
GLENCORE



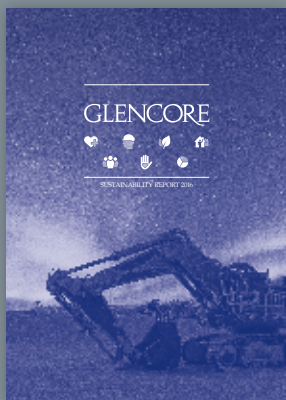
SUSTAINABILITY REPORT 2016



Welcome to our 2016 sustainability report and highlights

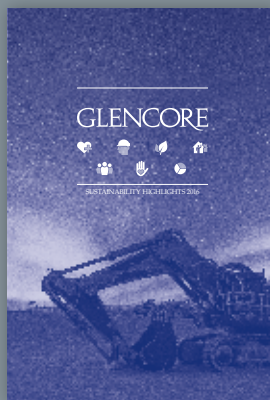
Our printed report has two parts: the full sustainability report and a removable highlights document. There is also an accompanying databook and a complementary document, *Our Approach to Sustainability*, which provides more detail on how we approach the topics material to our business. These can be found online at www.glencore.com/sustainability

Sustainability Report 2016



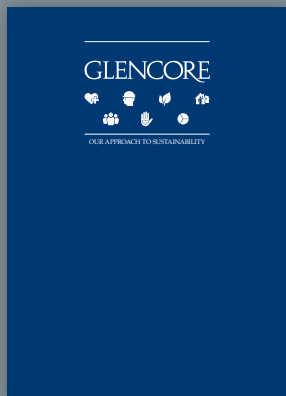
Our seventh sustainability report reviews our activities and performance in 2016. It details how we address our most material risks and opportunities; it is aimed at employees, investors, business partners, customers, governments and NGOs.

Highlights 2016



Our 2016 sustainability highlights booklet provides a succinct overview of our activities and achievements during the year. It is designed to be read either as a standalone document or to complement the full sustainability report.

Our Approach to Sustainability



This document sets out our approach to working sustainably. It explains our full thinking on sustainability, from the underlying principles and values upon which we base all our activities, to the details of our approach and the issues that affect our operations.

Sustainability online



Further information on our sustainability activity, plus more detailed data on our key sustainability indicators, is available on our website: www.glencore.com/sustainability

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Governance

“Our business will only see true success if we prioritise the wellbeing of our workforce, support and respect our host communities and work in partnership with our host governments to deliver sustainable socio-economic benefits.”

IVAN GLASENBERG
Chief Executive Officer (see page 6)

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Chairman's statement



Tony Hayward, Chairman

I am pleased to present Glencore's sustainability report for 2016. This year we have taken a new approach, with a sharp focus on the year's performance. Information about our general approach and positions on various sustainability issues is included in our new publication *Our Approach to Sustainability* at glencore.com/sustainability/our-progress/reports.

The report structure is based on the Group's material issues during the year, reflecting our risk-based approach. We have also highlighted the individual material issues for each of our commodity departments, with a selection of case studies illustrating those issues by commodity.

Safety

Safety continued to be our top priority in 2016; we remain committed to our goal of zero fatalities. Tragically, sixteen of our people lost their lives this year, including seven who died following the collapse of a mine wall at Katanga copper mine in the Democratic Republic of Congo. The Board HSEC committee visited the site following that incident, and we have worked closely with the local management to understand and address the causes of this terrible event.

Similarly, as in prior years, we have met with the management of the other assets that have experienced fatalities this year to ensure that appropriate learnings have been shared throughout the Group, to prevent anything similar happening again.

Climate change

This year's AGM approved the *Aiming for A* shareholder resolution, which calls for a comprehensive response to the challenges posed by climate change. We have used the 2016 annual planning process to develop a view of our projected energy use and emissions footprint until 2020. This will help us to identify and quantify the best emission reduction and abatement opportunities across our business.

To this end, I am leading a new working group of senior executives from key functions across the Group, including commodity department heads and technical experts.

We also continue to engage with public policy in our host countries to support development of robust carbon regulation.

We recognise the importance of this topic to our stakeholders, and have published a report detailing our position, steps taken to address the shareholder resolution, and other climate change considerations. This report, *Climate Change Considerations for our Business: 2017*, can be found at glencore.com/sustainability/our-progress/reports.

Water

There is increasing recognition around the world that water scarcity is an emerging issue in many communities. Water is of course vital for our host communities, as it is for our operations. We have formed a working group of experts from across our business to help us determine which of our assets need to focus on water. The group is now helping us to decide on appropriate management responses.

Sustainability assurance

In 2016 we finalised our comprehensive internal assurance programme, a key part of which is our HSEC auditing system. This draws on internal and external expertise, to inform a thorough and robust process.

To improve our understanding and response to catastrophic risks facing our business, we have adopted an approach that will enable us to understand our exposure to catastrophic hazards across the Group, and assess our responses to these through efficient, multidisciplinary audits.

All final audit reports are presented to the Board, with any findings and follow-up actions to be reviewed by the Board on completion.

Respect for human rights

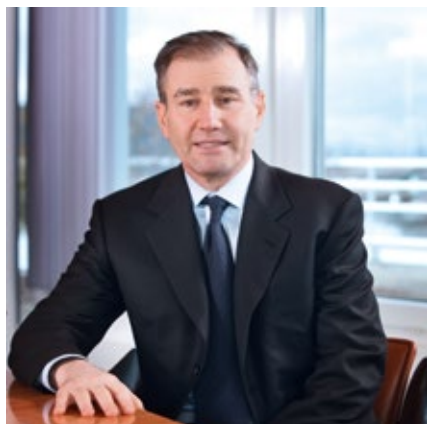
We strive to meet our responsibility to respect human rights, as detailed in the *UN Guiding Principles for Business and Human Rights*. To achieve this, we identify and assess our human rights impacts, and make it as easy as possible for our host communities to raise concerns, complaints or grievances. We assess our assets for human rights risks; where we find such risks, we ensure that mitigating measures are aligned with international best practice. The Board HSEC committee receives regular reports on concerns or complaints raised by our local communities.

Looking forward

As we continue to face a number of complex challenges, we remain committed to maintaining open dialogue and engagement with all our stakeholders to find the best way forward.

Tony Hayward
Chairman

Chief Executive Officer's review



Ivan Glasenberg, Chief Executive Officer

Business overview

During 2016, the commodities industry began to recover from five years of turbulence resulting from an imbalance in demand/supply fundamentals. It was also the year in which we completed delivery of our financial action plan to address concerns around our level of debt. This combination, and a recovery in commodity prices, has resulted in dramatic gains in our share price.

We have confidence that our Group is now well placed to withstand, and benefit from, the cyclical nature of the commodity market.

A number of our assets remain on care and maintenance status, or have reduced production volumes. We are aware that these situations affect our employees and our host communities, and we will continue to take proactive steps to alleviate any impact as much as possible. To this end, we support local training, business development and procurement; we also invest wherever possible in public infrastructure, such as roads, water supply and power distribution.

Safety

It is with deep sadness that we report sixteen people lost their lives at our operations in 2016. Our sincere condolences are with the families, friends and colleagues of all. Safety remains our top priority and we recognise that we must do more to protect the wellbeing of our people.

Over recent years, we have implemented a standardised, formal approach to the identification, mitigation and management of fatal and catastrophic hazards at all our assets. This is delivering real progress in safety performance at nearly all of our sites. However, our focus sites (which is how we refer to a small number of sites in remote locations with challenging legacy issues) face a range of obstacles in implementing the standards required to transform safety cultures. This is most apparent at our African copper assets in the DRC and Zambia, where 12 fatalities took place in 2016.

We must return to the terrible incident at Katanga initially described in last year's report, which resulted in seven deaths in the DRC. Over the past year we have carried out an exhaustive investigation involving the Board and our senior management to protect against any other events of this nature. Our Board HSEC committee, including myself, visited Katanga during that time, and local management teams have presented regular progress reports at all committee meetings. The HSEC committee will maintain an additional degree of scrutiny over how the investigation team's key recommendations are implemented.

Payments to governments

Our activities generate significant benefits for our host governments and communities. We support the responsible management of revenues from extractive activities. To this end, in 2016 we published our first report detailing our payments to governments on a project-by-project level, created in line with the EU Transparency Directive.

We also continue to support the Extractive Industries Transparency Initiative (EITI), and participate in in-country efforts to strengthen this initiative further. We want to help build resilience and autonomy in our host communities. We initiate and maintain ongoing conversations with them and organise community development activities to help reduce their dependence on our operations, achieve strong and diversified local economies, and support local capacity building.

Human rights

As a member of the Plenary of the Voluntary Principles on Security and Human Rights Initiative, we work with member governments, extractive sector businesses and non-governmental organisations to optimise our approach to human rights and to share learnings. Our annual progress submission to the Plenary is available on our website. It provides details of the steps we are taking to implement good practice and address concerns at sites that we recognise as being 'high-risk' for human rights.

Climate change

Following the passing of the *Aiming for A* resolution at our 2016 AGM, we have been developing a number of initiatives to address the key requirements of the resolution, which we are now implementing. This includes improving our communications on climate change, taking a more strategic approach to emissions management, and analysing our asset portfolio against the International Energy Agency's scenarios. Our aim is to understand our current and projected carbon footprint, and develop a methodology for assessing the risks and opportunities to our portfolio related to climate change.

To help our stakeholders better understand the impacts of climate change on our portfolio, we have published a detailed report, *Climate change considerations for our business: 2017*, at glencore.com/sustainability/our-progress/reports.

Maintaining an integrated value chain

We aim to deliver competitively-priced commodities that meet our stakeholders' needs and contribute to global society. A number of our products, such as copper, cobalt and nickel, play a key role in the transition to a low-carbon economy. We work to understand our products' properties in order to produce, process, use, transport and store them safely, and we share this knowledge with all stakeholders in our value chains. We are also determined to not deal in commodities associated with labour or human rights abuses. Where our value chains risk affecting the rights of their workforces or nearby communities, we look for organisations to partner with to counter this. We also work with local or national government whenever appropriate.

Looking forward

As the resource sector emerges from a challenging period, our business will only see true success if we prioritise the wellbeing of our workforce, support and respect our host communities and work in partnership with our host governments to deliver sustainable socio-economic benefits. Acknowledging that the sustainability of our business relies on good business practice means that our efforts will result in benefits for all our stakeholders.

It is the people at Glencore who are key to our success. I thank you all for your continued efforts to ensure our business remains robust, and your commitment to working at the highest standards.

Ivan Glasenberg
Chief Executive Officer

Who we are

Glencore plc is one of the world's largest diversified and integrated producers, processors and marketers of commodities.

We market and distribute physical commodities sourced from third-party producers as well as our own production. We also provide financing, processing, storage, logistics and other services to both producers and consumers of commodities.

Our operations comprise more than 150 mining and metallurgical, oil production and agricultural assets, handling over 90 commodities. Our integrated diversified

structure allows us to capture value at every stage of the supply chain, from sourcing raw materials to delivering products around the world, to customers in industries from automotive, to food processing, to power.

Our activities are supported by a global network of more than 90 offices in over 50 countries. We employ around 155,000 people, including contractors.



Our company is structured into three business segments:



Metals & Minerals

These businesses include the production and trading of copper, zinc & lead, nickel, ferroalloys, alumina & aluminium and iron ore. Assets include mining, smelting, refining and warehousing operations; for some we have operational control and for others we do not.



Energy Products

These businesses cover industrial and marketing activities for coal and oil, including controlled and non-controlled coal mining and oil production operations, and investments in strategic handling, storage and freight facilities.

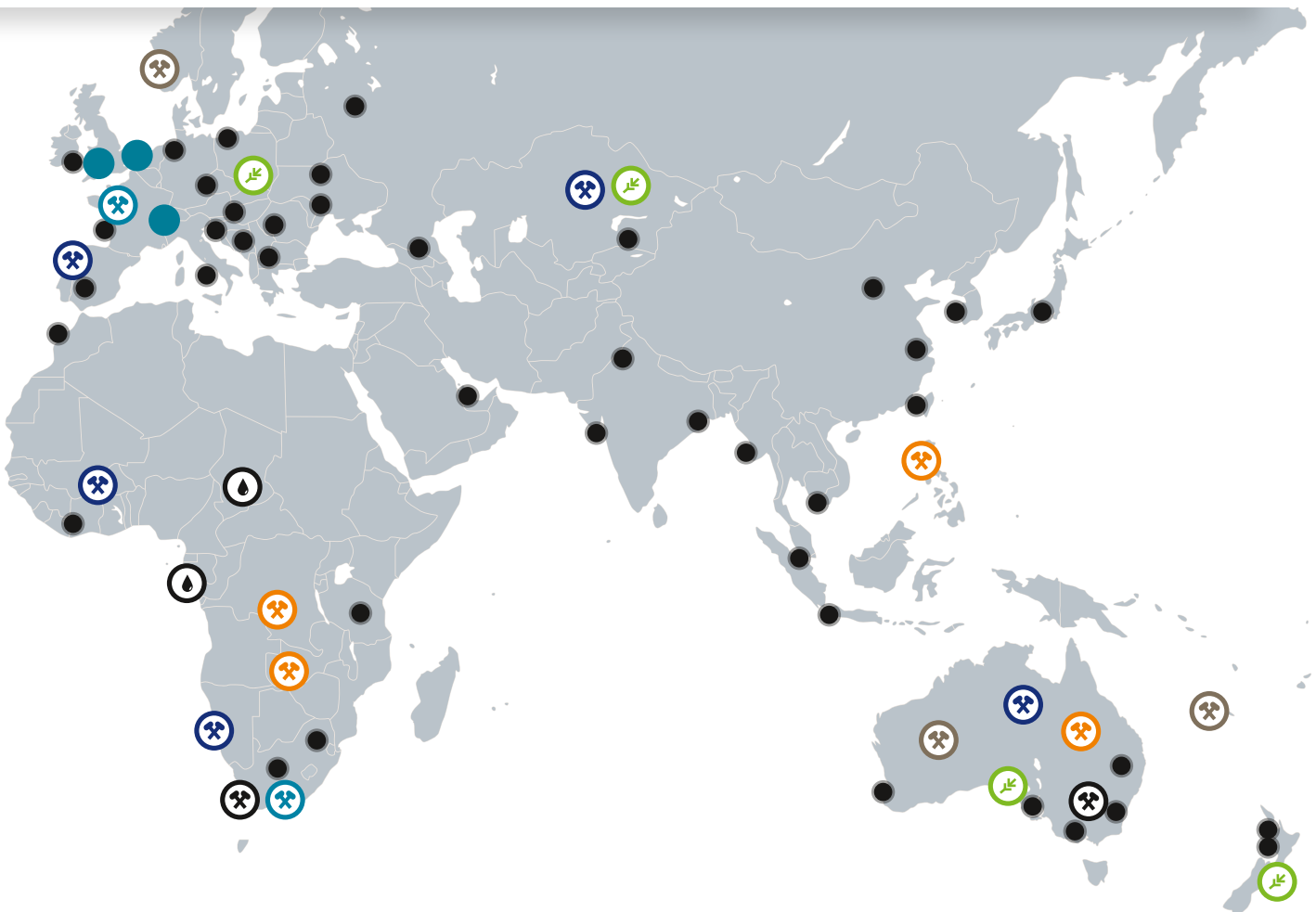


Agriculture

This business is focused on grain, oilseeds, pulses, sugar, rice, cotton, vegetable oils, protein meals and biodiesel. Assets include storage, handling and processing facilities in strategic locations; for some we have operational control and for others we do not.

We divide the assets and activities of our business into two categories: industrial, which is related to commodity production and processing; and marketing, which covers trading and sales activities, as well as the infrastructure and resources used to transport products to customers.

We take our responsibilities to our people, to society and to the environment very seriously, and align all our activities with the relevant international standards.



External commitments

We are committed to creating value for all our stakeholders in a manner that is responsible, transparent and respectful to the rights of all.

We believe that all work-related incidents, injuries and diseases are preventable; we are committed to providing a safe workplace and continually improving the wellbeing of our people, employees and contractors alike.

We uphold the International Labour Organization (ILO) *Declaration on Fundamental Principles and Rights at Work* and the UN *Universal Declaration of Human Rights*. We work in accordance with a number of specific international frameworks, including the:

- Core Conventions of the ILO
- UN Guiding Principles on Business and Human Rights (UNGPs)
- Extractive Industries Transparency Initiative (EITI)
- Global Reporting Initiative (GRI)

We submit annual reports to the CDP climate change and water programmes.

In 2014 we signed up to the United Nations Global Compact (UNGC), aligning our strategies and operations with its principles, which cover human rights, labour, environment and anti-corruption. The UNGC also encourages participants to support the UN Sustainable Development Goals (SDGs), with an emphasis on collaboration and innovation. This report indicates areas where our programmes are aligned with the SDGs.

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

Through our presence at every stage of the resource value chain, our activities and the commodities we produce and market are actively contributing to delivery of the SDGs.

Many of our sustainability programmes are aligned with the SDGs; we give examples in our standalone publication *Mapping Glencore’s Policies and Activities to the Sustainable Development Goals*, at glencore.com/sustainability/our-progress/reports.

In 2014, we were admitted to the International Council on Mining & Metals (ICMM) and endorsed its sustainable development framework principles.

In March 2015, we were admitted as a corporate participant in the Voluntary Principles on Security and Human Rights (Voluntary Principles) Initiative. We have been implementing the Voluntary Principles at those of our assets with a high risk of human rights breaches since 2013. We report on our progress in an annual report to the Plenary, relevant sections of which are available in this report and *Our Approach to Sustainability*.

The standalone reports we make as part of our commitments to the UNGC, ICMM, EITI, GRI and CDP (on climate change and water) are submitted to those bodies and can be found on their websites as they make them available.

In addition, our annual sustainability databook, our report on our payments to governments and further information on our activities, including climate change considerations, can be found at glencore.com/sustainability/our-progress/reports.



The 17 Sustainable Development Goals

Our strategy

Glencore’s main strategic objective is to sustainably grow total shareholder returns while maintaining a strong investment grade rating and acting as a responsible operator. To achieve this ambition, we are focusing on three strategic imperatives:

Strategic priority

Integration of sustainability throughout our business

Strategic priority

Maintain a robust and flexible balance sheet

Strategic priority

Focus on cost control and operational efficiencies



Our sustainability strategy

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



Safety:

Become a leader in workplace safety, eliminating fatalities and injuries.



Health:

Become a leader in the protection and improvement of our people's and communities' wellbeing.



Environment:

Minimise any negative environmental impact from our operations and apply the precautionary principle in decision-making.



Community and human rights:

Foster sustainable growth and respect human rights wherever we operate.

Our sustainability strategy, policies and procedures support good business practice and meet or exceed applicable laws and external requirements.

Our Group sustainability strategy is reviewed each year, by the HSEC committee, the Group sustainability team, and the sustainability teams from our commodity departments and individual assets, to check that it aligns with our business requirements.

The strategy organises our activities into four core pillars: health; safety; environment; and community and human rights. It has clearly defined imperatives, objectives, priority areas and targets. It helps us to meet legislative requirements and international standards, manage the catastrophic hazards associated with our business, and maintain our societal licence to operate.

Our commodity departments and assets align their annual HSEC plans to the strategy.

There are three further areas of activity that cut across all four of these pillars. Our efforts relating to **product stewardship, our people** and **compliance** underpin all our work on sustainability, making them essential topics for measurement and reporting.

Our activities in these areas are detailed in this report.



For more details on our general approach to working sustainably, see "Our Approach to Sustainability" at: glencore.com/sustainability/our-progress/reports.

Management approach

Oversight from the top

Oversight and ultimate responsibility for our Group HSEC strategy, our sustainability framework and its implementation across the Group rests with our senior management team. This includes our CEO and CFO, and the heads of our commodity businesses. They also take a hands-on approach to monitoring and investigating sustainability activities around the Group.

Board HSEC committee

Our Board HSEC committee has overall responsibility for the strategic direction of Glencore sustainability activities and oversees the development and implementation of strategic HSEC programmes. It reviews the strategies and action plans developed by management and the results of internal sustainability audits and assurance activities.

In the event of a fatality or a major incident (whether this concerns health, safety, the environment, community or human rights), the committee receives detailed reports from the management of the relevant operation. These include the details of the incident, the cause, and any immediate and follow-up actions taken.

