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. Where sales are made at fixed prices with future delivery, the consideration of embedded derivatives in sales contracts is required for accurate financial reporting. Marketing related activities depend on the reliability of the trade capture systems and their IT infrastructure environment. Industrial assets: Substantially all output from industrial assets is sold by the Group's marketing divisions. Where third party sales occur, the key risks relate to provisional pricing terms, metal concentrate estimates and the consideration of embedded derivatives in sales contracts. Judgement must be exercised to determine when control has transferred under bill and hold and other non-standard contract arrangements.	We have reviewed Glencore's revenue recognition policies for compliance with the requirements of IFRS. For marketing operations we: • assessed the design, implementation and tested the operating effectiveness of key controls surrounding the completeness and accuracy of trade capture and the revenue and trade cycle; • tested the operating effectiveness of 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; • 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 enhance audit effectiveness over large transaction volumes; • agreed, on a sample basis, deliveries occurring on or around 31 December 2018 between the trade book system and the relevant shipping documents to assess whether the IFRS revenue recognition criteria were met for recorded sales; and • reviewed key contracts for the existence of embedded derivatives and performed valuation testing as appropriate. For industrial assets we: • assessed the design and implementation of controls around the methodology adopted by management to identify the provisional pricing terms and the determination of estimates of metal in concentrate sold to third parties; • obtained third party confirmations to assess the completeness and accuracy of third party sales; and • reviewed key contracts for the existence of embedded derivatives and assessed the pricing and other assumptions utilised in the valuation against independent third-party pricing sources and recalculated the mathematical accuracy of the valuation.

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
Determination of fair values of marketing inventories, 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 2018, total Level 3 Other financial assets and liabilities amounted to $552 million and $539 million respectively. As $41,308 million of the Group's advances and loans, marketing inventories, accounts receivable, accounts payable, and other financial assets and liabilities are measured at fair value at each reporting date, these fair value measurements significantly impact the Group's results. Refer to "Key sources of estimation uncertainty" within note 1 and additionally notes 11, 12, 13, 24, 25, 27 and 28.	We assessed the design and implementation and tested the operating effectiveness of key 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. Using financial instrument specialists embedded within the audit team with experience in commodity trading, we specifically tested the evidence supporting significant unobservable inputs utilised in Level 3 measurements in the fair value hierarchy as outlined in notes 25 and 28 to the financial statements, which included assessing management's valuation assumptions against independent price quotes, recent transactions and other supporting 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 adequate.

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. IFRS 9 *Financial Instruments* ("IFRS 9") supersedes IAS 39 *Financial Instruments* and covers classification and measurement of financial assets and liabilities, impairment of financial assets and hedge accounting. Refer to note 1 for the description of changes in classification and measurement as a result of the adoption of IFRS 9. The most significant changes relate to the reassessment of classification of financial assets from four to three primary categories and the introduction of an expected credit loss model for financial assets at amortised cost. Implementation of these changes may require significant judgement. The classification of contracts relating to the Group's marketing operations is a judgemental area, particularly distinguishing sales contracts where the Group physically delivers its own production to a third party ("own use"), from those which form part of the Group's regular marketing operations. The majority of the Group's trades 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, 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 evaluated and challenged management's assessments and conclusions relating to the implementation of IFRS 9, with particular focus on the areas involving significant judgement and changes in classification or measurement approach. 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 "own use" criteria. We challenged management's judgement and conclusions associated with classification and accounting for new significant arrangements and/or significant changes to existing arrangements containing a financing element. Our challenge included evaluation of commercial substance of the arrangements in 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 valuation and classification 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 2018, total advances and loans and accounts receivable classified as financial assets amounted to $926 million and $14,355 million respectively. During the period, $191 million of impairments of non-current financial assets were recognised on non-current advances and loans. Refer to notes 11, 13 and 27 and the Audit Committee Report on page 109.	We assessed the design and implementation 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
There is significant judgement around accounting for income taxes particularly in light of the number of jurisdictions in which the Group operates, including judgements concerning presence of key corporate operations and holding companies, provisioning for tax exposures, application of transfer pricing rules, the recognition of deferred income tax assets and the taxation impacts of any corporate restructurings. As described in notes 6 and 7, and the Audit Committee Report on page 109 the enactment of the 2018 DRC Mining Code has introduced higher tax and royalty rates including a new super profits tax ("SPT") that overrides the existing tax stability agreements with the DRC government. The calculation of SPT is predicated on a base bankable feasibility study ("BFS") and the legality of the immediate application of the 2018 DRC Mining Code is subject to legal challenge, therefore judgement is required on how this legislation should be interpreted and applied. This gives 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 such as the implementation of the 2018 DRC Mining Code. As at 31 December 2018, the Group has recorded net deferred tax liabilities of $6,839 million and net deferred tax assets of $1,728 million. Additionally, the Group has $7,871 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 has been 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 109.	We undertook a specific assessment of the material components impacting the Group's transfer pricing arrangements, deferred tax assets, and tax disputes and exposures, and performed 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, and the consistency of these forecasts with the Group's budgets or underlying asset life of mine plans; • We challenged management's application of the 2018 DRC Mining Code, specifically focusing on the impact of the legislation on impairment models and tax losses carried forward, valuation of additional income tax accruals and management's judgement on the SPT application, considering any third party legal and tax opinions where relevant; • We reviewed and challenged management's assessment of uncertain tax positions and conclusions on complex tax arrangements (such as transfer pricing) through discussions with the Group taxation department, reviewing correspondence with local tax authorities, reviewing third party expert tax opinions and utilising Deloitte tax specialists, where appropriate, to assess the adequacy of associated provisions and disclosures; and • We challenged management on the 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

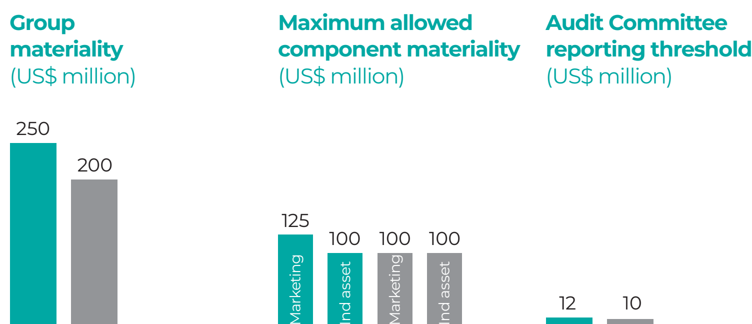
We define materiality as the magnitude of misstatement in the financial statements that makes it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced. We use materiality both in planning the scope of our audit work and in evaluating the results of our work.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

Group materiality

$250 million (2017: $200 million)

The applied materiality is approximately 5% of normalised 3-year average pre-tax profit (2017: 7%), and equates to less than 1% (2017: less than 1%) of equity.



Basis for determining materiality

Consistent with the methodology in the prior year, we have determined materiality by using a percentage of a normalised 3-year average (2016 – 2018) of pre-tax profits. The selected materiality is 3.5% of current year normalised pre-tax profit without the effect of averaging.

The normalising items are outlined in notes 4, 5 and 6 to the financial statements.

Rationale for the benchmark applied

The pre-tax profits for the 2016-2018 years have been normalised in determining materiality to exclude items which, due to their variable financial impact and/or expected infrequency of the underlying events, are not considered indicative of continuing operations of the Group. These items do not form part of the Group's internally or externally monitored primary key performance indicators, and which if included, would distort materiality year-on-year.

We consider this approach of 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 to therefore provide a more appropriate base reflective of the scale of the Group's size and operations.

The maximum permitted component materiality for marketing operations has increased to $125 million equating to 50% of materiality. Component materiality for industrial assets was limited to $100 million owing to their lower contribution to pre-tax profits on an individual basis.

We agreed with the Audit Committee that we would report to the Committee all audit differences in excess of $12 million (2017: $10 million), as well as differences below that 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.

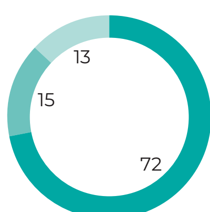
An overview of the scope of our audit

Our Group audit was scoped by obtaining an understanding of the Group and its environment, including group-wide controls, and assessing the risks of material misstatement at the Group level. Based on our continuing assessment, we focused our Group audit scope primarily on the audit work at 42 components (2017: 47 components), representing the Group's most material marketing operations and industrial assets, and utilised 24 component audit teams (2017: 23 component audit teams) in 20 countries (2017: 20 countries)

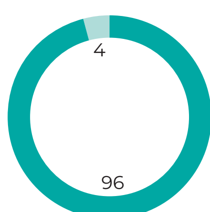
- 27 components (2017: 27 components) were subject to a full scope audit; and
- 15 components (2017: 20 components) were subject to specified audit procedures where the extent of our testing was based on our assessment of the risk of material misstatement and of the materiality of the Group's operations at those locations.

These 42 components account for 87% of the Group's net assets (2017: 93%), 96% of the Group's revenue (2017: 94%) and 98% of the Group's adjusted EBITDA (2017: 89%).

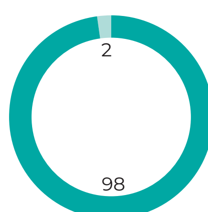
Net assets (%)



Revenue (%)



Adjusted EBITDA (%)



Coverage
- Full scope audit
- Specified audit procedures
- Analytical procedures

Components are scoped based on their 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.

Detailed audit instructions were sent to the auditors of these in-scope components. These detailed audit instructions specified significant audit risks, areas of audit focus, identified the material account balances, classes of transactions, and disclosures and their relevant risks of material misstatement as assessed by the Group audit team and set out the information to be reported back to the Group audit team.

The Group audit team continued to follow a programme of regular on-site meetings with components 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 2018, the Group audit team held in-person meetings with 11 components (2017: 21 components).

Additionally 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 also 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.

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.

Details of the extent to which the audit was considered capable of detecting irregularities, including fraud, are set out below.

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 committee, 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;
  - reviewing internal controls established to mitigate risks related to fraud or non-compliance with laws and regulations;
- discussing among the engagement team, including significant component audit teams, and involving relevant internal specialists, including tax, valuations, and IT regarding how and where fraud might occur in the financial statements and any potential indicators of fraud. As part of these discussions, we identified potential for fraud in the following areas:
  - bespoke transactions which may be outside the normal course of business or have an unclear business rationale, may contain unusual or complex terms, or may involve counterparties that are high-risk and/or related parties;
  - the complexity and magnitude of the group structure and the resulting risk that material transactions may be processed in components that are not scoped in for the Group audit or the allocation of profit and/or costs between operating segments;
  - management override of controls, in particular in relation to certain significant accounting judgements and 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.
- obtaining an understanding of the legal and regulatory frameworks that the group operates in, focusing on those laws and regulations that had a direct effect on 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, US Anti-Money Laundering regulations and the UK Bribery Act 2010. In addition, compliance with the group's various operating licences, 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 performing the above, Revenue Recognition and Impairments remain as key audit matters in relation to fraud risks. 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 to the above and the procedures described in the relevant key audit matters section of our report, our procedures to respond to risks identified included the following:

- reviewing the financial statement disclosures and testing to supporting documentation to assess compliance with relevant laws and regulations discussed above;
- enquiring of management, the audit committee, in-house legal 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 evaluate 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;
- assessing the design and implementation of key controls within the compliance function at Group and at selected components to further our understanding of management's processes around the Group's compliance obligations and monitoring; and
- in addressing the risk of fraud through management override of controls, testing the appropriateness of journal entries and other adjustments, with a particular focus on profit and cost allocations; 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; or
- 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 8 years, covering the years ending December 2011 to December 2018. During this period, the Engagement Partner has rotated after the completion of the 2012 and 2017 audits.

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
28 February 2019

Consolidated statement of income

For the year ended 31 December 2018

US$ million	Notes	**2018**	2017
Revenue	2/3	219,754	205,476
Cost of goods sold		(210,698)	(197,695)
Selling and administrative expenses		(1,381)	(1,310)
Share of income from associates and joint ventures	10	1,043	1,158
(Loss)/gain on disposals and investments	4	(139)	1,309
Other (expense)/income – net	5	(764)	34
Impairments of non-current assets	6	(1,452)	(479)
Impairments of non-current financial assets	6	(191)	(149)
Dividend income		21	28
Interest income		228	168
Interest expense		(1,742)	(1,619)
Income before income taxes		**4,679**	**6,921**
Income tax expense	7	(2,063)	(1,759)
Income for the year		**2,616**	**5,162**
Attributable to:			
Non-controlling interests		(792)	(615)
Equity holders of the Parent		3,408	5,777
Earnings per share:			
Basic (US$)	17	0.24	0.41
Diluted (US$)	17	0.24	0.40

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of comprehensive income

For the year ended 31 December 2018

US$ million	Notes	**2018**	2017
Income for the year		2,616	5,162
Other comprehensive income			
Items not to be reclassified to the statement of income in subsequent periods:			
Defined benefit plan actuarial (losses)/gains, net of tax of $10 million (2017: $32 million)	23	(35)	81
Loss on equity investments accounted for at fair value through other comprehensive income, net of tax of $2 million (2017: $Nil)	10	(848)	–
Net items not to be reclassified to the statement of income in subsequent periods:		**(883)**	**81**
Items that have or may be reclassified to the statement of income in subsequent periods:			
Exchange (loss)/gain on translation of foreign operations		(711)	446
Losses on cash flow hedges, net of tax of $1 million (2017: $5 million)	16	(18)	(165)
Share of other comprehensive (loss)/gain from associates and joint ventures	10	(124)	93
Unrealised gain on available for sale financial instruments	10	–	500
Items recycled to the statement of income upon disposal of subsidiaries	25	218	(143)
Net items that are or may be reclassified to the statement of income in subsequent periods:		**(635)**	**731**
Other comprehensive (loss)/income		**(1,518)**	**812**
Total comprehensive income		**1,098**	**5,974**
Attributable to:			
Non-controlling interests		(841)	(672)
Equity holders of the Parent		1,939	6,646

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of financial position

As at 31 December 2018

US$ million	Notes	**2018**	2017
Assets			
Non-current assets			
Property, plant and equipment	8	56,770	57,046
Intangible assets	9	6,971	6,787
Investments in associates and joint ventures	10	13,909	13,998
Other investments	10	2,067	2,958
Advances and loans	11	2,555	2,976
Other financial assets	27	51	–
Inventories	12	353	369
Deferred tax assets	7	1,728	1,733
		84,404	**85,867**
Current assets			
Inventories	12	20,564	24,084
Accounts receivable	13	17,787	20,359
Other financial assets	27	3,482	2,311
Prepaid expenses		389	416
Cash and cash equivalents	14	2,046	2,124
		44,268	**49,294**
Assets held for sale	15	–	432
		44,268	**49,726**
Total assets		**128,672**	**135,593**
Equity and liabilities			
Capital and reserves – attributable to equity holders			
Share capital	16	146	146
Reserves and retained earnings		45,592	49,609
		45,738	**49,755**
Non-controlling interests	33	(355)	(300)
Total equity		**45,383**	**49,455**
Non-current liabilities			
Borrowings	20	26,424	24,532
Deferred income	21	2,301	2,561
Deferred tax liabilities	7	6,839	7,024
Other financial liabilities	27	529	513
Provisions including post-retirement benefits	22	6,824	7,094
		42,917	**41,724**
Current liabilities			
Borrowings	20	8,570	9,402
Accounts payable	24	26,484	28,826
Deferred income	21	412	410
Provisions	22	554	477
Other financial liabilities	27	3,243	4,522
Income tax payable		1,109	618
		40,372	**44,255**
Liabilities held for sale	15	–	159
		40,372	**44,414**
Total equity and liabilities		**128,672**	**135,593**

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of cash flows

For the year ended 31 December 2018

US$ million	Notes	**2018**	2017[1]
Operating activities			
Income before income taxes		4,679	6,921
Adjustments for:			
Depreciation and amortisation		6,325	5,398
Share of income from associates and joint ventures	10	(1,043)	(1,158)
Streaming revenue and other non-current provisions		(647)	(187)
Loss/(gain) on disposals and investments	4	139	(1,321)
Unrealised mark-to-market movements on other investments	5	(139)	(290)
Impairments	6	1,643	628
Other non-cash items – net[2]		739	424
Interest expense – net		1,514	1,451
Cash generated by operating activities before working capital changes		**13,210**	**11,866**
Working capital changes			
Decrease/(increase) in accounts receivable[3]		2,734	(1,165)
Decrease/(increase) in inventories		3,539	(5,614)
(Decrease)/increase in accounts payable[4]		(4,948)	1,814
Total working capital changes		**1,325**	**(4,965)**
Income taxes paid		(1,740)	(921)
Interest received		183	106
Interest paid		(1,419)	(1,269)
Net cash generated by operating activities		**11,559**	**4,817**
Investing activities			
Net cash used in acquisition of subsidiaries	25	(2,922)	(674)
Net cash received from disposal of subsidiaries	25	88	706
Exchangeable loan provided for a conditional acquisition of an oil refinery/downstream business	13	(1,044)	–
Purchase of investments		(19)	(378)
Proceeds from sale of investments		16	36
Purchase of property, plant and equipment	8/9	(4,687)	(3,586)
Proceeds from sale of property, plant and equipment		136	282
Dividends received from associates and joint ventures	10	1,139	1,081
Net cash used by investing activities		**(7,293)**	**(2,533)**

1 Includes results from assets held for sale, see note 15.
2 Includes certain non-cash items as disclosed in note 5.
3 Includes movements in other financial assets, prepaid expenses and long-term advances and loans.
4 Includes movements in other financial liabilities, provisions and deferred income.

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated statement of cash flows
As at 31 December 2018 continued

US$ million	Notes	2018	2017[1]
Financing activities[2]			
Proceeds from issuance of capital market notes[3]		185	2,026
Proceeds from issuance of non-dilutive convertible bonds[3]		576	–
Purchase of call options on non-dilutive convertible bonds		(95)	–
Repayment of capital market notes		(3,650)	(4,539)
Proceeds from revolving credit facility		4,624	501
Proceeds from other non-current borrowings		15	19
Repayment of finance lease obligations		(72)	(105)
Margin (calls)/receipts in respect of financing related hedging activities		(507)	1,255
(Repayment of)/proceeds from U.S. commercial papers		(634)	1,180
Proceeds from/(repayment of) current borrowings		439	(1,266)
Acquisition of non-controlling interests in subsidiaries		(58)	(561)
Return of capital/distributions to non-controlling interests		(343)	(194)
Purchase of own shares	16	(2,005)	–
Disposal of own shares		27	17
Distributions paid to equity holders of the Parent	18	(2,836)	(998)
Net cash used by financing activities		**(4,334)**	**(2,665)**
Decrease in cash and cash equivalents		(68)	(381)
Effect of foreign exchange rate changes		(33)	21
Cash and cash equivalents, beginning of year		2,147	2,508
Cash and cash equivalents, end of year		**2,046**	**2,148**

1 Includes results from assets held for sale, see note 15.
2 Refer to note 20 for reconciliation of movement in borrowings.
3 Net of issuance costs of $4 million (2017: $20 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 2018

US$ million	(Deficit)/ retained earnings	Share premium	Other reserves (Note 16)	Own shares (Note 16)	Total reserves and (deficit)/ retained earnings	Share capital	Total equity attributable to equity holders	Non-controlling interests (Note 33)	Total equity
1 January 2017	**(3,739)**	**52,338**	**(2,802)**	**(1,700)**	**44,097**	**146**	**44,243**	**(462)**	**43,781**
Income for the year	5,777	–	–	–	5,777	–	5,777	(615)	5,162
Other comprehensive income	174	–	695	–	869	–	869	(57)	812
Total comprehensive income	**5,951**	**–**	**695**	**–**	**6,646**	**–**	**6,646**	**(672)**	**5,974**
Own share disposal[1]	(60)	–	–	125	65	–	65	–	65
Equity-settled share-based expenses[2]	105	–	–	–	105	–	105	–	105
Change in ownership interest in subsidiaries	–	–	(318)	–	(318)	–	(318)	(676)	(997)
Acquisition/disposal of business[3]	12	–	–	–	12	–	12	1,704	1,716
Distributions paid[4]	–	(998)	–	–	(998)	–	(998)	(194)	(1,192)
At 31 December 2017	**2,269**	**51,340**	**(2,425)**	**(1,575)**	**49,609**	**146**	**49,755**	**(300)**	**49,455**
Impact from the adoption of IFRS 9[5]	(25)	–	–	–	(25)	–	(25)	–	(25)
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[6]	–	–	(1,207)	–	(1,207)	–	(1,207)	1,108	(99)
Acquisition/disposal of business[3]	–	–	–	–	–	–	–	21	21
Reclassifications	(5)	–	5	–	–	–	–	–	–
Distributions paid[4]	–	(2,836)	–	–	(2,836)	–	(2,836)	(343)	(3,179)
At 31 December 2018	**5,343**	**48,504**	**(4,937)**	**(3,318)**	**45,592**	**146**	**45,738**	**(355)**	**45,383**

1 See note 16.
2 See note 19.
3 See note 25.
4 See note 18.
5 See note 1.
6 See note 33.

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, energy products and agricultural 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 automotive, steel, power generation, oil and food processing 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 plc 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. On 31 January 2018, the Company delisted its shares from the Hong Kong stock exchange.

These consolidated financial statements were authorised for issue in accordance with a Directors' resolution on 28 February 2019.

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 2018, and
- IFRS and interpretations as issued by the International Accounting Standards Board (IASB) effective for the year ended 31 December 2018.

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 (note 35)

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.

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.

1. Accounting policies continued

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 2018, trade payables include $5,152 million (2017: $6,673 million) of such liabilities arising from supplier financing arrangements, the weighted average of which have extended the settlement of the original payable to 59 days (2017: 80 days) after physical supply and are due for settlement 29 days (2017: 42 days) after year end.

(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 (note 6)

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 may not be fully recoverable or at least annually for goodwill and other indefinite life intangible assets. If an asset's recoverable amount is less than the asset's carrying amount, an impairment loss is recognised in the consolidated statement of income. 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. Future cash flow estimates which are used to calculate the asset's fair value are discounted using asset 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, price trends and related factors), 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, 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.

