Principal risks and uncertainties

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

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

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

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

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

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

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

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

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

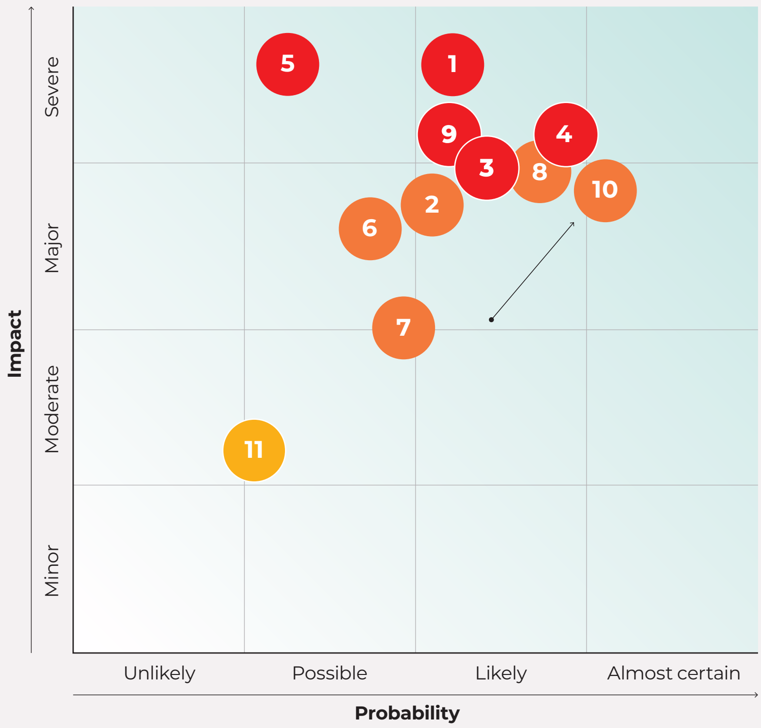
The assessment of our principal risks, according to exposure and impact, is detailed on the following pages.

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

Evolution in principal risks

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

2019 developments and overview of principal risks and uncertainties



Key

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

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

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

Risk impact
● Moderate ● Major ● Severe

Indicates change in 2019

Longer-term viability

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

These scenarios included:

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

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

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

Understanding the information on risks

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

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

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

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

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

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

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

To provide for concise text:

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

Strategic priorities

Integration of sustainability throughout our business

Maintain a robust and flexible balance sheet

Focus on cost control and operational efficiencies

External risks

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

Link to strategic priorities

Risk appetite

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

Risk description and potential impact

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

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

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

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

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

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

Developments

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

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

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

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

Mitigating factors

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

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

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

External risks continued

2 Currency exchange rates	Risk movement in 2019: Stable

Link to strategic priorities

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

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

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

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

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

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

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

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

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

External risks continued

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

Link to strategic priorities

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

External risks continued

4 Laws and enforcement	Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite

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

Risk description and potential impact

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

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

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

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

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

External risks continued

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

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

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

a. The United States Department of Justice is investigating the Group with respect to compliance with the Foreign Corrupt Practices Act and United States money laundering statutes related to the Group's business in certain overseas jurisdictions, from 2007
b. The Brazilian authorities are investigating the Group in relation to "Operation car wash", which relates to bribery allegations concerning Petrobras

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

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

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

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

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

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

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

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

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

External risks continued

5 Liquidity	Risk movement in 2019: Stable

Link to strategic priorities

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

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

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

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

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

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

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

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

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

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

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

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

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

Business risks

6 Counterparty credit and performance

Risk movement in 2019: Stable

Link to strategic priorities

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

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

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

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

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

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

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

Mitigating factors
We seek to diversify our counterparties.

We try to ensure adherence to open account limits.