At each meeting, the committee receives a detailed report covering any fatalities, significant high potential risk incidents (HPRIs), performance across the full range of sustainability issues, progress of our HSEC audit and assurance programme, and engagement with external stakeholders. Additional matters were discussed in 2016:

February
• External expectations and concerns around climate change
• Content and focus of the 2015 sustainability report
• Management of community complaints
March
• The slope failure at Katanga's KOV open pit copper mine
May
• Setting our sustainability strategy for 2016/17
• The HSEC summit on catastrophic hazard management and fatality prevention
• Stakeholder engagement programme during AGM and sustainable development roadshow
August
• Feedback on the sustainability report and performance; our 2016/17 engagement strategy
• Overview of 2016 materiality process
• Key findings and next steps from the catastrophic hazards summit
October
• Review of progress in safety programmes at focus assets
• Review of tailings storage facilities
• Progress in meeting commitments of the <i>Aiming for A</i> shareholder resolution
• Management of community and human rights issues in Colombia; stakeholder engagement
• Catastrophic hazards management progress update
• Review of assurance programme
December
• Progress of safety programmes at focus assets
• Review and approval of material issues assessment
• Climate change working group progress update

Our sustainability teams

Our Group sustainability team and departmental sustainability leads provide guidance and thought leadership to the Group as a whole, as well as to asset-level sustainability professionals. The teams support our assets in implementation of Group policies and programmes.

Our performance and targets

Performance table

Commitment	2016 target
Continual improvement of our sustainability framework	Substantial implementation of Group HSEC policies and internal audit programme
	28 Group HSEC catastrophic hazard audits scheduled for 2016, including two outstanding from 2015 programme
Safety	No fatalities
	50% reduction of Group LTIFR by the end of 2020, against 2015 figure of 1.34
	50% reduction in TRIFR by 2020 using 2014 figures as baseline*
Health	No new occupational diseases from current exposure
Our people	Continue to strengthen trainee programmes and develop leadership training
	Continue to support and foster development of talented people regardless of age, gender or race through local employment, internships, scholarships or training
	Become an employer of choice in the marketplaces where our main offices and industrial operations participate
Environment	No major or catastrophic environmental incidents
	Implement the water management framework across the Group and assess assets identified as high-risk for water
	Independent inspection of all surface tailings dams at least every three years
Community and human rights	Continue to invest in development initiatives to benefit our host communities
	Assets to implement Group societal value scorecard framework
	No serious human rights incidents
Product stewardship	Register substances produced/imported in low volumes with REACH (deadline 2018)
	Assess Korean REACH obligations and prepare for action to ensure compliance
	Continue phase two of safety datasheet review (metals) and initiate phase three (complex metal products)
	Conduct self-assessment on implementation of product stewardship policy, analyse results and follow up
	Group review of occupational exposure levels to incorporate into health strategy
	Finalise our conflict minerals policy

* Our 2014 TRIFR baseline has been restated this year to take into account enhanced definitions as well as improved data accuracy and recording of reported indicators.

**An environmental incident at the Talovsky Dam, Kazzinc, was classified as a moderate environmental incident with a major reputational impact.

Results	2017+ target	Find out more
Group HSEC policies substantially implemented	Implement catastrophic hazard management processes, including critical control verification and reporting systems	See pages 22 to 23
Revised Group HSEC catastrophic hazard audit programme established; associated audits ongoing	Continue to implement the corporate HSEC audit programme, focusing on catastrophic hazards and material risks	
16 fatalities	No fatalities	See pages 25 to 29
Our LTIFR has increased by 4% since 2015	50% reduction of Group LTIFR by the end of 2020, against 2015 figure of 1.34	
Our TRIFR has reduced by 7% since 2015	50% reduction in TRIFR by 2020 using 2014 figures as baseline	
Not achieved	Year on year reduction in the number of new cases of occupational disease	See pages 28 to 29
Ongoing	Continue to strengthen trainee programmes and develop leadership training	See pages 51 to 52
Ongoing	Continue to foster development of talented people regardless of age, gender or race through local employment, internships, scholarships or training	
On track	Become an employer of choice in the marketplaces where our main offices and industrial assets operate	
Achieved**	No major or catastrophic environmental incidents	See pages 35 to 39
Strategic water management framework rolled out and an approach for identifying potential high water-related risk sites established	High water risk assets to implement five-year water targets for 2017-2021	
Achieved	Continue internal and external audit programme for high-risk tailings storage facilities Produce report on the development of carbon targets for coal and ferroalloys departments	
\$84 million spent	No serious human rights incidents	See pages 41 to 46
Achieved	Review and update our societal strategy	
Achieved	Train and develop our community relations teams to deliver effectively and efficiently	
Preparation for registration is proceeding to schedule	Register substances produced/imported in low volumes with REACH (deadline 2018)	See pages 48 to 49
Currently considering the impact of amendment proposals	Assess impact of the regulatory amendment and prepare for action to ensure compliance	
Phase two ~50% completed; phase three 25% complete	Finalise all phases of safety datasheet review	
Achieved		
Created a global overview of existing and upcoming OELs for review. Still in draft due to multiple developments in discussion by regulators	Continue review of OELs and consider adapting the OELs agreed throughout the Group	
Still in draft due to multiple developments in discussion by regulators	Finalise our conflict minerals policy	

Risk management and assurance

We developed the Glencore risk management framework for use across the Group in 2013; it is applied by our assets. This framework and its supporting guidelines establish Group processes for the identification, assessment and mitigation of risk. We manage risk proactively to create and protect value, manage catastrophic hazards, maintain continuous improvement and support business decision making.

Our sustainability assurance processes have been designed to support our management's assessment of risk, and to provide assurance over the key controls in place to mitigate this. Our processes have three elements:

1. General risk management

Our risk management framework is used throughout the Group to identify hazards, particularly those with potentially major or catastrophic consequences, and to develop plans to address and eliminate, or mitigate, the related risks. Our aim is to manage risk through policy, implementation, compliance and performance management.

Risk management is integrated into our business planning and decision-making processes at every level of the Group, with clearly defined roles, responsibilities and key competencies. We maintain a register of risks and management plans and continually monitor performance against those plans, with regular internal reviews of effectiveness.

2. Self-assessments

Our assets complete annual self-assessments against Group sustainability policies and fatal hazard protocols to check that they are effectively implemented. The results are used to drive performance and to identify any gaps. Our external auditor checks sample assets for data accuracy and policy compliance as part of our annual sustainability data audit.

We review our corporate HSEC policies at least once every three years to check that they are continuing to support our business requirements as well as reflecting developments within the ICMM and the industry. On an annual basis, our assets undertake a self-assessment of their alignment to these policies. The 2016 self-assessment process demonstrated a substantial compliance with these policies. Gaps identified by the self-assessment process, or from other ongoing department HSEC review and audit programmes, are logged and addressed.

3. HSEC auditing

Our HSEC assurance policy specifies systematic auditing activity at both Group and departmental levels. The primary focus of our audit programme is catastrophic hazards.

Implementing external feedback

We continually monitor feedback from our peers and stakeholders to understand emerging expectations around risk management, both in our industry and the regions in which we work. We translate this feedback into the evolution of our risk management practices.

Department-level audit programmes

Each department implements their own internal and external auditing, covering areas such as catastrophic hazards, fatal hazard protocols, HSEC policies and HSEC data. Audit activities are planned, risk-based and developed specifically for the needs of each region, asset or project.

Group-level audit programme

Our dedicated Group HSEC audit team assesses how we address catastrophic hazards.

In 2016, we introduced a portfolio approach to identify and focus on priority areas. We consider how each catastrophic hazard affects different types of operation and assets across the Group, to understand our exposure to each hazard, and to focus on priority assets or activities. The approach consists of:

- Considering assets and activities related to each catastrophic hazard
- Identifying applicable catastrophic failure modes and causes at an asset level
- Reconciling asset priority ranking with the management of each commodity department
- Delivery by highly-skilled and experienced subject matter experts (both internal and external)

We use this approach for assessments such as reviewing the integrity of tailings storage facilities.

We also introduced multi-disciplinary assessments, allowing us to audit more complex issues from a range of viewpoints for a more robust appraisal. These assessments have criteria that cover a number of different disciplines, requiring the input of multiple subject matter experts from within and outside the Company. They are suitable for reviewing complex operations and activities with many different risk factors, such as underground operations (where subjects may include strata control, fire and explosion, inrush and outburst, infrastructure, power), open pit mines and metal processing plants.

The results of audits are presented to the Board HSEC committee, together with key findings, observations and good practice.

Materiality

We conduct a materiality assessment every other year to establish the material topics for our sustainability strategy review and sustainability reporting. Assessments are undertaken at both Group and department levels; they take the views of internal and external stakeholders into account.

For our 2016 report, the assessment methodology was first approved by the Board HSEC committee. The assessment covers information drawn from three areas:

- Our understanding of the issues that affect our business and the natural resources sector
- What is required of us by law and how this affects our activities
- Topics raised during engagement with our people and external stakeholders including local communities, investors, the media, governments and NGOs

In line with the Global Reporting Initiative (GRI) guidance on materiality, we undertook a Group-wide review of material topics at global and local levels. This identified topics raised during structured engagement activities, by a broad range of internal and external stakeholders. It considered the issues that affect our peers and the entire sector, assessing media coverage and feedback from local communities. It included input from each department's HSEC and Corporate Affairs teams on relevant issues and reporting indicators, including interviews and analysis. The results of this assessment were prioritised in a matrix and presented to our Board HSEC Committee for approval.

We report on issues with global interest or impact, or that affect more than one region. If an issue is material to a commodity department, regardless of geographical region, it will be reported on in the Commodities section.

We consider a topic material if senior management determines that it may significantly affect our business operations or have a significant impact on any of our stakeholders.



The ten subjects identified as focus topics across the Group in 2017 were:

- Health and safety
- Catastrophic hazard management
- Process safety management
- Climate change and emissions
- Water and effluents
- Waste and spills
- Local community engagement and social commitment compliance
- Human rights and grievance mechanisms
- Product stewardship
- Emerging regulations

About this report

This is our seventh annual sustainability report. This year the report focuses on performance for ease of reference. For more information about our general approach and positions on various sustainability issues, see *Our Approach to Sustainability* at glencore.com/sustainability/our-progress/reports.

This sustainability report complies with the core level of the Global Reporting Initiative (GRI) G4 sustainability reporting guidelines, including the metals and mining sector supplement. Our online GRI Index provides further details: www.glencore.com/gri2016.

The report's GRI compliance has been independently assured by Deloitte LLP (Appendix 2).

As signatories to the principles of the United Nations Global Compact (UNGC), this report serves as our advanced level *UNGC Communication on Progress*, outlining our support for its broader development objectives and our work on implementing the principles. It also fulfils our reporting requirements as members of the International Council for Mining and Metals (ICMM).

Boundaries and scope

This report includes information and data from our industrial and marketing activities, including only assets where we have operational control, and excluding investment and holding companies. We exclude environmental data from our warehouses, silos and ports, with the exception of any environmental spills if they occur, as their contribution to these indicators is immaterial. Our marketing offices do not report on environmental data.

The report contains data for the full year 2016. Acquisitions are only included if they were integrated before 1 July 2016. Closed sites (or sites in the care and maintenance phase of their lifecycles) report on a limited indicator set, reflecting their reduced activities and workforce. Data from divestments is included until the month before disposal. Workforce numbers are the exception to this rule, as they are based on the end of year status. As a result, this report does not include workforce data from assets that were disposed of in 2016 earlier than 31 December 2016.

Data and information

The data in this report is taken from Glencore's reporting systems. The metrics in this report reflect those used in the commodity markets and sectors in which we operate and are primarily based on GRI indicators, including indicators from the GRI metals and mining sector supplement.

In some instances, figures from previous years have been restated to reflect improvements in our data collection, analysis and validation systems. All figures stated in this report represent the latest available data unless remarked upon in the text. Some of the group totals shown may reflect the rounding up or down of sub-totals.

Glencore seeks to report on every incident in the time period when it occurs. Occasionally, our incident reporting may take place at a later date, as a result of an improved understanding of the incident or revisions to its classification. Where this results in a restatement of previously reported data, the restatement and its rationale will be publicly disclosed.

Where data for previous reporting years has been restated, Deloitte LLP has not undertaken additional work to review accuracy and completeness. No assurance is provided over restated data.

We may change our approach to how we report our data in future sustainability reports without prior announcement; we may also change the reporting of specific data and its interpretation.

Related publications

We have published a number of standalone reports that are connected to our sustainability activities. These are:

- *Glencore Modern Slavery Statement 2016*
- *Climate change considerations for our business 2017*
- *Payments to Governments Report 2016*
- *GRI databook 2016*
- *Our Approach to Sustainability*

There is a list of Glencore's publicly available policy documents at glencore.com/who-we-are/our-values/policies.

There is a list of our current associations and memberships at glencore.com/assets/sustainability/doc/2016-list-of-associations-and-memberships.pdf.



Material issues

“As we continue to face a number of complex challenges, we remain committed to maintaining open dialogue and engagement with all our stakeholders to find the best way forward.”

TONY HAYWARD
Chairman *(see page 5)*

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Catastrophic hazard management

Why this is material:

Catastrophic events that take place in the natural resource sector can have disastrous impacts on workers, communities, the environment and corporate reputation, as well as having a substantial financial cost.

SDGs:



In 2016:

Developed a catastrophic hazard protocol for tailings storage facilities

Ground and strata control guidelines finalised

Aviation guidance finalised and distributed across the Group



We are committed to protecting the safety and wellbeing of our people and the communities and environment around us.

Our approach

We require catastrophic and fatal hazards to be controlled at all times. We work to provide those who might be directly exposed with appropriate awareness of such hazards, along with other appropriate stakeholders. We continually review, update and improve our approach and methods.

In general, we classify the severity of incidents against a five-point scale, from negligible (category 1), through minor, moderate and major, to catastrophic (category 5). We define catastrophic events as those with a low probability but severe consequences that could devastate the Group, cause widespread loss of life or significant environmental harm, or result in major reputational or financial damage.

We recognise the exceptional nature of such events and have a Group catastrophic hazard and fatal hazard management policy that specifies our approach to their management, based on critical control management with rigorous monitoring and reporting. Our management policy and guidance reflects the on-the-ground reality for our assets as well as international leading practice and International Council on Mining & Metals (ICMM) guidance.

We have developed protocols for catastrophic and fatal hazards, which detail our expectations of our assets on the hazards they may face. We require each site to conduct self-assessments against these protocols; the assessments form the basis for site visits by our Group team and follow-on engagement with the management of the assets. Assets report their progress in implementation of the protocols to the Board HSEC committee.

During recent years, our Board has driven a strengthening of our internal processes for identifying and managing catastrophic hazards. The Board receives regular updates on this area and actively encourages an approach of ongoing improvement.

Our commodity departments identify and regularly review the catastrophic hazards relevant to their production and processing procedures and the appropriate controls, including critical controls.

We require each of our assets to have a management plan for each catastrophic hazard, including the critical controls identified to eliminate or mitigate the risks. These plans are regularly reviewed in risk management workshops, and the resulting action plans are closely monitored to completion. (For an example of this, see the [Catastrophic hazard management](#) case study in the *Ferroalloys* commodity chapter).



You can find more details of our approach to catastrophic hazard management in "Our Approach to Sustainability" at: glencore.com/sustainability/our-progress/reports/

2016 performance

During 2016, we began developing a process for quarterly critical control management reports and verification. This includes recording the methods used to monitor, inspect and audit critical controls. Assets will have their performance verified by their departments.

We are consolidating critical catastrophic hazard control information into a Group catastrophic hazard register. All departments have identified the catastrophic hazards relevant to their activities. The Group sustainability team maintains the register, to track progress and share learning.

We continue to develop protocols and guidance to support management of catastrophic hazards. In particular, we have drawn on the experience and learnings gained from recent catastrophic events involving tailings facilities elsewhere in the mining industry to develop a specific protocol for tailings storage facilities. This identifies and minimises or eliminates the associated health, safety, environmental, societal and business risks. (See the *Waste and air emissions* chapter for further details.)

Catastrophic hazard management *continued*

In 2016, we finalised our ground and strata control guidelines and made them available to our assets. These cover the development and implementation of ground and strata failure management and the geotechnical engineering system controls that provide the basis for checking the integrity of assets' existing systems.

We also finalised our aviation guidance and distributed it across the Group. Plane travel is recognised as a potential catastrophic hazard, with the potential for major harm to our people and assets. Our guidance is aligned with the Flight Safety Foundation's *Basic Aviation Risk Standard (BARS)* programme, which is recognised internationally as leading practice, with a proven safety record. The guidance will help our departments and assets to develop and implement suitable controls, aligned with the different aircraft services and infrastructure used across Glencore.

Next steps

We will continue to focus on material issues, critical catastrophic hazard controls and process safety management, with an ongoing review of how their role fits into our general strategic overview and risk management processes.

We will continue our work to promote systematic catastrophic hazard management, in line with the new ICMM guidelines. The Board HSEC committee will continue to receive reports on progress.

We recognise that the Group needs a more holistic approach to risk management with a greater focus on the 'human factor.' This will support a greater understanding of the role of the workforce in the management of critical controls.

We will prioritise the development of catastrophic hazard protocols for those hazards not currently covered by our fatal hazard protocols as we identify them through our risk management processes.

We will continue to update processes as we share learning internally and with other ICMM members.

Workplace safety, health and process safety management (PSM)

Why this is material

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

SDGs:



In 2016:

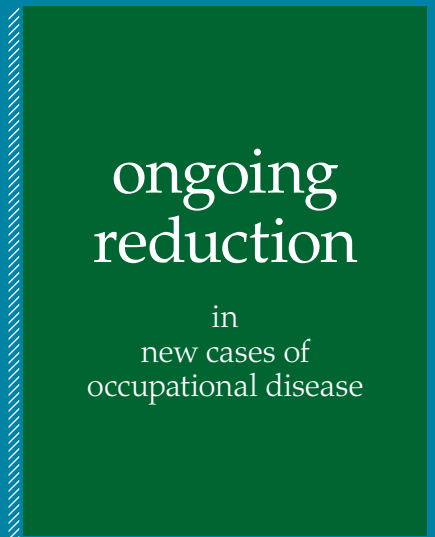
TRIFR continues to improve

We established a working group to address process safety management



ongoing reduction

in new cases of occupational disease



Support tools and resources for the Group health management strategy finalised



During 2016, our assets reported over

400

HPRI's



We continued to develop further fatal and catastrophic hazard protocols



Workplace safety, health and PSM *continued*

We believe that all fatalities, occupational diseases and injuries are preventable, and that we can create and maintain safe workplaces for all our people with strong safety leadership.

Managing risks to the health of our people is essential for their long-term wellbeing. It also helps us to maintain our productivity. Our goal is to become an industry leader in protecting and improving the wellbeing of our people and local communities.

Our approach

Workforce safety

Risk management is at the heart of our approach. We let our people know that we expect every individual, both employees and contractors, to take responsibility for their own safety and for that of their colleagues and the communities in which they work.

We expect managers to help create safe workplaces by applying effective controls, with critical controls for fatal and catastrophic hazards. Our risk management process is a comprehensive, robust and well-tested framework.

Our SafeWork programme, along with its fatal hazard protocols, is embedded at every one of our assets; we actively track progress. This includes training on consequence management and life-saving behaviours, as well as each fatal hazard protocol. Each asset must assess its implementation of fatal hazard protocols; implementation is also verified at a department level.

We encourage the reporting of near misses and high potential risk incidents (HPRI). These are reviewed, with investigation reports and the lessons learned shared across the Group to support knowledge building and the prevention of repeat incidents.

Health

Our Group health management strategy addresses the health risks facing our workforce, their families and the communities inside and outside our gates. We integrate health management into our core business practices and are committed to becoming leaders in this field.

Our health management strategy has three pillars:

- Healthy workplaces
- Fit for work
- Fit for life

We support the strategy with learnings and tools developed from leading industry and Group practice, which we use to help assets as they implement health risk assessments.

We continuously incorporate feedback from key stakeholders, both internal and external, into the strategy.

Our assets have a range of programmes to manage occupational disease and exposure to health hazards; we extend many of these programmes to our host communities, to combat regional health problems and promote healthy lifestyles. Our community development activities and environmental impact monitoring support these programmes.

Process safety management

Process safety management (PSM) is an operational framework originally developed in the oil industry for managing the integrity of the systems and processes involved in handling hazardous substances. The PSM approach recognises that failures leading to catastrophic events are often a result of multiple factors, and that technical and engineering elements are interrelated, as is operator behaviour. Using a PSM framework allows all of these to be actively managed.

In the past, PSM was treated as an operational consideration, with its importance in the prevention of catastrophic events not fully recognised in the mining industry. Today, PSM is valued as a methodology that is proven to assist in managing all the factors for successful containment of hazardous materials and energy.

Glencore has begun implementing PSM principles within the Group, in recognition that the framework is a valuable method for the identification of critical controls and equipment, as well as the key processes and behaviours that interrelate for effective prevention of catastrophic events.

A small number of our assets, within our oil, agriculture and nickel departments, deal with highly hazardous materials or energy: we refer to these as 'major hazard facilities.' These assets all comply with national PSM legislation.

Glencore's evolving approach to PSM is based on what we have applied so far at our major hazard facilities. We are continuing to incorporate learnings and leading practices from our major hazard facilities into a standard approach for use across the Group.