(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 revised standards

In the current year, Glencore has adopted a number of new and revised IFRS standards that became effective as of 1 January 2018:

(i) Amendments to IFRS 2 – Classification and measurement of share-based payment transactions

The amendments to IFRS 2 Share-based payments clarify the classification and measurement of share-based payments transactions with respect to accounting for cash-settled share-based payment transactions that include a performance obligation, the classification of share-based payment transactions with net settlement features and the accounting for modifications of share-based payment transactions from cash-settled to equity-settled. The adoption of this amendment has had no material impact on the Group.

1. Accounting policies continued

(ii) IFRS 9 – Financial Instruments

IFRS 9 supersedes IAS 39 "Financial Instruments: Recognition and Measurement" and covers classification and measurement of financial assets and financial liabilities, impairment of financial assets and hedge accounting. IFRS 9 modifies the classification and measurement of certain classes of financial assets and liabilities and required the Group to reassess classification of financial assets from four to three primary categories (amortised cost, fair value through profit and loss, fair value through other comprehensive income), reflecting the business model in which assets are managed and their cash flow characteristics. Financial liabilities continue to be measured at either fair value through profit and loss or amortised cost. In addition, IFRS 9 introduced an expected credit loss ("ECL") impairment model, which means that anticipated as opposed to incurred credit losses are recognised resulting in earlier recognition of impairments.

Changes in accounting policies resulting from IFRS 9 have been applied as at 1 January 2018, with no restatement of comparative information for prior year other than certain presentation changes. Consequently, any difference between the carrying amount of financial instruments under IAS 39 and the carrying amount under IFRS 9 has been recognised in the opening retained earnings as at date of initial application.

The following summarises the impact from the adoption of IFRS 9:

- Presentational changes primarily in the investments (note 10), advances and loans (note 11), accounts receivable (note 13) and accounts payable (note 24) note disclosures to reflect the business model and cash flow characteristics of these assets and liabilities and group them into their respective IFRS 9 category or other IFRS classification;
- Additional disclosure around classification and measurement of financial instruments (notes 27 and 28 and Table 1 below); and
- An additional net credit loss allowance and fair value adjustment of $25 million as at 1 January 2018, recognised against opening retained earnings. Also see Table 2 below.

Table 1: Summary of the change in classification and measurement of financial assets and liabilities under IFRS 9 and IAS 39 at the date of initial application, 1 January 2018:

US$ million	Notes	Original measurement category under IAS 39	New measurement category under IFRS 9	Original carrying amounts under IAS 39	Effect of IFRS 9 adoption	New carrying amount under IFRS 9
Financial assets						
Investments in equity instruments	10	Available-for-sale investments	Fair value through other comprehensive income	2,268	–	2,268
Other investments in equity instruments[1]	10	Fair value through profit and loss	Fair value through other comprehensive income	204	–	204
Loans to associates	11	Loans and receivables	Amortised cost	220	–	220
Other non-current receivables and loans	11	Loans and receivables	Amortised cost	804	(10)	795
Rehabilitation trust fund	11	Loans and receivables	Amortised cost	126	–	126
Trade receivables and advances	13	Loans and receivables	Amortised cost	4,642	(16)	4,626
Trade receivables containing provisional pricing features[2]	13	Loans and receivables	Fair value through profit and loss	7,292	(28)	7,264
Margin calls paid	13	Loans and receivables	Amortised cost	3,380	–	3,380
Receivables from associated companies	13	Loans and receivables	Amortised cost	517	(1)	516
Other receivables	13	Loans and receivables	Amortised cost	621	(3)	618
Other financial assets	28	Fair value through profit and loss	Fair value through profit and loss	2,311	–	2,311
Cash and cash equivalents	14	Fair value through profit and loss	Amortised cost	2,124	–	2,124
Financial liabilities						
Borrowings	20	Amortised cost	Amortised cost	(33,934)	–	(33,934)
Trade payables	24	Amortised cost	Amortised cost	(8,642)	–	(8,642)
Trade payables containing provisional pricing features[2]	24	Amortised cost	Fair value through profit and loss	(16,022)	33	(15,989)
Margin calls received	24	Amortised cost	Amortised cost	(443)	–	(443)
Payables to associated companies	24	Amortised cost	Amortised cost	(1,052)	–	(1,052)
Other payables and accrued liabilities	24	Amortised cost	Amortised cost	(2,015)	–	(2,015)
Other financial liabilities	28	Fair value through profit and loss	Fair value through profit and loss	(5,035)	–	(5,035)
					(25)	

1 The Group designated all eligible equity investments as fair value through other comprehensive income and upon adoption of IFRS 9, $204 million of investments previously classified as fair value through profit and loss were designated as fair value through other comprehensive income. As a result of the designation of these investments, a fair value loss of $848 million was recognised in other comprehensive income during 2018. In 2017, fair value movements recognised on these investments in the consolidated statement of income were $11 million.

2 Prior to the adoption of IFRS 9, the Group accounted for provisionally priced features (embedded derivatives) in certain of its trade receivables and payables at fair value and movements in fair value were recognised in the consolidated statement of income. The accounting for trade receivables containing an embedded derivative under IFRS 9 is that such provisionally priced trade receivables are now accounted for as one instrument measured at fair value through profit and loss until final settlement. Furthermore, upon adoption of IFRS 9, the Group elected to designate trade payables containing embedded derivatives at fair value through profit and loss consistent with the accounting required for trade receivables containing an embedded derivative to eliminate any accounting mismatches that would have arisen.

1. Accounting policies continued

Table 2: Summary of net credit loss and fair value adjustments recognised on initial adoption of IFRS 9:

US$ million	Notes	Measurement attributes	Effect of IFRS 9 adoption recognised as at 1 January 2018
Financial assets at amortised cost			
Other non-current receivables and loans	11	ECL is determined based on different scenarios of probability of default and expected loss applicable to each specific loan	(10)
Trade receivables and advances	13	ECL is estimated using a provision matrix based on reference to past default experience, adjusted as appropriate for current observable data	(16)
Receivables from associated companies	13	ECL is estimated using a provision matrix based on historical average default rates of similar credit quality counterparties	(1)
Other receivables	13	ECL is determined based on different scenarios of probability of default and expected loss for each of the specific balances	(3)
Financial assets and liabilities at fair value through profit and loss			
Trade receivables, containing provisional pricing features	13/28	Based on observable quoted commodity prices adjusted by a discount rate, which captures the time value of money and counterparty credit considerations.	(28)
Trade payables, containing provisional pricing features	24/28		33
			(25)

(iii) IFRS 15 – Revenue from Contracts with Customers

IFRS 15 applies to revenue from contracts with customers and replaces all of the revenue standards and interpretations in IFRS. The standard outlines the principles an entity must apply to measure and recognise revenue and the related cash flows. The Group has undertaken a comprehensive analysis of the impact of the new standard based on a review of the contractual terms of its principal revenue streams with the primary focus being to understand whether the timing and amount of revenue recognised could differ under IFRS 15. Changes in accounting policies resulting from IFRS 15 have been applied using the full retrospective method, with no restatement of comparative information for prior year in accordance with the practical expedient not to restate contracts that begin and end within the same annual reporting period or have been completed as at 1 January 2017. As the majority of the Group's revenue is derived from commodity sales, for which the point of recognition is dependent upon contract sales terms (Incoterms), the transfer of risks and rewards as defined by IAS 18 and the transfer of control as defined by IFRS 15 generally coincides with the fulfilment of performance obligations under the Incoterms at a point in time. As such, the adoption of IFRS 15 has had no material impact in respect of timing and amount of revenue recognised by the Group and accordingly prior period amounts were not restated.

New and revised standards not yet effective

At the date of authorisation of these consolidated financial statements, the following new and revised IFRS standards, which are applicable to Glencore, were issued but are not yet effective:

(i) IFRS 16 – Leases – effective for year ends beginning on or after 1 January 2019

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 supersedes IAS 17 Leases and its associated interpretative guidance. The Group will apply the modified retrospective approach. Under this approach, the Group will not restate amounts previously reported and will apply the practical expedient to retain the classification of existing contracts as leases under current accounting standards (i.e. IAS 17) instead of reassessing whether existing contracts are/or contain a lease at the date of initial application provided these contracts are ending within 12 months of the date of initial application.

Under the new standard, a lessee is required to recognise the present value of the unavoidable lease payments as a lease liability on the statement of financial position (including those currently classified as operating leases) with a corresponding right of use asset. The unwind of the financial charge on the lease liability and amortisation of the leased asset are recognised in the statement of income based on the implied interest rate and contract term respectively. The Group's recognised assets and liabilities will increase and affect the presentation and timing of related depreciation and interest charges in the consolidated statement of income. Upon adoption of IFRS 16, the most significant impact will be the present value of the operating lease commitments (see note 30) being shown as a liability on the statement of financial position together with an asset representing the right of use, which are unwound and amortised to the statement of income over time. A preliminary assessment of the impacts resulting from the change in 2019 are as follows:

- Approximately $1,160 million of these arrangements relate to leases other than short-term leases and leases of low-value, and hence the Group will recognise a right-of-use asset and corresponding lease liability of approximately $904 million. Further, the Group will recognise a lease receivable of approximately $62 million relating to chartering relet arrangements, with a corresponding reduction of the right-of-use assets
- Cost of goods sold will decrease by approximately $35 million and interest expense will increase by approximately $53 million, the net result having an immaterial impact on basic and diluted earnings per share
- Operating cash flow will increase by approximately $232 million and cash from financing activities will decrease by approximately $232 million, and
- Adjusted EBITDA (an APM measure, see Glossary for definition) will increase by approximately $285 million as the operating lease cost is charged against Adjusted EBITDA under IAS 17, while under IFRS 16 the charge will be included in depreciation and interest (as noted above) which are excluded from Adjusted EBITDA.

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 the 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 2018 Annual Report and Accounts. Therefore, they continue to adopt the going concern basis of accounting in preparing these financial statements. Also see page 120. 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.

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 cash-generating units (CGU) 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. 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.

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.

1. Accounting policies continued

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.

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.

1. Accounting policies continued

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.

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
Mineral and petroleum rights	UOP
Deferred mining costs	UOP

Assets under finance leases, where substantially all the risks and rewards of ownership transfer to the Group as lessee, are 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 are classified as operating leases, the expenditures for which are recognised in the statement of income on a straight-line basis over the lease term.

(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.

1. Accounting policies continued

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:

(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.

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.

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.

1. Accounting policies continued

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 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 is not reversed in subsequent periods.

Other investments

Equity investments, other than investments in Associates, are recorded at fair value. Glencore designated these 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 fair value less costs of disposal and its value in use. 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 been recognised. Goodwill impairments cannot be subsequently reversed.

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.

1. Accounting policies continued

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.

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.

1. Accounting policies continued

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.

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, 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.

2. Segment information

Glencore is organised and operates on a worldwide basis in three core business segments – Metals and minerals, Energy products and Agricultural products, with each business segment responsible for the marketing, sourcing, hedging, logistics and industrial investment activities of their respective products and reflecting the structure used by Glencore's management to assess the performance of Glencore.

The business segments' contributions to the Group are primarily derived from the net margin or premium earned from physical Marketing activities (net sale and purchase of physical commodities), provision of marketing and related value-add services and the margin earned from Industrial asset activities (net resulting from the sale of physical commodities over the cost of production and/or cost of sales) and comprise the following underlying key commodities:

- Metals and minerals: Zinc, copper, lead, alumina, aluminium, ferroalloys, nickel, cobalt and iron ore, including smelting, refining, mining, processing and storage related operations of the relevant commodities
- Energy products: Crude oil, oil products, steam coal and metallurgical coal, including investments in coal mining and oil production operations, ports, vessels and storage facilities, and
- Agriculture products: Wheat, corn, canola, barley, rice, oil seeds, meals, edible oils, biofuels, cotton and sugar supported by investments in storage, handling, processing and port facilities

Corporate and other: consolidated statement of income amount represents unallocated Group related expenses (including variable pool bonus charges). Statement of financial position amounts represent Group related balances.

The financial performance of the Metals and minerals and Energy products 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.

During the year, the Glencore Agri joint venture continued its transition to a fully independent stand-alone group through bedding down of its independent governance structure and the firm establishment of its own stand-alone capital structure and credit profile, including the removal of all, but one (see note 10) of the Group's legacy guarantee arrangements. As a result of its increasing independence and Glencore's management evaluating the segment's financial performance on a net return basis as opposed to an Adjusted EBITDA basis, the financial results of Glencore Agri are no longer adjusted and presented on a proportionate consolidation basis, but rather are presented on a basis consistent with its underlying IFRS treatment (equity accounting). Applicable comparative segment balances have been adjusted to reflect these changes.

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.

2018 US$ million	Metals and minerals	Energy products	Agricultural products	Corporate and other	**Total**
Revenue – Marketing activities[1]	51,980	126,348	–	–	178,328
Revenue – Industrial activities	31,385	12,660	–	24	44,069
Revenue	**83,365**	**139,008**	**–**	**24**	**222,397**
Proportionate adjustment – revenue[2]	(1,805)	(838)	–	–	(2,643)
Revenue – reported measure	**81,560**	**138,170**	**–**	**24**	**219,754**
Marketing activities					
Adjusted EBITDA	1,767	795	21	(91)	2,492
Depreciation and amortisation	(25)	(53)	–	–	(78)
Adjusted EBIT	**1,742**	**742**	**21**	**(91)**	**2,414**
Industrial activities					
Adjusted EBITDA	8,478	5,312	–	(515)	13,275
Depreciation and amortisation	(4,316)	(1,913)	–	(18)	(6,247)
Proportionate adjustment – depreciation[2]	(109)	(190)	–	–	(299)
Adjusted EBIT	**4,053**	**3,209**	**–**	**(533)**	**6,729**
Total Adjusted EBITDA	**10,245**	**6,107**	**21**	**(606)**	**15,767**
Total depreciation and amortisation	(4,341)	(1,966)	–	(18)	(6,325)
Total depreciation proportionate adjustment	(109)	(190)	–	–	(299)
Total Adjusted EBIT	**5,795**	**3,951**	**21**	**(624)**	**9,143**
Share of associates' significant items[2,3]					(40)
Unrealised intergroup profit elimination adjustments[4]					237
Loss on disposals and investments					(139)
Other expense – net					(764)
Impairments					(1,643)
Interest expense – net					(1,514)
Income tax expense					(2,063)
Proportionate adjustment – net finance, income tax expense and non-controlling interest[2]					(601)
Income for the year					**2,616**

1 Balance is net of intra-segment sales arising from transactions between the Industrial and Marketing activities. Metals and minerals segment: $20,291 million and Energy products segment $3,285 million.
2 Refer to APMs section for definition.
3 Share of associates' significant items comprise Glencore's share of significant charges booked directly by various associates, primarily Century and Glencore Agri.
4 Represents the required adjustment to eliminate unrealised profit or losses arising on intergroup 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

2017 US$ million	Metals and minerals	Energy products	Agricultural products Restated[1]	Corporate and other	**Total Restated[1]**
Revenue – Marketing activities[2]	51,017	118,199	–	–	169,216
Revenue – Industrial activities	29,448	10,067	–	37	39,552
Revenue	**80,465**	**128,266**	**–**	**37**	**208,768**
Proportionate adjustment – revenue[3]	(2,502)	(790)	–	–	(3,292)
Revenue – reported measure	**77,963**	**127,476**	**–**	**37**	**205,476**
Marketing activities					
Adjusted EBITDA	2,029	1,054	99	(175)	3,007
Depreciation and amortisation	(24)	(64)	–	–	(88)
Adjusted EBIT	**2,005**	**990**	**99**	**(175)**	**2,919**
Industrial activities					
Adjusted EBITDA	8,281	3,599	–	(342)	11,538
Depreciation and amortisation	(3,274)	(1,998)	–	(38)	(5,310)
Proportionate adjustment – depreciation[3]	(511)	(177)	–	–	(688)
Adjusted EBIT	**4,496**	**1,424**	**–**	**(380)**	**5,540**
Total Adjusted EBITDA	**10,310**	**4,653**	**99**	**(517)**	**14,545**
Total depreciation and amortisation	(3,298)	(2,062)	–	(38)	(5,398)
Total depreciation proportionate adjustment	(511)	(177)	–	–	(688)
Total Adjusted EBIT	**6,501**	**2,414**	**99**	**(555)**	**8,459**
Share of associates' significant items[3,4]					(6)
Unrealised intergroup profit elimination adjustments[5]					(523)
Mark-to-market valuation on certain coal hedging contracts[6]					225
Gain on disposals and investments					1,309
Other income – net					34
Impairments					(628)
Interest expense – net					(1,451)
Income tax expense					(1,759)
Proportionate adjustment – net finance and income tax expense[3]					(498)
Income for the year					**5,162**

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).
2 Balance is net of intra-segment sales arising from transactions between the Industrial and Marketing activities. Metals and minerals segment: $19,648 million and Energy products segment $2,677 million.
3 Refer to APMs section for definition.
4 Share of associates' significant items comprise Glencore's share of significant charges booked directly by various associates, primarily Century.
5 Represents the required adjustment to eliminate unrealised profit or losses arising on intergroup 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.
6 Represents an accounting measurement mismatch between the fair value of coal derivative positions in respect of portfolio risk management/hedging activities initiated in Q2 2016 and the anticipated future revenue to be generated from the sale of future unsold coal production. These transactions were not able to be designated as hedging instruments under IFRS, which would have allowed for the deferment of any income statement effect until performance of the underlying future sale transactions. The fair value movements in the derivative portfolio was offset against future revenue in the segment information as the related sales (of production) were realised.

2. Segment information continued

2018 US$ million	Metals and minerals	Energy products	Agricultural products	Corporate and other	Total
Current assets	28,178	14,640	–	(596)	42,222
Current liabilities	(12,873)	(18,268)	–	(661)	(31,802)
Allocatable current capital employed	**15,305**	**(3,628)**	**–**	**(1,257)**	**10,420**
Property, plant and equipment	34,864	21,503	–	403	56,770
Intangible assets	3,633	3,322	–	16	6,971
Investments in associates and other investments	8,125	4,667	3,184	–	15,976
Non-current advances and loans	1,045	1,510	–	–	2,555
Inventories	353	–	–	–	353
Allocatable non-current capital employed	**48,020**	**31,002**	**3,184**	**419**	**82,625**
Other assets[1]				3,825	3,825
Other liabilities[2]				(51,487)	(51,487)
Total net assets	**63,325**	**27,374**	**3,184**	**(48,500)**	**45,383**
Capital expenditure – Marketing activities	34	55	–	–	89
Capital expenditure – Industrial activities	3,996	1,043	–	38	5,077
Capital expenditure	**4,030**	**1,098**	**–**	**38**	**5,166**
Proportionate adjustment – capital expenditure[3]	(308)	(81)	–	–	(389)
Capital expenditure – reported measure	**3,722**	**1,017**	**–**	**38**	**4,777**

1 Other assets include non-current financial assets, deferred tax assets and cash and cash equivalents.
2 Other liabilities include borrowings, non-current deferred income, deferred tax liabilities, non-current provisions and non-current financial liabilities.
3 Refer to APMs section for definition.

2017 US$ million	Metals and minerals	Energy products	Agricultural products Restated[1]	Corporate and other	Total Restated[1]
Current assets	32,642	15,464	–	(936)	47,170
Current liabilities	(16,603)	(17,676)	–	(574)	(34,853)
Allocatable current capital employed	**16,039**	**(2,212)**	**–**	**(1,510)**	**12,317**
Property, plant and equipment	37,030	19,607	–	409	57,046
Intangible assets	3,643	3,127	–	17	6,787
Investments in associates and other investments	8,767	4,868	3,321	–	16,956
Non-current advances and loans	1,128	1,773	–	75	2,976
Inventory	369	–	–	–	369
Allocatable non-current capital employed	**50,937**	**29,375**	**3,321**	**501**	**84,134**
Other assets[2]				4,289	4,289
Other liabilities[3]				(51,285)	(51,285)
Total net assets	**66,976**	**27,163**	**3,321**	**(48,005)**	**49,455**
Capital expenditure – Marketing activities	17	79	–	–	96
Capital expenditure – Industrial activities	3,232	742	–	46	4,020
Capital expenditure	**3,249**	**821**	**–**	**46**	**4,116**
Proportionate adjustment – capital expenditure[4]	(439)	(54)	–	–	(493)
Capital expenditure – reported measure	**2,810**	**767**	**–**	**46**	**3,623**

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).
2 Other assets include deferred tax assets, cash and cash equivalents and assets held for sale.
3 Other liabilities include borrowings, non-current deferred income, deferred tax liabilities, non-current provisions, non-current financial liabilities and liabilities held for sale.
4 Refer to APMs section for definition.

2. Segment information continued

Geographical information

US$ million	2018	2017
Revenue from third parties[1]		
The Americas	36,939	33,930
Europe	75,991	72,459
Asia	94,643	82,694
Africa	5,240	4,800
Oceania	6,941	11,593
	219,754	**205,476**
Non-current assets[2]		
The Americas	23,491	23,121
Europe	10,824	10,917
Asia	4,453	4,605
Africa	16,921	19,604
Oceania	22,314	19,953
	78,003	**78,200**

1 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.
2 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 $20,500 million (2017: $18,353 million), in Peru of $10,596 million (2017: $10,721 million) and the DRC of $7,272 million (2017: $8,166 million).

3. Revenue

US$ million	2018	2017
Sale of commodities	217,119	202,639
Freight, storage and other services	2,635	2,837
Total	**219,754**	**205,476**

Revenue is derived principally from the sale of commodities, recognised once the control of the goods has transferred from Glencore to the buyer. 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. (Loss)/gain on disposals and investments

US$ million	2018	2017
Loss on sale of Mototolo	(137)	–
Gain on sale of HG Storage	–	674
Gain on sale of Zinc Africa	–	232
Gain on sale of other operations	15	173
(Loss)/gain on disposal of property, plant and equipment and intangible assets[1]	(17)	230
Total	**(139)**	**1,309**

1 2017 primarily comprises the gain on sale of a royalty portfolio, see below.

Mototolo

In November 2018, Glencore disposed of its 40% interest in the Mototolo joint venture, a Platinum 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).

HG Storage

In December 2017, Glencore disposed of a 51% interest in HG Storage, its petroleum products and logistics business, resulting in a gain of $674 million, including remeasurement of the retained investment to its fair value (see note 25).

Zinc Africa

In August 2017, Glencore disposed of its African zinc operations (Perkoa and Rosh Pinah), resulting in a gain of $232 million (see note 25).