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

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

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

7 Operating

Risk movement in 2019: Stable

Link to strategic priorities

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

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

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

Business risks continued

Risk description and potential impact continued

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

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

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

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

Developments

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

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

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

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

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

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

Mitigating factors

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

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

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

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

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

Business risks continued

8 Cyber	Risk movement in 2019: Stable

Link to strategic priorities

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Sustainability risks

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

Link to strategic priorities

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

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

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

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

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

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

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

Environmental, safety and health regulations may result in increased costs or, in the event of non-compliance or incidents causing injury or death or other damage at or to our facilities or surrounding areas, may result in significant losses. These include, those arising from (1) interruptions in production, litigation and imposition of penalties and sanctions and (2) having licences and permits withdrawn or suspended while being forced to undertake extensive remedial clean-up action or to pay for government-ordered remedial clean-up actions.

Liability may also arise from the actions of any previous or subsequent owners or operators of the property, by any past or present owners of adjacent properties, or by third parties.

Developments
We remain focused on the significant risks facing our industry arising from operational catastrophes such as the examples of mining dam collapses in Brazil in the last five years. During 2019, the HSEC Committee continued to sponsor and monitor the Group's sustainability risks assurance process. Its focus continues to be on the Group's catastrophic hazards.

We continued to take a flexible local approach to transforming our workforces' safety and health attitudes and culture. Although we seek to improve our policies and their implementation over time, we continue to experience shortcomings, which result in health and safety and environmental issues.

We regret that we recorded 17 fatalities at our operations in 2019 (2018: 13). There is full commitment from senior management and the Board to improve our performance.

During the year, no major or catastrophic environmental (category 4-5 and above) incidents occurred.

Mitigating factors
Our approach to sustainability and our expectations of our workers and our business partners are outlined in our sustainability framework. This underpins our approach towards social, environmental, safety and compliance indicators, providing clear guidance on the standards we expect all our operations to achieve. Through the reporting function within the programme, our Board and senior management receive regular updates and have a detailed oversight on how our business is performing across all of the sustainability indicators.

The creation of a new role – Head of Industrial Assets together with supporting central team – one of the objectives of which, is to ensure an efficient and consistent approach to managing Industrial Assets. Considerable ongoing investment continues in the Group's SafeWork health and safety programme. Our commitment to complying with or exceeding the health, safety and environmental laws, regulations and best practice guidelines applicable to our operations and products through our sustainability framework.

We remain focused on the significant risks facing our industry arising from operational catastrophes. For example, the considerable verification work undertaken and enhanced monitoring of tailings storage facilities is assisting in greater visibility and control of these risks, and we continue to undertake work to improve the safety and stability of these facilities.

We monitor catastrophic risks, in particular, across our portfolio and operate emergency response programmes. We are working towards creating a workplace without fatalities, injuries or occupational diseases through establishing a positive safety culture.

We aim to minimise any potential water-related impacts as it is a vital resource to our operations and the communities in which we operate.

We recognise the contribution a healthy community makes towards the robustness of our production processes. Community members are often our employees, contractors, procurement partners and service providers. We work with local authorities, local community representatives and other partners, such as NGOs, to help to overcome major public health issues in the regions where we work, such as HIV/AIDS, malaria and tuberculosis. See also the Sustainability review on page 34 and the HSEC Committee report on page 106. Further details will also be published in our 2019 sustainability report.

10 Climate change

Risk movement in 2019: Increase

Link to strategic priorities

Risk appetite
High. Our business involves producing and consuming fossil fuels along with processing minerals, all of which inevitably entails emitting a level of greenhouse gases.

Risk description and potential impact
Climate change is a material issue that can affect our business. As a significant producer, marketer and consumer of energy products, energy is a key output, input, cost and revenue driver for our business, and a material source of our greenhouse gas emissions.
A number of governments have already introduced, or are contemplating the introduction of regulatory responses to greenhouse gas emissions to support the achievement of the goals of the Paris Agreement and the transition to a low-carbon economy. This includes countries where we have assets such as Australia, Canada, Chile and South Africa, as well as our customer markets such as China, India and Europe.

A transition to a low-carbon economy and its associated public policy and regulatory developments may lead to:
- the imposition of new regulations, and climate change related policies adverse to our interests in fossil fuels by actual or potential investors, customers and banks, potentially impacting Glencore's reputation, access to capital and financial performance
- increased costs for energy and for other resources, which may impact the productivity of our assets and associated costs the imposition of levies related to greenhouse gas emissions
- increased costs for monitoring and reporting related to our carbon footprint
- reduced demand for our fossil fuel products
- impacts on the development or maintenance of our assets due to restrictions in operating permits, licences or similar authorisations
- closing of coal assets and consequent loss of investment

Climate change may increase physical risks to our assets and related infrastructure, largely driven from extreme weather events and water related risks such as flooding or water scarcity.