You can find more details of our approach to safety, PSM and health management in "Our Approach to Sustainability" at: glencore.com/sustainability/our-progress/reports/

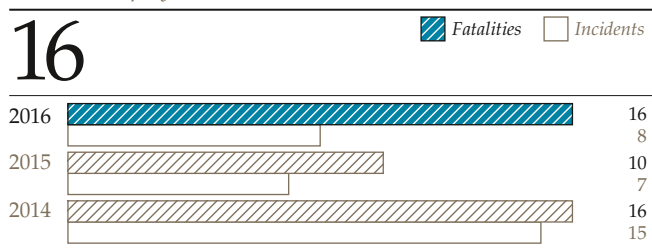
2016 performance

Safety

We report with great sadness that 16 of our people lost their lives in 2016 as a result of eight fatal incidents. This is unacceptable; we consider it a major setback to the fatality prevention progress we have made in recent years.

Fatalities at managed operations

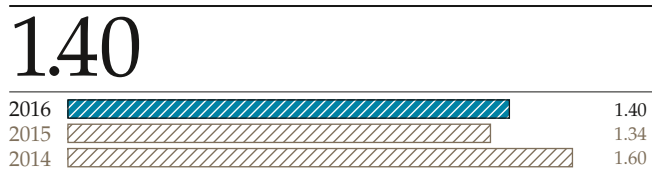
Number (employees and contractors)



NB: 13 of the 16 deaths took place at focus assets: Katanga (7), Mopani (5), Kazzinc (1). The others happened at Pasar in the Philippines, Newlands Coal in Australia, and Helena in South Africa. We seek to report every incident in the time period when it occurred. Occasionally incidents may be reported in separate periods from their occurrence; this may be for more meaningful presentation of information or if further investigation is required for accurate classification. Where this results in a restatement of previously reported data, that restatement and its rationale is disclosed.

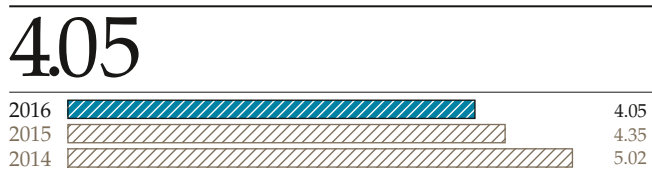
Lost time injury frequency rate (LTIFR)

per million hours worked



Total recordable injury frequency rate (TRIFR)

per million hours worked



During the year, two incidents at our African copper assets resulted in 10 deaths.

In March of 2016, a tragic incident resulted in the deaths of five employees and two contracted workers at Katanga, a copper asset in the DRC. The north wall of the KOV open pit mine at Katanga partially collapsed. Katanga’s management immediately organised a general meeting with all the families to tell them and keep them informed of rescue efforts. As we recovered their bodies, management met each family individually to provide support with funeral expenses and agree compensation. We also worked with the contractor company to ensure that the families of the two missing workers were informed and that similar support was provided. In all cases, Katanga provided employment for another member of the family to ensure continued income, as well as funds to support the education of children of the deceased.

We also kept the local community informed through regular updates in the press, on TV and local radio channels, and requested that they stay away from the area. Following the incident, Katanga has held monthly meetings with the community to address any concerns, and to determine whether any artisanal miners in the area were unaccounted for. This has also been discussed with the authorities. To date, no artisanal miners have been reported missing due to the incident.

Katanga cooperated with the Congolese authorities throughout the investigation. Glencore formed an independent investigation team from outside the copper department, focusing on geotechnical, hydrological and organisational factors. Short-term and long-term corrective plans were put in place immediately after the incident, with further refinements as findings were verified during the investigation. The Group’s HSEC committee and senior management monitored those action plans during 2016 and will continue to do so through 2017.

Mopani in Zambia saw three people die in an electrical incident that year. The asset also saw an increase in LTIFR for the first time since 2009.

All the members of our Board HSEC committee visited both sites; they have worked closely with the management of these assets to fully understand the causes and the action that will be taken following investigation.

Workplace safety, health and PSM *continued*

Six further deaths were caused by six separate incidents, including two more in Zambia. The committee members also met with the management teams from the other sites that experienced fatalities. The committee is overseeing how we manage the sharing of what we have learned from these incidents across the Group. We recognise that we must put in further work to ensure each asset has the skills and attitude to identify fatal hazards and establish effective measures to manage, mitigate or eliminate them.

In light of these events, we have re-examined our approach to safety and fatality prevention, with involvement from our Board, to look for any areas that could have been overlooked, and any subsequent changes to make. This deep review leaves us with the determination that, while more work must be done at a small number of assets, our strategy is generally the right one for the Group. We base this view on continued performance improvements at our other ‘focus assets’ (which is how we denote assets in remote locations with specific health & safety legacy issues):

- For the first time, we have seen a fatality free year at our South American assets
- Our agricultural assets have been fatality free for two years to the end of December 2016
- Kazzinc in Kazakhstan has seen dramatic progress against most indicators, with one fatality in the 27 months to the end of December 2016

While these improvements suggest we are on the right track, health & safety remains our top priority and we will continue to work hard to bring about a universally robust safety culture at all our assets. (Two examples of programmes created at focus assets to improve safety behaviours among our people can be found in the case studies in the *Copper* chapter: ■ [Katanga: putting safety first](#) and ■ [Mopani: a safety improvement campaign](#).)

During 2016 we saw a 4% increase in our LTIFR, the first increase since 2010. In June 2016 we carried out a review of all sites that had not improved their LTIFR that year; following this, 67% of those assets improved their LTIFR in the second half of 2016. Despite this increase we are confident that we will meet our LTIFR target for 2020.

During 2016 we saw a reduction in the absolute number of LTIs. Our TRIFR also continues to improve; although we did not meet our annual target for 2016 we have no reason to believe our 2020 target is not achievable.

We continue to focus on incidents with a potential to cause a fatal or catastrophic event (high potential risk incidents, or HPRIs), as a means of understanding and addressing potential hazards. In 2016 we recorded 405 HPRIs, with the greatest number (127) relating to the use of mobile equipment. We are working to address this hazard through internal training and new technologies that focus on the avoidance of collision between mining vehicles, people and other moving equipment (known as EMESRT vehicle interaction technology).

Continuous improvement work

In South Africa, we began a new initiative in 2016 to develop supervisory skills in relation to rollout of the SafeWork leadership programme. The results of this initiative will help us to tackle supervisor training across the Group.

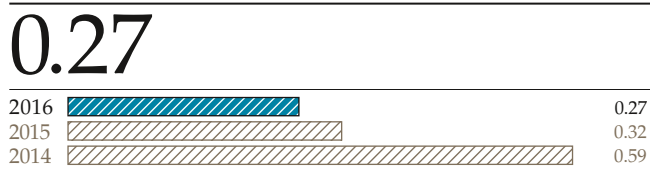
During 2016, we established a pilot PSM working group within our nickel business. One of the working group’s first tasks during 2017 will be to make recommendations for approaching PSM across the Group.

Health

We finalised the supporting tools and resources for our health management strategy in 2016, developed from leading industry and Group practice. These will help our assets continue to develop and implement health risk assessments and leading health & safety practice. Our HSEC professionals will have access to these tools, along with guidance on local implementation.

We have continued to reduce the number of new cases of occupational disease, from 127 in 2015 to 89 cases in 2016. 93% of our assets saw no new cases.

New cases of occupational disease *per million hours worked*



In 2016, one employee at one of our Queensland underground mines in Australia was diagnosed with coal worker’s pneumoconiosis (CWP, also known as black lung disease) and two with silicosis. CWP is an occupational disease long thought eradicated, but which has recently been identified again within the industry. We are committed to taking an active part in finding a solution that includes managing existing cases and preventing further occurrences, as well as assisting and compensating employees who have contracted the disease.

Tackling HIV/AIDS

HIV/AIDS affects our workforce and communities, particularly at our operations in South Africa and, to a lesser extent, in the DRC. In South Africa, where the disease is especially prevalent, we work to enable all our employees to know their HIV status. We offer free testing, counselling and treatment to our workforce, as well as education and awareness raising programmes among our communities. We also place emphasis on providing ongoing care, which includes access to emotional, legal or basic financial advice to help our employees cope with the burden of the disease. In 2017, our coal operations, in partnership with Life Careways, will work to provide one-on-one coaching and further financial support to help manage loans.

Next steps

We remain committed to eliminating fatalities throughout our assets, regardless of their safety history.

The PSM working group will investigate the development of PSM education and training and a Group PSM strategy.

During 2017, we will update health risk assessments across the Group, based on leading practices from individual assets. We will use these assessments, along with health benchmarking at each asset, to create long-term health management plans.

We are monitoring the latest learnings and developments in health & safety, and building our knowledge, through our involvement in external organisations such as the ICMM.



Katanga and Mutanda, our DRC copper assets, have supported the national HIV programme with materials and technical support. The assets have assisted with construction of new facilities, training for medical staff, and awareness campaigns targeting vulnerable groups. Katanga has also been continuing its collaboration with Mwangeji hospital, supporting the livelihoods programme that targets people living with HIV.



Climate change

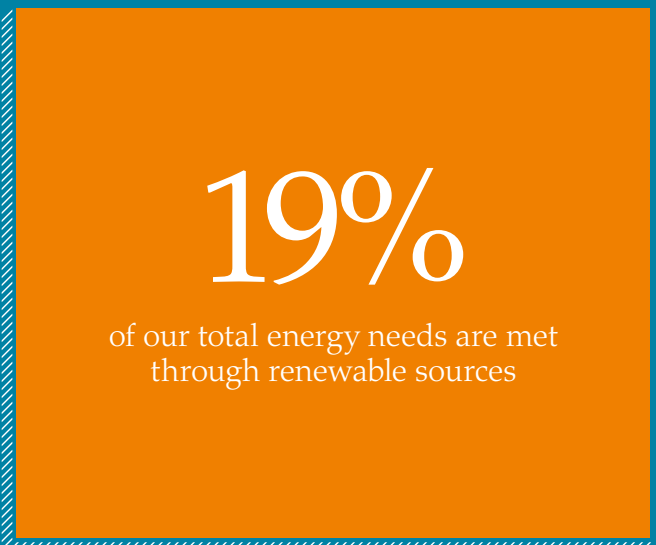
Why this is material:

Responding to climate change is a strategic focus for our company. As a major fossil fuel producer and consumer, we recognise our responsibility to understand and manage our greenhouse gas emissions, and to support the global transition to a low carbon economy.

SDGs:



In 2016:



Climate change *continued*

We have continued our efforts to address climate change as a material issue for our business. This includes progressing initiatives to meet our commitments under Aiming for A.

At the December 2015 COP21 summit in Paris, global leaders pledged to keep the world's temperature increase to "well below 2°C" compared with pre-industrial levels, and to pursue sustainable development via low-carbon technologies. The measures required to achieve this goal, along with the nationally determined contributions (NDCs) pledged by individual countries, will affect the way businesses operate.

We must fulfil our responsibility to our shareholders by ensuring that our business is aware of the risks and prepared for the impact of regulation being created to meet COP21 commitments, as well as national carbon and energy policy requirements.

A standalone climate change report, *Climate change considerations for our business: 2017*, is downloadable at glencore.com/sustainability.

Our approach

The cost of energy is one of the largest components of our operating costs; we are continually looking for ways to reduce our energy-related costs and to improve our energy and operational efficiency.

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

We report publicly to the CDP Climate Change programme. In 2016, Glencore achieved a CDP Score of B, up from 99C in 2015.



You can find more details of our approach to climate change in "Our Approach to Sustainability" and in "Climate change considerations for our business 2017" at: glencore.com/sustainability/our-progress/reports/.

2016 performance

Progress on shareholder resolution *Aiming for A*

Following the adoption of a special resolution by the *Aiming for A* shareholder coalition at our 2016 AGM, we established a working group to deliver our climate change commitments. The group is led by our Chairman; it includes department heads and senior representatives of key functions. It makes regular reports on its progress to the Board HSEC committee. To date, we have taken the following steps to comply with the provisions of the resolution:

- **Understanding our current and future footprint:** we have incorporated climate change considerations into the annual planning process. Commodity departments are now required to provide energy and GHG forecasts for each asset and provide details of any mitigation projects that may reduce emissions, as well as any anticipated changes in local government climate change policies. Linked to this, we have mapped our global opportunities pipeline to reduce GHG emissions across our portfolio, recording the likelihood of reductions being achieved, within what timeline and the expected returns.
- **Testing portfolio resilience:** our departments, as part of our business planning process, are required to project their energy and GHG profile by asset based on the best available life of mine data. Using this data, we test our portfolio against various carbon policy scenarios, including those produced by the International Energy Agency, and other recognised energy forecasts. We started to evaluate carbon price scenarios against each asset in 2016 and are incorporating the results into our broader carbon risk management approach.
- **Understanding risks and opportunities:** we are developing a comprehensive approach to assessing the risks and opportunities posed by climate change. This considers government policy, energy costs, physical changes, stakeholder perceptions and market trends. Results will help to continuously inform our climate change response and stakeholder engagement.
- **Setting targets:** an improved understanding of our expected footprint helps us to establish and track realistic Group GHG reduction targets.
- **Engagement:** we continue to participate in public policy discussions on carbon and energy issues.

Managing our energy use and GHG emissions

We continue to create bespoke energy plans for each asset to improve energy efficiency. In 2016, we generated 35.6 million tonnes of Scope 1 and Scope 2 CO₂ emissions, compared to 37.8 million tonnes in 2015. The decrease was primarily due to the closure of our US alumina operations.

Total energy consumption

petajoules

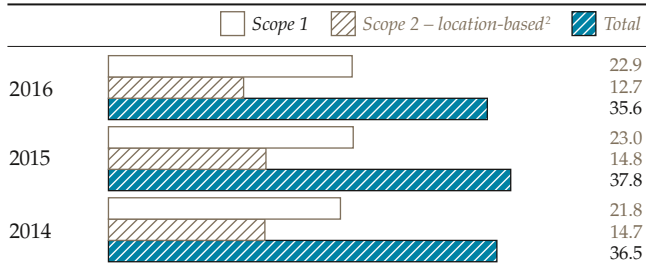
222

2016		222
2015		236
2014		236

Our total energy use was 222PJ, compared to 236PJ in 2015. This reduction is primarily due to the shutdown of our Sherwin Alumina asset in the US, as well as ongoing energy efficiency initiatives.

Total greenhouse gas emissions

million tonnes CO₂¹



¹ Scope 1 emissions are measured in CO₂e.

² Scope 2 indicators have been restated to reflect updated IEA grid emission factors and a shift to the location-based approach of the Scope 2 amendment of the Greenhouse Gas Protocol.

Our GHG emissions reduced by 2.2 million tonnes in 2016 compared to 2015, due to changes in our operational profiles as well as a range of carbon reduction projects.

Renewable energy

19% of our total energy needs are met through renewable sources, including energy from Glencore-owned renewable energy facilities, use of biofuels, use of bio-based energy from agricultural waste, and electricity from low-carbon national grids (less than 25g CO₂ per kWh). In particular, 85% of the electricity for Kazzinc, our zinc asset in Kazakhstan that uses around 16PJ each year, is provided by the Bukhtarma hydroelectric plant. Almost all the electricity for our copper operations in the DRC and in Zambia is also provided by hydropower.

During 2016, we undertook a number of carbon reduction projects. They included more energy efficient equipment in the sulphuric acid plant at our German zinc asset and several fuel consumption reduction projects at our Canadian nickel smelter. At our Norwegian nickel plant, changing processes to reuse surplus heat saved 25TJ of electricity that year.

Adaptation

We recognise that the changing climate can pose a physical risk to our assets. In particular, our nickel operations in northern Canada are vulnerable to melting permafrost and reduction of ice cover, among other changes. Both of our assets in this region continuously review the controls they have in place to ensure integrity of their tailings facilities and the workings in their mines.

We also recognise the impact that weather pattern changes may have on water availability in certain regions. As we work to identify those sites facing a high risk of water shortage, or other forms of water stress, we take into account how weather systems may change in the future with the additional effects of climate change.

Next steps

We will continue our detailed reporting on progress in fulfilling our climate change commitments.

Water and effluents

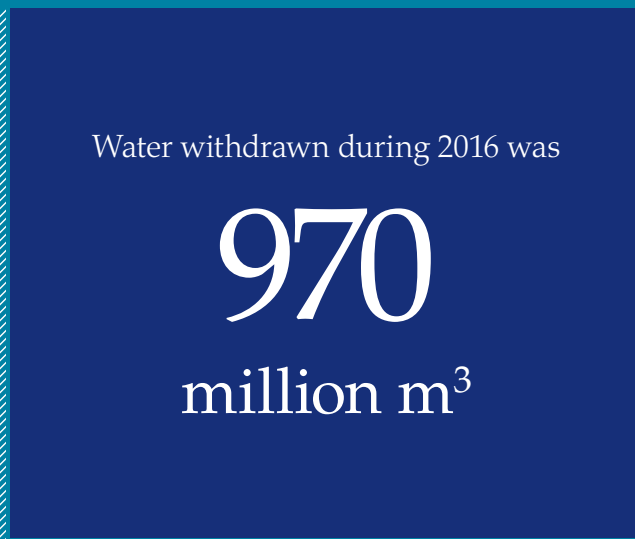
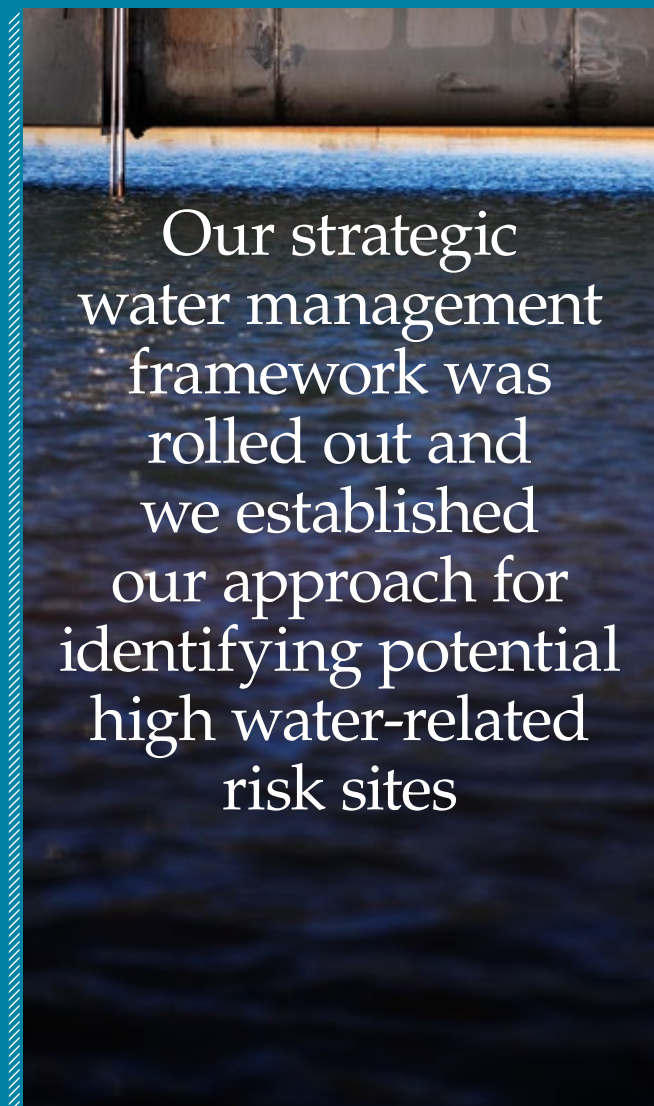
Why this is material:

Water is an essential input for our industrial activities. We ship products over maritime and inland waterways, which could contaminate the water if spilled. Many of our assets are located in areas with water baseline stress, some in areas of extremely high water stress. Other assets must manage surplus water of different types.

SDGs:



In 2016:



We recognise that water is a shared and finite resource; we are conscious of the increasing concerns of local stakeholders and other water users. Concerns regarding the long-term availability and quality of water, and security of access to water, have increased as a result of changes to demography and climate.

Our approach

We seek to understand our effect on the environment, minimise our water-related impacts and ensure that shared use of water is not compromised by our activities. We are committed to ensuring good water management is in place at all our assets. We recognise that water management is a complex issue; to understand it fully requires a dialogue between all the multiple stakeholders involved at each site.

Our assets consult their host communities and other local water users to find out their priorities and collaborate on solutions. They share operational plans and increase their understanding of the cultural, economic and environmental value of water in the region. We require them to assess the risk of contamination to waterways and put management plans in place, and to monitor the water they discharge.

We engage with regional and national governments on their work to identify material water stewardship risks; this engagement helps us to improve our water management strategies.

We publicly report on our material water risks, management activities and performance and participate in the annual CDP water disclosure programme.

