GLENCORE

NEWS RELEASE
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Preliminary Results 2018

Highlights

Glencore's Chief Executive Officer, Ivan Glasenberg, commented: "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. Our asset portfolio continued to deliver overall competitive all-in unit costs, which allowed the Company to capitalise on healthy average commodity prices and generate attractive margins. Adjusted EBITDA increased 8% to $15.8 billion and net income before significant items rose 5% to $5.8 billion.

"Our strong cash generation underpinned $5.2 billion of announced shareholder returns and buybacks in 2018. Reflecting the strength of these cash flows, 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. We also announce today a new $2 billion buyback program, which will run until the end of 2019. 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.

"Our commodity portfolio and its key role in enabling the energy and mobility transition for a low-carbon economy enables us to look ahead with confidence and to remain focused on creating sustainable long-term value for all our shareholders."

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)[2,3◊]	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

1 Restated to present 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 on page 7.

3 Refer to page 11.

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

Highlights continued

Another record Adjusted EBITDA performance

- Adjusted EBITDA of $15.8 billion, up 8%; Adjusted EBIT of $9.1 billion, also up 8%
- Net income attributable to equity holders down 41% to $3.4 billion, mainly due to non-cash impairments at Mutanda and Mopani, totalling $1.4 billion, compared to $1.3 billion of accounting gains on sales of investments in the base period
- Resulting EPS down 17¢ to 24¢/share

Marketing Adjusted EBIT down $0.5 billion, still well within our long-term guidance range

- Some industrial metal inventories (e.g. copper) reaching near-historical lows on exchange, indicating balanced to undersupplied markets
- Generally positive market conditions, hampered by alumina “basis risk” impact and a challenging cobalt market in H2
- Marketing EBIT guidance for 2019 towards the middle of our $2.2-3.2 billion long-term range

Industrial Adjusted EBITDA up $1.7 billion (15%) supported by ramp-ups, acquisitions and prices

- Restarts of Katanga’s processing operations and zinc mining at Lady Loretta (Mount Isa)
- HVO and Hail Creek contributed positively post-acquisition
- H1 commodity prices generally strong; H2 lower but still well above H1 2016 lows. Coal prices were strong throughout
- Looking forward, Mutanda’s updated mine plan reduces annual copper production to 100,000 tonnes per year from oxide and transitional ores (vs 200,000 tonnes historically), pending a future investment decision on whether and how to process the now increased sulphide reserves/resources.
- 2019 production guidance in all commodities expected higher than 2018

Governance issues being addressed

- Resolutions achieved at Katanga relating to recapitalisation of its main operating subsidiary and with the Ontario Securities Commission regarding accounting, governance and disclosure matters. A refreshed management team has been appointed
- Board committees have been created to oversee (1) the Group’s response to the U.S. Department of Justice’s investigation (2) the Group’s key ethics, compliance, culture and governance matters. We have appointed a Head of Industrial Assets (newly created position) to drive operational and sustainability improvements across the Group

Global transition to a low carbon economy

- Following engagement with the investor signatories of the Climate Action 100+ initiative, we are furthering our commitment to the transition to a low carbon economy
- As one of the world’s largest diversified mining companies, we have a key role in enabling transition to a low carbon economy
- We aim to prioritise capital investment to grow production of commodities essential to the energy and mobility transition and to limit our coal production capacity broadly to current levels
- Our commitments include: Paris-consistent capital discipline, developing new longer-term Scope 1 and 2 reduction targets, regular review of progress, alignment with TCFD recommendations and corporate climate change lobbying review

Targeted M&A moving to integration phase

- Hunter Valley Operations premium thermal coal mine (49% interest) and Hail Creek coking/thermal coal mine (82% interest) acquired and material integration benefits starting to flow
- Acquired fuel distribution network in Brazil
- Acquisition of Astron Energy (formerly Chevron’s Cape Town refinery and distribution assets in South Africa and Botswana), pending SA competition clearance. At 31 December, this is reflected as a loan to our prospective business partner

2018 announced returns to shareholders totalling $5.2 billion (approximately 36¢/share); further distributions and buybacks in 2019

- Distribution of 20¢/share was enhanced by share trust purchases of $0.32 billion and a $2 billion buyback programme, now almost fully executed
- 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
- We have therefore recommended a 20¢/share distribution for 2019 (basis 2018 cash flows), in line with the prior year, supplemented by a new $2 billion buyback programme, effective immediately and running until the end of 2019. 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
- Equity cash flows prioritised for: (1) buybacks funded by cash generation; (2) RMI managed consistently below $20 billion; and (3) net debt maintained in a $10-16 billion range, while limiting Net debt:Adjusted EBITDA to around one times, in the current uncertain economic cycle backdrop

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Notes for Editors

Glencore is one of the world's largest global diversified natural resource companies and a major producer and marketer of more than 90 commodities. The Group's operations comprise around 150 mining and metallurgical sites, oil production assets and agricultural facilities.