Other

The gain on sale of other operations in 2017 arose primarily from the disposal of Eland Platinum, which resulted in a gain of $147 million, mainly on account of recycling foreign currency translation reserves to the statement of income (see note 25).

Gain on disposal of property, plant and equipment – Royalty portfolio

In December 2017, Glencore disposed of a portfolio of selected base metals' royalty assets for a combination of cash ($150 million) and a 50% interest in a new base metals streaming and royalties joint venture (BaseCore Metals), resulting in a gain on disposal of $210 million (see note 10).

5. Other (expense)/income – net

US$ million	Notes	2018	2017
Net changes in mark-to-market valuations on investments		139	290
Net foreign exchange losses		(58)	(80)
Legal related costs		(86)	(75)
Closed site rehabilitation costs		(8)	–
Disposal of Rosneft stake related costs		(325)	–
KCC debt restructuring	33	(248)	–
Katanga OSC settlement and restatement		(22)	(78)
Acquisition related costs	25	(142)	–
Other expenses – net		(14)	(23)
Total		**(764)**	**34**

Together with foreign exchange movements and mark-to-market movements on investments, other expense includes certain items that, due to the variable financial impact or expected infrequency of the events giving rise to these items, are reported separately from operating segment results. Other expenses – net includes, but is not limited to, restructuring and closure costs.

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

2018
Regulatory investigation related costs of $24 million (2017: $Nil) relate to legal and other third party costs incurred with respect to the open U.S. Department of Justice (DOJ) investigation (see note 31).

During the year, 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 and related costs incurred in relation to this inventory amounted to $62 million.

2017
Glencore Ltd (GLtd), the U.S. branch of Glencore AG, is a defendant in a case relating to an alumina refinery located in St. Croix, U.S. Virgin Islands which was acquired by Virgin Islands Alumina Corporation (Vialco), a former affiliate of GLtd in 1989, and was subsequently disposed of by Vialco in 2005. GLtd guaranteed the obligations of Vialco under the 1989 agreement which included certain environmental and other indemnities. The complaint alleges that GLtd is contractually obligated to indemnify the previous owners for two environmental lawsuits arising out of ownership and operation of the refinery. GLtd intends to vigorously defend the contention, but has nevertheless reserved $75 million for the possibility the plaintiff might prevail in the whole of its claims.

Closed site rehabilitation costs
Relates to movements on restoration, rehabilitation and decommissioning estimates related to sites that are no longer operational and are thus classified as “closed sites” (see note 22).

Disposal of Rosneft stake related costs
On 3 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). Upon completion of the transaction, QHG had incurred funding and other costs and liabilities totalling $325 million for which Glencore has assumed liability pursuant to the termination arrangements with QIA. QHG has a contractual right to recover these liabilities. A claim has been made but it is being disputed by the counterparty.

Katanga OSC settlement and restatement
In December 2018, Katanga Mining Limited (Katanga), an 86.3% 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 resolves an investigation by the OSC into certain of Katanga’s historic accounting practices, corporate governance and disclosure practices.

In 2017, an initial phase of the OSC investigation identified certain accounting matters affecting Katanga’s results reported in prior years, the impact of which was considered material for Katanga but not for the Group. Consequently, for the years ended 31 December 2016 and earlier, Katanga restated its financial statements, however the cumulative impact was only corrected in the Group financial statements for the year ended 31 December 2017. Had the Group’s 2017 results been restated, income before taxes for the 2016 year would have been lower by $10 million.

6. Impairments

US$ million	Notes	2018	2017
Property, plant and equipment and intangible assets[1] – net	8/9	(1,452)	(378)
Investments	10	–	(101)
Advances and loans – non-current	11	(191)	(149)
Total impairments[2]		**(1,643)**	**(628)**

1 2017 includes impairment reversals of $243 million relating to Energy products as detailed below.
2 Impairments recognised during the year are allocated to Glencore's operating segments as follows: Metals and minerals $1,551 million (2017: $318 million) and Energy products $92 million (2017: $310million).

As part of a regular portfolio review, Glencore carries out an assessment of whether there is an indication 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 7% – 13.5% (2017: 7% – 12%). 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:

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 (Metals and minerals 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. Should the copper, cobalt and acid price assumptions fall by 10%, a further $390 million of impairment would be recognised. In addition, should operating costs rise by 5% as a result of further operational challenges and delays, a further $165 million of impairment would be 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 (Metals and minerals segment) 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 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. Should the copper and cobalt price assumptions fall by 10% and it be determined that super profits tax is due, a further impairment ranging between $479 million and $1,008 million would be 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 Metals and minerals segment.

Advances and loans – non-current

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 (Energy segment). The estimated recoverable amount of the advance is $23 million.

- $99 million impairment of a financial loan arrangement (Metals and minerals segment). The estimated recoverable amount of the loan is $155 million, see note 11.

6. Impairments continued

2017

Property, plant and equipment

- Following a modest downward revision, compared to prior year, of the long-term oil price assumption used to determine the remaining recoverable value of the E&P assets, offset by a combination of improved pricing differentials for the Chad crude oil blend (Doba) and further cost savings, an overall impairment charge of $278 million was recognised in the Chad oil operations (Energy products segment). The remaining recoverable value of the Chad oil operations was $1,221 million. The valuation remains sensitive to price and further deterioration or improvement in the pricing outlook may result in additional or reversal of impairment. The short- to long-term Brent crude oil price assumptions used in the valuation were $65 – $70 per barrel and should these decrease or increase by 10%, a further $535 million of impairment or reversal would be recognised.
- In January 2018, a farm-down agreement to divest a 50% interest in the Bolongo licence in Cameroon was signed. As a result, the remaining recoverable value of the retained 37.5% working interest was impaired by $81 million, to its recoverable value of $142 million. The valuation remains sensitive to price and further deterioration or improvement in the pricing outlook may result in additional or reversal of impairment. The short- to long-term Brent crude oil price assumptions used in the valuation were $65 – $70 per barrel and should these decrease or increase by 10%, a further $13 million of impairment or reversal would be recognised.
- The Alen field gas production in Equatorial Guinea is currently reinjected back into the field. A project to commercialise gas production has now progressed sufficiently, resulting in a partial reversal of impairments of $243 million in the Equatorial Guinea oil operations (Energy products segment) and an increase in the recoverable value to $394 million. The valuation remains sensitive to price and further deterioration or improvement in the pricing outlook may result in additional or reversal of impairment. The short- to long-term Brent crude oil price assumptions and the Henry Hub price assumption used in the valuation were $65 – $70 per barrel and $3 per million Btu respectively. Should these decrease or increase by 10%, a further $75 million of impairment or reversal would be recognised.
- As a result of certain life of mine optimisation and design updates, alongside the finalisation phase of Katanga's whole ore leach project and its successful commissioning in late 2017, it was determined that certain processing equipment and non-current inventories were no longer required and therefore the full carrying value of these assets were impaired by $76 million.
- The balance of property, plant and equipment related impairment charges (none of which were individually material) relates to specific assets where utilisation is no longer required or projects progressed due to changes in production and development plans. As a result, the full carrying value of these assets/projects was impaired, with $186 million recognised in our Metals and minerals segment.

Investments

- Following strategic reviews of a copper and gold exploration investment and a coal investment it was determined, for the time being, to cease further development and, as a result, the full carrying value of each investment, $56 million and $45 million respectively, was impaired.

Advances and loans – non-current

Glencore has reviewed the carrying value of its interest in subordinated debt and preference shares of a coal port following the insolvencies of certain third party shippers which impact the expected return on these investments and as a result, such loans were impaired by $149 million, to their estimated recoverable amount of $139 million.

7. Income taxes

Income taxes consist of the following:

US$ million	2018	2017
Current income tax expense	(2,290)	(1,367)
Adjustments in respect of prior year income tax	21	(18)
Deferred income tax credit/(expense)	264	(370)
Adjustments in respect of prior year deferred income tax	(58)	(4)
Total tax expense reported in the statement of income	**(2,063)**	**(1,759)**
Current income tax (expense)/credit recognised directly in other comprehensive income	–	–
Deferred income tax credit/(expense) recognised directly in other comprehensive income	8	(37)
Total tax credit/(expense) recognised directly in other comprehensive income	**8**	**(37)**

The effective Group tax rate is different from the statutory Swiss income tax rate applicable to the Company for the following reasons:

US$ million	2018	2017
Income before income taxes and attribution	4,679	6,921
Less: Share of income from associates and joint ventures	(1,043)	(1,158)
Parent Company's and subsidiaries' income before income tax and attribution	**3,636**	**5,763**
Income tax expense calculated at the Swiss income tax rate of 15% (2017: 15%)	(545)	(864)
Tax effects of:		
Different tax rates from the standard Swiss income tax rate	(227)	(333)
Tax exempt income of $275 million (2017: $125 million) from recurring items and $77 million (2017: $248 million) from non-recurring items	352	373
Items not tax deductible of $585 million (2017: $316 million) from recurring items and $187 million (2017: $279 million) from non-recurring items	(772)	(595)
Foreign exchange fluctuations	(130)	(30)
Changes in tax rates $Nil (2017: $5 million) from recurring items and $1 million (2017: $188 million) from non-recurring items	1	(193)
Utilisation and changes in recognition of tax losses and temporary differences	(357)	290
Tax losses not recognised	(340)	(412)
Adjustments in respect of prior years	(37)	(22)
Other	(8)	27
Income tax expense	**(2,063)**	**(1,759)**

The non-tax deductible items of $772 million (2017: $595 million) primarily relate to non-deductible exploration charges, financing costs, impairments and various other expenses. The impact of tax exempt income of $352 million (2017: $373 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.

The impact of change in tax rates of $193 million in 2017 arose primarily from significant corporate tax rate changes in the U.S., following the announced U.S. tax reform.

7. Income taxes continued

Deferred taxes

Deferred taxes as at 31 December 2018 and 2017 are attributable to the items in the table below:

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)**

US$ million	2017	Recognised in the statement of income	Recognised in other comprehensive income	Business combination and disposal of subsidiaries	Foreign currency exchange movements	Other	2016
Deferred tax assets[1]							
Tax losses carried forward	1,523	(131)	–	–	1	–	1,653
Other	210	50	(14)	2	18	47	107
Total	**1,733**	**(81)**	(14)	**2**	**19**	**47**	**1,760**
Deferred tax liabilities[1]							
Depreciation and amortisation	(6,855)	(265)	(5)	(914)	(142)	17	(5,546)
Mark-to-market valuations	(65)	20	(5)	–	(4)	–	(76)
Other	(104)	(48)	(13)	–	(5)	4	(42)
Total	**(7,024)**	**(293)**	**(23)**	**(914)**	**(151)**	**21**	**(5,664)**
Total Deferred tax – net	**(5,291)**	**(374)**	**(37)**	**(912)**	**(132)**	**68**	**(3,904)**

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 2018, $2,140 million (2017: $2,404 million) of deferred tax assets related to available loss carry forwards have been brought to account, of which $1,514 million (2017: $1,523 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:

- $520 million (2017: $470 million) in entities domiciled in the DRC (Katanga Mining Group),
- $452 million (2017: $478 million) in entities domiciled in Switzerland, and
- $403 million (2017: $425 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.

7. Income taxes continued

The recognised losses carried forward in Switzerland primarily relate to non-recurring events in 2012. 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.

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 $705 million (2017: $633 million) of unrecognised tax effected losses are available to be recognised.

During the year, 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, 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	**2018**	2017
1 year	1,418	110
2 years	36	955
3 years	35	66
Thereafter	2,791	2,140
Unlimited	3,591	3,303
Total	**7,871**	**6,574**

As at 31 December 2018, unremitted earnings of $55,029 million (2017: $60,014 million) have been retained by subsidiaries for reinvestment. No provision is made for income taxes.

8. Property, plant and equipment

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]		5,566	41,318	28,975	2,170	14,221	92,250
Restatement[2]	25	145	(8)	(356)	–	453	234
1 January 2018 (restated)		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	15	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)
Depreciation		354	3,059	1,539	4	1,287	6,243
Disposals		(10)	(968)	(184)	–	(66)	(1,228)
Impairments	6	3	415	861	–	173	1,452
Effect of foreign currency exchange movements		(3)	(134)	(91)	–	(8)	(236)
Reclassification from held for sale	15	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 their appropriate classification. Other than the restatement within the property, plant and equipment headings, there are no depreciation and amortisation changes.
2 Adjustment to previously reported purchase price allocation in relation to Volcan.

8. Property, plant and equipment continued

Plant and equipment includes expenditure for construction in progress of $3,268 million (2017: $4,454 million) and a net book value of $523 million (2017: $527 million) of lease assets under finance lease agreements. Mineral and petroleum rights include biological assets of $18 million (2017: $21 million). Depreciation expenses included in cost of goods sold are $6,224 million (2017: $5,272 million) and in selling and administrative expenses $19 million (2017: $19 million).

During 2018, $49 million (2017: $42 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% (2017: 3%).

As at 31 December 2018, except for the purposes of finance leases, no property, plant or equipment was pledged as security for borrowings (2017: $Nil).

US$ million	Notes	Freehold land and buildings	Plant and equipment (restated)[1]	Mineral and petroleum rights (restated)[1]	Exploration and evaluation	Deferred mining costs (restated)[1]	Total
Gross carrying amount:							
1 January 2017		4,808	54,622	20,332	2,343	2,362	84,467
Reclassification[1]		–	(14,040)	3,958	–	10,082	–
1 January 2017 (restated)		4,808	40,582	24,290	2,343	12,444	84,467
Business combination	25	523	204	3,972	–	–	4,699
Disposal of subsidiaries	25	(88)	(572)	(118)	–	(282)	(1,060)
Additions		76	2,602	346	–	576	3,600
Disposals		(31)	(384)	(10)	–	(24)	(449)
Effect of foreign currency exchange movements		26	334	281	–	34	675
Reclassification to held for sale	15	(43)	(633)	(126)	–	(11)	(813)
Other movements[2]		295	(815)	340	(173)	1,484	1,131
31 December 2017 (restated)		**5,566**	**41,318**	**28,975**	**2,170**	**14,221**	**92,250**
Accumulated depreciation and impairment:							
1 January 2017		1,061	22,392	5,219	1,138	831	30,641
Reclassification[1]		–	(6,178)	831	–	5,347	–
1 January 2017 (Restated)		1,061	16,214	6,050	1,138	6,178	30,641
Disposal of subsidiaries	25	(44)	(289)	(34)	–	(201)	(568)
Depreciation		266	2,955	991	–	1,079	5,291
Disposals		(6)	(237)	(9)	–	(9)	(261)
Impairments	6	23	261	(8)	477	(375)	378
Effect of foreign currency exchange movements		5	97	56	–	6	164
Reclassification to held for sale	15	(6)	(448)	(73)	–	(65)	(592)
Other movements[2]		64	178	(195)	(31)	135	151
31 December 2017 (restated)		**1,363**	**18,731**	**6,778**	**1,584**	**6,748**	**35,204**
Net book value 31 December 2017 (restated)		**4,203**	**22,587**	**22,197**	**586**	**7,473**	**57,046**

1 Certain balances in the prior year have been restated to reflect their appropriate classification. Other than the restatement within the property, plant and equipment headings, there are no depreciation and amortisation changes.
2 Includes additions to restoration and rehabilitation of $786 million, see note 22.

9. Intangible assets

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)
Amortisation expense[2]		–	37	35	10	82
Disposals		–	–	(8)	–	(8)
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 carrying amount 31 December 2018		**5,050**	**1,177**	**166**	**578**	**6,971**

1 Adjustment to previously reported purchase price allocation in relation to Volcan.
2 Recognised in cost of goods sold.

US$ million	Notes	Goodwill	Port allocation rights	Licences, trademarks and software	Customer relationships and other	**Total**
Cost:						
1 January 2017		13,293	1,408	385	258	15,344
Business combination	25	–	–	76	–	76
Disposal of subsidiaries	25	–	–	(2)	(2)	(4)
Additions		–	–	6	17	23
Disposals		–	–	(39)	(105)	(144)
Effect of foreign currency exchange movements		–	147	1	1	149
Reclassification to held for sale	15	–	–	(1)	–	(1)
Other movements		–	–	42	14	56
31 December 2017		**13,293**	**1,555**	**468**	**183**	**15,499**
Accumulated amortisation and impairment:						
1 January 2017		8,243	100	163	122	8,628
Disposal of subsidiaries	25	–	–	(1)	–	(1)
Amortisation expense[1]		–	36	53	18	107
Disposals		–	–	(19)	(51)	(70)
Effect of foreign currency exchange movements		–	13	1	–	14
Other movements		–	–	40	(6)	34
31 December 2017		**8,243**	**149**	**237**	**83**	**8,712**
Net carrying amount 31 December 2017		**5,050**	**1,406**	**231**	**100**	**6,787**

1 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	**2018**	2017
Metals and minerals marketing businesses	3,326	3,326
Coal marketing business	1,674	1,674
Metals warehousing business	50	50
Total	**5,050**	**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

Goodwill of $50 million (2017: $50 million) relates to the Access World logistics business CGU.

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

During the year, Glencore acquired a Brazilian fuel distribution business (see note 25) and as part of this acquisition, recognised intangible assets related to long-standing customer relationships. These intangible assets are being amortised on a straight-line basis over their estimated economic life of 5 years.

In December 2017, a royalty pertaining to the Antamina copper mine was disposed of, see note 4.

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 (2017: 15 times) is derived from observable market data for broadly comparable businesses; and
- Glencore believes that no reasonably possible change 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	2018	2017
1 January		13,998	13,086
Additions		19	8
Disposals		(1)	(12)
Share of income from associates and joint ventures		1,043	1,158
Share of other comprehensive income from associates and joint ventures		(124)	93
Fair value of retained interest in HG Storage and other	25	–	563
Disposal of equity accounted investments	25	–	(170)
Acquisition of equity accounted investments	25	109	–
Investment in Trevali		–	242
Investment in BaseCore Metals	5	–	150
Impairments	6	–	(101)
Dividends received		(1,139)	(1,081)
Reclassification from held for sale	15	8	–
Other movements		(4)	62
31 December		**13,909**	**13,998**
Of which:			
Investments in associates		7,707	7,643
Investments in joint ventures		6,202	6,355

As at 31 December 2018, the carrying value of our listed associates is $772 million (2017: $808 million), mainly comprising Century Aluminum and Trevali, which have a carrying value of $441 million (2017: $478 million) and $244 million (2017: $239 million) respectively. The fair value of our listed associates and joint ventures, using published price quotations (a Level 1 fair value measurement) is $463 million (2017: $1,340 million). As at 31 December 2018, $101 million (2017: $270 million) of the carrying value of Century Aluminum was secured under a loan facility, with proceeds received and recognised in current borrowings of $90 million (2017: $170 million).

HG Storage

In December 2017, Glencore disposed of a 51% interest in HG Storage, its petroleum products and logistics business, for $530 million (see note 25), subsequently accounting for its remaining share using the equity method.

Trevali

In August 2017, Glencore disposed of its African zinc operations (Perkoa and Rosh Pinah) for a combination of cash and a 25% ($222 million) interest in Trevali (see note 25).

BaseCore Metals

In December 2017, Glencore disposed of a portfolio of selected base metals' royalty assets for a combination of cash and a 50% ($150 million) interest in BaseCore Metals LP (see note 4), subsequently accounting for its share using the equity method.

10. Investments in associates, joint ventures and other investments continued

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**
2018							
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**
2018							
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.

10. Investments in associates, joint ventures and other investments continued

US$ million	Cerrejón	Antamina	Total material associates	Collahuasi	Glencore Agri	Total material joint ventures	Total material associates and joint ventures
2017							
Non-current assets	2,646	4,383	**7,029**	4,629	4,732	**9,361**	**16,390**
Current assets	880	1,174	**2,054**	1,363	5,839	**7,202**	**9,256**
Non-current liabilities	(612)	(1,098)	**(1,710)**	(1,084)	(855)	**(1,939)**	**(3,649)**
Current liabilities	(522)	(747)	**(1,269)**	(636)	(5,687)	**(6,323)**	**(7,592)**
The above assets and liabilities include the following:							
Cash and cash equivalents	148	56	**204**	166	146	**312**	**516**
Current financial liabilities[1]	(2)	(39)	**(41)**	(2)	(3,273)	**(3,275)**	**(3,316)**
Non-current financial liabilities[1]	–	(120)	**(120)**	(77)	(564)	**(641)**	**(761)**
Net assets 31 December 2017	**2,392**	**3,712**	**6,104**	**4,272**	**4,029**	**8,301**	**14,405**
Glencore's ownership interest	33.3%	33.8%		44.0%	50.0%		
Acquisition fair value and other adjustments	967	1,973	**2,940**	1,154	1,307	**2,461**	**5,401**
Carrying value	1,764	3,228	**4,992**	3,034	3,321	**6,355**	**11,347**

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 2017, 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
2017							
Revenue	2,371	3,550	**5,921**	2,960	25,222	**28,182**	**34,103**
Income for the year	388	1,300	**1,688**	841	198	**1,039**	**2,727**
Other comprehensive loss	–	–	**–**	(11)	(3)	**(14)**	**(14)**
Total comprehensive income	388	1,300	**1,688**	830	195	**1,025**	**2,713**
Glencore's share of dividends paid	147	493	**640**	356	–	**356**	**996**
The above profit for the year includes the following:							
Depreciation and amortisation	(533)	(766)	**(1,299)**	(574)	(248)	**(822)**	**(2,121)**
Interest income[1]	–	23	**23**	2	59	**61**	**84**
Interest expense[2]	(3)	(7)	**(10)**	(25)	(195)	**(220)**	**(230)**
Income tax expense	(240)	(712)	**(952)**	(389)	(50)	**(439)**	**(1,391)**

1 Includes foreign exchange gains and other income of $62 million.
2 Includes foreign exchange losses of $81 million.

Aggregate information of associates that are not individually material:

US$ million	**2018**	2017
The Group's share of income	93	121
The Group's share of other comprehensive (loss)/income	(116)	99
The Group's share of total comprehensive (loss)/income	(23)	220
Aggregate carrying value of the Group's interests	2,781	2,651

The amount of corporate guarantees (excluding Glencore Agri) in favour of associates and joint ventures as at 31 December 2018 was $419 million (2017: $476 million). Issued guarantees in favour of Glencore Agri amounted to $506 million as at 31 December 2018 (2017: $518 million), mainly relating to a $400 million Viterra bond maturing in 2020. No amounts have been claimed or provided as at 31 December 2018. Glencore's share of joint ventures' capital commitments amounts to $19 million (2017: $72 million).