We have developed a Group water strategy, with five primary objectives:

1. Identification and assessment of our material water impacts, risks and opportunities
2. Gaining an understanding of our water footprint
3. Development and implementation of water management plans covering each of our assets' lifecycles to avoid, minimise or mitigate water impacts and risks
4. Improvement of our water management performance, including identifying and setting water-related targets
5. Ongoing engagement with significant stakeholders and public reporting on our progress



You can find more details of our approach to water management in "Our Approach to Sustainability" at: glencore.com/sustainability/our-progress/reports/.

2016 performance

We rolled out our strategic water management framework and established our approach for identifying potential high water-related risk sites. We expect to complete identification and assessment of all high-risk sites by the end of 2017 at the latest.

We have used the World Resource Institute (WRI) Aqueduct global water risk mapping tool to assess our assets.

We found that almost 20% of our sites are located in areas with a high to extremely high baseline water stress, or are considered to be arid. Of these, 4% are located in areas of extremely high water stress.

A major project in 2016 was the harmonisation of our reporting indicators with the Water Accounting Framework (WAF) of the Minerals Council of Australia as the metrics we used previously did not account for our entire water balance. For example, they did not allow for us to account for water being stored temporarily at assets, when we divert water but do not use it, or when our ore concentrate or process waste contains significant volumes of water. This essential groundwork has enabled us to create comprehensive water balances for all our assets, which will help us to improve measuring and reporting on the volume of water that we consume, the quantity and quality withdrawn from various sources, and its discharge by destination. Having more accurate water balances allows us to create an accurate water footprint for the Group, which is an essential requirement for developing our water strategy.

We will continue to roll out this approach next year to support ongoing performance analysis and underpin the deployment of our water strategy as sites continue to implement water management plans.

Water and effluents *continued*

Glencore's overall water balance

million m³

Water input ¹	982	Water used onsite	1,363	Water output	944	Diversions and water transferred to others	94
<i>Surface water – withdrawn</i>	189	<i>Water used in a task or process</i>	848	<i>Water discharged to surface sources</i>	546	<i>River/creek diversions</i>	14
<i>Sea water – withdrawn</i>	162	<i>Water recycled at onsite treatment facilities</i>	128	<i>Water discharged to sea/ocean</i>	179	<i>Aquifer interception diversion</i>	18
<i>Ground water – withdrawn</i>	273	<i>Water reused</i>	387	<i>Water discharged to ground water</i>	2	<i>Water supplied to others</i>	61
<i>Rain water – withdrawn</i>	283	<i>Changes in stored water</i>	39	<i>Water discharged to offsite treatment or disposal locations</i>	11		
<i>Potable (drinking) water imported or withdrawn</i>	19			<i>Water exported to a third party</i>	22		
<i>Other (not potable) water imported from a third party</i>	45			<i>Water lost to evaporation and other losses</i>	154		
<i>Water entrained in ore that is processed</i>	12			<i>Water entrained in waste material and end products</i>	31		

¹ The terminology is broadly aligned with Mineral Council of Australia's Water Accounting Framework.

NB: Our review and the resulting revisions to our reporting process have resulted in a number of amendments to the indicators (and their definitions) for the data that we collect to analyse and assess our performance. Indicators that have substantially changed relate to rain water, ground water and diverted water. To give our assets enough time to make the transition, we will only fully implement some of these new revised indicators in 2017.




As a result of these changes, our new water data cannot be fully aligned with reporting from previous years. However, the improvements to our water performance reporting will greatly improve data accuracy going forward.

Recognising the importance of multi-stakeholder dialogues for water management, Glencore is an active member of the International Council on Mining and Metals (ICMM), and participated in the development of its *Position Statement on Water Stewardship*. Our commodity departments are currently carrying out self-assessments to confirm how well they are aligned with the statement.

Water withdrawn*

million m³

970

2016		970
2015		954
2014		996

* 2016 data is not directly comparable to previous periods due to disclosed changes in data reporting methodology.

Next steps

During 2017, we will further evaluate our assets using our new approach for sites with high water-related risk. We will assess current water management practices at those high risk assets to identify potential areas for improvement.

We will also begin a pilot study using the ICMM catchment-based approach to water management in 2017. Catchment-based water management is a comprehensive, systematic approach to identifying, evaluating and responding to local water-related risks throughout the lifecycle of each asset; it also captures each asset's impact on other local water users.

We are developing Group water management guidance that will define minimum water management requirements for our assets, with enhanced requirements for high-risk sites. We expect this project, which is being led by our internal working group on water, to be completed by the end of 2017. The working group is responsible for developing a more strategic approach to water management, identifying best practice and communicating its findings across the Group.

Waste and air emissions

Why this is material:

Responsible resource production involves minimising the impact of our waste and air emissions on the natural environment and our host communities. In recent years, a small number of sudden catastrophic failures at tailings facilities within the resource sector have also resulted in a heavy focus on tailings facility management.

SDGs:



In 2016:

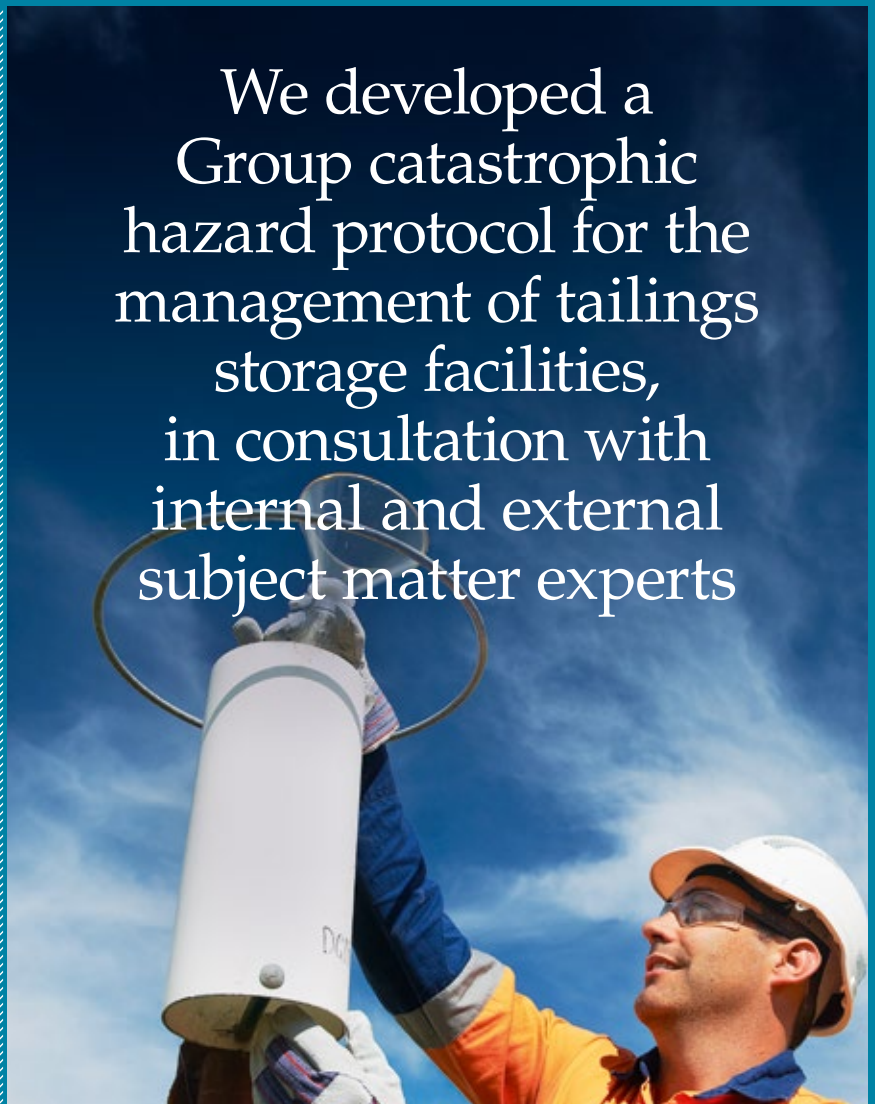
SO₂ emissions totalled

402kt

Our hazardous and non-hazardous waste totalled

2,025mt

We developed a Group catastrophic hazard protocol for the management of tailings storage facilities, in consultation with internal and external subject matter experts



Waste and air emissions *continued*

Our operations emit sulphur dioxide, dust and nitrogen oxide as well as generate waste, which can affect the environment and nearby communities. We monitor all material emissions, both stack and fugitive, and continuously look for ways to reduce those that pollute the air around us. Our assets continually review their waste management procedures and identify opportunities for improvement, to minimise the impact of the waste we produce.

Our approach

Most of the waste that Glencore generates is mineral; it mainly includes tailings, slag and rock. Our assets have rigorous management systems to dispose of waste while preventing environmental contamination. We continually review our waste management procedures and identify opportunities for improvement to minimise the impact of the waste we produce. This includes the reuse of as much waste as possible.

Tailings management

Our metal and coal assets generate tailings (residues of mineral processing), which are stored in purpose-built tailings storage facilities.

Our tailings storage facilities are heavily regulated and undergo regular inspections. They are monitored continuously to ensure integrity and structural stability. We require each department and asset to have policies or procedures for the management of its tailings facilities.

We also work to reduce the risk of acid rock drainage (ARD), which involves the formation of sulphuric acid from waste rock and tailings, constantly assessing the effectiveness of the measures we take.

Air emissions

The activities we undertake vary from site to site but include open-cut mines, a number of which emit a significant amount of fugitive dust. To manage this, we water our mine roads, using non-potable process water from our assets whenever possible to minimise the effect on local water sources. We place protective barriers around the mine perimeters to reduce dust escape, and coat our products for storage and transportation.

We also work to minimise emissions from our stacks, mining operations and processing facilities. We use air emission abatement systems to help us reach the emission levels appropriate for each type of emission. Many of our assets also have monitoring stations in place that prompt us to take mitigative action when required, including suspending operations until weather conditions or other relevant factors improve. The data from these stations is available to local communities, and they are able to raise concerns about these in meetings with the operation, or through a direct complaint to the operation.



You can find more details of our approach to waste and air emissions management in "Our Approach to Sustainability" at: glencore.com/sustainability/our-progress/reports/.



2016 performance

During 2016 we have continued our review of our tailings storage facilities, by directive of the HSEC committee. This included a review of the risk profiles of all the facilities; some have since been subject to additional third party reviews, based on their risk profiles.

We have incorporated tailings-related risks into our risk management system. We have developed a Group catastrophic hazard protocol for the management of tailings storage facilities, in consultation with both internal and external subject matter experts. It conforms to the ICMM *Review of tailings management guidelines and recommendations for improvement* and identifies, and minimises or eliminates, the potential health, safety, environmental, societal or business risks associated with tailings storage facilities.

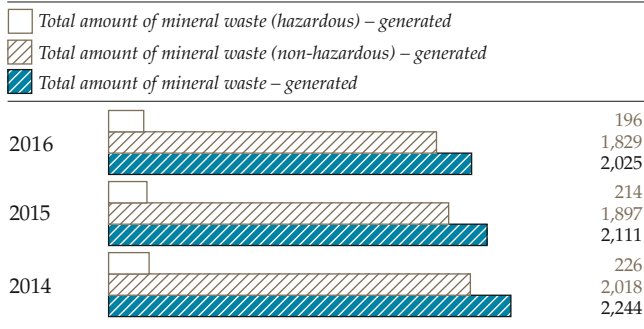
The first stage of implementing the protocol is a self-assessment of all tailings storage facilities for each asset, with action plans to be developed, to close any gaps against the protocol.

We are developing a Group database of all tailings facilities, which will record each facility's risk profile and monitoring requirements. To determine if any immediate action is required, our Group HSEC audit team is assessing our high-risk facilities against the protocol.

Hazardous and non-hazardous mineral waste

million tonnes

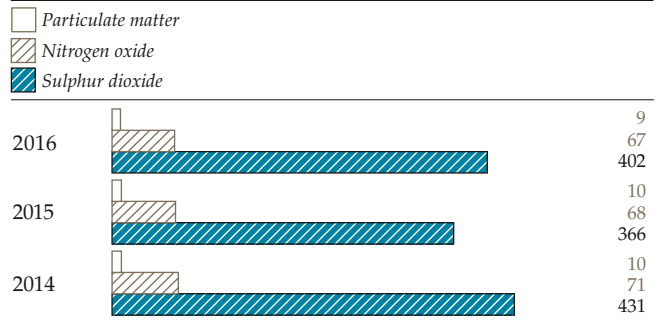
2,025



Air emissions

thousand tonnes

402 SO₂



The increase in SO₂ emissions is primarily due to a 30% increase in production at our Mount Isa plant this year. In addition, our Sudbury INO nickel asset received raw materials with a higher sulphur content than usual; this had a significant impact on our SO₂ emissions as the site had comparatively low emissions in 2015 due to a major production shutdown. Both of these assets engage extensively with their local communities to discuss operational changes.

Mount Isa Mines has data monitoring systems in place that allow residents real-time access to emission data. Residents can also contact dedicated personnel when they have concerns about emissions levels. Those personnel members investigate complaints, and, in extreme cases, will shut down operations when needed until weather conditions improve.

In 2016, 20 Glencore sites around the world implemented dust reduction programmes for emissions from fugitive sources and stacks. These include coal and ferroalloys operations in South Africa, the McArthur River zinc mine in Australia, and the Mutanda copper mine in the DRC. One zinc and one copper asset completed SO₂ reduction initiatives. Additionally, 14 sites started initiatives to reduce other air emissions (such as NO_x, CO or fumes).

Next steps

Our assets will continue to evolve their procedures and policies for management of tailings storage facilities and continue to improve their performance related to air emissions.

Human rights and raising grievances

Why this is material:

We recognise that our operations may have an impact on the rights of our workforce and the surrounding communities. We are also aware of the need to ensure unencumbered, fair and transparent access to remedy for any stakeholders affected by our operations. We are continuing to look for ways to strengthen the mechanisms we have in place to address this.

SDGs:



In 2016:

Our management of security is governed by the Voluntary Principles

Guidance on the design and implementation of grievance mechanisms finalised and rolled out

Noise complaints reduced by more than

50%

across the Group in comparison to 2014

Human rights impact assessment completed in Colombia



Our commitment to respect human rights is enshrined in our Code of Conduct; the details of this commitment are part of our Group human rights policy and supporting guidelines.

The most relevant issues are:

- Workplace health & safety
- Labour conditions
- The activities of security forces, either contracted by us, or present at our operations
- The rights of our host communities, including indigenous people and other vulnerable groups

Our approach

Our Code of Conduct and human rights policy commit us to working in line with the UN *Universal Declaration on Human Rights*, the UN *Guiding Principles on Business and Human Rights* and Global Compact. Our management of security activities is governed by the Voluntary Principles on Security and Human Rights (Voluntary Principles).

We require our assets to assess risks to human rights as part of their general risk assessment. Where such risks are found, assets develop mitigation plans that follow international leading practice, for instance the International Finance Corporation's resettlement guidelines and the Voluntary Principles.

Our assets must allow local stakeholders to express their concerns. The mechanisms to support this vary from informal channels to comprehensive grievance mechanisms, depending on our assessment of the risk to human rights at each asset.

We continue to engage with our business partners on ways to manage human rights risks. In regions with a high risk of human rights abuses, we require our security contractors to comply with the Voluntary Principles. Where public security forces, such as local military or police forces, are present at our assets, we engage with our host governments to raise awareness of international human rights standards and promote responsible practices. Where our commodity value chains risk affecting the rights of the workforce or nearby communities, we look for relevant initiatives and organisations to partner with, to promote responsible human rights management throughout the value chain.

Incidents relating to human rights, including complaints and grievances, are reported to the Board HSEC committee, which seeks to understand the root causes and agree corrective actions.



You can find more details of our approach to human rights in "Our Approach to Sustainability" at: glencore.com/sustainability/our-progress/reports.

2016 performance

In 2016, we finalised our guidance on the design and implementation of grievance mechanism programmes and rolled it out to our assets. We developed the guidance with input from external sources, and focused on ensuring alignment with the UN Guiding Principles (UNGPs).

We received 963 complaints in 2016. The main causes were noise, odour and dust, with Australia, then Africa and North America, being the countries where most of the complaints originated.

Almost a quarter related to noise emissions, with the majority from in and around one of our Australian coal assets; the main complainant is surrounded by three mines (only one of which is a Glencore asset) and a railway line. An investigation into low frequency noise emanating from our mine by the region's environmental authority found that our site complies with current noise limits. Over the past three years since operations began, we have made significant efforts to engage directly with external stakeholders and mitigate the impact of industrial noise experienced by residents close to our operations. As a result we have seen noise complaints reduce by more than 50% across the Group, in comparison to 2014.

The second most common reason for complaints was odour or fume emissions. Mount Isa, the copper/zinc asset in Australia connected to most of those reports, has implemented an extensive air quality control system and alert process to react to such emissions. This enables the asset to adapt its smelting operations instantly to avoid adverse impact on the nearby community.

Human rights and raising grievances *continued*

The next most frequently reported complaint regards dust. These complaints related to several assets. Our operations regularly review their dust management initiatives. These include wetting of roads, washing vehicles before they leave sites, covering truck loads and closing conveyor systems.

We take all complaints seriously and continuously look for new ways to minimise our impacts. In 2016, we developed a guideline to support alignment of the grievance and complaint mechanisms at our sites with the effectiveness criteria set out in the UN Guiding Principles. Summaries of complaints, underlying causes and remedial action are presented to the Board HSEC committee. (See the case study on [Chad's grievance management](#) in the *Oil* commodity chapter for an example.)

In 2016, we conducted three resettlements in South Africa (two at our Goedgevonden mine and one in Wonderfontein).

We have 33 assets that are located on or near indigenous people's land and 23 of these assets have formal benefit agreements or community development plans with these indigenous communities.

In 2016, Prodeco, our coal asset in Colombia, completed a human rights impact assessment. This looked at the full suite of human rights, and drew on internal input as well as input from government officials, union leaders and local communities. Prodeco is now developing an action plan to address the recommendations of the assessment. (See the case study [A major human rights risk assessment](#) in the *Coal* commodity chapter for further details.)

We provided training on human rights to over 1,500 directly employed security officers in 2016 and 2,710 contracted officers. In areas with high risk of security-related human rights abuses, and where public security forces are present at our operations, we also look to raise their awareness of international human rights standards and our expectations. In 2016, we undertook activities in this area at our operations in Chad, Colombia, Democratic Republic of Congo (DRC) and Peru. In 2016, we also reviewed our security practices at our oil business in Chad, including implementation of the Voluntary Principles.

Some of the areas where we operate are exposed to conflict or ongoing violence. In these areas, we monitor the situation to determine the extent of the risk to our host communities. Where appropriate, we engage with local government and local NGOs with expertise in this field to raise awareness of the situation, and to identify and support strategies to promote peace and address the safety concerns. (See the case study on [Our contribution to the Colombian peace process](#) in the *Coal* commodity chapter for an example.)

We continuously engage with our suppliers and customers. In 2016, we joined efforts to address the risks associated with cobalt. Much of this mineral is produced by artisanal miners in the DRC, using child labour. As a major producer and marketer of cobalt, we support efforts to establish greater transparency in the value chain, and address the endemic poverty in this region that is the underlying cause of artisanal mining (ASM). We do not support ASM, nor process or purchase any material derived from ASM in the DRC. We have developed robust due diligence processes to ensure this material does not enter our supply chain. (See the case study on [Responsible cobalt and gold production](#) in the *Copper* commodity chapter for further details.)

We recognise the risks of modern slavery and other labour standards violations within our supply chains. We have published the *Glencore Modern Slavery Statement 2016* on the steps we are taking to understand and address these risks.

Next steps

We are currently conducting a Group-wide self-assessment against our HSEC policies, including those relating to human rights, and particularly to grievance mechanisms. We will use the results to drive more targeted implementation efforts.

We also continue to engage with local, national and international initiatives on responsible product sourcing, such as the Organisation for Economic Cooperation and Development (OECD) *Mineral Risks Handbook* project, which will inform our approaches and practice.

Community engagement and commitments

Why this is material:

We recognise that our business activities make a significant contribution to the national and local economies in which we operate. While the most significant derive from employment and procurement, we also have a responsibility to minimise dependency on our operations, and promote diversified and resilient local economies.

SDGs:



In 2016:



We developed a toolkit of training materials for our community relations teams

Community Leadership Programme



\$4 billion

paid in taxes and royalties

Community engagement and commitments *continued*

Our goal is to contribute to the economic resilience of our host communities while minimising our impact on society. We believe this is essential to protecting and strengthening our societal licence to operate.

Our approach

Our approach has three key elements:

1. Proactive, strategic stakeholder and community engagement that furthers the interests of both our host communities and our assets
2. Respect for human rights and ensuring that all stakeholders have access to remedy (see the *Human rights and raising concerns* chapter for further details)
3. A cross-functional approach to understanding and managing our socio-economic contributions, to deliver shared value while managing our impact on society

We use training and knowledge tools, reference materials, reporting systems, and ongoing monitoring and evaluation of KPIs to achieve this.