With a strong footprint in both established and emerging regions for natural resources, Glencore's industrial and marketing activities are supported by a global network of more than 90 offices located in over 50 countries.

Glencore's customers are industrial consumers, such as those in the automotive, steel, power generation, oil and food processing sectors. We also provide financing, logistics and other services to producers and consumers of commodities. Glencore's companies employ around 158,000 people, including contractors.

Glencore is proud to be a member of the Voluntary Principles on Security and Human Rights and the International Council on Mining and Metals. We are an active participant in the Extractive Industries Transparency Initiative.

Chief Executive Officer's Review

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.

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 13 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, and
- 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 today a new $2 billion buyback program, which will run until the end of 2019. 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

Financial and Operational Review

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 106.

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, 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 U.S. dollar (on average) against many of our key producer country currencies. Average year-over-year increases in the U.S. 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).

Adjusted EBITDA/EBIT◊

Adjusted EBITDA by business segment is as follows:

US$ million	2018 Marketing activities	2018 Industrial activities	2018 Adjusted EBITDA	2017 Restated[1] Marketing activities	2017 Restated[1] Industrial activities	2017 Restated[1] 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:

US$ million	2018 Marketing activities	2018 Industrial activities	2018 Adjusted EBIT	2017 Restated[1] Marketing activities	2017 Restated[1] Industrial activities	2017 Restated[1] 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.

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.

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 its 2014 – 2016 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.

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).

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.

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 $7,335 million one-year revolving credit facilities signed in May 2017. Funds drawn under the facilities bear interest at U.S.$ 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; and
  - 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.

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 below) 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 (www.glencore.com) or from the Company's Registrars.

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

Metals and minerals

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% ($/lb)	33	25	32
MB ferrochrome China import charge chrome 50% Cr index, CIF Shanghai, duty unpaid (¢/lb)	90	101	(11)
Iron ore (Platts 62% CFR North China) price ($/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.

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 5 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.

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.

Looking ahead, given the current project pipeline in the ROW, zinc mine supply is expected to continue to grow in 2019. This should incentivise metal production increases in the medium term, mainly in China. However, the current environmental constraints could continue to support a tight metal market and price for some time.

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 7% 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 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 200,000 mts for a third consecutive year bringing cumulative deficits over the last 3 years to well over 400,000 mts. 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.

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◊ 2018	Adjusted EBITDA◊ 2017	Adjusted EBITDA◊ Change %	Adjusted EBIT◊ 2018	Adjusted EBIT◊ 2017	Adjusted EBIT◊ 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	164	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 %
Africa (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)**

Metals and minerals continued

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)

Metals and minerals continued

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 Compania 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 20.5 million tonnes was also in line.

Energy products

Highlights

Energy products Adjusted EBITDA of $6.1 billion was up 31% over 2017. The increase was predominately 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

		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.

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.

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 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◊ **2018**	Adjusted EBITDA◊ 2017	Adjusted EBITDA◊ Change %	Adjusted EBIT◊ **2018**	Adjusted EBIT◊ 2017	Adjusted EBIT◊ 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** **Sustaining**	**2018** **Expansion**	**2018** **Total**	2017 Sustaining	2017 Expansion	2017 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

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 %
Glencore Agri Adjusted EBITDA◊ (100% basis)	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]

		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.

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

For the year ended 31 December 2018

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.

This preliminary announcement was authorised for issue in accordance with a Directors' resolution on 19 February 2019.

The unaudited financial information for the year ended 31 December 2018 and audited financial information for the year ended 31 December 2017 contained in this document do not constitute statutory accounts as defined in Article 105 of Companies (Jersey) Law 1991. The financial information for the year ended 31 December 2018 has been extracted from the financial statements of Glencore which will be delivered to the Registrar in due course. The audit report for 31 December 2018 is yet to be signed by the auditors.

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

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, 12, 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. 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.

1. Accounting policies continued

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[2]		–	–	(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.
2 See note 14.

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$)	**0.32**	**0.34**
Diluted headline earnings per share (US$)[1]	**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 24.

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

			Defined benefit pension plans		
US$ million	Notes	Post-retirement medical plans	Present value of defined benefit obligation	Fair value of plan assets	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, 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	926	–	–	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	**9,812**	**11,115**	**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.
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 is subject to regulatory approvals and expected to close in H1 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.

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.

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).

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)**

Production by quarter – Q4 2017 to Q4 2018 continued

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)

Production by quarter – Q4 2017 to Q4 2018 continued

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.

Production by quarter – Q4 2017 to Q4 2018 continued

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)**