10. Investments in associates, joint ventures and other investments continued

Other investments

US$ million	2018	2017
Fair value through other comprehensive income[1]		
United Company Rusal plc	440	–
OAO NK Russneft	744	–
Yancoal	233	–
OSJC Rosneft Oil (see below)	376	–
Other[2]	207	–
	2,000	**–**
Available for sale		
United Company Rusal plc	–	933
OAO NK Russneft	–	1,042
Yancoal	–	293
	–	**2,268**
Fair value through profit and loss		
OSJC Rosneft Oil cash-settled equity swaps (see below)	–	307
Century Aluminum Company cash-settled equity swaps	67	179
Other	–	204
	67	**690**
Total	**2,067**	**2,958**

1 Fair value through other comprehensive income includes net disposals of $17 million for the period.
2 Prior to adoption of IFRS 9, other investments in equity instruments were classified as fair value through profit and loss in accordance with IAS 39. On adoption of IFRS 9, the Group designated these investments that are not held for trading as at fair value through other comprehensive income. The balance comprises a number of investments, none of which are individually material.

Fair value through other comprehensive income

Following the adoption of IFRS 9, Glencore has designated all of its investments, other than investments in Associates, as at fair value with mark-to-market movements recognised in other comprehensive income. Although Glencore holds a 25% interest in OAO Russneft, it does not exercise significant influence over its financial and operating policy decisions.

Rosneft

In September 2018, the EUR300 million total return swap over 0.57% of Rosneft shares, accounted for at fair value through profit and loss, was converted into a 0.57% direct equity stake which, from the date of conversion, is accounted for at fair value through other comprehensive income (see note 5). From 1 January 2018 through to the date of conversion, an $84 million positive fair value adjustment was recognised in the consolidated statement of income and from the date of conversion to year-end, a $15 million negative fair value adjustment was recognised in other comprehensive income.

11. Advances and loans

US$ million	Notes	2018	2017
Financial assets at amortised cost			
Loans to associates		275	220
Other non-current receivables and loans		376	804
Rehabilitation trust fund		120	126
Financial assets at fair value through profit and loss			
Other non-current receivables and loans		155	–
Non-financial instruments			
Pension surpluses	23	41	68
Advances repayable with product[1]		1,387	1,542
Other non-current receivables		201	216
Total		**2,555**	**2,976**

1 Net of $1,142 million (2017 $1,654 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. In December 2017, loans extended to associates were impaired by $149 million, see note 6.

Other non-current receivables and loans

Other non-current receivables and loans comprise the following:

US$ million	2018	2017
Secured financing arrangements	360	786
Other	16	18
Total	**376**	**804**

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 loans to associates and other non-current receivables and loans 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 non-current financial assets classified at amortised cost is detailed below:

US$ million	Loans to associates	Other non-current receivables and loans	Total
Gross carrying value	302	954	1,256
De-recognition of financial asset at amortised cost (see below)	–	(255)	(255)
Gross carrying value 31 December 2018	302	699	**1,001**
Loss allowances			
31 December 2017	28	210	238
Additional loss allowance under IFRS 9[1]	–	10	10
1 January 2018	28	220	248
Released during the period	(1)	(9)	(10)
Charged during the period (see note 6)	–	191	191
De-recognition of financial asset at amortised cost (see below)	–	(100)	(100)
Reclassifications	–	21	21
31 December 2018	27	323	**350**
Net carrying value 31 December 2018	**275**	**376**	**651**

1 See note 1.

Financial assets at fair value through profit and loss

Other non-current receivables and loans

During the year, 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.

11. Advances and loans continued

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 7 years. The valuation is sensitive to timing of the underlying cash flows and could result in a $44 million reduction of fair value if the repayment schedule is extended by an additional 7 years.

Non-financial instruments

Advances repayable with product

US$ million	2018	2017
Counterparty		
Société Nationale d'Electricité (SNEL) power advances	340	307
Chad State National Oil Company	393	339
Société Nationale des Pétroles du Congo	65	123
Other	589	773
Total	**1,387**	**1,542**

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 2019. 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 $393 million (2017: $398 million) to the Chad State National Oil Company (SHT) to be repaid through future oil deliveries over seven years. As at 31 December 2018 the advance is net of $805 million (2017: $872 million) provided by a syndicate of banks, 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, $393 million (2017: $339 million) is receivable after 12 months and is presented within Other non-current receivables and loans and $Nil (2017: $59 million) is due within 12 months and included within Accounts receivable.

Société Nationale des Pétroles du Congo (SNPC)

Glencore has provided a net $183 million (2017: $212 million) to SNPC repayable through future oil deliveries over five years. As at 31 December 2018, the advance is net of $530 million (2017: $549 million) provided by the bank market, 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, $65 million (2017: $123 million) is due after 12 months and is presented within Other long-term receivables and loans and $118 million (2017: $89 million) is due within 12 months and included within Accounts receivable.

12. Inventories

Current inventory

Inventories of $20,564 million (2017: $24,084 million) comprise $11,449 million (2017: $15,344 million) of inventories carried at fair value less costs of disposal and $9,115 million (2017: $8,740 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 year was $196,509 million (2017: $185,371 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 retains the principal risks and rewards of ownership. The proceeds received are recognised as current borrowings (see note 20). As at 31 December 2018, the total amount of inventory secured under such facilities was $562 million (2017: $435 million). The proceeds received and recognised as current borrowings were $366 million (2017: $221 million) and $139 million (2017: $80 million) as non-current borrowings.

Non-current inventory

$353 million (2017: $369 million) of inventories valued at the 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	2018	2017
Financial assets at amortised cost			
Trade receivables		4,163	4,623
Trade advances		321	19
Margin calls paid[1]		1,388	3,380
Associated companies		546	517
Other receivables[2]		422	621
Trade receivables containing provisional pricing features		–	7,292
Financial assets at fair value through profit and loss			
Trade receivables containing provisional pricing features	28	6,471	–
Exchangeable loan (see below)		1,044	–
Non-financial instruments			
Advances repayable with product[3]		1,535	2,091
Income tax receivable		203	178
Other tax and related receivables		1,694	1,638
Total		**17,787**	**20,359**

1 Includes $1,041 million (2017: $717 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 $104 million (2017: $260 million).
3 Includes advances, net of $1,136 million (2017: $876 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 19 days (2017: 20 days). The carrying value of trade receivables approximates fair value.

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 2018	**Not past due**	**<30**	**31 – 60**	**61 – 90**	**>90**	**Total**
Gross carrying amount	3,618	329	115	33	83	4,178
Expected credit loss rate	0.26%	0.52%	0.77%	1.03%	2.19%	
Lifetime expected credit loss	(10)	(2)	(1)	–	(2)	(15)
Total	**3,608**	**327**	**114**	**33**	**81**	**4,163**

The movement in allowance for doubtful accounts is detailed below:

US$ million	2018	2017
31 December 2017	284	295
Additional loss allowance under IFRS 9[1]	20	–
1 January 2018	304	295
Released during the year	(54)	(143)
Charged during the year	99	153
Utilised during the year	(11)	(21)
Reclassifications	(21)	–
31 December	**317**	**284**

1 See note 1.

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 2018, the total amount of trade receivables secured was $1,943 million (2017: $748 million) and proceeds received and classified as current borrowings amounted to $1,539 million (2017: $669 million) and $126 million (2017: $Nil) 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 loan is exchangeable into the 75% stake in Chevron SA and the 100% stake in Chevron Botswana acquired by OTS following receipt of the necessary regulatory approvals which are expected in H1 2019.

The current expectation is that this loan will be settled through exchanging the shares in the underlying businesses. Notwithstanding this expectation, until the conditions precedent for this transaction have been satisfied, Glencore's contractual right is to be repaid in cash and as such, this meets the definition of a financial asset under IFRS 9. As the contractual cash flows do not represent "solely payments of principal and interest" under IFRS 9, the funds advanced have been accounted for as an exchangeable loan carried at fair value through profit and loss.

13. Accounts receivable continued

The exchangeable loan is a Level 2 fair value measurement based on the observable transaction price with reference to the underlying value of the respective stakes in Chevron SA and Chevron Botswana. Given the necessary regulatory approvals for the completion of the transaction are expected during H1 2019, the fair value is not expected to change materially in the next financial year.

14. Cash and cash equivalents

US$ million	**2018**	2017
Bank and cash on hand	1,860	1,751
Deposits and treasury bills	186	373
Total	**2,046**	**2,124**

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 2018, $63 million (2017: $35 million), including $18 million (2017: $Nil) 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

On 29 December 2017, Glencore completed the sale of a 51% interest in HG Storage International Ltd (HG Storage), an entity comprising the majority of Glencore's petroleum products storage and logistics businesses to HNA Innovation Finance Group Co Ltd (HNA) (see note 25). Glencore and HNA also entered into a second agreement pursuant to which three of the original transaction assets located in the USA (HG Storage U.S.) were to be sold to HG Storage in H2 2018 for proceeds of $196 million, subject to receipt of customary regulatory approvals. The long stop date related to the HG Storage US proposed sale lapsed and in September 2018, both parties agreed to terminate the sale. As a result, the net assets (assets of $208 million and liabilities of $50 million) previously classified as held for sale in 2017 were reclassified to the respective line items in the statement of financial position at depreciated cost and a one-time depreciation charge of $24 million was recognised to reflect the additional depreciation that would have been charged if the related assets had not previously been classified as held for sale.

In 2017, Glencore entered into an agreement to sell Tahmoor, a coal mining operation in New South Wales, as well as its manganese plants located in France and Norway. Both transactions completed in H1 2018, see note 25.

US$ million	HG Storage U.S.	Other	**As at 31.12.2017**
Non-current assets			
Property, plant and equipment	141	96	237
Intangible assets	1	–	1
Investments in associates	8	–	8
Deferred tax assets	–	33	33
	150	129	279
Current assets			
Inventories	4	49	53
Accounts receivable	39	27	66
Other financial assets	–	7	7
Prepaid expenses	3	–	3
Cash and cash equivalents	12	12	24
	58	95	153
Total assets held for sale	**208**	**224**	**432**
Non-current liabilities			
Deferred tax liabilities	(41)	(5)	(46)
Provisions	–	(38)	(38)
	(41)	(43)	(84)
Current liabilities			
Accounts payable	(8)	(62)	(70)
Income tax payable	(1)	(4)	(5)
	(9)	(66)	(75)
Total liabilities held for sale	**(50)**	**(109)**	**(159)**
Total net assets held for sale	**158**	**115**	**273**

16. Share capital and reserves

	Number of shares (thousand)	Share capital (US$ million)	Share premium (US$ million)
Authorised:			
31 December 2018 and 2017 Ordinary shares with a par value of $0.01 each	50,000,000		
Issued and fully paid up:			
1 January 2017 and 31 December 2017 – Ordinary shares	**14,586,200**	**146**	**51,340**
Distributions paid (see note 18)	–	–	(2,836)
31 December 2018 – Ordinary shares	**14,586,200**	**146**	**48,504**

	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 2017	191,459	(948)	166,930	(752)	**358,389**	**(1,700)**
Own shares disposed during the year	–	–	(37,080)	125	**(37,080)**	**125**
31 December 2017	**191,459**	**(948)**	**129,850**	**(627)**	**321,309**	**(1,575)**
1 January 2018	191,459	(948)	129,850	(627)	**321,309**	**(1,575)**
Own shares purchased during the period	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)**

Own shares

Own shares comprise shares acquired under the Company's share buy-back programme 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 Trust are expensed in the period in which they are incurred.

In 2018, Glencore announced a $2 billion share buy-back programme, effected in accordance with the term of the authority granted by shareholders at the 2018 Annual General Meeting. As at 31 December 2018, $1,684 million of treasury shares and $321 million of trust shares have been purchased and, in aggregate, 753,702,088 shares (2017: 321,309,725 shares), equivalent to 5.17% (2017: 2.2%) of the issued share capital were held at a cost of $3,318 million (2017: $1,575 million) and market value of $2,798 million (2017: $1,694 million).

Other reserves

US$ million	Translation adjustment	Cash flow hedge reserve	Net unrealised gain/(loss)	Net ownership changes in subsidiaries	Total
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)**
1 January 2017	(2,553)	126	377	(752)	(2,802)
Exchange gain on translation of foreign operations	503	–	–	–	503
Loss on cash flow hedges, net of tax	–	(165)	–	–	(165)
Gain on available for sale financial instruments	–	–	500	–	500
Change in ownership interest in subsidiaries	–	–	–	(318)	(318)
Items recycled to the statement of income upon disposal of subsidiaries (see note 25)	(271)	–	–	128	(143)
31 December 2017	**(2,321)**	**(39)**	**877**	**(942)**	**(2,425)**

17. Earnings per share

US$ million	2018	2017
Income attributable to equity holders of the Parent	3,408	5,777
Weighted average number of shares for the purposes of basic earnings per share (thousand)	14,151,826	14,256,020
Effect of dilution:		
Equity-settled share-based payments (thousand)	101,701	167,024
Weighted average number of shares for the purposes of diluted earnings per share (thousand)	14,253,527	14,423,044
Basic earnings per share (US$)	**0.24**	**0.41**
Diluted earnings per share (US$)	**0.24**	**0.40**

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 4/2018 as issued by the South African Institute of Chartered Accountants (SAICA), is reconciled using the following data:

US$ million	2018	2017
Profit attributable to equity holders of the Parent for basic earnings per share	3,408	5,777
Net loss/(gain) on disposals[1]	139	(1,309)
Net loss/(gain) on disposal – non-controlling interest	–	7
Net loss/(gain) on disposals – tax	(38)	107
Impairments[2]	1,452	479
Impairments – non-controlling interest	(218)	(42)
Impairments – tax	(181)	(104)
Headline and diluted earnings for the year	**4,562**	**4,915**
Headline earnings per share (US$)	**0.32**	**0.34**
Diluted headline earnings per share (US$)	**0.32**	**0.34**

1 See note 4.
2 Comprises impairments of property, plant and equipment, intangible assets and investments (see note 6).

18. Distributions

US$ million	2018	2017
Paid during the year:		
First tranche distribution – $0.10 per ordinary share (2017: $0.035)	1,427	499
Second tranche distribution – $0.10 per ordinary share (2017: $0.035)	1,409	499
Total	**2,836**	**998**

The proposed distribution in respect of the year ended 31 December 2018 of $0.20 per ordinary share amounting to $2.8 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 2019 and September 2019.

19. Share-based payments

US$ million	Number of awards granted (thousand)	Fair value at grant date (US$ million)	**Number of awards outstanding 2018 (thousand)**	Number of awards outstanding 2017 (thousand)	**Expense recognised 2018 (US$ million)**	Expense recognised 2017 (US$ million)
Deferred Bonus Plan – Bonus share award						
2015 Series	14,315	36	–	3,909	–	7
2016 Series	14,851	35	–	14,023	–	–
2017 Series	16,506	64	9,088	16,506	–	64
2018 Series	12,891	65	12,891	–	65	–
	58,563		**21,979**	**34,438**	**65**	**71**
Performance Share Plan						
2014 Series	20,908	115	826	5,302	1	9
2015 Series	77,816	107	33,026	54,250	11	30
2016 Series	24,156	84	15,190	23,439	27	47
2017 Series	19,421	93	18,904	6,280	52	–
2018 Series	7,758	28	7,758	–	2	–
	150,059		**75,704**	**89,271**	**93**	**86**
Total	**208,622**		**97,683**	**123,709**	**158**	**157**

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 30 June, 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 2018	124,603	4.00
Lapsed	(9,626)	6.58
Exercised[1]	(8,339)	2.62
31 December 2018	**106,638**	
1 January 2017	141,272	3.89
Lapsed	(8,756)	4.45
Exercised[1]	(7,913)	1.60
31 December 2017	**124,603**	

1 The weighted average share price at date of exercise of the share based awards was GBP3.91 (2017: GBP3.45).

As at 31 December 2018, a total of 106,637,103 options (2017: 124,602,481 options) were outstanding and exercisable, having a range of exercise prices from GBP1.095 to GBP4.80 (2017: GBP1.1 to GBP6.87) and a weighted average exercise price of GBP3.91 (2017: GBP4.00). These outstanding awards have expiry dates ranging from March 2019 to February 2022 (2017: March 2018 to February 2022) and a weighted average contractual life of 2.19 years (2017: 2.97 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	2018	2017
Non-current borrowings			
Capital market notes		19,804	22,628
Committed syndicated revolving credit facilities		5,623	994
Finance lease obligations	30	277	328
Other bank loans		720	582
Total non-current borrowings		**26,424**	**24,532**
Current borrowings			
Secured inventory/receivables/other facilities	10/12/13	1,995	1,060
U.S. commercial paper		596	1,230
Capital market notes		2,775	3,550
Finance lease obligations	30	110	64
Other bank loans[1]		3,094	3,498
Total current borrowings		**8,570**	**9,402**
Total borrowings		**34,994**	**33,934**

1 Comprises various uncommitted bilateral bank credit facilities and other financings.

Reconciliation of cash flow to movement in borrowings

US$ million	2018	2017
Cash related movements in borrowings[1]		
Proceeds from issuance of capital market notes	185	2,026
Proceeds from issuance of non-dilutive convertible bond	576	–
Repayment of capital market notes	(3,650)	(4,539)
Proceeds from revolving credit facilities	4,624	501
Proceeds from other non-current borrowings	15	19
Repayment of finance lease obligations	(72)	(105)
(Repayment of)/proceeds from U.S. commercial papers	(634)	1,180
Proceeds from/(repayment of) current borrowings	439	(1,266)
	1,483	(2,184)
Non-cash related movements in borrowings		
Borrowings acquired/(disposed) in business combinations	263	761
Reclassification of the derivative component of the non-dilutive convertible bond	(95)	–
Foreign exchange movements	(557)	1,840
Fair value hedge movements	(143)	192
Change in finance lease obligations	90	73
Other non-cash movements	19	34
	(423)	2,900
Increase in borrowings for the year	**1,060**	**716**
Total borrowings – opening	33,934	33,218
Total borrowings – closing	**34,994**	**33,934**

1 See consolidated statement of cash flows.

20. Borrowings continued

Capital Market Notes

US$ million	Maturity	2018	2017
AUD 500 million 4.50% coupon bonds	Sep 2019	–	398
Euro 750 million 3.375% coupon bonds	Sep 2020	865	931
Euro 1,250 million 1.25% coupon bonds	Mar 2021	1,413	1,491
Euro 600 million 2.75% coupon bonds	Apr 2021	688	730
Euro 700 million 1.625% coupon bonds	Jan 2022	814	857
Euro 1,000 million 1.875% coupon bonds	Sep 2023	1,140	1,195
Euro 400 million 3.70% coupon bonds	Oct 2023	492	525
Euro 750 million 1.75% coupon bonds	Mar 2025	858	906
Euro 500 million 3.75% coupon bonds	Apr 2026	618	662
Eurobonds		**6,888**	**7,297**
JPY 10 billion 1.075% coupon bonds	May 2022	91	89
GBP 650 million 6.50% coupon bonds	Feb 2019	–	876
GBP 500 million 7.375% coupon bonds	May 2020	669	731
GBP 500 million 6.00% coupon bonds	Apr 2022	640	679
Sterling bonds		**1,309**	**2,286**
CHF 175 million 2.125% coupon bonds	Dec 2019	–	184
CHF 500 million 1.25% coupon bonds	Dec 2020	513	522
CHF 250 million 2.25% coupon bonds	May 2021	249	251
CHF 175 million 1.25% coupon bonds	Oct 2024	182	–
Swiss Franc bonds		**944**	**957**
US$ 500 million LIBOR plus 1.36% coupon bonds	Jan 2019	–	279
US$ 1,500 million 2.50% coupon bonds	Jan 2019	–	690
US$ 1,000 million 3.125% coupon bonds	Apr 2019	–	447
US$ 1,000 million 2.875% coupon bonds	Apr 2020	412	414
US$ 1,000 million 4.95% coupon bonds	Nov 2021	1,034	1,045
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	1,008	1,011
US$ 500 million 3.00% coupon bonds	Oct 2022	497	496
US$ 1,500 million 4.125% coupon bonds	May 2023	1,495	1,520
US$ 1,000 million 4.625% coupon bonds	Apr 2024	1,004	1,024
US$ 625 million non-dilutive convertible bonds	Mar 2025	494	–
US$ 500 million 4.00% coupon bonds	Apr 2025	475	483
US$ 1,000 million 4.00% coupon bonds	Mar 2027	964	986
US$ 50 million 4.00% coupon bonds	Mar 2027	50	50
US$ 500 million 3.875% coupon bonds	Oct 2027	479	491
US$ 250 million 6.20% coupon bonds	Jun 2035	272	273
US$ 500 million 6.90% coupon bonds	Nov 2037	591	594
US$ 500 million 6.00% coupon bonds	Nov 2041	539	540
US$ 500 million 5.55% coupon bonds	Oct 2042	473	473
US$ bonds		**10,572**	**11,601**
Total non-current bonds		**19,804**	**22,628**

1 Assumed in the Volcan acquisition, see note 25.

20. Borrowings continued

Capital Market Notes

US$ million	Maturity	2018	2017
AUD 500 million 4.50% coupon bonds	Sep 2019	355	–
GBP 650 million 6.50% coupon bonds	Feb 2019	829	–
Euro 1,250 million 4.625% coupon bonds	Apr 2018	–	1,480
Euro 1,000 million 2.625% coupon bonds	Nov 2018	–	1,202
CHF 175 million 2.125% coupon bonds	Dec 2019	179	–
CHF 450 million 2.625% coupon bonds	Dec 2018	–	461
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$ 250 million LIBOR plus 1.06% coupon bonds	Apr 2018	–	48
US$ 500 million 2.125% coupon bonds	Apr 2018	–	159
US$ 200 million LIBOR plus 1.20% coupon bonds	May 2018	–	200
Total current bonds		**2,775**	**3,550**

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

2017 Bond activities

- In March, issued a 10-year $1,000 million, 4% coupon bond
- In August, issued a 10-year $50 million, 4% coupon bond as a private placement
- In October, issued a 5-year $500 million, 3% coupon bond
- In October, issued a 10-year $500 million, 3.875% coupon bond

Committed syndicated revolving credit facilities

In March 2018 (effective May 2018), Glencore signed new one-year revolving credit facilities of $9,085 million, refinancing the $7,335 million one-year revolving facilities signed in May 2017. Funds drawn under the facilities bear interest at US$LIBOR plus a margin of 40 basis points. Glencore also voluntarily reduced the medium term facility size from $5,425 million to $5,115 million.