One of our strategic objectives for community engagement is to train and develop our community relations teams to ensure their effective and efficient performance.

The diversity of our assets, and the wide variance in the circumstances of the neighbouring communities, mean that there is no one-size-fits-all training solution. However, we recognise the need for all our community relations teams to have the tools to understand, interpret and meet relevant standards and expectations, and apply international best practice. Senior management at each asset also has an important role to play in ensuring that the asset lives up to its societal commitments and interacts with local communities in respectful and constructive dialogue.



You can find more details of our approach to created shared value and community engagement in "Our Approach to Sustainability" at: glencore.com/sustainability/our-progress/reports.

2016 performance

Community engagement

We developed *Community Leadership Programme*, a toolkit of training materials for our community relations teams and management at assets, drawn from internal and external expertise. The toolkit addresses all relevant international standards, including the *UN Guiding Principles on Business and Human Rights*, *ICMM Sustainable Development Principles* and the *Voluntary Principles on Security and Human Rights*. It covers all aspects of interaction with local communities, from initial stakeholder identification and engagement, through development of community programmes, to ongoing monitoring and evaluation of these efforts.

In 2017, we continue disseminating the toolkit to our assets, which will be able to customise it to address their local circumstances. Training will include regional workshops.

Socio-economic contribution

In 2015, we launched the Glencore socio-economic contribution scorecard to collect information on our performance.

The scorecard supports our efforts to meet objectives for maintaining and strengthening our societal licence to operate, while supporting our local communities' own objectives.

Operational objectives	Community objectives
Maintain and protect societal licence to operate, as measured by:	Achieve resilience, as measured by:
<ul style="list-style-type: none"> Levels of community support and community perceptions Anticipation and mitigation of risks associated with benefit generation, such as additional migration to these areas, or confusion over which entity will provide public services Incidents of societal unrest 	<ul style="list-style-type: none"> Measurable benefits Reduced dependency on the asset Diversified economy

The scorecard examines the key value flows that our assets create for four principal stakeholder groups.

Stakeholder group	Value flows	2016 results
Employees	<ul style="list-style-type: none"> Wages and benefits 	<ul style="list-style-type: none"> 94% of our workforce is local to the countries where we operate
Suppliers and contractors	<ul style="list-style-type: none"> Procuring goods and services Skills and enterprise development 	<ul style="list-style-type: none"> 73% of our global procurement bill is with suppliers and contractors local to the countries where we operate
Local communities	<ul style="list-style-type: none"> Community development Use of shared public-use infrastructure Skills and enterprise development 	<ul style="list-style-type: none"> We spent \$84 million on programmes supporting local community development, including \$20 million to support and develop approximately 141,000 local entrepreneurs In general, over 2 million people living near to our assets have benefited from our community investment activities Approximately \$3.4 million spent on infrastructure for water processing and distribution \$8 million spent building or maintaining over 4,000 kilometres or roads
Local and national government	<ul style="list-style-type: none"> Taxes and royalties Shared public-use infrastructure 	<ul style="list-style-type: none"> Nearly \$4 billion paid to host governments in taxes and royalties Nearly \$30 million spent on public infrastructure such as water, power and sewage networks and roads

Economic value added in 2016¹

\$ million	Group	Africa	Australia	North America	South America	Rest of the World
Revenues ²	217,046	4,215	13,396	30,889	8,855	159,692
Payments to suppliers (operating costs) ³	202,799	3,410	8,648	29,042	7,238	154,460
Economic value added	14,248	804	4,748	1,847	1,617	5,232
Royalties and taxes ^{4,5}	3,963	479	1,396	369	967	753
Employee wages and benefits ⁶	4,825	528	1,642	875	568	1,214
Payments to capital providers ⁷	3,390	528	94	(30)	141	2,656
Community development	84	28	6	3	12	34
Capital expenditure	3,004	773	835	352	473	571
Economic value retained/contributed	(1,019)	(1,530)	774	278	(545)	4

¹ For presentation purposes, all figures in this table have been rounded to the nearest unit.

² Revenues include sales, intercompany sales and other income.

³ Operating costs include all costs of goods sold, excluding salaries, employee benefits, taxes, community development investments, depreciation, impairment and M2M.

⁴ Does not include total net refunds from governments on VAT, GST and sales tax amounting to \$1,238 million. Taxes and royalty payments for Equatorial Guinea amounting to \$27 million not included.

⁵ Does not include income taxes paid in Colombia, Peru and Chile, relating to Glencore's ownership interest in joint ventures (Cerrejón, Antamina and Collahuasi) amounting to a total of \$96 million.

⁶ Excludes all costs relating to contractors; these are shown in operating costs.

⁷ Consists of dividend payments and interest expenses to third-parties and inter-Group entities. Payments to providers do not include any repayments of loan principals.

Community engagement and commitments *continued*

Payments to governments

We pay all relevant taxes, royalties and levies required by local and national regulation in our host countries. We welcome fiscal transparency, as it encourages the responsible management of revenues from extractive activities.

We are a supporter of the Extractive Industries Transparency Initiative (EITI) and its principles of transparency and accountability.

This payments to governments' section includes information required to be disclosed under the EU Accounting Directive. In 2016 we published our first report for the EU Transparency Directive in line with the EU Accounting Directive, detailing our payments to governments per project and country, and will publish our next in 2017.

In 2016, the tax and royalty payments made by our industrial and marketing activities was \$4 billion compared to \$4.5 billion in 2015. The decrease is mainly due to lower profitability and production.

Our highest payments made to governments in 2016 were:

Payments to governments by country (2016)

Country	Payments excluding VAT (\$ million)
Australia	1,396
Argentina	536
Kazakhstan	349
Colombia	254
Canada	220
Democratic Republic Of Congo	199
South Africa	180
United States	144
Peru	75
United Kingdom	65
Switzerland	59

NB: Does not include total net refunds from governments on VAT, GST and sales tax amounting to \$1,238 million. Does not include taxes and royalty payments for Equatorial Guinea amounting to \$27 million.

Does not include income taxes paid in Colombia, Peru and Chile, relating to Glencore's ownership interest in joint ventures (Cerrejón, Antamina and Collahuasi) amounting to a total of \$96 million.

Next steps

We will disseminate community leadership training materials, and support training on this topic with regional workshops and online learning. This will support our objective of training and developing our community relations teams to deliver effectively and efficiently.

We will use our improved understanding of our key contributions to review and update our societal strategy, including tools and materials to support local objectives.

Product stewardship

Why this is material:

Our products are vital to today's society, creating devices used daily, all over the world. Supplying these products in a timely fashion with consistency in quality and safety is essential to our business and to our customers.

SDGs:



In 2016:

We are working with stakeholders and national authorities on developing regulation for cobalt



We are engaging with the IMO on the evolving requirements for the safe carriage of cargo

Our CCR gold refinery in Canada maintained its

LBMA conflict-free gold certification

Product stewardship *continued*

Our goal is to provide competitively-priced commodities that meet our customers' needs and contribute to global society, while addressing any associated health, societal and environmental risks.

Our approach

Safety

Our product stewardship programme, designed to fit our diversified range of activities, supports our strong commitment to health & safety. It contributes to the establishment of protective occupational exposure limits (OELs) and environmental reference values.

We continually study the nature and properties of our products to identify their intrinsic hazards and establish guidance on their safe use. We supply this information to our customers, and combine it with recommendations on engineering controls and protective equipment, as well as exposure monitoring to help maintain safe workplaces.

We operate in strict compliance with REACH (the EU regulations on the registration, evaluation, authorisation and restriction of chemicals) and comparable legislations in other regions. We maintain over 7,000 material safety datasheets on more than 100 commodities, available in 28 languages. These provide information on OELs and safe handling, storage and distribution.

Quality

Our products move through warehouses, land freight and shipping lines. Each stage can have an impact on quality, so we have quality controls at specific stages, especially loading and discharge locations. Some products require additional quality assurance measures, which we comply with.

Collaboration

We share our understanding of our product value chains and the associated risks with our peers, customers and other stakeholders. We help our customers implement their own material stewardship strategies, inform them of regulatory decision-making and generally help minimise risk to human health and the environment.

For instance, we provide customers from the US electronics industry with documentation to show that our products do not contain minerals sourced from conflict-affected and high-risk areas. This helps them ensure their compliance with the Dodd-Frank Act. We provide similar evidence to support compliance with other legislation, such as the Restriction of Hazardous Substances Directive and REACH.

We work continuously with experts, industry consortia and our peers to study the properties and impacts of our products throughout their lifecycles, to spread understanding of our products.

We support innovation in product efficiency and safety, for instance via industry consortia.



You can find more details of our approach to product stewardship in "Our Approach to Sustainability" at: glencore.com/sustainability/our-progress/reports.

2016 performance

Compliance

In recent years, the REACH regulatory programme has shown an increasing focus on cobalt, a versatile metal with many applications, most notably modern rechargeable batteries. In 2016 we continued working with stakeholders and national authorities on the evolution of developing regulation for this commodity. Our joint aim for the regulation is to create healthy work environments, based on good science, without being overly restrictive.

We also continued our dialogue with the International Maritime Organization on the evolving requirements for the safe carriage of cargo. The aim is to further improve safety at sea while preventing disruption of our supply lines.

Certification

We conduct appropriate due diligence on our supply chain and work with our customers in the US to help them meet the requirements of conflict minerals regulation. In 2016, we maintained LBMA conflict-free gold certification at our CCR gold refinery in Canada.

In 2016, Glencore did not produce, process or market any 'conflict minerals' originating from the conflict areas as defined under the Dodd-Frank Act (tin, tungsten, tantalum and gold from the DRC and adjoining countries).

Product stewardship initiatives

We work with stakeholders, including civil society, governments and our customers, to promote responsible commodity sourcing. An example is our membership of the technical and advisory committee for Bettercoal, a non-profit initiative established by major European utility companies. The committee has been developing requirements for coal suppliers and assisting with the design of an assessment process.

In 2016, we engaged with a range of stakeholders to find ways to address child labour within artisanal mining (ASM) with regard to sourcing cobalt from the DRC. While we prohibit child labour at our operations or among our suppliers, we recognise our responsibility to help address the economic conditions leading to child labour at such artisanal mines. (Details of our efforts to address this challenge through our community development programmes at our DRC operations can be found in the case study ■ [Commitment to our host communities](#) in the *Copper* commodity chapter.)

We also contributed to the development of a new protocol for the hazard assessment of alloys, which uses bioelution (a method of testing the human body's uptake of different substances). The protocol involves examining biological fluids to measure metal release, which can support the identification of a material's potential toxicological risk.

In 2016, the Group product stewardship team began to collate an overview of existing national and international OELs for the various materials we produce and work with, as well as OELs likely to be introduced in the future. This will help us determine the best approach to establishing and monitoring OELs across the Group to support our commitment to protect the wellbeing of our workforce.

Emerging regulation

We continue to face growing scrutiny into the potential human health and environmental impacts of the products we sell.

We are developing a Group monitoring system to track emerging regulations, and determine the degree of risk or impact they are likely to have on our different commodity departments. This will help us to better understand and engage with the growing interest from our stakeholders.

We have developed a product stewardship scorecard to help communicate awareness of this discipline's varied and far-reaching nature, combining disparate fields such as regulation and science. The scorecard covers any new regulatory or product-related development that may affect our business or the markets we work in. We use it to track and rank new developments by priority and potential impact, as well as communicate their significance to senior management. We classify each issue by both commodity department and region. High priority issues are allocated follow-up actions to mitigate or reduce the risk to ensure that our business and our sustainability activities run smoothly.

The Board HSEC committee and our senior management team will oversee the results of this system to ensure that any emerging regulatory risks are factored into business considerations.

Next steps

We will continue to keep track of regulatory changes around the world that may affect our operations or our markets. We have been following developments in Korea's chemicals management regulations (known as the Korean REACH). We will also monitor the European discussions and any subsequent changes regarding appropriate risk management for cobalt, to make sure that Europe continues to benefit from this metal while protecting workers appropriately.

Integrate the results of the review of existing OELs into our occupational health programmes.

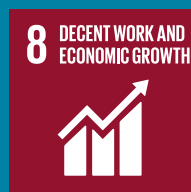
The conclusion of discussions on changes to the EU regulation on responsible sourcing will allow us to finalise our conflict minerals policy.

Human resources

Why this is material:

We must maintain a capable and engaged workforce that brings a diverse range of experience and perspectives to the organisation, in order to continue meeting our business objectives.

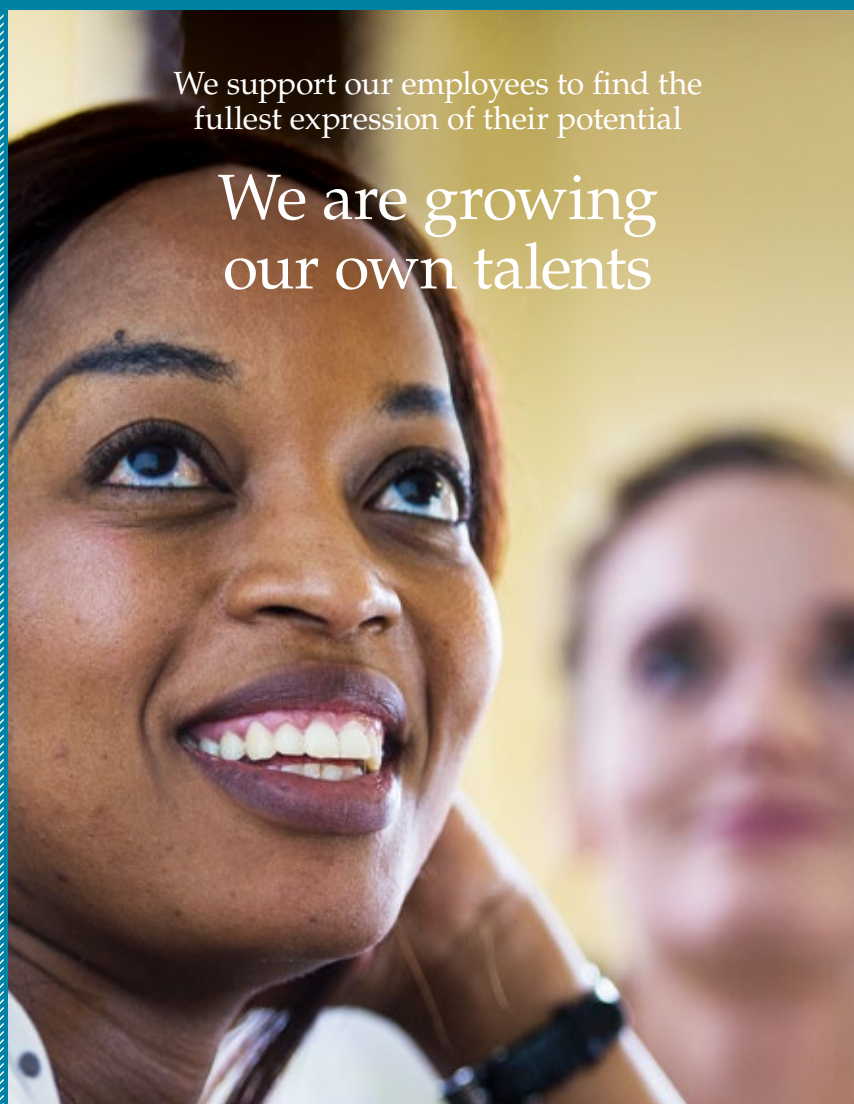
SDGs:



In 2016:

17% of our workforce and 40% of our marketing personnel are female

Our capable and engaged workforce brings a diverse range of experience and perspective



Our human resources operational framework supports our Code of Conduct and values, and the commitment we make to our stakeholders. We protect and uphold fundamental human rights around the Group, with fairness, dignity and respect. Our commitment is spelled out in our employment contracts, employee induction programmes, performance management reviews, job descriptions, employment handbooks, group intranet platforms, employee handbooks and posters.

Our approach

We continually monitor our remuneration levels to ensure market competitiveness and to enable Glencore to attract and retain high calibre candidates. Our human resources teams continually benchmark our salaries against market rates to determine departmental remuneration policy.

We offer regular assessments of skill levels and competence, aiming to identify good performance, talent and potential, and offering suitable reward, development and support.

We believe that diversity is essential to our business and prohibit discrimination on the basis of race, nationality, religion, gender, age, sexual orientation, disability, ancestry, social origin, political or other opinion, or any other bias. We do not tolerate any form of racial, sexual or workplace harassment. Our position is included in all training materials for new and current employees, and reinforced regularly in training for management.

Development opportunities

Our succession planning and workforce development practices are developed to identify individuals with high potential and train them appropriately, to ensure that we can fill roles in the future. Glencore's philosophy is to grow our own talents, with a decentralised approach allowing our assets and regional offices to link their development activities to their own succession plans. This approach naturally leads to our employees finding the fullest expression of their potential.

Our focus is on realising each of our employees' potential for the future.



You can find more details of our approach to looking after our people in "Our Approach to Sustainability" at: glencore.com/sustainability/our-progress/reports.

2016 performance

Diversity

We have continued our efforts to attract and retain a diverse workforce.

In Peru, 35% of Antapaccay's employees are already from the local area, and this year we have introduced training programmes for local people to develop skills that we need at our operations. In Chile, Altonorte Copper has made a significant increase in the number of female managers, from none in 2015 to 33% in 2016; they continue to focus on recruiting women.

In Australia, Mount Isa Mines (MIM)'s *Indigenous Employment Program* won the 2016 Queensland Resources Council Best Company Indigenous Employment and Training Initiative Award. The programme targets young local indigenous people, providing job-readiness and mining-specific training. Female trainees have made up 24.9% of the total intake since the programme began in May 2014. Overall, currently 12% of employees are women, with 5% coming from indigenous communities.

MIM also piloted its *Girls for Mining* mentoring programme in 2016, the first of its kind in the North West Australia region. 25 local secondary school girls were matched with Glencore mentors, in a wide variety of occupations that included operating, trading and technical professional roles. Students had a hands-on opportunity to learn about roles in the mining industry. We will expand the programme to Ernest Henry Mining in 2017.

The employees of McArthur River Mine (MRM) include 11% women and 15% people of indigenous background. MRM's employment and training strategy, *Pathways to Employment*, is a multi-year, three-stage process targeting students, entry-level trainees and new employees, that can ultimately lead to certification and career opportunities within Glencore.

Human resources *continued*

Turnover

Our turnover rates for 2016 were generally lower than in 2015, at 10% (2015: 19%).

Mount Isa Mines has introduced a job-share programme, in which employees may share one job and one roster. This is specifically aimed at employees transitioning to retirement and those acting as carers.

Career development

In 2016, Mount Isa Mines launched a programme called *Future Supervisors*. Seven operational employees were placed on a structured development programme with both formal and on-the-job training to build their competence in supervisory roles, in preparation for the possibility of promotion.

Intakes for Australian entry level programmes

Graduates	26
Apprenticeships	40
Scholarships	8

The Australian business is also implementing a trainee programme to draw talent from the local indigenous community. One trainee has now started an apprenticeship through the *Strong Start, Bright Futures* programme, a Borroloola school-based programme from McArthur River Mine.

In South Africa, we provide bursaries to a number of students; these bursaries are not tied to working at Glencore, but we often offer jobs to graduates. Of the 50 bursaries awarded this year, 11 students graduated in a range of engineering disciplines, such as metallurgy, electrical engineering, chemical engineering and life & environment science; nine of these students came to work for Glencore.

In 2016, we continued with an ongoing initiative: we sponsor not only university qualifications, but also engineering training for the South African Government Certificate of Competence (GCC), and relevant leadership training programmes.

Union relations

Many of our assets used 2016 to prepare for labour renegotiations in 2017, as several of our workplace agreements were due to expire. Several industrial assets in Australia, South Africa and South America have reached new wage agreements, that will last for three-year periods; we have benefited from increased performance due to new work rosters and cost saving initiatives, while employees have won increased benefits.

Next steps

We will continue to raise awareness of Glencore and our values, to consolidate our position as an employer of choice: we will do this by increasing our presence on university campuses and social media.

Our Group HR and sustainability functions will work together on programmes to develop and support supervisors at our assets.

Compliance

Why this is material:

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

SDGs:



In 2016:

In 2016,
our Raising Concerns
programme received

153
reports

29,569

employees and
contractors took part in
e-learning training on the
Code of Conduct in 2016

We are a member of
the Partnering Against
Corruption Initiative
and an associate
member of the Maritime
Anti-Corruption
Network



Compliance *continued*

We seek to maintain a culture of ethical behaviour and compliance throughout the Group, rather than simply performing the minimum required by laws and regulations.