We are one of the major producers of key metals (including copper, cobalt, nickel) that are currently essential for electric vehicles and the transition to a low carbon economy, although technological change may over time reduce their requirement.

There has been a significant increase in litigation (including class action), in which climate change and its impacts are a contributing or key consideration, including administrative law cases, tortious cases and claims brought by investors. In particular, a number of lawsuits have been brought against fossil fuel companies in various jurisdictions seeking damages related to climate change.

Sustainability risks continued

Developments
In 2019, the Group wrote down the value of its Colombian coal assets by c.$1.0 billion (see note 6 and 10).

Many developed countries are pledging to stop using fossil fuels (specifically coal) in power generation. The European coal market has seen reduced demand affecting our Colombian coal production in particular, also impacted by the low competing gas prices, which resulted in impairments in the year. In December 2018, global investors collectively representing $11.5tn have set out their requirements to investee power companies to set out transition plans consistent with the goal of the Paris Agreement. They also expect explicit time lines and commitments for the rapid elimination of coal use by utilities in EU and OECD countries by 2030.

This is particularly relevant for us as a large producer of seaborne thermal coal and a significant marketer of fossil fuels.

As a result of these factors, some market participants and analysts have a more bearish view (some strongly so) in relation to coal and oil. Some investors may not invest in our shares or divest their holdings due to our significant operations in fossil fuels. To date, the Norwegian sovereign fund is the only previous large investor that can no longer invest in Glencore shares due to the absolute size of our thermal coal production levels, rather than coal's relative contribution. However, a number of other investors may make various commitments in the future, which would cause them to reduce or divest their holdings in Glencore securities.

Mitigating factors
Through our focused climate change programme, we strive to ensure emissions and climate change issues are identified, understood and monitored in order to meet international best practice standards, ensure regulatory compliance and meet the commitments we have made in support of the goals of the Paris Agreement.

We disclose our energy and greenhouse gas emissions footprint, including our annual Scope 3 emissions. This supports our identification, understanding and monitoring of emissions, the setting of targets and reporting of projections.

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

Climate change also creates opportunities for our business. We are one of the major producers of key metals (including copper, cobalt and nickel) that are currently essential for electric vehicles and the transition to a low carbon economy, although technological change may over time reduce their requirement.

To understand better and plan for the effects of climate change on our business, we have a framework for identifying, understanding, quantifying and, ultimately, managing climate-related challenges and opportunities facing our portfolio:

- Government policy: we take an active and constructive role in public policy development of carbon and energy issues and seek to ensure that there is a balanced debate with regard to the ongoing use of fossil fuels
- Lobbying activities: we acknowledge IIGCC Investor Expectations on Corporate Climate Lobbying and recognise the importance of ensuring our membership in relevant trade associations does not undermine our support for the Paris Agreement and the Paris Goals
- Energy costs: projected price changes within our operating regions may affect our assets' operating cost sensitivities. We review the potential energy cost impacts on our operating costs
- Physical impacts: changes in weather patterns: floods; droughts; and storm frequency as well as storm surge have the potential to impact on ports and critical infrastructure and on local communities. We review risk registers and conduct risk assessments at our assets for projected impacts
- Stakeholder perceptions: negative perception may result in impacts to permit approvals, divestiture or cost of finance and affect our operating policy environments. We consider policy and financial consequences for our business and operations
- Market impacts: potential impacts on existing commodity markets through new or increased opportunities for our products from emerging technologies and policy changes. We determine how significant the potential impacts are (both positive and negative) and act accordingly

Last year, following engagement with investor signatories of the Climate Action 100+ initiative, we furthered our commitment to a low-carbon economy, amongst others by limiting our coal production broadly to approximately 150 million tonnes. In addition, we undertook to ensure that our material capital expenditure and investments align with the Paris Goals, and to report publicly on how this is achieved. At present, we project a c. 30% reduction in Scope 3 emissions by 2035. Please refer to pages 16-23 for further details.