As at 31 December 2018, the active facilities comprise:

- A $9,085 million one-year revolving credit facility with a 12-month borrower's term-out option (to May 2020) and a 12 month extension option; and
- A $5,115 million medium-term revolving credit facility (to May 2022).

Secured facilities

US$ million	Maturity	Borrowing base	Interest	2018	2017
Syndicated committed metals inventory/receivables facilities[1]	Feb 2021	331	5%	328	80
Syndicated uncommitted metals inventory/receivables facilities	Jan[2]/Jul/Aug 2019	1,724	US$ LIBOR + 0.95%	1,317	590
Syndicated uncommitted oil receivables facilities	Oct 2019	525	US$ LIBOR + 65 bps	525	300
Other secured facilities	Dec 2019	170	US$ LIBOR+ 65 bps	90	170
Total		**2,750**		**2,260**	**1,140**
Current		2,483		1,995	1,060
Non-current		267		265	80

1 Comprises various facilities. The maturity and interest detail represent the weighted average of the various debt balances outstanding at year end.
2 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 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 combinations	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
1 January 2017		617	1,787	2,404
Additions		–	675	675
Accretion in the year		–	164	164
Utilised in the year		(64)	(240)	(304)
Effect of foreign currency exchange difference		32	–	32
31 December 2017		**585**	**2,386**	**2,971**
Current		59	351	410
Non-current		526	2,035	2,561

Unfavourable contracts

In several business combinations, Glencore recognised liabilities related to various assumed contractual agreements to deliver tonnes of coal over periods ending between 2019 and 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 implied forward price curves at the time of the acquisitions.

Prepayments

In November 2017, Glencore entered into a silver supply arrangement in exchange for an upfront advance payment of $675 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. The arrangement has been accounted for as an executory contract whereby the advance payment has been recorded as deferred revenue. The revenue from the advance payment is being recognised as the silver is delivered consistent with the implied forward price curve at the time of the transaction. An accretion expense, representing the time value of the upfront deposit on the deferred revenue balance, is also being recognised.

In 2015 and 2016, Glencore entered into various 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 exchange for an upfront prepayment and, for Antamina and Antapaccay, 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. The arrangements have been accounted for as executory contracts whereby the advance payments have been recorded as deferred revenue. The revenue from the advance payments is being recognised as the gold and/or silver is delivered at an amount consistent with the implied forward price curve at the time of the transaction along with ongoing cash payments, if any. An accretion expense, representing the time value of the upfront deposit on the deferred revenue balance, is also being recognised.

22. Provisions

US$ million	Post-retirement employee benefits	Other employee entitlements	Rehabilitation costs	Onerous contracts	Other	**Total**
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[1]	–	26	82	31	134	273
Disposals of subsidiaries[1]	–	(1)	(41)	–	(31)	(73)
Additions	95	31	391	75	92	684
Effect of foreign currency exchange difference	(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
1 January 2017	860	218	3,194	1,305	812	6,389
Utilised	(96)	(39)	(191)	–	(79)	(405)
Released	–	(1)	–	(325)	(27)	(353)
Accretion	–	–	260	1	–	261
Assumed in business combination[1]	–	–	162	–	38	200
Disposals of subsidiaries[1]	–	(2)	(45)	–	(10)	(57)
Reclassification to held for sale[2]	–	(1)	(37)	–	–	(38)
Additions	35	118	786	111	424	1,474
Effect of foreign currency exchange difference	48	1	51	–	–	100
31 December 2017	**847**	**294**	**4,180**	**1,092**	**1,158**	**7,571**
Current	–	56	90	176	155	477
Non-current	847	238	4,090	916	1,003	7,094

1 See note 25.
2 See note 15.

Post-retirement employee benefits
The provision for post-retirement employee benefits includes pension plan liabilities of $393 million (2017: $392 million) and post-retirement medical plan liabilities of $405 million (2017: $455 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 (2017: 21 years). As at 31 December 2018, 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 (2.0%) (2017: 2.0%), South African rand (4.0%) (2017: 4.0%), Australian dollar (2.8%) (2017: 3.0%), Canadian dollar (2.3%) (2017: 2.5%), and Chilean peso (3.0%) (2017: 3.0%). The effect of decreasing the discount rates used by 0.5% would result in an increase in the overall rehabilitation provision by $368 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 $6 million. The resulting net impact in the statement of income would be a decrease of $9 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, none of which are individually material. 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

In December 2018, HMRC issued formal transfer pricing, permanent establishment and diverted profits tax assessments for the 2008 –2017 tax years, amounting to $680 million. The Group intends to appeal and vigorously contest these assessments, following, over the years, various legal opinions received and detailed analysis conducted, supporting its positions and policies applied, and therefore the Group has not provided for the amount assessed. 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 2018 and 2017, were $5,063 million and $4,656 million, respectively. Personnel costs related to consolidated industrial subsidiaries of $3,887 million (2017: $3,593 million) are included in cost of goods sold. Other personnel costs, including the 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 $140 million in 2018 (2017: $133 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 69% of the present value of obligations accrued to date 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 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 actual return on plan assets in respect of defined benefit pension plans amounted to a loss of $222 million (2017: gain of $426 million), comprising interest income and the re-measurement of plan assets.

During the next financial year, the Group expects to make a contribution of $83 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 $138 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	Defined benefit pension plans: Fair value of plan assets	Defined benefit pension plans: Net liability for defined benefit pension plans
1 January 2017		**432**	2,946	(2,518)	**428**
Current service cost		8	55	–	55
Past service cost – plan amendments		–	(8)	–	(8)
Settlement relating to mine closure		–	(79)	75	(4)
Interest expense/(income)		17	98	(86)	12
Total expense recognised in consolidated statement of income		**25**	66	(11)	**55**
Gain on plan assets, excluding amounts included in interest expense – net		–	–	(169)	(169)
Gain from change in demographic assumptions		–	(11)	–	(11)
(Gain)/loss from change in financial assumptions		(15)	87	–	87
Loss/(gain) from actuarial experience		3	(8)	–	(8)
Actuarial (gains)/losses recognised in consolidated statement of comprehensive income		**(12)**	68	(169)	**(101)**
Employer contributions		–	–	(76)	(76)
Employee contributions		–	1	(1)	–
Benefits paid directly by the Company		(20)	(9)	9	–
Benefits paid from plan assets		–	(171)	171	–
Net cash (outflow)/inflow		**(20)**	(179)	103	**(76)**
Exchange differences		30	189	(171)	18
31 December 2017		**455**	3,090	(2,766)	**324**
Of which:					
Pension surpluses	11	–			(68)
Pension deficits	22	455			392

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 2018 and 2017. The defined benefit obligation of any of the Group's defined benefit plans outside of Canada as at 31 December 2018 does not exceed $206 million (2017: $230 million).

23. Personnel costs and employee benefits continued

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**

2017 US$ million	Canada	Other	**Total**
Post-retirement medical plans			
Present value of defined benefit obligation	425	30	**455**
of which: amounts owing to active members	132	4	136
of which: amounts owing to pensioners	293	26	319
Defined benefit pension plans			
Present value of defined benefit obligation	2,217	873	**3,090**
of which: amounts owing to active members	586	389	975
of which: amounts owing to non-active members	40	214	254
of which: amounts owing to pensioners	1,591	270	1,861
Fair value of plan assets	(2,167)	(599)	**(2,766)**
Net defined benefit liability at 31 December 2017	**50**	**274**	**324**
Of which:			
Pension surpluses	(68)	–	(68)
Pension deficits	118	274	392
Weighted average duration of defined benefit obligation – years	12	17	**13**

Estimated future benefit payments of the Canadian plans, which reflect expected future service but exclude plan expenses, up until 2028 are as follows:

US$ million	Post-retirement medical plans	Defined benefit pension plans	**Total**
2019	18	105	123
2020	19	168	187
2021	19	120	139
2022	20	102	122
2023	20	101	121
2024-2028	105	504	609
Total	**201**	**1,100**	**1,301**

The plan assets consist of the following:

US$ million	**2018**	2017
Cash and short-term investments	38	31
Fixed income	1,060	1,343
Equities	839	1,189
Other	362	203
Total	**2,299**	**2,766**

All investments have been fair valued based on quoted market prices with the exception of securities of $2 million (2017: $23 million) included in "Other".

23. Personnel costs and employee benefits continued

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	
	2018	2017	**2018**	2017
Discount rate	4.0%	3.8%	3.5%	3.2%
Future salary increases	–	–	2.6%	2.7%
Future pension increases	–	–	0.3%	0.3%
Ultimate medical cost trend rate	4.2%	4.3%	–	–

Mortality assumptions are based on the latest available standard mortality tables for the individual countries concerned. As at 31 December 2018, these tables imply expected future life expectancy, for employees aged 65, 16 to 24 years for males (2017: 16 to 24) and 20 to 25 years for females (2017: 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 2018 is set out below, assuming that all other assumptions are held constant and the effect of interrelationships is excluded.

	Increase/(decrease) in pension obligation		
US$ million	Post-retirement medical plans	Defined benefit pension plans	**Total**
Discount rate			
Increase by 50 basis points	(28)	(151)	**(179)**
Decrease by 50 basis points	32	180	**212**
Rate of future salary increase			
Increase by 100 basis points	–	34	**34**
Decrease by 100 basis points	–	(32)	**(32)**
Rate of future pension benefit increase			
Increase by 100 basis points	–	34	**34**
Decrease by 100 basis points	–	(26)	**(26)**
Medical cost trend rate			
Increase by 100 basis points	59	–	**59**
Decrease by 100 basis points	(47)	–	**(47)**
Life expectancy			
Increase in longevity by one year	15	59	**74**

24. Accounts payable

US$ million	Notes	**2018**	2017
Financial liabilities at amortised cost			
Trade payables		7,569	8,642
Margin calls received[1]		753	443
Associated companies		824	1,052
Other payables and accrued liabilities		1,710	2,015
Trade payables containing provisional pricing features		–	16,022
Financial liabilities at fair value through profit and loss			
Trade payables containing provisional pricing features	28	15,073	–
Non-financial instruments			
Advances settled in product		251	451
Other tax and related payables		304	201
Total		**26,484**	**28,826**

1 Includes $139 million (2017: $325 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.

25. Acquisition and disposal of subsidiaries

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. Due to the proximity of the transaction to the reporting date, 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 acquired mineral rights, plant and equipment, deferred taxes and provisions.

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	HVO	Hail Creek	Ale	Other	**Total**
Non-current assets					
Property, plant and equipment	1,402	1,701	46	8	3,157
Intangible assets	–	–	426	1	427
Investments in associates and joint ventures	32	77	–	–	109
Advances and loans[1]	14	5	54	–	73
	1,448	1,783	526	9	**3,766**
Current assets					
Inventories	50	68	90	–	208
Accounts receivable[1]	69	114	100	2	285
Cash and cash equivalents	11	23	90	1	125
	130	205	280	3	**618**
Non-controlling interest	–	–	(41)	–	**(41)**
Non-current liabilities					
Borrowing	–	–	(189)	–	(189)
Deferred income	(200)	–	–	–	(200)
Deferred tax liabilities	–	–	(140)	(2)	(142)
Provisions	(66)	(69)	(41)	–	(176)
	(266)	(69)	(370)	(2)	**(707)**
Current liabilities					
Borrowing	–	–	(74)	–	(74)
Accounts payable	(52)	(166)	(98)	–	(316)
Deferred income	(20)	–	–	–	(20)
Provisions	(9)	(2)	–	–	(11)
	(81)	(168)	(172)	–	**(421)**
Total fair value of net assets acquired	**1,231**	**1,751**	**223**	**10**	**3,215**
Less: cash and cash equivalents acquired	(11)	(23)	(90)	(1)	(125)
Less: deferred consideration	(82)	–	(82)	(4)	(168)
Net cash used in acquisition of subsidiaries	**1,138**	**1,728**	**51**	**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.

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.

If the acquisition had taken place effective 1 January 2018, the operation would have contributed additional revenue of $192 million and additional attributable income of $29 million. From the date of acquisition, the operation contributed $611 million of revenue and $118 million of attributable income.

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.

25. Acquisition and disposal of subsidiaries continued

If the acquisition had taken place effective 1 January 2018, the operation would have contributed additional revenue of $639 million and additional attributable income of $149 million. From the date of acquisition, the operation contributed $345 million of revenue and $95 million of attributable income.

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.

If the acquisition had taken place effective 1 January 2018, the operation would have contributed additional revenue of $2,439 million and additional attributable loss of $15 million. From the date of acquisition, the operation contributed $969 million of revenue and $2 million of attributable loss.

2017 Acquisitions

In 2017, Glencore acquired controlling interests in Volcan Compania Minera S.A.A. ("Volcan") and other businesses, none of which are individually material. 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	Volcan provisional fair values as reported at 31 December 2017	Fair value adjustments to the provisional allocation in 2018	Total Volcan fair values	Other	Total
Non-current assets					
Property, plant and equipment	4,656	234	4,890	43	4,933
Intangible assets	76	(47)	29	–	29
Other investments	52	–	52	–	52
Deferred tax assets	–	–	–	2	2
Advances and loans[1]	32	(27)	5	1	6
	4,816	160	4,976	46	**5,022**
Current assets					
Inventories	80	3	83	2	85
Accounts receivable[1]	206	58	264	5	269
Other financial assets	30	–	30	–	30
Cash and cash equivalents	81	–	81	3	84
	397	61	458	10	**468**
Non-controlling interest	(1,733)	–	(1,733)	–	**(1,733)**
Non-current liabilities					
Borrowings	(629)	–	(629)	–	(629)
Deferred tax liabilities	(986)	(123)	(1,109)	–	(1,109)
Provisions	(174)	(86)	(260)	(26)	(286)
	(1,789)	(209)	(1,998)	(26)	**(2,024)**
Current liabilities					
Borrowings	(175)	–	(175)	–	(175)
Accounts payable	(386)	(12)	(398)	(6)	(404)
Other financial liabilities	(37)	–	(37)	–	(37)
	(598)	(12)	(610)	(6)	**(616)**
Total fair value of net assets acquired	**1,093**	**–**	**1,093**	**24**	**1,117**
Less: cash and cash equivalents acquired	(81)	–	(81)	(3)	(84)
Less: amounts previously recognised as other investments[2]	(359)	–	(359)	–	(359)
Net cash used in acquisition of subsidiaries	**653**	**–**	**653**	**21**	**674**

1 There is no material difference between the gross contractual amounts for loans and advances and accounts receivable and their fair value.
2 See note 10.

Volcan

On 9 November 2017, Glencore completed a tender offer, acquiring an additional 42.3% of the Class A common (voting) shares in Volcan, a Peruvian zinc mining business listed on the Lima stock exchange, for a consideration of $734 million, thereby increasing its voting shares interest from 20.7% to 63.0%. Glencore's total economic interest (including the class B common (non-voting) shares and excluding treasury shares) increased from 7.7% to 23.3%. 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 Volcan 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 fixed asset classes, deferred taxes, rehabilitation and other provisions. The acquisition accounting for Volcan has now been finalised.

25. Acquisition and disposal of subsidiaries continued

If the acquisition had taken place effective 1 January 2017, the operation would have contributed additional revenue of $696 million and additional attributable income of $93 million for the year ended 31 December 2017. From the date of acquisition, the operation contributed $160 million of revenue and $Nil of attributable income for the year ended 31 December 2017.

2018 Disposals

In 2018, Glencore disposed of its controlling interest in Glencore Manganese France SAS, Glencore Manganese Norway AS and Tahmoor Coal Pty Ltd, operations that were classified as held for sale as at 31 December 2017 (together "Operations held for sale as at 31.12.2017").

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	Operations held for sale as at 31.12.2017	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**

25. Acquisition and disposal of subsidiaries continued

2017 Disposals

In 2017, Glencore disposed of its controlling interest in the Rosh Pinah mine in Namibia ("Rosh Pinah") and Perkoa mine in Burkina Faso ("Perkoa"), together referred to as "Zinc Africa" and 51% of the large majority of its petroleum storage and logistics businesses ("HG Storage").

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	Zinc Africa	HG Storage	Others	Total
Non-current assets				
Property, plant and equipment	266	169	57	492
Intangible assets	3	–	–	3
Investments in associates	–	170	–	170
Advances and loans	–	11	–	11
	269	350	57	**676**
Current assets				
Inventories	58	4	7	69
Accounts receivable	43	68	15	126
Cash and cash equivalents	23	28	18	69
	124	100	40	**264**
Non-controlling interest	(4)	–	(25)	**(29)**
Non-current liabilities				
Borrowings	–	(31)	(10)	(41)
Deferred tax liabilities	(50)	(17)	(5)	(72)
Provisions	(24)	–	(33)	(57)
	(74)	(48)	(48)	**(170)**
Current liabilities				
Borrowings	(2)	–	–	(2)
Accounts payable	(56)	(67)	(9)	(132)
Income tax payable	–	(2)	–	(2)
	(58)	(69)	(9)	**(136)**
Carrying value of net assets disposed	**257**	**333**	**15**	**605**
Cash and cash equivalents received	(245)	(530)	–	(775)
Shares received	(222)	–	–	(222)
Future consideration	–	–	(13)	(13)
Items recycled to the statement of income	(22)	–	(121)	(143)
Reclassified to investment in joint venture[1]	–	(509)	(54)	(563)
Provision for guarantees	–	20	–	20
Transaction fees	–	12	–	12
Net gain on disposal[1]	**(232)**	**(674)**	**(173)**	**(1,079)**
Cash and cash equivalents received	245	530	–	775
Less: Cash and cash equivalents disposed	(23)	(28)	(18)	(69)
Net cash received from disposal	**222**	**502**	**(18)**	**706**

1 Includes a gain of $383 million attributable to the re-measurement of the retained investment to its fair value upon change in control in HG Storage ($363 million) and Other ($20 million).

Zinc Africa

On 31 August 2017, Glencore completed the transaction with Trevali Mining Corporation ("Trevali") a TSX listed zinc company, to sell its 80.1% equity interest in Rosh Pinah and its 90.0% equity interest in Perkoa. The aggregate consideration received was $467 million, of which $245 million was cash and the remaining balance ($222 million) was 193.4 million shares in Trevali. As a result of the transaction, Glencore's direct ownership in Trevali increased from 4% to 25.6%.

Glencore is no longer able to unilaterally direct the key strategic, operating and capital decisions of Rosh Pinah and Perkoa 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 share in Trevali using the equity method in accordance with IAS 28 (see note 10).

HG Storage

On 29 December 2017, Glencore completed the sale of a 51% interest in HG Storage International Ltd ("HG Storage"), a group comprising the majority of Glencore's petroleum products storage and logistics businesses (excluding the U.S., see note 15) to HNA Innovation Finance Group Co Ltd (HNA) for cash consideration of $530 million, including the assumption of certain debt. Glencore is no longer able to unilaterally direct the key strategic, operating and capital decisions of HG Storage 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 remeasured share in HG Storage using the equity method in accordance with IAS 28.

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 Baa2 (positive 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	**2018**	2017
Year-end position	33	18
Average during the year	34	25
High during the year	76	41
Low during the year	16	13

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 energy and metals and minerals' 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 2018 would decrease/increase by $135 million (2017: $110 million).

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.

26. Financial and capital risk management continued

Glencore has issued Euro, Swiss Franc, Sterling, Yen and Australian dollar 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	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	
Cross currency swap agreements									
Cash flow hedges – currency risk									
Eurobonds	1,117	4,038	1.12	1.26	53	98	–	227	2023
Sterling bonds	2,906	1,921	1.77	1.77	–	15	785	636	2020
Australian dollar bonds	453	453	0.91	0.91	3	9	101	62	2019
Swiss franc bonds	–	473	–	1.05	–	–	–	7	2018
Fair value hedges – currency and interest rate risk									
Eurobonds	6,100	6,100	1.26	1.26	153	285	435	192	2022
Yen bonds	81	81	0.01	0.01	10	8	–	–	2022
Swiss franc bonds	1,148	966	1.04	1.04	–	6	28	13	2020
	11,805	15,017			219	421	1,349	1,137	
Interest rate swap agreements									
Fair value hedges – currency and interest rate risk									
US$ bonds	5,584	5,743	–	–	11	70	62	20	2023
	17,389	**20,760**			**230**	**491**	**1,411**	**1,157**	

1 Refer to note 20 for details.

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	**2018**	2017	**2018**	2017
Foreign exchange and interest rate risk				
Eurobonds	5,748	6,102	(143)	(229)
Yen bonds	91	89	–	(1)
Swiss franc bonds	1,122	957	(2)	(8)
US$ bonds	5,492	5,742	60	(33)
	12,453	**12,890**	**(85)**	**(271)**

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 3.9% (2017: 3.3%) of its trade receivables (on a gross basis taking into account credit enhancements) or accounting for more than 2.6% of its revenues over the year ended 31 December 2018 (2017: 3.5%).

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 (2017: $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, 13, 20, 21 and 24).

As at 31 December 2018, Glencore had available committed undrawn credit facilities and cash amounting to $10,163 million (2017: $12,801 million), refer to Other reconciliations section. The maturity profile of Glencore's financial liabilities based on the contractual terms is as follows:

2018 US$ million	After 5 years	Due 3 – 5 years	Due 2 – 3 years	Due 1 – 2 years	Due 0 – 1 year	**Total**
Borrowings	7,229	7,157	3,630	8,408	8,570	34,994
Expected future interest payments	2,700	862	635	796	852	5,845
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

2017 US$ million	After 5 years	Due 3 – 5 years	Due 2 – 3 years	Due 1 – 2 years	Due 0 – 1 year	**Total**
Borrowings	10,071	7,637	2,710	4,114	9,402	33,934
Expected future interest payments	3,256	1,116	728	913	964	6,977
Accounts payable	–	–	–	–	28,826	28,826
Other financial liabilities	513	–	–	–	4,522	5,035
Total	**13,840**	**8,753**	**3,438**	**5,027**	**43,714**	**74,772**
Current assets					49,726	49,726

27. 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 expected to 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 $34,994 million (2017: $33,934 million) of borrowings, the fair value of which at 31 December 2018 was $34,863 million (2017: $34,776 million) based on observable market prices applied to the borrowing portfolio (a Level 2 fair value measurement).