Our approach

To support this, we have implemented a Group compliance programme that includes a range of policies and guidelines. Our permanent and temporary employees, directors and officers (as well as contractors, where they are under a relevant contractual obligation) must comply with the Group compliance policies that apply to their duties, in addition to complying with applicable laws and regulations.

The Business Ethics Committee

The Business Ethics Committee (BEC) develops and reviews the Group's policies, guidelines and principles on business ethics, including money laundering, bribery and corrupt payments, sanctions and conflicts of interest, and assists in questions related to their application. The BEC comprises senior representatives from across our businesses and management, and two of the Group's external counsel. The BEC reports to the Board Audit Committee. The policies, guidelines and principles developed by the BEC are implemented by the Group's compliance teams, local compliance coordinators and business ethics officers together with the operations. The BEC meets two times per year and the BEC Subcommittee meets four times per year.

Group compliance policies

Our sustainability framework encompasses our Group values, Code of Conduct and other policies and guidelines, such as those developed by the BEC. Our sustainability framework represents our commitment to uphold good business practices and to meet or exceed applicable laws and external requirements. Our policies and guidelines are easily available to all employees; we also use them in many of our business activities, including recruitment, induction, supplier briefings and external engagement activities.

We will not knowingly assist any third party in breaching the law, or participate in any criminal, fraudulent or corrupt practice in any country. We seek to prevent such misconduct through training programmes and strong leadership, underpinned by internal policies, procedures and controls. The Group compliance policies are made accessible to employees via the local compliance coordinator, the Group intranet or the intranet of the specific asset at which they work. Our managers and supervisors are responsible for ensuring that employees understand and comply with the policies. Relevant employees must confirm their awareness and understanding of our compliance requirements in writing every year.

Certain assets implement their own policies in addition to Group policies. These are designed to address their specific requirements, while being consistent with our Group values, Code of Conduct and policies. Local compliance coordinators, guided by the Group compliance department and teams, support our employees in day-to-day business considerations, particularly those seeking advice on ethical, lawful behaviour or policy implementation. Employees may access the telephone, email and postal contact details of our local compliance coordinators via the Group intranet, their local intranet and notice boards. The Glencore Group currently has 98 local compliance coordinators.

In accordance with our Code of Conduct, anybody working for Glencore who breaches the law, the Code of Conduct or other policies may face disciplinary action that could include dismissal. In 2016, 318 employees (2015: 523 and 2014: 378) were dismissed for breaching the Code of Conduct. The dismissals were predominantly related to failures to follow safety instructions or policies, or misappropriation of company property.

Bribery and corruption

Bribery is a criminal act in most countries, with severe penalties. We conduct continuous analysis for corruption risks within our businesses; our Group compliance and internal audit teams are brought in if necessary. Glencore's global anti-corruption policy is available on the Group website. It contains our clear position on bribery and corruption, which is that offering, paying, authorising, soliciting or accepting bribes is unacceptable.

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

Case study: prevention of corrupt payments in shipping

In November 2016, Glencore's shipping subsidiary ST Shipping participated in the MACN meeting in Jakarta, Indonesia. MACN brings together port agents, bulk carriers, tanker operators, container carriers and cargo owners to raise awareness about corruption risks in shipping, share best practices in addressing those risks, and collaborate on strategies to increase transparency and the exchange of information in the maritime sector, including collective action. ST Shipping shared the learnings with relevant Glencore compliance and marketing personnel.



Training

Our marketing employees receive induction sessions and ongoing training on sanctions, the prevention of bribery and corrupt payments, anti-money laundering, anti-trust, confidential information and conflicts of interest.

Our industrial assets carry out their own training programmes, designed to address their specific requirements while being consistent with our Group values, Code of Conduct and policies. In 2016, 29,569 employees and contractors (2015: 27,754) took part in e-learning training on the Code of Conduct, which includes guidelines on raising concerns. In addition, 20,119 (2015: 18,933) undertook e-learning training on our global anti-corruption policy, which includes guidelines on giving and receiving gifts and entertainment. While the target audience of the Code of Conduct training was administrative and supervisory employees and contractors, the training on anti-corruption targeted those whose function may require them to interact with third parties.

Most of our people do not have regular access to a computer; we undertake their training with more traditional training forms, including induction sessions, pre-shift general training and toolbox talks.

Reporting misconduct

If one of our people encounters a situation that appears to breach our Code of Conduct or policies, that individual must raise this promptly with his or her immediate supervisor or manager. Alternatively, the individual may raise the concern with another appropriate manager, local compliance coordinator, business ethics officer or BEC member. The BEC includes representatives from our external legal advisers, to whom misconduct can be reported independently. If a concern remains unresolved through local channels, it can be referred to the Group's *Raising Concerns* programme, via email (CodeofConduct@glencore.com) or the online form at www.glencore.com/raising-concerns. In countries with low levels of internet access we have telephone numbers, made known to our people via notice boards. Calls are free and routed to a regional compliance contact who speaks the local language. Those who call or use the online form may choose to raise their concerns anonymously. The *Raising Concerns* programme is accessible by substantially all of our employees and contractors. Nobody working for Glencore will suffer demotion, penalty or any other disciplinary action for raising a concern in good faith.

In 2016, the *Raising Concerns* programme received 153 (2015: 140) reports from employees, contractors or third parties regarding situations in which Group policies appeared to be breached.

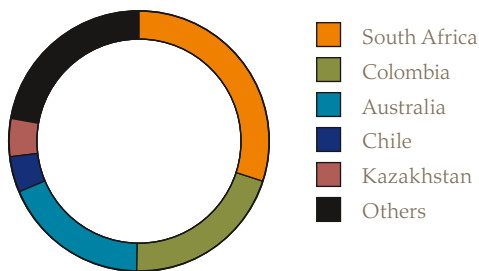
Compliance *continued*

Case study: raising concerns about fraudulent qualifications

The *Raising Concerns* programme occasionally receives reports relating to human resources. These include concerns expressed by employees or contractors that a colleague is performing his or her duties without the necessary qualifications or with fraudulent ones. Such concerns are highly sensitive; such allegations, if found to be true, could mean that an employee has committed fraud, that internal application processes have failed or that an employee or contractor is working without the necessary skills, posing a safety risk for that individual and those in proximity.

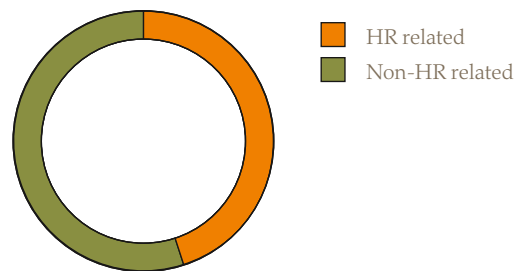
When we receive a report like this, we immediately review the qualification documents in the individual's HR file, the application process followed and observations from any related performance management documentation. Because of the risk of a forged qualification document, for example that of an artisan or truck driver, our investigations will sometimes require verification from the issuing institution, to ensure that the individual is registered as having the qualification in question.

Raising concerns – reports by country (2016)



- South Africa: 46 reports (30%)
- Colombia: 31 reports (20%)
- Australia: 29 reports (18%)
- Chile: 7 reports (5%)
- Kazakhstan: 7 reports (5%)
- Others: 33 reports (22%)

Raising concerns – reports by subject (2016)



- Human resources related: 69 reports (45%), mostly related to unfair treatment and bullying/harassment
- Non-human resources related: 84 reports (55%), including allegations of conflict of interest, theft, safety breaches, irregularities in procurement and fraud



Commodities

“Our activities generate significant benefits for our host governments and communities. We support the responsible management of revenues from extractive activities.”

IVAN GLASENBERG
Chief Executive Officer *(see page 6)*

- 60 Agriculture
- 66 Coal
- 78 Copper
- 86 Ferroalloys
- 94 Nickel
- 106 Oil
- 114 Zinc





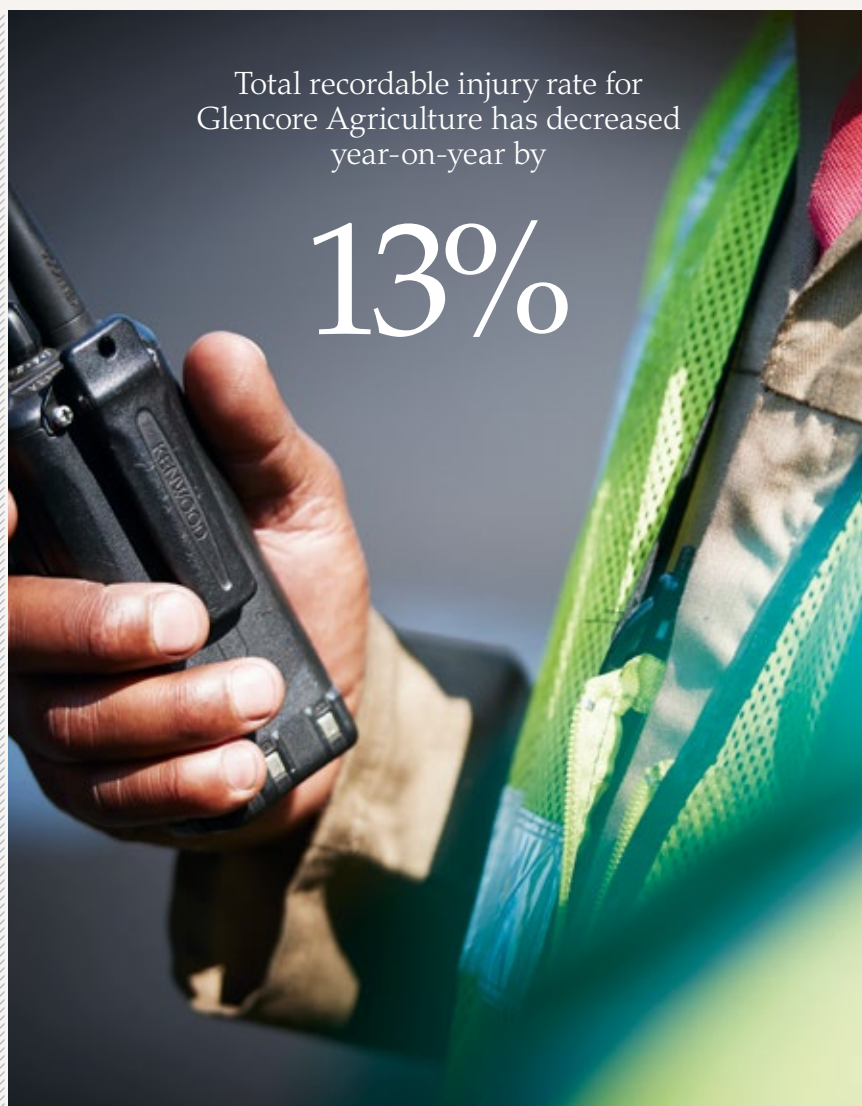
In focus: Agriculture



About Glencore Agriculture

We are a market leader in originating, handling, processing and marketing agricultural commodities, including grain, oilseeds, pulses, sugar, rice, cotton, vegetable oils, protein meals and biodiesel.

In 2016:

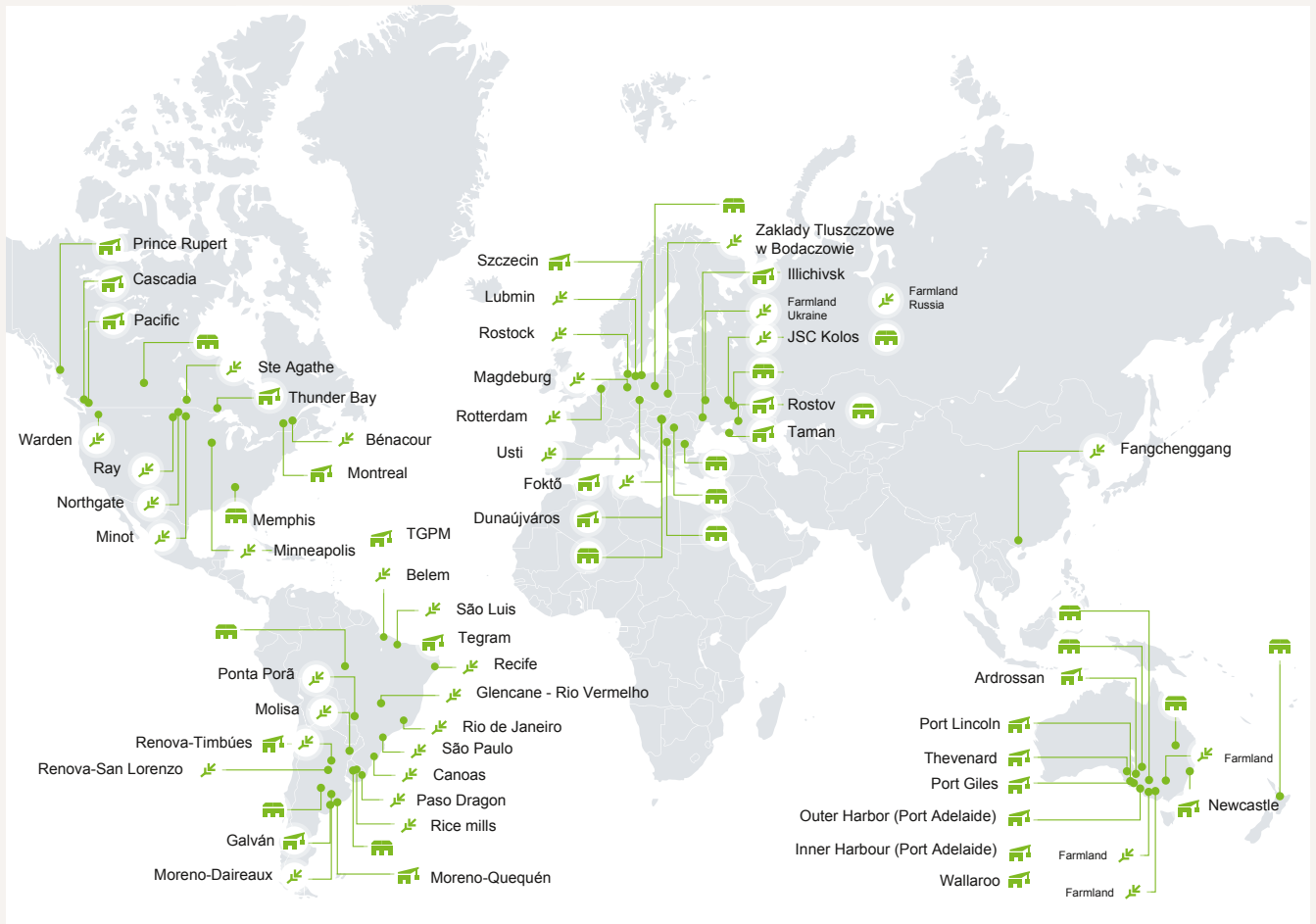


SafeAgri training materials
are translated into

12

languages

Group-wide
standard for dry
bulk and glycerine
storage locations
introduced



Key

- Agricultural asset
- Agricultural port facilities & storage
- Agricultural storage facilities

KPIs

	2016	2015	2014
Fatalities at managed operations	0	0	2
Lost time injury frequency rate (LTIFR) (per million hours worked)	3.45	4.43	6.01
Total recordable injury frequency rate (TRIFR) (per million hours worked)	7.94	9.14	12.55
New cases of occupational disease	2	5	19
CO ₂ e Scope 1 GHG emissions (million tonnes)	0.44	0.340	0.415
CO ₂ Scope 2 (location based) GHG emissions (million tonnes)	0.179	0.121	0.204
Total energy use (petajoules)	20	16	16
Water withdrawn (million m ³)	142	188	218
Number of employees and contractors	13,833	13,177	15,459
Proportion of female employees (%)	25%	23%	25%

Agriculture

Safety

Glencore Agriculture runs approximately 350 assets worldwide and our first priority during day-to-day work is safety. We have a specialised safety initiative in place within all our assets called SafeAgri, an adaptation of the Group safety initiative SafeWork.

As with the rest of the Group, we require catastrophic and fatal hazards to be controlled at all times. We identify all such hazards and manage the related risks using fatal and catastrophic hazard protocols, critical controls, and evaluating planned tasks to identify hazards. These processes focus on identifying hazards, putting controls in place, being fit for work, awareness during work, communicating clearly with colleagues and applying the proper controls. We are committed to identifying and implementing improvements to our systems.

In addition to our ongoing work to manage, control and prevent fatal and catastrophic hazards across our operations, in 2016 we focused on leadership training.

Training for SafeAgri

SafeAgri includes four different leadership safety training modules that allows our people to develop and build individual SafeAgri training programmes customised to the needs of different assets and different job roles. As visible leadership from supervisors and management is an important part of creating a safety culture, we have a specific training module for management and supervisor levels.

In addition to the leadership safety training, we also introduced a *Step-up to Leadership* programme for supervisors during 2016. The main objective of this programme is to equip, develop and support supervisors while performing their roles and responsibilities.

We carry out SafeAgri training sessions around the world every year, educating our people at every level; we provide customised tools and attributes for their development. We are translating our training materials into 12 languages and have undertaken senior management training in Rotterdam, Buenos Aires and Sao Paulo, and regional training in Argentina, Uruguay, Brazil, Ukraine, Russia, Poland, Canada and Australia.

Principles from SafeAgri Leadership Programme

Our training for supervisors and managers begins with a definition of the qualities required of our leaders:

- Good self-management and awareness
- Ability to remain resilient in difficult times
- A visibly positive attitude towards work

We believe that these attributes can be developed by everyone, but they require the ability to evaluate oneself and others.

Our training also emphasises some behaviours that will help participants become successful leaders:

- Understanding and managing oneself before trying to lead others
- Maintaining a clear vision of what is to be achieved
- Fostering a positive outlook
- Managing stress levels
- Developing personal resilience
- Creating and maintaining supportive networks to assist oneself

Various tools, supported by appropriate training, are provided to all employees as part of the SafeAgri programme's aim of empowering employees to work safely. As part of our approach of continuous improvement, potential supervisors are identified and trained. The programme is further enhanced through on-site coaching.

Product stewardship

Our agricultural procurement operations, which buy from growers, apply extensive quality control, especially in the regions where we do most of our business, such as North and South America, the Black Sea region and Australia. This is to ensure that all products are safe for consumption.

Quality control is primarily achieved through product testing, performed by our in-house laboratories and through close cooperation with third-party product surveyors, independent testing labs and local authorities.

Our trading and production activities are certified against leading sustainability standards, and against food and feed safety assurance systems as required, including:

- International sustainability & carbon certification (ISCC)
- The good manufacturing practices feed certification scheme (GMP+)
- International Food Standards (IFS)
- Food Safety System Certification (FSSC) 2200

We regularly and proactively monitor for contaminants, to ensure compliance with applicable legislation and contract terms, and continually work to improve our quality management systems, which are verified through internal and external audits.

We introduced a Group-wide standard for dry bulk and glycerine storage locations in 2016.



We have initiated an improvement programme in several locations, developed in partnership with the inspection and certification organisation SGS. The programme focuses on Eastern Europe in particular and is designed to minimise the risk of mycotoxin contamination. When screening is performed before harvesting, we can identify the risk of mycotoxins earlier, and take the appropriate measures to mitigate this.



Agriculture *continued*

A programme to improve fumigation safety

Our business transports millions of tonnes of grain each year, using a fleet of more than 80 vessels. When moving products, we preserve quality by protecting the cargo against infestation by small insects. Where appropriate, we take protective action while cargo is in transit; this means we directly fumigate the holds of the vessels while transporting cargo.

In 2016, we introduced a risk-based programme to limit and manage the risks of fumigation, to protect our crews, product quality and vessel safety. We worked with a specialist fumigation process consultant to develop an awareness and training programme to make fumigation safer and more sustainable. This includes auditing procedures and employee training. We also assess suppliers to ensure they are using environmentally-friendly products, audit suppliers and train inspectors.

To guarantee a safe fumigation process, Glencore Agriculture appoints an independent, qualified third party to perform the fumigation at destination to assure discharging. Weather conditions (temperature and humidity), transport time and volume are important parameters to decide if/how cargo can be fumigated.



Community

Community investments

We invest in the education and skills development of the farmers and producers from whom we buy products. One example is the Viterra Knowledge Centre, which provides training and technical support to growers in cooperation with the Canadian International Grains Institute (Cigi).

We also contribute to the communities living near to our operations through educational initiatives and donations. We support Feyenoord Street League and the Reading & Writing Foundation in the Netherlands and the Agriculture in the Classroom programme in Canada. In addition, we fund a Christmas gifts initiative for handicapped families in Hungary and a programme to support areas affected by bushfires in Australia.



Career development

It is vital to the success of our business to attract and retain the best people at every level.

In common with the general approach across the Group, we have a strong focus on employing people who are local to our operations. We provide formal training and development to these employees to help them advance their career and progress to management positions. We work hard to identify any cultural barriers to retention, and seek to address these.