Our internal, cross-function and multi-commodity working group, led by our Chairman, co-ordinates our understanding and planning for the effects of climate change on our business, as well as the steps we have put in place to meet our Group-wide carbon emission intensity reduction target of 5% on 2016 levels by 2020. We are comfortably on track to exceed our target. We are continuing to invest in a range of emission reduction projects.

We participate in a wide range of public policy discussions on carbon and energy issues and seek to ensure that there is a balanced debate with regard to the ongoing use of fossil fuels. We review our membership of trade associations to ensure that these do not undermine our support for the goals of the Paris Agreement.

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

11 Community relations and human rights

Risk movement in 2019: Stable

Link to strategic priorities

Risk appetite
Low. It is our policy to ensure we proactively engage with local communities to maintain our social licence to operate.

Risk description and potential impact
Community relations, in particular in developing countries such as Colombia, Zambia, DRC and Peru, are important for the Group's local operations.

Our operations have a significant effect on our workforce, and surrounding communities and on society as a whole. We recognise the contribution our business activities make to the national and local economies in which we operate. As a result, the continued success of our existing operations and our future projects are in part dependent on broad support and a healthy relationship with the communities surrounding our operations as well as our ability to promote diversified and resilient local economies.

A perception that we are not respecting human rights or generating local sustainable benefits could have a negative impact on our "social licence to operate", our ability to secure access to new resources and our financial performance. The consequences of adverse community reaction or allegations of human rights incidents could also have a material adverse impact on the cost, profitability, ability to finance or even the viability of an operation and the safety and security of our workforce and assets. Locally based events could escalate to disputes with regional and national governments as well as with other stakeholders and potentially result in reputational damage and social instability that may affect the perceived and real value of our assets.

Some of our mine sites are in remote locations where they are a – or the – key employer in the region. Inevitably, every mine will reach a point of depletion where it is no longer economic to operate and must be closed in an orderly fashion.

Developments
We have faced community unrest at a number of our operations, most notably in South Africa, largely driven by lack of economic opportunities and poverty. The unrest has resulted in protests and blockades, leading to operational shutdowns and putting our workforce at risk of injury.

Illegal artisanal mining continues to be a challenge at certain operations, most notably in the DRC. In 2019, an incident resulted in multiple fatalities and injuries of illegal miners at our Kamoto Copper Company (KCC) industrial operations. The illegal miners were working two galleries (underground tunnels) in benches overlooking the extraction area. Two of these galleries caved in, resulting in thirty fatalities. These incidents were not linked to KCC operations or activities. Further details on this incident and our response are available on our website at: **glencore.com/media-and-insights/updates-regarding-illegal-mining-at-KCC**

Mitigating factors
We take a proactive and strategic approach to our stakeholder and community engagement. We support the advancement of the interests of both our host communities and our assets. Through our sustainability programme, we seek to manage these vital relationships by adhering to the principles of open dialogue and cooperation. In doing so, we engage with local communities to demonstrate our operations' contribution to socio-economic development and seek to ensure that appropriate measures are taken to prevent or mitigate possible adverse impacts on the community. We aim for continuous monitoring and reporting of community initiatives and complaints. In the DRC, we operate a number of programmes to offer alternative livelihoods to people engaged in illegal artisanal mining.

We uphold and respect the human rights of our people and our local communities. Where we may cause adverse impacts on our stakeholders, we seek to apply relevant international standards to understand, control and mitigate the impact. We also seek to apply the Voluntary Principles on Security and Human Rights in regions where there is a high risk to human rights. At Antapaccay, we have engaged external human rights experts to undertake an independent human rights review to build an understanding of stakeholder perceptions and concerns about the operation.

We are working with all stakeholders at our mine sites to operate for as long as it is economically viable to do so, and to prepare long-term plans that provide for a gradual transition to the end of mine life.

We seek to make our grievance mechanisms available to the community members impacted by our operations. We review all complaints received and take actions when necessary to address the issues raised.

Further information is available on our website at: **glencore.com/sustainability/community-and-human-rights**