2018 US$ million	Amortised cost	FVTPL[1]	FVTOCI[2]	**Total**
Assets				
Other investments[3]	–	67	2,000	2,067
Non-current other financial assets	–	51	–	51
Advances and loans	771	155	–	926
Accounts receivable	6,840	7,515	–	14,355
Other financial assets	–	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	189	340	–	529
Accounts payable	10,856	15,073	–	25,929
Other financial liabilities	–	3,243	–	3,243
Total financial liabilities	**46,039**	**18,656**	**–**	**64,695**

1 FVTPL – Fair value through profit and loss, see note 28.
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.

2017 US$ million	Amortised cost	FVTPL[1]	FVTOCI[2]	Total
Assets[3]				
Other investments[4]	–	2,268	690	2,958
Advances and loans	1,150	–	1,826	2,976
Accounts receivable	16,452	–	–	16,452
Other financial assets (see note 28)	–	2,311	–	2,311
Cash and cash equivalents	2,124	–	–	2,124
Total financial assets	**19,726**	**4,579**	**2,516**	**26,821**
Liabilities[3]				
Borrowings	33,934	–	–	33,934
Non-current other financial liabilities (see note 28)	–	513	–	513
Accounts payable	28,174	–	–	28,174
Other financial liabilities (see note 28)	–	4,522	–	4,522
Total financial liabilities	**62,108**	**5,035**	**–**	**67,143**

1 FVTPL – Fair value through profit and loss, see note 28.
2 FVTOCI – Fair value through other comprehensive income.
3 Restated to exclude $3,907 million of receivables and $652 million of payables that were non-financial instruments.
4 Other investments of $2,871 million are classified as Level 1 measured using quoted market prices with the remaining balance of $87 million being investments in private companies whose fair value cannot be reliably measured and therefore carried at cost.

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 2018 and 2017 were as follows:

	Amounts eligible for set off under netting agreements			Related amounts not set off under netting agreements				
2018 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.

	Amounts eligible for set off under netting agreements			Related amounts not set off under netting agreements				
2017 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]	13,220	(11,907)	**1,313**	(347)	(426)	540	**998**	**2,311**
Derivative liabilities[1]	(15,162)	11,907	**(3,255)**	347	2,430	(478)	**(1,267)**	**(4,522)**

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.

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 2018 and 2017. Other assets and liabilities which are measured at fair value on a recurring basis are marketing inventories, other investments and cash and cash equivalents. Refer to notes 12 and 27 for disclosures in connection with these fair value measurements. There are no non-recurring fair value measurements.

Other financial assets

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 $625 million non-dilutive convertible bond, due in 2025. See note 20.

2017 US$ million	Level 1	Level 2	Level 3	**Total**
Other financial assets				
Commodity related contracts				
Futures	227	42	–	**269**
Options	93	37	–	**130**
Swaps	131	339	–	**470**
Physical forwards	–	582	356	**938**
Financial contracts				
Cross currency swaps	–	421	–	**421**
Foreign currency and interest rate contracts	–	83	–	**83**
Total	**451**	**1,504**	**356**	**2,311**

28. Fair value measurements continued

Other financial liabilities

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	–	–	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**

2017 US$ million	Level 1	Level 2	Level 3	Total
Other financial liabilities				
Commodity related contracts				
Futures	2,029	84	–	**2,113**
Options	37	29	8	**74**
Swaps	121	372	–	**493**
Physical forwards	–	468	184	**652**
Financial contracts				
Cross currency swaps	–	1,137	–	**1,137**
Foreign currency and interest rate contracts	–	53	–	**53**
Current other financial liabilities	**2,187**	**2,143**	**192**	**4,522**
Non-current other financial liabilities				
Non-discretionary dividend obligation[1]	–	–	513	**513**
Non-current other financial liabilities	**–**	**–**	**513**	**513**
Total	**2,187**	**2,143**	**705**	**5,035**

1 A ZAR denominated derivative liability payable to ARM Coal, a participant 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 2018) 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.

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 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**
1 January 2017	355	(6)	(403)	(54)
Total gain/(loss) recognised in cost of goods sold	58	(8)	–	50
Non-discretionary dividend obligation	–	–	(110)	(110)
Realised	(241)	6	–	(235)
31 December 2017	**172**	**(8)**	**(513)**	**(349)**

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.

28. Fair value measurements continued

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.

Fair value of financial assets/financial liabilities

US$ million			2018	2017
Futures – Level 1		Assets	**1,353**	227
		Liabilities	**(318)**	(2,029)
Valuation techniques and key inputs:	Quoted bid prices in an active market			
Significant unobservable inputs:	None			
Futures – Level 2		Assets	**79**	42
		Liabilities	**(72)**	(84)
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	**15**	93
		Liabilities	**(93)**	(37)
Valuation techniques and key inputs:	Quoted bid prices in an active market			
Significant unobservable inputs:	None			
Options – Level 2		Assets	**–**	37
		Liabilities	**–**	(29)
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)**	(8)
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	**149**	131
		Liabilities	**(45)**	(121)
Valuation techniques and key inputs:	Quoted bid prices in an active market			
Significant unobservable inputs:	None			
Swaps – Level 2		Assets	**483**	339
		Liabilities	**(432)**	(372)
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			
Physical Forwards – Level 2		Assets	**598**	582
		Liabilities	**(615)**	(468)
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			

28. Fair value measurements continued

US$ million			2018	2017
Physical Forwards – Level 3		Assets	**552**	356
		Liabilities	**(247)**	(184)
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	**219**	421
		Liabilities	**(1,349)**	(1,137)
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	**34**	83
		Liabilities	**(69)**	(53)
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	**51**	–
		Liabilities	**(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			
Accounts receivable and payable – Level 2		Assets	**6,471**	–
		Liabilities	**(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	**(188)**	(513)
Valuation techniques:	Discounted cash flow model			
Significant unobservable 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 a $111 million adjustment to the current carrying value.			
Option over non-controlling interest in Ale – Level 3		Assets	**–**	–
		Liabilities	**(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 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	2018	2017
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	2
Total audit and related assurance fees	**24**	**23**
Transaction services	–	4
Taxation compliance services	2	2
Other taxation advisory services	2	2
Other assurance services	2	1
Total non-audit fees	**6**	**9**
Total professional fees	**30**	**32**

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 2018, $1,321 million (2017: $987 million), of which 88% (2017: 93%) 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 2018, $86 million (2017: $139 million) of such development expenditures are to be incurred, of which 20% (2017: 36%) are for commitments to be settled over the next year.

Glencore procures seagoing vessels/chartering services to meet its overall marketing objectives and commitments. As at 31 December 2018, Glencore has committed to future hire costs to meet future physical delivery and sale obligations and expectations of $335 million (2017: $247 million), of which $56 million (2017: $76 million) are with associated companies. 70% (2017: 72%) of the total charters are for services to be received over the next two years.

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 2018, $10,842 million (2017: $10,995 million) of procurement and $3,692 million (2017: $3,615 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.

Glencore has entered into various operating leases mainly as lessee for office and warehouse/storage facilities. Rental expenses for these leases totalled respectively $179 million and $173 million for the years ended 31 December 2018 and 2017. Future net minimum lease payments under non-cancellable operating leases are as follows:

US$ million	2018	2017
Within 1 year	235	203
Between 2 – 5 years	482	401
After 5 years	335	189
Total	**1,052**	**793**

Glencore has entered into finance leases for various plant and equipment items, primarily vessels and machinery. Future net minimum lease payments under finance leases together with the future finance charges are as follows:

	Undiscounted minimum lease payments		Present value of minimum lease payments	
US$ million	2018	2017	2018	2017
Within 1 year	134	92	110	64
Between 1 and 5 years	203	255	151	182
After 5 years	174	209	126	146
Total minimum lease payments	**511**	**556**	**387**	**392**
Less: amounts representing finance lease charges	124	164	–	–
Present value of minimum lease payments	**387**	**392**	**387**	**392**

Future development and related commitments

Ulan Coal Mines Limited

On 17 December 2018, Glencore entered into an agreement to acquire the remaining 10% of Ulan Coal Mines Limited it does not currently own for a total cash consideration of approximately $124 million. The transaction closed at the end of February 2019.

31. Contingent liabilities

The amount of corporate guarantees in favour of third parties as at 31 December 2018 was $Nil (2017: $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 feasible an estimate is made of the potential financial impact on the Group. As at 31 December 2018 and 2017 it was not feasible to make such an assessment.

Legal and regulatory proceedings

On 3 July 2018 Glencore announced that one of its subsidiaries had received a subpoena from the US Department of Justice ("DOJ") to produce documents and other records with respect to compliance with the Foreign Corrupt Practices Act and United States money laundering statutes, in relation to Glencore Group's business in Nigeria, the Democratic Republic of Congo and Venezuela, from 2007 to present.

Additionally, various securities class actions suits have been filed against Glencore plc in connection with the announcement of the DOJ subpoena. Glencore plc has not been served with any of these complaints.

The existence, timing and amount of any future financial obligations (such as fines, penalties or damages, which could be material) or other consequences arising from the DOJ investigation or the class actions suits are unable to be determined at this time and no liability has been recognised in relation to these matters in the consolidated statement of financial position at the end of the reporting period.

Other legal and regulatory proceedings, claims and unresolved disputes are pending against Glencore in respect of which the timing of resolution and potential outcome (including any future financial obligations) are uncertain and no liabilities have been recognised in relation to these matters.

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 2018, sales and purchases with associates and joint ventures amounted to $1,690 million (2017: $1,859 million) and $5,744 million (2017: $7,485 million) respectively.

Remuneration of key management personnel

Glencore's key management personnel are the members of the Board of Directors, CEO, CFO and the heads of the operating segments. 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 $22 million (2017: $22 million). There were no other long-term benefits or share-based payments to key management personnel (2017: $Nil). Further details on remuneration of Directors are set out in the Directors' remuneration report on page 113.

33. Principal subsidiaries with material non-controlling interests

Non-controlling interest is comprised of the following:

US$ million	2018	2017
Volcan	1,608	1,733
Kazzinc	1,356	1,438
Koniambo	(3,177)	(2,905)
Katanga (see KCC debt restructuring note below)	11	(965)
Other[1]	(153)	399
Total	**(355)**	**(300)**

1 Other comprises various subsidiaries in which no individual balance attributable to non-controlling interests is material.

KCC Debt Restructuring

Kamoto Copper Company ("KCC"), the 75% owned Katanga (in turn 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") over the past year, 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 "gifted" by 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 "gifted" 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.

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 2018, reflecting 100% of the underlying subsidiary's relevant figures, is set out below.

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**	**(9,102)**	**(1,951)**	**2,662**
Equity attributable to owners of the Company	3,124	(5,925)	(1,962)	1,054
Non-controlling interests	1,356	(3,177)	11[1]	1,608
Non-controlling interests in %	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 attributable to owners of the Company	301	(261)	(587)	(35)
Profit 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 interests" balance includes $321 million and the "profit attributable to non-controlling interests" balance includes negative $84 million related to non-controlling interests arising at the KCC level.

33. Principal subsidiaries with material non-controlling interests continued

US$ million	Kazzinc	Koniambo	Katanga	Volcan
31 December 2017				
Non-current assets	4,659	1,502	4,333	4,754
Current assets	1,234	314	889	423
Total assets	**5,893**	**1,816**	**5,222**	**5,177**
Non-current liabilities	763	10,273	3,760	1,789
Current liabilities	378	112	2,593	562
Total liabilities	**1,141**	**10,385**	**6,353**	**2,351**
Net assets	**4,752**	**(8,569)**	**(1,131)**	**2,826**
Equity attributable to owners of the Company	3,314	(5,664)	(166)	1,093
Non-controlling interests	1,438	(2,905)	(965)[1]	1,733
Non-controlling interests in %	30.3%	51.0%	13.7%	76.7%
2017				
Revenue	3,078	–	25	160
Expenses	(2,517)	(494)	(1,004)	(160)
Net profit/(loss) for the year	**561**	**(494)**	**(979)**	**–**
Profit attributable to owners of the Company	395	(242)	(575)	–
Profit attributable to non-controlling interests	166	(252)	(404)[1]	–
Other comprehensive income attributable to owners of the Company	–	–	–	–
Other comprehensive income attributable to non-controlling interests	–	–	–	–
Total comprehensive income/(loss) for the year	**561**	**(494)**	**(979)**	**–**
Dividends paid to non-controlling interests	(124)	–	–	–
Net cash inflow/(outflow) from operating activities	764	–	(177)	–
Net cash outflow from investing activities	(196)	(241)	(369)	–
Net cash (outflow)/inflow from financing activities	(511)	256	583	–
Total net cash inflow	**57**	**15**	**37**	**–**

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 interests" balance includes negative $939 million and the "profit attributable to non-controlling interests" balance includes negative $310 million related to non-controlling interests arising at the KCC level.

34. Subsequent events

- In January 2019, the Group completed an acquisition of an additional 2.7% of Hail Creek for net consideration of $39 million.
- In January 2019, following the lifting of sanctions by the United States Government over United Company Rusal plc (Rusal) and EN+ Group plc (EN+), Glencore agreed to exchange its 8.8% interest in Rusal for a 10.55% interest in EN+. The investment in EN+ will be classified and accounted on a basis similar to how the Rusal investment was accounted for – "at fair value through other comprehensive income", see note 10.
- In February 2019, Glencore announced a new $2 billion share buy-back programme that will run until 31 December 2019.

35. Principal operating, finance and industrial subsidiaries and investments

	Country of incorporation	% interest 2018	% interest 2017	Main activity
Principal subsidiaries				
Metals and minerals				
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
Minera Altos de Punitaqui Limitada	Chile	–	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	100.0	Copper production
Katanga Mining Limited[2]	Canada	86.3	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
Glencore Manganese Group	France/Norway	–	100.0	Manganese furnace
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 Compania 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 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).

35. Principal operating, finance and industrial subsidiaries and investments continued

	Country of incorporation	% interest 2018	% interest 2017	Main activity
Energy products				
Oakbridge Pty Ltd	Australia	78.0	78.0	Coal production
Glencore Coal Queensland 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
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) Limited	South Africa	100.0	100.0	Coal production
Topley Corporation	B.V.I.	100.0	100.0	Ship owner
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
ALE Combustiveis	Brazil	78.0	–	Oil distribution
Chemoil Energy Limited	Hong Kong	100.0	100.0	Oil storage and bunkering
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
Glencore Canada Financial Corp	Canada	100.0	100.0	Finance
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 operation 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.

35. Principal operating, finance and industrial subsidiaries and investments continued

	Country of incorporation	**% interest 2018**	% interest 2017	Main activity
Principal joint ventures[7]				
Glencore Agriculture Limited	Jersey	49.9	49.9	Agriculture business
Clermont Coal Group[8]	Australia	25.1	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 arrangements[9]				
United Joint Venture	Australia	95.0	95.0	Coal exploration
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
Foybrook Joint Venture	Australia	67.5	67.5	Coal production
Hail Creek Joint Venture	Australia	82.0	–	Coal production
Hunter Valley Operations Joint Venture	Australia	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
Ulan Coal Mines Joint Venture	Australia	90.0	90.0	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
Mototolo Joint Venture	South Africa	–	38.0	Platinum 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	29.7	Coal terminal
Port Waratah Coal Services Ltd	Australia	15.5	15.5	Coal terminal
Wiggins Island Coal Export Terminal	Australia	20.0	20.0	Coal terminal
Richards Bay Coal Terminal Company Limited	South Africa	20.2	20.2	Coal terminal
Polymet Mining Corp.	Canada	29.0	29.1	Copper production
Century Aluminum Company[10]	USA	47.2	47.4	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	25.6	25.6	Zinc production
Compania Minera Antamina S.A.	Peru	33.8	33.8	Zinc/Copper production
Recylex S.A.	France	29.9	30.2	Zinc/Lead production
Other investments				
United Company Rusal plc[11]	Jersey	8.8	8.8	Aluminium production
OAO NK Russneft[12]	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 25.05% economic interest in Clermont Coal is held through GS Coal Pty Ltd, a 50:50 joint venture with Sumitomo Corporation. In 2019, it is expected that the Group's effective economic interest will increase to 37.1%, via GC Coal's announced purchase of an additional interest.
9 Classified as joint operations under IFRS 11, as these joint arrangements are not structured through separate vehicles. 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% (2017: 42.9%) voting interest and 4.3% non-voting interest (2017: 4.5%). Century is publicly traded on NASDAQ under the symbol CENX.
11 In January 2019, the Group has agreed to swap its Rusal stake for a 10.55% interest in EN+.
12 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.

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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 improve 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.

During the year, the Glencore Agri joint venture continued its transition to a fully independent stand-alone group through bedding down of its independent governance structure and the firm establishment of its own stand-alone capital structure and credit profile, including the removal of all, but one (see note 10) of the Group's legacy guarantee arrangements. As a result of its increasing independence and Glencore's management evaluating the segment's financial performance on a net return basis as opposed to an Adjusted EBITDA basis, the financial results of Glencore Agri are no longer adjusted and presented on a proportionate consolidation basis, but rather are presented on a basis consistent with its underlying IFRS treatment (equity accounting). Applicable comparative balances have been adjusted to reflect these changes.

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	2018	2017 Restated[1]	Glencore Agri[1]	2017 Previously reported
Revenue – Marketing activities	178,328	169,216	(12,611)	181,827
Revenue – Industrial activities	44,069	39,552	–	39,552
Revenue	**222,397**	**208,768**	(12,611)	221,379
Proportionate adjustment material associates and joint ventures– revenue	(3,443)	(3,292)	12,611	(15,903)
Proportionate adjustment Volcan – revenue	800	–	–	–
Revenue – reported measure	**219,754**	**205,476**	–	205,476

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).

Share of income from material associates and joint ventures

US$ million	2018	2017 Restated[1]	Glencore Agri[1]	2017 Previously reported
Associates' and joint ventures' Adjusted EBITDA	2,212	2,124	(316)	2,440
Depreciation and amortisation	(726)	(688)	124	(812)
Associates' and joint ventures' Adjusted EBIT	1,486	1,436	(192)	1,628
Net finance costs	7	(6)	68	(74)
Income tax expense	(536)	(492)	25	(517)
	(529)	(498)	93	(591)
Share of income from relevant material associates and joint ventures	**957**	**938**	(99)	1,037
Share of income from other associates	86	220	99	121
Share of income from associates and joint ventures[2]	**1,043**	**1,158**	–	1,158

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).
2 Comprises share in earnings of $14 million (2017: $164 million) from Marketing activities and $1,029 million (2017: $994million) 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	2018	2017 Restated[1]	Glencore Agri[1]	2017 Previously reported
Reported measures				
Revenue	219,754	205,476	–	205,476
Cost of goods sold	(210,698)	(197,695)	–	(197,695)
Selling and administrative expenses	(1,381)	(1,310)	–	(1,310)
Share of income from associates and joint ventures	1,043	1,158	–	1,158
Dividend income	21	28	–	28
	8,739	7,657	–	7,657
Adjustments to reported measures				
Share of associates' significant items	40	6	–	6
Unrealised intergroup profit elimination	(237)	523	–	523
Mark-to-market valuation on certain coal hedging contracts	–	(225)	–	(225)
Proportionate adjustment material associates and joint ventures – net finance and income tax expense	529	498	(93)	591
Proportionate adjustment Volcan – net finance, income tax expense and non-controlling interests	72	–	–	–
Adjusted EBIT	**9,143**	**8,459**	(93)	8,552
Depreciation and amortisation	6,325	5,398	–	5,398
Proportionate adjustment material associates and joint ventures – depreciation	726	688	(124)	812
Proportionate adjustment Volcan – depreciation	(427)	–	–	–
Adjusted EBITDA	**15,767**	**14,545**	(217)	14,762

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).

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Alternative performance measures continued

Significant items

Significant items of income and expense which, due to their 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. Refer to reconciliation below.

Reconciliation of net significant items 2018

US$ million	Gross significant charges	Non-controlling interests' share	**Equity holders' share**
Share of Associates' significant items[1]	(40)	–	(40)
Unrealised intergroup profit elimination[1]	237	–	237
Loss on disposals and investments[2]	(139)	–	(139)
Other expense – net[3]	(764)	58	(706)
Impairments[4]	(1,643)	236	(1,407)
Income tax impact from significant items and significant tax items themselves	(302)	–	(302)
Total significant items	**(2,651)**	**294**	**(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.

Reconciliation of net significant items 2017

US$ million	Gross significant charges	Non-controlling interests' share	**Equity holders' share**
Share of Associates' significant items[1]	(6)	–	(6)
Mark-to-market valuation on certain coal hedging contracts[1]	225	–	225
Unrealised intergroup profit elimination[1]	(523)	–	(523)
Gain on disposals and investments[2]	1,309	–	1,309
Other expense – net[3]	34	–	34
Impairments[4]	(628)	45	(583)
Income tax impact from significant items and significant tax items themselves	(187)	–	(187)
Total significant items	**224**	**45**	**269**

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.

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 earnings summary in the Financial and Operational Review section and reconciliation of tax expense below.

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 2018, $17,428 million (2017: $20,837 million) of inventories were considered readily marketable. This comprises $11,449 million (2017: $15,261 million) of inventories carried at fair value less costs of disposal and $5,979 million (2017: $5,576 million) carried at the lower of cost or net realisable value. Total readily marketable inventories includes $171 million related to the relevant material associates and joint ventures (see note 2) presented under the proportionate consolidation method, comprising inventories 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 2018

US$ million	Reported measure	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				**0.93x**

Net funding/net debt at 31 December 2017

US$ million	Reported measure	Proportionate adjustment	Volcan	**Adjusted measure Previously reported**	Glencore Agri[1]	**Adjusted measure Restated[1]**
Non-current borrowings	24,532	356	(629)	24,259	(282)	23,977
Current borrowings	9,402	1,650	(177)	10,875	(1,636)	9,239
Total borrowings	33,934	2,006	(806)	35,134	(1,918)	**33,216**
Less: cash and cash equivalents	(2,124)	(214)	102	(2,236)	73	(2,163)
Net funding	31,810	1,792	(704)	32,898	(1,845)	**31,053**
Less: Readily marketable inventories	(20,666)	(1,559)	–	(22,225)	1,388	(20,837)
Net debt	11,144	233	(704)	10,673	(457)	**10,216**
Adjusted EBITDA				14,762	(217)	**14,545**
Net debt to Adjusted EBITDA				0.72x		**0.70x**

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).