We place a high importance on the ongoing education and training of our employees and have developed a number of internal training programmes to support their growth and ensure a strong succession pipeline.

From entry level to management

We believe that if we offer employment to young apprentices, graduates and professionals, they will grow and develop to become the future leaders of our business. Our commitment to offering local employees career development is illustrated by the proportion of our managers who originate from the regions close to our operations.

We offer regular assessments of skill levels and competence, with the aim of spotting good performance, talent and potential and offering suitable reward, development and support.

Our heavily decentralised approach allows individuals to take significant responsibility. Our people are accountable for their contributions to our businesses around the world, including the creation of long-term relationships with our stakeholders.

Graduate employment

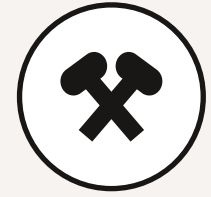
Each year we hire a number of talented graduates at our marketing offices through our targeted graduate and trainee programmes that are in place at our locations around the world.

We offer our selected candidates a place on our training programmes with an 18-month fixed-term contract. During that time they rotate through different areas of the business and have the possibility to temporarily move abroad to different Glencore Agriculture locations. Rotations are determined by their interests and our business need, as well as their area of study.

Participants receive organisational support and both formal and on-the-job training to prepare them for a potential permanent role.

To find and attract enthusiastic and motivated students we have developed and run graduate programmes in our key operating regions. For example, we have built a close relationship with the Erasmus University in Rotterdam. Each year we organise a commodity trading masterclass for students with an interest in commodity trading. The class includes courses in different commodities, finance, accounting and risk management, provided by our traders and department heads, together with university professors. The masterclass has led to Glencore Agriculture hiring a number of Erasmus graduates into different departments and specialties.

In focus: Coal



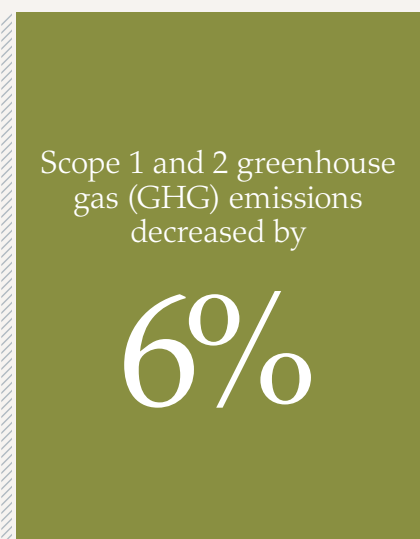
About coal

We are a leading producer and exporter of bituminous thermal coal and a significant producer of both premium hard and premium semi-soft coking coal.

We supply thermal coal to customers from a wide range of industries and locations, including major utilities across three continents.

We have interests in more than 28 operating coal mines in Australia, South Africa and Colombia.

In 2016:





Key

- Coal
- Port facilities

KPIs

	2016	2015	2014
Fatalities at managed operations	1	0	0
Lost time injury frequency rate (LTIFR) (per million hours worked)	1.50	1.35	1.35
Total recordable injury frequency rate (TRIFR) (per million hours worked)	3.79	3.32	3.49
New cases of occupational diseases	11	5	18
CO ₂ e Scope 1 GHG emissions (million tonnes)	10.88	11.23	10.57
CO ₂ Scope 2 (location based) GHG emissions (million tonnes)	1.35	1.72	1.83
Total energy use (petajoules)	37	39	40
Water withdrawn (million m ³)	73	98	99
Number of employees and contractors	21,564	23,442	29,901
Proportion of female employees (%)	14%	14%	13%

Coal

Safety

The safety of our workforce is the single most important aspect of managing our operations. In August 2016 there was a tragic death in Australia. The incident, at our Newlands asset in Queensland, involved a contractor conducting maintenance work at our coal handling and preparation plant. We will continue to focus on developing our safety leadership through an improved targeted frontline safety leadership programme, empowering individuals to address unsafe work, improving hazard recognition, and promoting task risk assessments.

The high risk verification process in South Africa

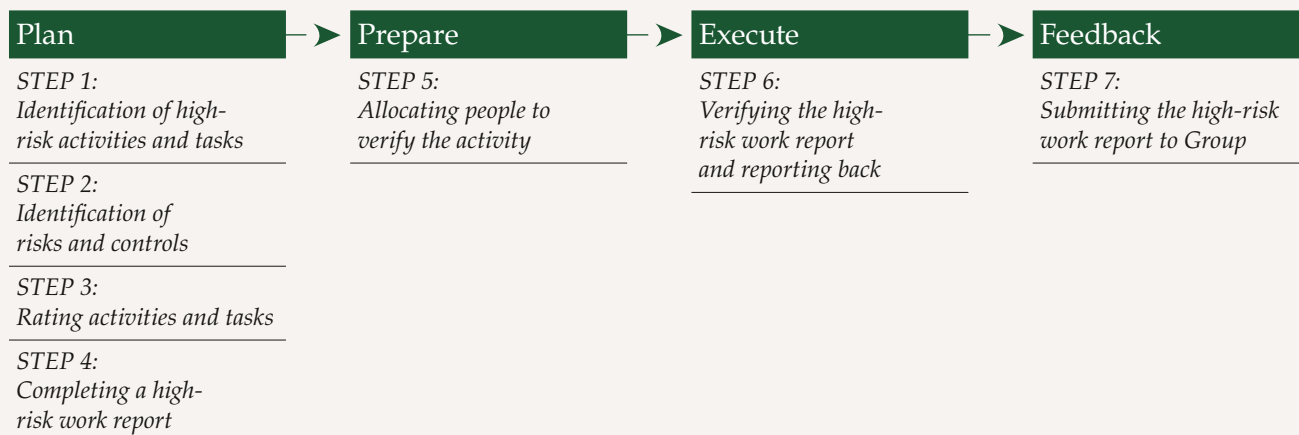
Our South African business has seen no loss of life since 2012. This achievement has been underpinned by the implementation of a weekly high-risk verification process.



This process allows managers to establish steps for the identification, recording and verification of high-risk work or activities within their areas of responsibility. It allows them to ensure that potential risks are managed and gives assurance to senior management that appropriate controls are in place. It has resulted in:

- Better planning from senior management at our assets
- Improved supervision
- Regular in-person reviews of the practicality of safe work procedures and processes
- A weekly senior management field review process (leading to an improvement in risk management)
- Improved accountability throughout the organisation

The seven key steps of the verification process:



Improvements in safety performance

Over the last five years, our coal business has seen a 37% reduction in its total recordable injury rate (TRIFR) and a 12% reduction in its lost time injury frequency rate (LTIFR). All three regions (Australia, Colombia and South Africa) have had a strong safety performance over this period, with Prodeco in Colombia seeing a particularly significant reduction in TRIFR (86%) and LTIFR (90%), and no loss of life since 2012.



Prodeco's strong performance is delivered through its *Yo Trabajo Seguro* programme ('I work safely'), which builds on the Group safety initiative SafeWork. The programme places significant emphasis on visible commitment by the leadership, clear communication of expectations and individual responsibilities, and consistent performance management. Consistent implementation of the programme has fostered high levels of compliance and risk awareness, resulting in strong safety performance.

Prodeco's commitment to safety and strong performance has been recognised with a number of awards in Colombia, including the Cruz Esmeralda Medal of Merit for Excellence, the highest distinction that the Colombian safety council awards to companies for their health and safety standards at work.

Learning from near misses

We report all incidents at our assets and classify them by risk, from near misses and high potential risk incidents (HPRI) to fatal incidents. We investigate all near misses, HPRI and fatal incidents and present the findings at a monthly meeting led by the head of the coal department, and attended by all chief operating officers from across the business.

In 2016 one death occurred within our Australian coal business, along with 35 HPRI (compared to 46 in 2015). Most of the HPRI involved interactions between surface mobile equipment (14), with strata failure (4) and fire & explosion (3) being the next most common.

Investigations of incidents and the actions that flow from them are a powerful tool to help identify root causes and to check the appropriate controls. We identify key learnings and translate them into recommendations for all our assets.

Examples of recent key learnings arising from HPRI that we have implemented include:

- A review of underground fire & explosion equipment, engineering controls, TARPs & alarms, and training
- A review of design and procedures for determining the location of dump sites, safety berm height and visibility for truck turning routes, incorporating the monitoring of these standards by front line leadership
- A design review for rail crossing approaches and boom gates (vehicle entry barriers)

2016 analysis showed that a third of all incidents involved poor risk assessment; two-thirds involved non-compliance with standards or procedures. These two factors will be a high priority in 2017. We plan to strengthen frontline safety leadership training activities, particularly work planning, team processes (including pre-shift safety communication), task risk assessments and SafeWork compliance.

Coal *continued*

Health

Managing risks to the health of our people is essential for their long-term wellbeing. Good working conditions also help with morale and maintain our productivity and efficiency. Our assets offer a range of initiatives to improve quality of life and job satisfaction for our people.

Our health management strategies encompass baseline risk assessments, adequate working environments, and wellness programmes on topics that include fitness for work, fatigue, and chronic disease management. We also conduct regular occupational health monitoring for respirable dust, diesel particulates and noise.

Since 2014 we have seen a 39% reduction in the number of new cases of occupational disease.

Mates in Mining

Every year over 3,000 people die by suicide in Australia, where suicide is one of the top 10 causes of death in men. Research has shown that men in semi-skilled occupations are at particularly high risk for suicide. But suicide is preventable; focused workplace programmes have been found to be effective.

The *Mates in Construction* initiative was developed for the Queensland construction industry. The initiative establishes a peer-based workplace support programme, encouraging workers to offer help “when a mate is doing it tough.” There is also a 24/7 crisis line and case management services for those in crisis. The initiative is widely recognised as best practice for suicide prevention in male-dominated industries.

An industry-led working group was created to develop a framework for a *Mates in Mining* variant. The group conducted a trial at two of our assets: Clermont in Queensland, and Glendell in NSW. This provides training on how to better recognise the triggers for suicide and how to identify somebody who is finding life tough as well as building better awareness of suicide.

The trial was to determine the initiative’s suitability for the mining industry and tailor it with any mining-specific requirements. We partnered with the University of Newcastle’s Centre for Resources Health and Safety to conduct independent surveys before implementation, and then six months and 18 months after implementation.

Mates in Mining will be established as an independent charity. The programme is industry-based, but workplace focussed. It has support from the Minerals Council of Australia, the mining division of the Australian construction workers’ union (CFMEU), the Queensland Resources Council and the NSW Minerals Council.



Addressing coal worker pneumoconiosis in Australia

We were disappointed and deeply concerned by the identification in late 2015 of an industrial illness that we all thought had been eradicated in Australia many years ago. We were surprised and concerned to learn during 2016 that three of our employees at our Queensland UG operations were among those diagnosed with pneumoconiosis (CWP). In line with specialist medical advice, our insurer subsequently accepted all three compensation claims, one employee with CWP and two employees with industrial related lung dust disease.

We take this matter and the welfare of our workers very seriously and are committed to be part of the solution that improves the regulation, manages existing cases, prevents further occurrences and support employees who have contracted CWP with the provision of assistance and compensation. We have had the opportunity to contribute to the Queensland's Parliamentary Select Committee Inquiry into Coal Workers' Pneumoconiosis and are awaiting the recommendations.

Since the first diagnosis was confirmed, our Australian operations have:

- Communicated with our workforce, as well as consulting with NSW Coal Services, the Government, our peers and the industry association, to ensure that our employees are educated on CWP and kept updated of our approach to the issue. This communication is ongoing.
- Provided all our underground employees with the opportunity to have new chest x-rays, taken at an accredited clinic – or alternatively have existing x-rays re-read.
- Undertaken a number of additional underground engineering initiatives, including a comprehensive campaign of respirable dust sampling and analysis to better determine airborne concentrations of dust generated across a range of underground activities, as well as a variety of changes to underground operations, all designed to further minimise dust.

Catastrophic hazard management

Assuring catastrophic hazard management

In 2013, our Australian coal business embarked on a new approach to managing catastrophic hazards within their operations. It designed a five-step assurance programme that requires assets to demonstrate:

- How they manage risk in line with legislation, their own internal standards and industry leading practice
- The controls that they have identified and implemented
- That those controls are working as specified

The process takes three to six months to complete and begins with each asset completing a self-assessment against criteria set by internal and external experts.

Next are comprehensive site investigations and audit reviews by the regional assurance team to verify the self-assessment. The assessors create a report detailing their findings as well as any gaps in the asset's systems and areas for improvement. The regional assurance team follow up with on-the-ground verification to check that gaps are addressed.

We piloted the process in 2014, covering the topics of underground gas and explosion. We have since repeated the process to cover underground strata failure, open-cut strata failure, and open-cut vehicle interaction.

Coal *continued*

Environment

Management of our impacts on land, air and water remain core to our commitment to protect the environment. We are conscious of our role as temporary custodians of the land where we work, and our assets undertake responsible land stewardship at every stage of their lifecycles. We seek to minimise our impact on water quality, and to reduce any emissions to air.

We understand that local indigenous people may have a unique connection with the land on which they live; we make efforts to recognise their cultural heritage when planning our operations.

Water management

Our coal business identifies water risks for each asset and manages these through management plans that address shared water use challenges.

In 2016 we treated and recycled over 2,252 million litres of water, significantly and reduced the total amount of water we withdrew accordingly'.

We have made extensive investments in water management infrastructure across our business. At Prodeco, our asset in Colombia, we are making significant improvements to our infrastructure for transporting and treating runoff water in our waste dumps, to prevent erosion and minimise any impact on water quality in surface streams. In Australia and South Africa we have constructed a number of water treatment plants to manage mine process water, reduce the impact on fresh water and provide water for surrounding land owners and communities to share. We have also invested in water transfer infrastructure, levees and dams, to help high-risk assets improve their resilience to droughts.

For example, in Australia, Ulan Coal has led the way in managing water as a shared natural resource. This asset extracts and treats mine water from underground mine workings, using some for agricultural purposes and contributing significantly to the natural flow of the nearby Goulburn River. This has allowed aquatic and riparian ecosystems to return to the river system in the Goulburn National Park. Also in Australia, Oaky Creek Coal has constructed a reverse-osmosis water treatment plant to manage process water, which has reduced the amount of fresh water it withdraws by 1,600 million litres per year. This has allowed some of the original allocation to be transferred to the local township of Capella. Oaky Creek discharges over 360 million litres of highly treated clean water each year.

Managing and protecting biodiversity

We manage over 19,000ha of high value biodiversity offset areas. These areas protect a diverse range of threatened vegetation communities and plants, as well as providing important habitat for threatened fauna.

Biodiversity and land management plans are required at all our assets. These include measures for flora and fauna conservation, weed and pest control, fire management and grazing management. Our plans allow for the continuation of grazing and other agricultural activities wherever possible.

Two offset areas are the Newlands Nature Refuge in central Queensland (4,363 ha) and the Hillcrest area in New South Wales (1,392 ha). Both contain ecologically significant flora and endangered fauna species, offsetting disturbance from our operations and providing high quality native habitats.

At Prodeco in Colombia our offset programme includes the restocking of native fish species in the La Pacha and Mata de Palma wetlands. It also involves marine ecosystem restoration for the benthos communities associated with the Banco de las Ánimas in Magdalena. We are working with the government to design a programme for the restoration, conservation and protection of the Toribio estuary mangrove ecosystem in Magdalena. We are also developing programmes for conservation and restoration of forests near the Toribio river and the Tucuy-Calenturitas river basin in Cesar.

Land management: rehabilitating mining areas

We are committed to rehabilitating and restoring the land progressively during the life of our mines, as well as when our mining activities have ceased. We aim to return mined land to either self-sustaining native ecosystems, agricultural use or other purposes agreed by our host governments in consultation with local communities.

Planning for rehabilitation begins before we start mining. All our sites must develop, implement and maintain mine closure plans, which consider economic, societal and environmental factors and are reviewed annually. Each site also prepares an annual rehabilitation and land management plan.

In Australia, our assets at Ravensworth and Mount Owen have won awards for their rehabilitation work. Our Mangoola open-cut mine has pioneered the use of natural landforms in its mine overburden rehabilitation. The largest constructed project of its type in the NSW Upper Hunter region, the area disturbed by Mangoola, of around 1,300ha, will be returned to landforms and vegetation consistent with the surrounding undisturbed land.

Over the past six years we have also made significant progress in South Africa, rehabilitating small open cast mining areas. Our dedicated rehabilitation team has successfully rehabilitated approximately 740ha in the last two years. We have made over 440ha of sustainable grassland available for agriculture in the Witbank area, with native birds and bees reintroduced.

During 2016, our activities disturbed 2,141ha; we completed rehabilitation work on 1,769ha. As of 1 January 2017, we have rehabilitated over 15,500ha across our mining assets.



Climate change

During 2016 our coal business's Scope 1 and 2 greenhouse gas (GHG) emissions decreased by 6% compared to 2015. We produced approximately 12.9 million tonnes of carbon dioxide equivalent (CO₂e) in 2015 and approximately 12.2 million tonnes of CO₂e in 2016.

This reduction was mostly related to a decrease in electricity consumption following closure of a number of our underground mines in South Africa, and reduced coal seam methane emissions from our Australian mines.

A temporary sealing of our mine at Ravensworth also meant that fugitive emissions from Australia reduced by 4% across the Group.

Over the past eight years, we have participated in a number of low emission technology projects in Australia and overseas.

The Carbon Transport and Storage Company (CTSCo) is undertaking a carbon capture and storage project in Queensland, Australia. CTSCo is a wholly-owned subsidiary of Glencore; this is a demonstration project testing the suitability of the Surat Basin in Queensland for deep carbon storage. The project began in 2009 with a pre-feasibility study that ran to 2012. Now in the feasibility stage, we are carrying out geological studies and environmental baseline monitoring, with a view to gaining permits to inject CO₂. We expect to build a post-combustion-capture plant attached to a coal power station by 2021, with CO₂ injection anticipated for 2021-2024. This project has received strong industry support from the Australian Coal Association Low Emissions Technologies Ltd (ACALET) and from the federal and Queensland governments.

Coal *continued*

Human rights

We are committed to respecting and upholding human rights throughout our business and among our stakeholders. We operate in some sensitive communities and have designated community relation officers at our assets. The Voluntary Principles on Security and Human Rights provide us with guidance on appropriate techniques for interactions with security providers.

Over 73% of our employees are represented by an independent trade union or collective bargaining agreement; we have spent over \$61 million training our employees and contractors in 2016.

A major human rights risk assessment

In 2015, Prodeco redeveloped its human rights due diligence process, with support from the Fundación Ideas para la Paz (FIP), an independent Colombian think tank. Prodeco also participated in the development of Colombia's National Plan on Business and Human Rights, led by the Presidential Advisory Office on Human Rights.

As part of this work, Prodeco began an integrated risk assessment, supported by FIP. It was based on previous work by FIP on a gap analysis comparing Prodeco's current working practices and policies with the leading practice recommended by the UNGPs and ICMM guidelines.

The risk assessment included creation of a risk register covering characterisations and prioritisations for the human rights risks identified. The register is a key tool for monitoring the action plan.

Methodology

FIP's assessment was structured into four sections:

- **Sources of risk:** FIP identified sources of risk from a context analysis that took the different situations in each of our host regions into account. These risk sources do not necessarily originate from our operations.
- **Risk scenarios:** based on their analysis of risk sources and the specific vulnerabilities of each asset/location, FIP created risk scenarios to define and interpret the possible risks for Prodeco and our stakeholders.
- **Consequences:** FIP calculated the probabilities of particular outcomes for each of the risk scenarios.
- **Action taken:** FIP examined our policies, strategies and actions for eliminating or mitigating the human rights risks identified within our operations and supply chain.

Areas of analysis

FIP carried out stakeholder interviews to establish their areas of concern. They identified four different overall areas of interest: government and state institutions; socio-economic issues; security and public order and strategic relations with key stakeholders.

As all of these areas are interconnected they will be approached holistically.

Prodeco developed an action plan in consultation with FIP with varying time frames and in some cases participation by third parties. Prodeco will regularly update on its progress and further details can be found online at grupoprodeco.com.co/en.