APMs derived from the statement of cash flows

Capital expenditure ("Capex")

Capital expenditure is expenditure on property, plant and equipment. For internal reporting and analysis, Capex includes related Proportionate adjustments. See reconciliation table below.

US$ million	**2018**	2017 Restated[1]	Glencore Agri[1]	2017 Previously reported
Capital expenditure – Marketing activities	89	96	(118)	214
Capital expenditure – Industrial activities	5,077	4,020	–	4,020
Capital expenditure	**5,166**	**4,116**	(118)	4,234
Proportionate adjustment material associates and joint ventures – capital expenditure	(577)	(493)	118	(611)
Proportionate adjustment Volcan – capital expenditure	188	–	–	–
Capital expenditure – reported measure	**4,777**	**3,623**	–	3,623

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).

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, related Proportionate adjustments and Significant items, as appropriate. Furthermore, the relationship of FFO to net debt is an indication of our financial flexibility and strength. See reconciliation table below.

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
Share in earnings from associates included in 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%**

2017 US$ million	Reported measure	Proportionate adjustment	**Adjusted measure Previously reported**	Glencore Agri[1]	**Adjusted measure Restated[1]**
Cash generated by operating activities before working capital changes	11,866	–	11,866	–	11,866
Addback EBITDA of relevant material associates and joint ventures	–	2,440	2,440	(316)	2,124
Share in earnings from associates included in EBITDA	–	(39)	(39)	38	(1)
Adjusted cash generated by operating activities before working capital changes	11,866	2,401	14,267	(278)	13,989
Coal related hedging included above (via statement of income – refer to note 2)	(225)	–	(225)	–	(225)
Income taxes paid	(921)	(451)	(1,372)	35	(1,337)
Interest received	106	8	114	(6)	108
Interest paid	(1,269)	(44)	(1,313)	43	(1,270)
Dividends received from associates and joint ventures	1,081	(996)	85	–	85
Funds from operations (FFO)	10,638	918	11,556	(206)	**11,350**
Net debt			10,673	(457)	**10,216**
FFO to Net debt			108.3%		**111.1%**

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).

Other reconciliations

Other reconciliations

Available committed liquidity[1]

US$ million	2018	2017 Restated[2]
Cash and cash equivalents – reported	2,046	2,124
Proportionate adjustment – cash and cash equivalents	135	141
Headline committed syndicated revolving credit facilities	14,200	12,760
Amount drawn under syndicated revolving credit facilities	(5,623)	(994)
Amounts drawn under U.S. commercial paper programme	(596)	(1,230)
Total	**10,163**	**12,801**

1 Presented on an adjusted measured basis.
2 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).

Cash flow related adjustments 2018

US$ million	Reported measure	Proportionate adjustment	Adjusted measure
Funds from operations (FFO)	11,373	222	11,595
Working capital changes	1,325	201	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 a conditional acquisition of an oil refinery/downstream business	(1,044)	–	(1,044)
Purchase of investments	(19)	–	(19)
Proceeds from sale of investments	16	–	16
Purchase of property, plant and equipment	(4,687)	(351)	(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)	88	**(1,368)**

Cash flow related adjustments 2017

US$ million	Reported measure	Proportionate adjustment	Adjusted measure Previously reported	Glencore Agri[1]	Adjusted measure Restated[1]
Funds from operations (FFO)	10,638	918	11,556	(206)	11,350
Working capital changes	(4,965)	(108)	(5,073)	(79)	(5,152)
Net cash used in acquisitions of subsidiaries	(674)	(57)	(731)	57	(674)
Net cash received from disposal of subsidiaries	706	33	739	(33)	706
Purchase of investments	(378)	(8)	(386)	8	(378)
Proceeds from sale of investments	36	–	36	–	36
Purchase of property, plant and equipment	(3,586)	(605)	(4,191)	118	(4,073)
Proceeds from sale of property, plant and equipment	282	11	293	(9)	284
Margin receipts in respect of financing related hedging activities	1,255	–	1,255	–	1,255
Acquisition of non-controlling interests in subsidiaries	(561)	–	(561)	–	(561)
Return of capital/distributions to non-controlling interests	(194)	–	(194)	–	(194)
Disposal of own shares	17	–	17	–	17
Distributions paid to equity holders of the Parent	(998)	–	(998)	–	(998)
Coal related hedging	225	–	225	–	225
Cash movement in net funding	1,803	184	1,987	(144)	**1,843**

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).

Reconciliation of tax expense 2018

US$ million	Total
Adjusted EBIT, pre-significant items	9,143
Net finance costs	(1,514)
Adjustments for:	
Net finance costs from material associates and joint ventures	7
Net finance costs and non-controlling interests Volcan	(67)
Share of income from other associates pre-significant items	(125)
Profit on a proportionate consolidation basis before tax and pre-significant items	**7,444**
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	**30.9%**

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 Represents the tax impact on current period significant items and tax significant items in their own right, such as foreign exchange fluctuations ($130 million) and tax losses not recognised ($340 million) (see note 7).

Reconciliation of tax expense 2017

US$ million	Total Restated[1]
Adjusted EBIT, pre-significant items	8,459
Net finance costs	(1,451)
Adjustments for:	
Net finance costs from material associates and joint ventures	(6)
Share of income from other associates pre-significant items	(226)
Profit on a proportionate consolidation basis before tax and pre-significant items	**6,776**
Income tax expense, pre-significant items	(1,572)
Adjustments for:	
Tax expense from material associates and joint ventures	(492)
Tax expense on a proportionate consolidation basis	**(2,064)**
Applicable tax rate	**30.5%**

US$ million	Pre-significant tax expense Restated[1]	Significant items tax[2]	Total tax expense Restated[1]
Tax expense on a proportionate consolidation basis	2,064	187	2,251
Adjustment in respect of material associates and joint ventures tax	(492)	–	(492)
Tax expense on the basis of the income statement	**1,572**	**187**	**1,759**

1 Adjusted for presenting Glencore Agri on a basis consistent with its underlying IFRS treatment (equity accounting).
2 Represents the tax impact on current period significant items and tax significant items in their own right, such as foreign exchange fluctuations ($30million tax benefit) and change in tax rates ($157 million) (see note 7).

Production by quarter – Q4 2017 to Q4 2018

Metals and minerals

Production from own sources – Total[1]

		Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	**2018**	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
Copper	kt	363.2	345.4	350.8	366.9	390.6	1,453.7	1,309.7	11	8
Cobalt	kt	7.6	7.0	9.7	11.8	13.7	42.2	27.4	54	80
Zinc	kt	262.8	242.7	255.5	287.8	282.1	1,068.1	1,090.2	(2)	7
Lead	kt	61.8	57.4	58.3	80.8	76.8	273.3	272.5	–	24
Nickel	koz	28.4	30.1	32.1	28.7	32.9	123.8	109.1	13	16
Gold	koz	262	231	256	287	229	1,003	1,033	(3)	(13)
Silver	kt	8,935	8,296	8,408	9,635	8,541	34,880	37,743	(8)	(4)
Ferrochrome	kt	424	409	409	327	435	1,580	1,531	3	3

Production from own sources – Copper assets[1]

			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	**2018**	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
African Copper (Katanga, Mutanda, Mopani)											
Katanga	Copper metal	kt	2.2	27.7	35.6	39.3	49.8	152.4	2.2	n.m.	n.m.
	Copper in concentrates	kt	2.7	–	–	–	–	–	2.7	(100)	(100)
	Cobalt[2]			0.5	2.5	3.5	4.6	11.1	–	n.m.	n.m.
Mutanda	Copper metal	kt	51.5	50.8	51.1	50.2	46.9	199.0	192.1	4	(9)
	Cobalt[2]	kt	6.7	5.6	6.2	7.4	8.1	27.3	23.9	14	21
Mopani	Copper metal	kt	15.0	14.4	15.0	13.8	16.1	59.3	41.7	42	7
African Copper – total production including third party feed											
Mopani	*Copper metal*	*kt*	*40.8*	33.0	28.2	27.2	31.1	119.5	98.9	21	(24)
	Total Copper metal	**kt**	**68.7**	**92.9**	**101.7**	**103.3**	**112.8**	**410.7**	**236.0**	**74**	**64**
	Total Copper in concentrates	**kt**	**2.7**	**–**	**–**	**–**	**–**	**–**	**2.7**	**(100)**	**(100)**
	Total Cobalt[2]	**kt**	**6.7**	**6.1**	**8.7**	**10.9**	**12.7**	**38.4**	**23.9**	**61**	**90**
Collahuasi[3]	**Copper in concentrates**	**kt**	**63.5**	**60.6**	**54.7**	**61.5**	**69.2**	**246.0**	**230.5**	**7**	**9**
	Silver in concentrates	**koz**	**815**	**812**	**755**	**784**	**893**	**3,244**	**3,103**	**5**	**10**
Antamina[4]	**Copper in concentrates**	**kt**	**35.1**	**36.5**	**35.9**	**38.3**	**39.9**	**150.6**	**142.6**	**6**	**14**
	Zinc in concentrates	**kt**	**34.6**	**30.3**	**42.7**	**36.3**	**28.8**	**138.1**	**128.1**	**8**	**(17)**
	Silver in concentrates	**koz**	**1,480**	**1,321**	**1,468**	**1,452**	**1,309**	**5,550**	**6,579**	**(16)**	**(12)**

Production by quarter – Q4 2017 to Q4 2018 continued

Metals and minerals

Production from own sources – Copper assets[1] continued

			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	**2018**	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
Other South America (Alumbrera, Lomas Bayas, Antapaccay, Punitaqui)											
Alumbrera	Copper in concentrates	kt	5.5	6.5	7.5	3.4	–	17.4	33.3	(48)	(100)
	Gold in concentrates and in doré	koz	38	39	51	30	–	120	188	(36)	(100)
	Silver in concentrates and in doré	koz	44	55	71	30	–	156	306	(49)	(100)
Lomas Bayas	Copper metal	kt	17.2	17.1	16.7	19.2	19.8	72.8	78.1	(7)	15
Antapaccay	Copper in concentrates	kt	62.7	48.9	53.2	51.0	52.3	205.4	206.5	(1)	(17)
	Gold in concentrates	koz	50	33	38	34	27	132	139	(5)	(46)
	Silver in concentrates	koz	446	348	387	382	406	1,523	1,455	5	(9)
Punitaqui	Copper in concentrates	kt	1.3	1.1	0.8	0.9	0.3	3.1	5.5	(44)	(77)
	Gold in concentrates	koz	6	1	2	1	–	4	21	(81)	(100)
	Silver in concentrates	koz	11	14	15	10	4	43	60	(28)	(64)
	Total Copper metal	**kt**	**17.2**	**17.1**	**16.7**	**19.2**	**19.8**	**72.8**	**78.1**	**(7)**	**15**
	Total Copper in concentrates	**kt**	**69.5**	**56.5**	**61.5**	**55.3**	**52.6**	**225.9**	**245.3**	**(8)**	**(24)**
	Total Gold in concentrates and in doré	**koz**	**94**	**73**	**91**	**65**	**27**	**256**	**348**	**(26)**	**(71)**
	Total Silver in concentrates and in doré	**koz**	**501**	**417**	**473**	**422**	**410**	**1,722**	**1,821**	**(5)**	**(18)**
Australia (Mount Isa, Ernest Henry, Townsville, Cobar)											
Mount Isa, Ernest	Copper metal	kt	46.6	32.7	29.3	45.5	44.0	151.5	164.6	(8)	(6)
Henry, Townsville	Copper in concentrates	kt	5.1	1.9	4.7	–	4.3	10.9	12.5	(13)	(16)
	Gold	koz	20	17	7	28	22	74	67	10	10
	Silver	koz	252	235	118	264	237	854	1,096	(22)	(6)
	Silver in concentrates	koz	23	2	23	4	21	50	61	(18)	(9)
Mount Isa, Ernest Henry, Townsville – total production including third party feed											
	Copper metal	*kt*	60.6	45.1	37.3	66.7	57.5	206.6	227.4	(9)	(5)
	Copper in concentrates	*kt*	5.1	1.9	4.7	–	4.3	10.9	12.5	(13)	(16)
	Gold	*koz*	39	29	16	47	43	135	161	(16)	10
	Silver	*koz*	253	267	150	394	329	1,140	1,481	(23)	30
	Silver in concentrates	*koz*	23	2	23	4	21	50	61	(18)	(9)
Cobar	Copper in concentrates	kt	15.7	13.2	9.7	12.9	12.2	48.0	53.4	(10)	(22)
	Silver in concentrates	koz	146	133	105	134	123	495	564	(12)	(16)
	Total Copper	**kt**	**46.6**	**32.7**	**29.3**	**45.5**	**44.0**	**151.5**	**164.6**	**(8)**	**(6)**
	Total Copper in concentrates	**kt**	**20.8**	**15.1**	**14.4**	**12.9**	**16.5**	**58.9**	**65.9**	**(11)**	**(21)**
	Total Gold	**koz**	**20**	**17**	**7**	**28**	**22**	**74**	**67**	**10**	**10**
	Total Silver	**koz**	**421**	**370**	**246**	**402**	**381**	**1,399**	**1,721**	**(19)**	**(10)**
Total Copper department											
	Copper	**kt**	**324.1**	**311.4**	**314.2**	**336.0**	**354.8**	**1,316.4**	**1,165.7**	**13**	**9**
	Cobalt	**kt**	**6.7**	**6.1**	**8.7**	**10.9**	**12.7**	**38.4**	**23.9**	**61**	**90**
	Zinc	**kt**	**34.6**	**30.3**	**42.7**	**36.3**	**28.8**	**138.1**	**128.1**	**8**	**(17)**
	Gold	**koz**	**114**	**90**	**98**	**93**	**49**	**330**	**415**	**(20)**	**(57)**
	Silver	**koz**	**3,217**	**2,920**	**2,942**	**3,060**	**2,993**	**11,915**	**13,224**	**(10)**	**(7)**

Metals and minerals

Production from own sources – Zinc assets[1]

			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	2018	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
Kazzinc											
	Zinc metal	kt	53.4	49.8	55.9	53.6	41.9	201.2	210.5	(4)	(22)
	Lead metal	kt	11.7	14.0	13.2	10.1	9.6	46.9	52.9	(11)	(18)
	Lead in concentrates	kt	–	–	2.1	3.8	2.8	8.7	4.7	85	n.m.
	Copper metal[5]	kt	15.5	12.0	13.3	13.0	14.1	52.4	49.7	5	(9)
	Gold	koz	141	133	151	186	173	643	585	10	23
	Silver	koz	1,335	1,388	1,548	1,917	1,357	6,210	5,780	7	2
	Silver in concentrates	koz	7	–	77	128	98	303	132	130	n.m.
Kazzinc – total production including third party feed											
	Zinc metal	*kt*	82.4	80.1	76.6	76.1	76.9	309.7	316.8	(2)	(7)
	Lead metal	*kt*	34.5	38.8	37.3	37.6	35.8	149.5	146.3	2	4
	Lead in concentrates	*kt*	–	–	2.1	3.8	2.8	8.7	4.7	85	n.m.
	Copper metal	*kt*	20.8	15.3	18.3	17.1	19.3	70.	62.7	12	(7)
	Gold	*koz*	184	179	226	275	254	934	712	31	38
	Silver	*koz*	5,483	5,007	5,730	4,639	5,195	20,571	22,652	(9)	(5)
	Silver in concentrates	*koz*	7	–	77	205	98	303	132	130	n.m.
Australia (Mount Isa, McArthur River)											
Mount Isa	Zinc in concentrates	kt	42.0	50.1	52.1	86.5	89.5	278.2	226.0	23	113
	Lead in concentrates	kt	22.5	21.1	21.4	44.2	39.2	125.9	111.6	13	74
	Silver in concentrates	koz	1,046	829	759	1,686	1,369	4,643	5,494	(15)	31
McArthur River	Zinc in concentrates	kt	79.3	60.1	52.3	63.3	78.6	254.3	210.0	21	(1)
	Lead in concentrates	kt	17.0	11.5	10.3	11.6	16.5	49.9	44.8	11	(3)
	Silver in concentrates	koz	674	411	342	378	588	1,719	1,620	6	(13)
	Total Zinc in concentrates	kt	121.3	110.2	104.4	149.8	168.1	532.5	436.0	22	39
	Total Lead in concentrates	kt	39.5	32.6	31.7	55.8	55.7	175.8	156.4	12	41
	Total Silver in concentrates	koz	1,720	1,240	1,101	2,064	1,957	6,362	7,114	(11)	14
North America (Matagami, Kidd)											
Matagami	Zinc in concentrates	kt	13.1	8.9	9.1	8.5	8.7	35.2	51.3	(31)	(34)
	Copper in concentrates	kt	2.0	1.5	1.3	1.2	1.4	5.4	7.4	(27)	(30)
Kidd	Zinc in concentrates	kt	14.8	17.2	19.0	17.1	12.6	65.9	72.4	(9)	(15)
	Copper in concentrates	kt	11.3	8.9	9.3	7.3	8.1	33.6	39.9	(16)	(28)
	Silver in concentrates	koz	387	601	555	380	357	1,893	2,271	(17)	(8)
	Total Zinc in concentrates	kt	27.9	26.1	28.1	25.6	21.3	101.7	123.7	(18)	(24)
	Total Copper in concentrates	kt	13.3	10.4	10.6	8.5	9.5	39.0	47.3	(18)	(29)
	Total Silver in concentrates	koz	387	601	555	380	357	1,893	2,271	(17)	(8)

Metals and minerals

Production from own sources – Zinc assets[1] continued

		Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	2018	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
Other Zinc: South America (Argentina, Bolivia, Peru)[6]										
Zinc in concentrates	kt	25.6	26.3	24.4	22.5	22.0	95.2	99.8	(5)	(14)
Lead metal	kt	3.9	2.6	4.0	3.8	3.5	13.9	13.6	2	(10)
Lead in concentrates	kt	6.7	8.2	7.3	7.3	5.2	28.0	41.2	(32)	(22)
Copper in concentrates	kt	1.3	1.1	1.3	1.1	1.0	4.5	3.4	32	(23)
Silver metal	koz	192	158	217	179	190	744	637	17	(1)
Silver in concentrates	koz	1,919	1,879	1,844	1,793	1,473	6,989	7,775	(10)	(23)
Other Zinc: Africa (Rosh Pinah, Perkoa)										
Zinc in concentrates	kt	–	–	–	–	–	–	92.1	(100)	–
Lead in concentrates	kt	–	–	–	–	–	–	3.7	(100)	–
Silver in concentrates	koz	–	–	–	–	–	–	157	(100)	–
Total Zinc department										
Zinc	kt	228.2	212.4	212.8	251.5	253.3	930.0	962.1	(3)	11
Lead	kt	61.8	57.4	58.3	80.8	76.8	273.3	272.5	–	24
Copper	kt	30.1	23.5	25.2	22.6	24.6	95.9	100.4	(4)	(18)
Gold	koz	141	133	151	186	173	643	585	10	23
Silver	koz	5,560	5,266	5,342	6,461	5,432	22,501	23,866	(6)	(2)

Metals and minerals

Production from own sources – Nickel assets[1]

			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	**2018**	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
Integrated Nickel Operations (Sudbury, Raglan, Nikkelverk)											
	Nickel metal	kt	13.6	15.0	16.1	12.2	16.2	**59.5**	57.0	4	19
	Nickel in concentrates	kt	0.1	0.1	0.2	0.1	0.1	**0.5**	0.5	–	–
	Copper metal	kt	3.6	3.6	3.6	3.4	3.8	**14.4**	15.6	(8)	6
	Copper in concentrates	kt	5.4	6.9	7.8	4.9	7.4	**27.0**	28.0	(4)	37
	Cobalt metal	kt	0.2	0.2	0.3	0.2	0.2	**0.9**	0.8	13	–
	Gold	koz	7	8	7	7	7	**29**	32	(9)	–
	Silver	koz	158	110	124	114	116	**464**	653	(29)	(27)
	Platinum	koz	19	19	13	12	14	**58**	75	(23)	(26)
	Palladium	koz	34	39	27	24	29	**119**	136	(13)	(15)
	Rhodium	koz	2	1	1	1	1	**4**	6	(33)	(50)
Integrated Nickel Operations – total production including third party feed											
	Nickel metal	*kt*	21.3	21.4	22.8	23.4	23.2	90.8	86.5	5	9
	Nickel in concentrates	*kt*	0.2	0.1	0.2	0.1	0.2	0.6	0.6	–	–
	Copper metal	*kt*	5.0	5.1	4.8	5.2	5.5	20.6	22.7	(9)	10
	Copper in concentrates	*kt*	6.7	7.7	9.5	5.3	9.2	31.7	33.0	(4)	37
	Cobalt metal	*kt*	0.9	1.0	0.9	1.0	1.3	4.2	3.5	20	44
	Gold	*koz*	10	10	11	10	11	42	43	(2)	10
	Silver	*koz*	232	157	193	170	176	696	976	(29)	(24)
	Platinum	*koz*	25	24	20	17	21	82	103	(20)	(16)
	Palladium	*koz*	58	67	47	47	59	220	211	4	2
	Rhodium	*koz*	2	2	1	1	1	5	7	(29)	(50)
Murrin Murrin											
	Total Nickel metal	kt	9.5	8.4	8.7	8.6	9.8	**35.5**	34.1	4	3
	Total Cobalt metal	kt	0.7	0.7	0.7	0.7	0.8	**2.9**	2.7	7	14
Murrin Murrin – total production including third party feed											
	Total Nickel metal	*kt*	11.3	9.0	10.3	9.5	10.9	39.7	42.0	(5)	(4)
	Total Cobalt metal	*kt*	0.8	0.7	0.8	0.9	0.8	3.2	3.0	7	–
Koniambo	**Nickel in ferronickel**	kt	5.2	6.6	7.1	7.8	6.8	**28.3**	17.5	62	31
Total Nickel department											
	Nickel	kt	28.4	30.1	32.1	28.7	32.9	**123.8**	109.1	13	16
	Copper	kt	9.0	10.5	11.4	8.3	11.2	**41.4**	43.6	(5)	24
	Cobalt	kt	0.9	0.9	1.0	0.9	1.0	**3.8**	3.5	9	11
	Gold	koz	7	8	7	7	7	**29**	32	(9)	–
	Silver	koz	158	110	124	114	116	**464**	653	(29)	(27)
	Platinum	koz	19	19	13	12	14	**58**	75	(23)	(26)
	Palladium	koz	34	39	27	24	29	**119**	136	(13)	(15)
	Rhodium	koz	2	1	1	1	1	**4**	6	(33)	(50)

Production by quarter – Q4 2017 to Q4 2018 continued

Metals and minerals

Production from own sources – Ferroalloys assets[1]

		Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	**2018**	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
Ferrochrome[7]	kt	424	409	409	327	435	1,580	1,531	3	3
Vanadium Pentoxide	mlb	5.3	5.3	4.5	4.9	5.5	20.2	20.9	(3)	4

Total production – Custom metallurgical assets[1]

		Q4 2017	Q1 2018	Q2 20178	Q3 2018	Q4 2018	**2018**	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
Copper (Altonorte, Pasar, Horne, CCR)										
Copper metal	kt	135.2	117.0	109.9	108.7	103.2	438.8	526.8	(17)	(24)
Copper anode	kt	131.9	126.5	124.3	124.8	103.7	479.3	535.7	(11)	(21)
Zinc (Portovesme, San Juan de Nieva, Nordenham, Northfleet)										
Zinc metal	kt	196.2	190.0	197.9	206.2	205.5	799.6	788.0	1	5
Lead metal	kt	49.9	52.7	36.6	45.5	51.5	186.3	193.8	(4)	3
Silver	koz	3,301	2,907	2,409	2,385	2,386	10,087	13,656	(26)	(28)

1 Controlled industrial assets and joint ventures only. Production is on a 100% basis, except as stated.
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 Compania Minera.
7 The Group's attributable 79.5% share of the Glencore-Merafe Chrome Venture.

Energy products

Production from own sources – Coal assets[1]

		Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	**2018**	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
Australian coking coal	mt	1.6	1.6	1.8	2.0	2.1	7.5	6.1	23	31
Australian semi-soft coal	mt	0.8	0.6	1.0	0.9	1.4	3.9	4.0	(3)	75
Australian thermal coal (export)	mt	11.7	14.2	15.2	15.6	14.4	59.4	49.1	21	23
Australian thermal coal (domestic)	mt	2.6	2.4	2.2	2.4	2.4	9.4	7.5	25	(8)
South African thermal coal (export)	mt	4.6	4.0	4.0	5.2	4.1	17.3	18.7	(7)	(11)
South African thermal coal (domestic)	mt	2.5	2.5	1.8	2.7	3.0	10.0	10.0	–	20
Prodeco	mt	2.9	3.0	2.5	3.2	3.0	11.7	14.6	(20)	3
Cerrejón[2]	mt	2.9	2.4	2.8	2.7	2.3	10.2	10.6	(4)	(21)
Total Coal department	**mt**	**29.6**	**30.7**	**31.3**	**34.7**	**32.7**	**129.4**	**120.6**	**7**	**10**

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 Cerrejón production (33.3%).

Oil assets

		Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	**2018**	2017	Change 2018 vs 2017 %	Change Q4 18 vs Q4 17 %
Glencore entitlement interest basis										
Equatorial Guinea	kbbl	574	517	446	413	451	1,827	2,529	(28)	(21)
Chad	kbbl	593	639	687	654	819	2,799	2,524	11	38
Total Oil department	kbbl	**1,167**	**1,156**	**1,133**	**1,067**	**1,270**	**4,626**	**5,053**	**(8)**	**9**
Gross basis										
Equatorial Guinea	kbbl	2,721	2,395	2,190	2,065	2,168	8,818	11,914	(26)	(20)
Chad	kbbl	810	873	939	896	1,119	3,827	3,450	11	38
Total Oil department	kbbl	**3,531**	**3,268**	**3,129**	**2,961**	**3,287**	**12,645**	**15,364**	**(18)**	**(7)**

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 2018, as published on the Glencore website on 1 February 2019. 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 2018, unless otherwise noted. For comparison purposes, data for 2017 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	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
African copper									
Katanga	(Mt)	16	16	259	267	276	284	165	168
	Copper (%)	3.58	3.58	3.64	3.60	3.64	3.60	3.78	3.79
	Cobalt (%)	0.57	0.57	0.54	0.53	0.54	0.54	0.44	0.44
Mutanda	(Mt)	404	256	263	200	667	456	119	202
	Copper (%)	1.36	1.36	0.79	1.11	1.14	1.24	0.65	0.71
	Cobalt (%)	0.47	0.51	0.25	0.41	0.38	0.46	0.15	0.31
Mopani	(Mt)	208	211	76	74	285	285	76	78
	Copper (%)	2.08	2.09	1.99	2.01	2.06	2.07	2.06	2.07
	Cobalt (%)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09
Collahuasi	(Mt)	870	934	4,458	4,471	5,328	5,405	5,052	4,444
	Copper (%)	0.84	0.85	0.81	0.81	0.82	0.82	0.74	0.75
	Molybdenum (%)	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.01
Antamina	(Mt)	347	254	707	816	1,054	1,070	1,236	1,372
	Copper (%)	0.87	0.89	0.86	0.89	0.87	0.89	0.99	0.91
	Zinc (%)	0.65	0.76	0.77	0.76	0.73	0.76	0.60	0.55
	Silver (g/t)	10	11	11	11	11	11	12	10
	Molybdenum (%)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Other South America	(Mt)	677	647	2,063	2,129	2,741	2,776	797	838
	Copper (%)	0.44	0.43	0.42	0.38	0.42	0.39	0.30	0.34
	Gold (g/t)	0.11	0.10	0.04	0.03	0.05	0.05	0.03	0.03
	Silver (g/t)	0.7	0.6	0.8	0.6	0.7	0.6	0.2	0.4
Australia	(Mt)	116	116	168	177	284	293	161	165
	Copper (%)	1.77	1.82	1.37	1.37	1.53	1.54	1.1	1.1
	Gold (g/t)	0.09	0.09	0.23	0.23	0.17	0.18	0.06	0.06
	Silver (g/t)	0.6	0.6	0.4	0.4	0.5	0.5	0.7	0.7
Other projects	(Mt)	534	534	1,915	1,551	2,449	2,085	2,596	2,498
(El Pachon, West Wall)	Copper (%)	0.67	0.67	0.50	0.51	0.54	0.55	0.41	0.44
	Gold (g/t)	–	–	0.02	0.02	0.02	0.01	0.02	0.02
	Silver (g/t)	2.4	2.4	1.1	1.4	1.4	1.7	1.1	1.1
	Molybdenum (%)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Copper ore reserves

Name of operation	Commodity	Proved Ore Reserves 2018	Proved Ore Reserves 2017	Probable Ore Reserves 2018	Probable Ore Reserves 2017	Total Ore Reserves 2018	Total Ore Reserves 2017
African copper							
Katanga	(Mt)	9	9	124	129	133	138
	Copper (%)	3.56	3.55	3.15	3.13	3.18	3.15
	Cobalt (%)	0.55	0.55	0.51	0.51	0.52	0.51
Mutanda	(Mt)	80	93	52	34	132	126
	Copper (%)	1.69	1.80	1.79	1.73	1.73	1.78
	Cobalt (%)	0.70	0.69	0.59	0.59	0.66	0.66
Mopani	(Mt)	111	114	33	30	144	144
	Copper (%)	1.90	1.91	1.90	1.97	1.90	1.92
Collahuasi	(Mt)	448	479	2,683	2,740	3,131	3,220
	Copper (%)	1.10	1.14	0.90	0.89	0.93	0.93
	Molybdenum (%)	0.023	0.023	0.026	0.024	0.026	0.024
Antamina	(Mt)	235	180	254	358	489	538
	Copper (%)	0.96	0.97	0.87	0.89	0.91	0.92
	Zinc (%)	0.78	0.89	1.09	1.00	0.94	0.96
	Silver (g/t)	10	11	11	10	11	11
	Molybdenum (%)	0.027	0.027	0.021	0.022	0.024	0.024
Other South America	(Mt)	504	518	739	809	1,243	1,327
	Copper (%)	0.45	0.42	0.47	0.46	0.46	0.45
	Gold (g/t)	0.10	0.10	0.05	0.05	0.07	0.07
	Silver (g/t)	0.8	0.7	1.3	1.1	1.1	0.9
Australia	(Mt)	32	26	53	69	85	95
	Copper (%)	2.11	2.16	1.43	1.48	1.68	1.66
	Gold (g/t)	0.26	0.31	0.28	0.29	0.27	0.29
	Silver (g/t)	2.0	2.3	0.7	0.4	1.2	0.9

Metals and minerals: Zinc

Zinc mineral resources

Name of operation	Commodity	Measured Mineral Resources 2018	Measured Mineral Resources 2017	Indicated Mineral Resources 2018	Indicated Mineral Resources 2017	Measured and Indicated Resources 2018	Measured and Indicated Resources 2017	Inferred Mineral Resources 2018	Inferred Mineral Resources 2017
Kazzinc									
Kazzinc Polymetallic	(Mt)	92	90	92	97	185	187	157	156
	Zinc (%)	4.0	4.1	1.5	1.7	2.7	2.8	2	3
	Lead (%)	1.4	1.5	0.4	0.5	0.9	1.0	1	1
	Copper (%)	0.3	0.3	0.2	0.3	0.3	0.3	0.1	0.3
	Silver (g/t)	20	20	15	16	17	18	22	23
	Gold (g/t)	0.5	0.5	0.8	0.8	0.7	0.7	1	1
Kazzinc Gold (Vasilkovskoye)	(Mt)	78	84	46	48	124	132	–	0.1
	Gold (g/t)	2.1	2.1	1.7	1.7	1.9	2.0	–	0.9
Australia									
Mount Isa	(Mt)	110	123	308	358	419	480	220	190
	Zinc (%)	7.4	6.9	7.0	6.0	7.0	6.2	6	5
	Lead (%)	4.4	4.2	3.4	3.2	3.7	3.4	3	3
	Silver (g/t)	85	81	62	60	67	66	65	55
McArthur River	(Mt)	108	121	64	65	172	188	–	–
	Zinc (%)	9.7	9.9	10.1	8.8	9.8	9.6	–	–
	Lead (%)	4.2	4.6	5.1	4.0	4.6	4.5	–	–
	Silver (g/t)	42	47	55	42	47	46	–	–
North America									
Zinc North America	(Mt)	21.7	22.1	34	36	55	58	70	64
	Zinc (%)	4.2	4.3	4.8	4.7	4.5	4.6	4	4
	Lead (%)	0.5	0.5	0.5	0.5	0.7	0.5	1	1
	Copper (%)	1.5	1.5	0.7	0.7	1.0	1.0	1	1
	Silver (g/t)	46	47	112	106	87	84	133	145
	Gold (g/t)	0.4	0.4	0.4	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)	37	–	55	–	92	–	212	–
	Zinc (%)	6.3	–	5.2	–	5.6	–	2.7	–
	Lead (%)	1.2	–	1.2	–	1.2	–	0.9	–
	Silver (g/t)	109	–	79	–	93	–	76	–
Copper deposits	(Mt)	18.4	–	34.3	–	53	–	148	–
	Gold (g/t)	–	–	–	–	–	–	0.4	–
	Copper (%)	0.5	–	0.5	–	0.5	–	0.2	–
Other Zinc	(Mt)	15.9	16.3	22	20	38	36	73	64
	Zinc (%)	6.0	5.8	4.8	5.2	5.3	5.5	7	7
	Lead (%)	1.7	2.0	1.4	1.8	1.5	1.9	1	1
	Copper (%)	0.3	0.4	0.4	0.4	0.4	0.4	0.1	0.1
	Silver (g/t)	134	165	138	177	137	172	89	62

Zinc ore reserves

Name of operation	Commodity	Proved Ore Reserves 2018	Proved Ore Reserves 2017	Probable Ore Reserves 2018	Probable Ore Reserves 2017	Total Ore Reserves 2018	Total Ore Reserves 2017
Kazzinc							
Kazzinc Polymetallic	(Mt)	76	78	16.8	20.2	93	99
	Zinc (%)	3.9	3.9	4.4	4.3	4.0	4.0
	Lead (%)	1.4	1.5	0.7	0.8	1.3	1.4
	Copper (%)	0.1	0.2	0.6	0.6	0.2	0.3
	Silver (g/t)	18	16	27	26	19	18
	Gold (g/t)	0.3	0.3	0.7	0.7	0.4	0.3
Kazzinc Gold (Vasilkovskoye)	(Mt)	51	70	47	38	98	108
	Gold (g/t)	2.1	2.2	1.8	1.8	1.8	2.1
Australia							
Mount Isa	(Mt)	22	26	75	58	97	84
	Zinc (%)	8.1	8.7	7.0	7.0	7.2	7.8
	Lead (%)	4.1	4.3	3.3	3.2	3.5	3.8
	Silver (g/t)	75	79	60	63	62	68
McArthur River	(Mt)	73	70	35	44	108	114
	Zinc (%)	9.4	10.6	8.1	7.4	9.0	9.3
	Lead (%)	4.3	5.0	4.3	3.6	4.3	4.4
	Silver (g/t)	43	50	46	37	44	45
North America	(Mt)	5.8	6.3	3.0	4.1	9	10
	Zinc (%)	3.9	4.1	6.1	6.4	4.7	5.0
	Copper (%)	1.8	1.8	1.3	1.3	1.6	1.6
	Silver (g/t)	42	46	32	34	39	41
	Gold (g/t)	0.09	0.04	0.4	0.5	0.2	0.2
Volcan	(Mt)	15.8	–	18.5	–	34.3	–
	Zinc (%)	4.1	–	4.0	–	4.0	–
	Lead (%)	0.8	–	1.0	–	0.9	–
	Silver (g/t)	74	–	76	–	73	–
Other Zinc	(Mt)	5.6	5.5	11.2	10.6	16.8	16.5
	Zinc (%)	5.2	5.2	3.9	4.3	4.4	5.5
	Lead (%)	1.7	2.0	1.0	1.4	1.2	1.9
	Copper (%)	0.2	0.2	0.3	0.3	0.2	0.2
	Silver (g/t)	124	126	103	120	110	122

Metals and minerals: Nickel

Nickel mineral resources

Name of operation	Commodity	Measured Mineral Resources 2018	Measured Mineral Resources 2017	Indicated Mineral Resources 2018	Indicated Mineral Resources 2017	Measured and Indicated Resources 2018	Measured and Indicated Resources 2017	Inferred Mineral Resources 2018	Inferred Mineral Resources 2017
INO	(Mt)	12.2	14.6	37.5	34.6	49.6	49.3	39	34
	Nickel (%)	2.74	2.65	2.50	2.61	2.56	2.62	1.7	1.8
	Copper (%)	1.19	1.28	1.92	1.81	1.74	1.66	2.0	1.8
	Cobalt (%)	0.06	0.06	0.06	0.06	0.06	0.06	0.04	0.1
	Platinum (g/t)	0.94	0.91	0.92	0.92	0.93	0.91	1.0	1.0
	Palladium (g/t)	1.67	1.55	1.56	1.55	1.58	1.55	1.6	1.6
Murrin Murrin	(Mt)	138.4	140.9	75.5	77.4	214.0	218.3	17	18
	Nickel (%)	1.01	1.00	0.99	0.99	1.01	1.00	0.9	0.9
	Cobalt (%)	0.075	0.074	0.084	0.084	0.078	0.078	0.07	0.07
Koniambo	(Mt)	12.8	13.8	43.6	43.2	56.4	57.0	83	83
	Nickel (%)	2.48	2.49	2.40	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 2018	Proved Ore Reserves 2017	Probable Ore Reserves 2018	Probable Ore Reserves 2017	Total Ore Reserves 2018	Total Ore Reserves 2017
INO	(Mt)	10.3	11.1	21.7	21.9	32.0	33.0
	Nickel (%)	1.96	2.03	2.28	2.39	2.17	2.27
	Copper (%)	0.96	1.15	0.92	0.92	0.94	1.00
	Cobalt (%)	0.04	0.04	0.05	0.05	0.05	0.05
	Platinum (g/t)	0.70	0.78	0.52	0.54	0.58	0.62
	Palladium (g/t)	1.16	1.24	0.95	1.00	1.02	1.08
Murrin Murrin	(Mt)	83.1	85.5	18.5	18.9	101.7	104.3
	Nickel (%)	1.05	1.04	1.05	1.06	1.05	1.05
	Cobalt (%)	0.082	0.080	0.078	0.077	0.081	0.079
Koniambo	(Mt)	11.7	11.2	30.1	25.9	41.8	37.1
	Nickel (%)	2.27	2.30	2.20	2.22	2.22	2.25

Metals and minerals: Ferroalloys

Ferroalloys mineral resources

Name of operation	Commodity	Measured Mineral Resources 2018	Measured Mineral Resources 2017	Indicated Mineral Resources 2018	Indicated Mineral Resources 2017	Measured and Indicated Resources 2018	Measured and Indicated Resources 2017	Inferred Mineral Resources 2018	Inferred Mineral Resources 2017
Western Chrome Mines									
Western Chrome Mines	(Mt)	51.951	54.248	57.00	56.38	108.95	110.63	107.6	115.6
	Cr_2O_3 (%)	42.10	42.09	41.4	41.4	41.7	41.7	42	42
Tailings	(Mt)	–	–	–	–	–	–	2.6	1.0
	Cr_2O_3 (%)	–	–	–	–	–	–	17	17
Eastern Chrome Mines									
Eastern Chrome Mines	(Mt)	61.743	61.364	45.67	45.78	107.41	107.14	156.5	157.7
	Cr_2O_3 (%)	40.18	40.32	40.2	40.4	40.2	40.3	38	38
Tailings	(Mt)	–	–	–	–	–	–	4.2	–
	Cr_2O_3 (%)	–	–	–	–	–	–	19	–
Vanadium	(Mt)	48.36	49.68	37.67	38.12	86.04	87.81	93	94
	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 2018	Proved Ore Reserves 2017	Probable Ore Reserves 2018	Probable Ore Reserves 2017	Total Ore Reserves 2018	Total Ore Reserves 2017
Western Chrome Mines	(Mt)	17.418	18.477	7.94	7.37	25.36	25.84
	Cr_2O_3 (%)	30.84	31.00	28.2	28.4	30.0	30.4
Eastern Chrome Mines	(Mt)	22.961	27.050	10.03	9.09	32.99	36.14
	Cr_2O_3 (%)	33.20	35.00	34.2	35.9	33.5	35.2
Vanadium	(Mt)	23.94	25.30	11.5	12.1	35.4	37.4
	V_2O_5 (%)	0.47	0.47	0.5	0.5	0.5	0.5

Metals and minerals: Aluminium/Alumina

Alumina mineral resources

Name of operation	Commodity	Measured Mineral Resources 2018	Measured Mineral Resources 2017	Indicated Mineral Resources 2018	Indicated Mineral Resources 2017	Measured and Indicated Resources 2018	Measured and Indicated Resources 2017	Inferred Mineral Resources 2018	Inferred Mineral Resources 2017
Aurukun	(Mt)	94	–	322	–	416	–	3	–
	Al_2O_3 (%)	53.4	–	50.0	–	50.7	–	49.5	–

Metals and minerals: Iron Ore

Iron ore mineral resources

Name of operation	Commodity	Measured Mineral Resources 2018	Measured Mineral Resources 2017	Indicated Mineral Resources 2018	Indicated Mineral Resources 2017	Measured and Indicated Resources 2018	Measured and Indicated Resources 2017	Inferred Mineral Resources 2018	Inferred Mineral Resources 2017
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 2018	Proved Ore Reserves 2017	Probable Ore Reserves 2018	Probable Ore Reserves 2017	Total Ore Reserves 2018	Total Ore Reserves 2017
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 2018	Measured Coal Resources 2017	Indicated Coal Resources 2018	Indicated Coal Resources 2017	Inferred Coal Resources 2018	Inferred Coal Resources 2017
Australia							
New South Wales	Coking/Thermal Coal (Mt)	3,608	2,942	3,974	2,739	7,615	5,761
Queensland	Coking/Thermal Coal (Mt)	3,157	3,008	5,401	3,851	8,595	8,370
South Africa	Thermal Coal (Mt)	2,409	2,475	844	844	350	355
Prodeco	Thermal Coal (Mt)	205	220	148	160	70	70
Cerrejón	Thermal Coal (Mt)	3,100	3,150	1,200	1,050	700	700
Canada projects							
(Suska, Sukunka)	Coking/Thermal Coal (Mt)	45	45	113	113	130	130

Coal reserves

Name of operation	Commodity	Coal Reserves Proved 2018	Coal Reserves Probable 2018	Marketable Coal Reserves Proved 2018	Marketable Coal Reserves Probable 2018	Total Marketable Coal Reserves 2018	Total Marketable Coal Reserves 2017
Australia							
New South Wales	Thermal Coal (Mt)	1,069	698	771	490	1,261	711
	Coking Coal (Mt)	4	7	3	5	8	3
Queensland	Thermal Coal (Mt)	894	428	791	363	1,149	1,134
	Coking Coal (Mt)	107	121	72	78	150	73
South Africa	Thermal Coal (Mt)	683	250	434	143	581	595
Prodeco	Thermal Coal (Mt)	110	40	110	40	150	175
Cerrejón	Thermal Coal (Mt)	330	60	315	60	375	460

Energy products: Oil

Net reserves (Proven and Probable)[1]

	Working Interest Basis								
	Equatorial Guinea		Chad		Cameroon		**Total**		
	Oil mmbbl	Gas bcf	Oil mmbbl	Gas bcf	Oil mmbbl	Gas bcf	Oil mmbbl	Gas bcf	Combined mmboe
31 December 2017	17	146	96	–	3	–	**116**	**146**	**141**
Revisions	–	8	9	–	–	–	**9**	**8**	**10**
Production	(2)	–	(3)	–	–	–	**(5)**	**–**	**(5)**
31 December 2018	15	154	102	–	3	–	**120**	**154**	**147**

Net contingent resources (2C)[1]

	Working Interest Basis								
	Equatorial Guinea		Chad		Cameroon		**Total**		
	Oil mmbbl	Gas bcf	Oil mmbbl	Gas bcf	Oil mmbbl	Gas bcf	Oil mmbbl	Gas bcf	Combined mmboe
31 December 2017	23	454	61	–	4	–	**88**	**454**	**166**
31 December 2018	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

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