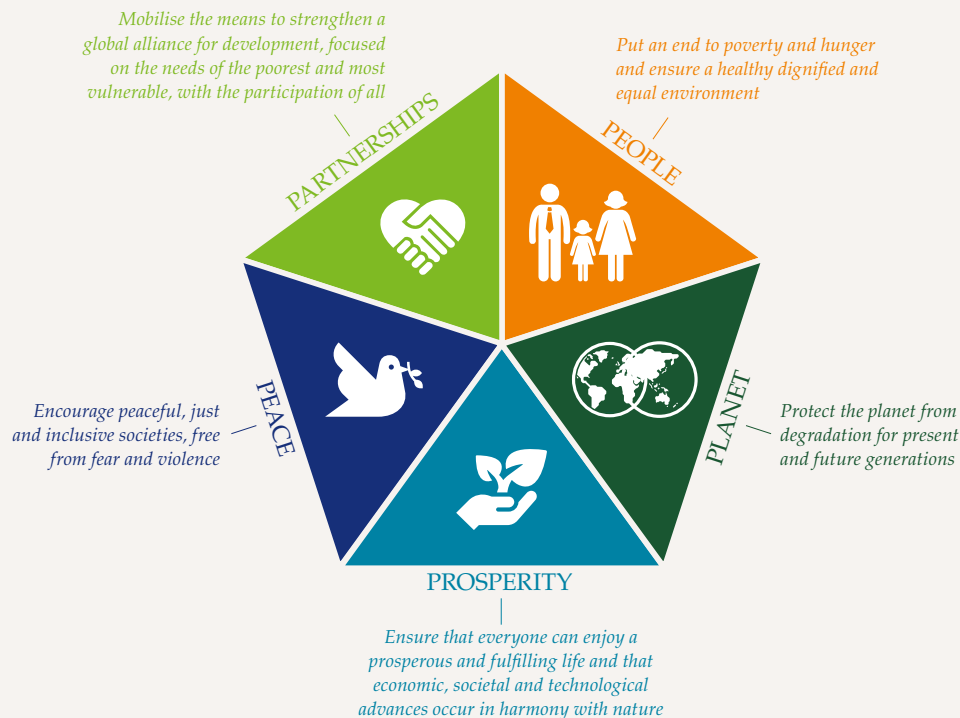
Prodeco's work towards the UN Sustainable Development Goals

Prodeco's community development activities are created to work in line with the UN Sustainable Development Goals (SDGs), part of the UN's 2030 agenda for sustainable development. Each of the 17 SDGs falls under one of five focus areas.

In 2015, Prodeco created a systematic community development strategy based on these five areas. Its projects contribute to the SDGs and fall under one of Prodeco's three core investment areas of education, community investment and income generation.

As an outcome of this strategy, Prodeco is committed to forming partnerships with local government to invest in improving local economic, societal and environmental sustainability with a focus on the SDGs. These partnerships have already yielded a number of projects.

- **An integrated solid waste management, agriculture and sustainable urban transformation system:** this was implemented in the rural district of La Victoria de San Isidro to improve local living conditions, specially air quality and food security. It will directly benefit 50 vulnerable families and serve as a model for a wider rollout.
- **Forest offset programme:** this works with the local community to encourage sustainable development by protecting existing forest cover, improving areas for reforestation, and improving water regulation.
- **Cross-industry programme:** this included five new partnerships, mostly working on education and training projects, to add value to Prodeco's supply chain, including a corporate volunteering programme and a framework agreement with the Colombian Foreign Office.



Coal *continued*

Our contribution to the Colombian peace process

Regional conflict has been a tragic reality of Colombia's history. Fortunately, the country has made great progress towards resolving these conflicts and consolidating civil governance in the last decade. The first significant step took place in 2006, with the demilitarisation of Colombian paramilitary forces.

Today, the Colombian government has signed a peace treaty with FARC, and is in talks with the ELN to find a peaceful solution to the conflict. Progress to date has been encouraging, leading to a safer, less volatile situation, with benefits for Colombia's people, its economy and its standing on the global stage.

As a major investor in Colombia, Prodeco plays a key role in its economic development, at both the national and local level. We believe that we and our stakeholders can work with the Colombian state to find long-term solutions to the historic situation, while building a platform for future sustainable development.

Prodeco has reviewed its community development strategy to incorporate the peace process and make sure that its efforts support transition to a lasting productive peace for Colombia.

We believe this is an opportunity for the development of our local communities and for the whole region and we intend to be key participants.

Resettlement activities across the business

When resettlement of neighbouring communities is unavoidable, all our assets work in accordance with the IFC performance standards on resettlement. This is required by our Group human rights policy.

South Africa

In 2016, we conducted three resettlements in South Africa (two at our Goedgevonden Mine and one in Wonderfontein).

In 2015, GGV undertook a full resettlement of the Tree Plantation community, where 35 households were resettled. These families were resettled to Phola, a town in the local municipality.

In addition to resettling the families into new homes, we also installed gas for cooking and solar panels for electricity, as their houses were not connected to the municipal electricity grid.

In 2016, a further two families were relocated and we are working with the remaining six families.

At Wonderfontein one household was relocated in 2016 and the other will be relocated in 2017.

Colombia

Prodeco met a number of resettlement milestones in 2016.

Work took place on the livelihood restoration plan for Plan Bonito. 96 families and 473 people have benefited so far; 468 people received access to the Colombian government's social programme for Beneficiary Selection System (Health), which assisted 22 elderly adults, 138 young people and 114 children. The plan helped develop 29 business models, create 20 enterprises and improve nine businesses.

Studies using the Multidimensional Poverty Index methodology show that the number of families doing well has increased considerably following resettlement, rising from 66 in 2012 to 84 in 2016. The number of families at risk of falling into poverty dropped from 11 to 6, and families in poverty fell from 19 to 8.

Prodeco finalised the drafting of the El Hatillo resettlement action plan in compliance with the relevant international standards in 2016. This community consists of 320 families, of whom 130 are non-residents. Prodeco is working with the community to finalise the plan. This involves workshops with the Colombian government, the local ombudsman's office and the human rights department of the Colombian President's Office. Resettlement is forecast to begin during the second half of 2017. Livelihood projects are being developed with the assistance of the United Nations Development Programme (UNDP).

Engagement with indigenous communities

Our aboriginal community working group, active in the Upper Hunter Region, Australia, is one of the key ways in which we engage with local aboriginal communities, to understand their concerns and aspirations, as well as their needs and priorities. This relationship helps us tailor our support efforts and build awareness throughout our business.

In 2016 the working group oversaw development of an online cultural awareness training package designed to build further understanding among our workforce. The group also has been a vital part of our continuing support for the Galuwa scholarships programme, which supports aboriginal children as they transition from primary to high school (a three-year period), and the establishment of Clontarf Academy at the local Singleton High School, which seeks to improve the education, discipline, life skills, self-esteem and employment prospects for young aboriginal men.

The Clermont Aboriginal Cultural Development Fund runs the Indigenous Rangers programme, which is delivering positive outcomes for the Wangan & Jagalingou traditional owners. 14 rangers have completed their initial training. The fund also supports three tertiary education scholarships.

Our Australian coal assets and Mount Isa Mines continued to support the Queensland indigenous youth leadership programme, which enables 40 participants from Queensland to learn from and work with elders, mentors and representatives from government departments to develop their leadership skills and learn about democratic processes. The group participates in the Eric Deeral Indigenous Youth Parliament, meets members of the Australian parliament and takes part in workshops covering a variety of leadership topics.



There is further detail of our position on engagement with indigenous communities at glencore.com: *Working with Australian indigenous communities*

In focus: Copper



About copper

We are one of the world's largest copper suppliers and its third largest producer of mined copper. Our industrial assets and marketing activities are fully integrated, and we have a sizeable custom smelting and refining capacity. We have assets in all the major copper-producing regions.

We are also one of the world's largest producers of cobalt as a result of by-products created by our copper assets in the DRC.

In 2016:

Katanga and Mutanda supported 88 cooperatives with more than

3,000
members

25,500 tonnes

of cobalt produced responsibly by our African copper assets in 2016

Lomas Bayas' water conservation measures at their leaching operation allow it to recirculate

90% of its water



Key

 Copper

KPIs

	2016	2015	2014
Fatalities at managed operations	13	6	7
Lost time injury frequency rate (LTIFR) (per million hours worked)	0.71	0.51	0.68
Total recordable injury frequency rate (TRIFR) (per million hours worked)	2.89	3.20	4.06
New cases of occupational diseases	53	34	129
CO ₂ e Scope 1 GHG emissions (million tonnes)	1.63	1.64	1.62
CO ₂ Scope 2 (location based) GHG emissions (million tonnes)	1.88	1.73	1.53
Total energy use (petajoules)	42	45	43
Water withdrawn (million m ³)	350	291	312
Number of employees and contractors	44,473	43,782	53,652
Proportion of female employees (%)	8%	8%	8%

Copper

Safety

The safety of our people is our top priority. We are working to establish a strong safety culture across our business, where employees and contractors put safety first in everything they do. We believe that clear leadership is required to accomplish this.

As with the rest of the Group, we require catastrophic and fatal hazards to be controlled at all times. We identify all such hazards and manage the related risks using fatal and catastrophic hazard protocols and appropriate critical controls.

Mopani: a safety improvement campaign

Mopani, our copper asset in Zambia, initiated a SafeWork campaign in 2016 called *Doing It Right*. This involves intensive interactive meetings, between the asset's health & safety teams and Mopani's line managers, several times a week to clearly define our expectations for SafeWork, and the related initiative for our mining assets, SafeMining.

Mopani is using this campaign to empower its line supervisors to implement the SafeWork principles in their areas of responsibility. It includes measurable interactive processes between supervisors and the workforce, based on recognised performance management principles.

Mopani has also introduced a high-risk work verification process that requires detailed planning of tasks, with risk assessments and follow ups from line managers and health & safety officers, for checking high-risk work in the field. Mopani's senior management review the reports from this process each week, they then provide their feedback on results to line managers.

Mopani is currently upgrading its safety management system to include the tracking and reporting of preventive work to provide leading indicators on safety performance. The new approach includes consequence management processes to promote safe behaviour among our workers through positive and negative consequences for their behaviour.

We are continuing with a significant programme to upskill the workforce in Mopani's world-class training centre. This included SafeMining training for 3,799 employees in 2016.

Tragically, Mopani saw five deaths take place in 2016, three in an electrical incident and the others in two separate incidents. This makes it all the more important for us to complete the implementation of critical controls for catastrophic and fatal hazards. Implementation will be completed in 2017, along with the development of management plans for the associated risks.

Katanga: putting safety first

For the last two years, Kamoto Copper Company (KCC) in the Democratic Republic of Congo (DRC) has been running a project to upgrade its processing plant and strip away waste rock at the KOV and Mashamba open pit mines. The process upgrades include the commissioning of a new leach plant, which will replace the existing oxide concentration process. The new plant will require approximately 20% less energy for each tonne of copper produced. Since work began, this project has provided jobs for 590 construction employees from the DRC.

In March of 2016, a tragic incident resulted in the deaths of five employees and two contracted workers when the north wall of KOV's mine partially collapsed (see the workplace safety chapter for further details).

This devastating occurrence makes the safe ongoing development of this project even more vital for Katanga and for the Group. We have taken many precautions to make sure the workplace is as safe for our workers as possible. We have adhered to strict risk assessment processes throughout planning and construction, with rigid fatal hazard controls in place to manage the risks identified.

The result has been encouraging: no lost time injuries in the leach plant's 24 months of construction, or 2.5 million hours worked. The rest of the project has seen 15 million hours worked without a lost time incident.

The next stage is to commission the new facility. We have broken the complex commissioning process down into separate modules, identifying and considering each working discipline required within each module. Each element is entered into a project management tracking system, which will provide real-time reports on the status of every entry; it will also allow managers to identify any areas needing corrective actions quickly and easily.

The significant testing effort required to ensure every element of the leach plant is functioning correctly will be identified, with individual tests entered into a tracking system that will be used to manage them until completion.

Katanga: putting safety first continued

During the construction period, while mining work was not possible, Katanga acquired two equipment simulators to help workers train for a safe return to production in the open pit. The first simulator allows us to train workers in the operation of 240 tonne haul trucks under challenging mining conditions. Installation of a second simulator for other key equipment is under way. Katanga has training targets in place, while other mine site teams (such as explosives experts, geologists and

equipment operators) have also developed and implemented formal plans to allow for a safe return to production.

As one of our focus assets, identified by the Group as having specific legacy issues with safety matters, Katanga has made substantial progress in the implementation of critical controls for catastrophic and fatal hazards. This implementation is on track to be completed before copper production resumes.

Environment

We seek to understand our effect on the environment, including the impact of our use of water and the waste we produce as a by-product of our operations.

We try to minimise our water-related impacts; we are committed to good water management at all our assets, with ongoing work to reduce wastage from evaporation and increase water reuse wherever possible.

To manage our mineral waste, we are currently working to ensure that all our tailings storage facilities are as safe and robust as possible.

Water efficiency in the world's driest desert

Lomas Bayas, our open-pit copper mine in northern Chile, is located in the Atacama Desert, which is the driest desert in the world. The mine has undertaken a significant programme of water conservation measures, starting in 2008; a continual optimisation of processes has allowed it to make increasingly efficient use of water. In 2016, 90% of the water used by the leaching operation of this asset was recirculated, with only 10% being drawn from fresh water sources.

Irrigation system improvements

In 2011, Lomas Bayas began to implement changes in its leach irrigation systems. Heap leaching is a method for extracting copper from mined ore; the ore is usually crushed and irrigated with a leach solution to dissolve the metals. The pregnant leach solution (PLS) (solution saturated with copper) is collected and the copper extracted.

The asset began incrementally transitioning from sprinklers (the mining industry's traditional irrigation system) to drip irrigation. This minimises evaporation of the solution, as well as allowing it to be distributed more evenly. To achieve greater efficiency, the driplines that carry the solution are buried in a thin layer of ore in one area and covered by a special film in another. These measures have contributed to reducing evaporation by up to 90%.

Pond covers

To reduce evaporation from our ponds, we implemented a floating cover, which helps to protect the liquid underneath from the arid climate, reducing evaporation by 65%.

Piping of pregnant leach solution

In the past we would transport the PLS using trenches. In early 2016, Lomas Bayas started replacing its trench system with a network of high-density polyethylene pipes. This initiative has been completed for one area of the plant and is still in progress for the other.

Lomas Bayas is the first mining operation in Chile to incorporate this specific system of floating covers in its water ponds and to bury driplines for the heap leaching process. The asset was also the first to develop a complex evaporation model that allows for the identification and prioritisation of additional improvement area.

Before its optimisation programme began in 2008, Lomas Bayas recorded an average water reuse rate of 8.5 cycles. Today each drop of water is reused 10.5 times. The team at Lomas Bayas is committed to sustaining the gains already achieved and to continuing to seek out new innovations and lead the way in water conservation.

Copper *continued*

Human rights

We recognise the issues associated with operating in challenging environments. Our assets are committed to implementing good practices and work with third party and public security providers to ensure human rights are respected.

Security and human rights

None of our copper assets reported any complaints or incidents relating to security or human rights in 2016.

Democratic Republic of Congo

Katanga and Mutanda, our copper assets in the DRC, have issues with illegal artisanal mining (ASM) on their sites; these intrusions often result in theft, damage to equipment and injuries to our people. For this reason both assets have security employees and private security contractors to ensure the safety of our people and workplaces.

The assets also cooperate with the division of the Congolese national police known as the mine police. These officers have a specific mandate to secure mine sites, as objects of strategic importance to the country. Businesses that work with the mine police have signed memoranda of understanding in place to define the terms of their engagement.

In addition, there are national military forces present at our sites to ensure the safe transportation and storage of explosives, in accordance with national regulations and governmental requirements.

All our security employees and private security contractors receive human rights training every year; in 2016 we trained 1,362 contractors and 616 employees. The training addresses Glencore's Code of Conduct, the Voluntary Principles and the legal requirements and expectations for security personnel, as well as our operational protocols for patrols, access control and deployment. In addition, Mutanda offers an induction course for mine police on international standards for human rights and the Voluntary Principles. In 2016, 34 officers attended these sessions. Katanga shares materials on the same topics with police commanders, to be disseminated to the officers that work at our sites. All materials are available in French and local languages, emphasising role play and illustrations to avoid the problems of low literacy levels.

Katanga and Mutanda operate a range of grievance mechanisms for local residents to raise concerns; they let communities know about them through local radio, posters and meetings with community liaison officers. All complaints are recorded; a tribal chief, community administrative authority or other nominated community leader ensures complaints are recorded accurately. Complainants sign the report to confirm its accuracy after hearing it read back to them. Complaints are reported to the senior management at each asset and investigated. Once an action has been identified and completed, complainants are informed, and there may be a visit to the source of the problem. In addition, security managers participate in meetings with the communities to discuss any concerns with security management.

In 2016, the principal issue of concern was the influx of artisanal miners and the impact this has on local communities.

Peru

Antapaccay, our largest copper asset in Peru, employs a private security company. Its contract stipulates compliance with our sustainable development policies and standards, which include compliance with the Voluntary Principles.

Antapaccay also works with the local police, particularly on the storage and handling of explosives. All security contractors receive training on the Voluntary Principles at induction and on a twice-yearly basis. In 2016, 152 security contractors received training that included the Voluntary Principles, management of social conflict and personal conduct. Antapaccay also trains police officers each time a new roster of people begins work on site. Each training session has an average of 50 participants.

The mine operates grievance mechanisms to receive and investigate complaints from the local communities and other stakeholders. These include complaints registers and regular community meetings. Security managers join these meetings to address any concerns.

Antapaccay participates in monthly workshops that bring together security and community relations teams from different mining companies, as well as representatives from the Peruvian Ministry of Interior, to discuss a range of societal and human rights issues, including the Voluntary Principles.

Product stewardship

We are committed to responsible product sourcing, with our supply chain sustainability objectives formalised in our Group Code of Conduct. We are aware that artisanal mining could be a potential risk in terms of our cobalt products (a by-product of our copper production), and take care to deal with suppliers that have no association with this practice.

Responsible cobalt and gold production

Cobalt and ASM

Artisanal and small-scale mining (ASM) is normally subsistence mining; it often involves dangerous working conditions, conflict, corruption, child labour and poor environmental practices. It usually occurs in regions with larger social or political problems, including poverty, corruption and people displaced by conflict.

ASM is an important source of income for many people in the Democratic Republic of Congo (DRC). One of the commodities that ASM practitioners target in this country is cobalt, an element primarily extracted as a by-product of nickel and copper ores. Cobalt's contribution to low carbon technology in recent years has increased demand and attention from stakeholders about the production chain.

Mutanda, a Glencore copper asset in the DRC, is one of the largest copper producers in Africa, with a production capacity of 210,000 tonnes of copper and 28,000 tonnes of cobalt. It has a workforce of nearly 7,000 employees and contractors. Mutanda produces copper, with cobalt as a by-product following strict controls in the production and shipment processes.

Increasing numbers of customers are focused on responsible sourcing and have increased their sustainability assurance activities accordingly. Mutanda works with its cobalt customers to demonstrate how the mine is a responsible producer.

Our operations in the DRC are in the Katanga Province, which is conflict-free, and we have implemented controls over the transport of the material to our processing facilities to prevent contamination with material from other sources.

Our activities cover every stage of the production, sourcing and distribution of cobalt; coupled with our extensive network of marketing teams, this allows us to apply rigorous oversight to the production and refining process.

Where we do source cobalt from outside of our own production in DRC, we only deal with industrial third parties that have no associated ASM. We take a custodial approach to the supply chain: the specification and origin of the cobalt product is clearly defined in our contractual arrangements. Once compliance with all appropriate legislation is confirmed, the product is added to our product safety database, allowing us to fully monitor its supply chain.

As a member of the Cobalt Development Institute and the Cobalt REACH consortium, our Group actively contributes to knowledge gathering and sharing on the responsible manufacturing and sourcing of cobalt. Our contribution includes looking at minimising negative impacts while promoting how cobalt benefits society. Our membership of these industry organisations also allows us to play an active role in the development of product stewardship legislation across a broad range of topics, including conflict minerals.

Conflict-free gold

Since 2012, CCR, our refinery in Montreal, Canada, has had a policy and procedures for responsible global supply chain management in place. These demonstrate that its gold is conflict-free and complies with high anti-money laundering standards. The policy also complies with guidelines from the Organization of Economic Cooperation and Development (OECD) and the London Bullion Market Association's (LBMA) Responsible Gold Guidance.

In 2013, CCR enlisted Ernst & Young, an approved LBMA auditor, to audit the policy and procedures; the asset was certified as compliant with the LBMA Responsible Gold Guidance. The audit focused on our supply chain verification process for raw materials, which aims to ensure that none of our purchases of gold-bearing material support human rights abuses or non-state armed groups. It also aims to eliminate bribery, the fraudulent misrepresentation of the origin of gold, and money laundering.

Since then, CCR has been subject to limited assurance audits in 2014, 2015 and 2017 and a reasonable assurance audit in 2016 as part of the annual recertification process. CCR's conflict-free gold policy, compliance and audit reports can be found at www.affinerieccr.ca.

Copper *continued*

Communities

Our copper business makes a significant economic contribution to our host communities and governments. We promote healthy, sustainable communities in the regions where we work, and help to support the growth of diversified and resilient local economies.

Our support for our host communities ranges from local employment to investment in community projects, as well as significant healthcare initiatives that benefits all local residents, as well as our employees and their families.

Community engagement at Mount Isa

We operate one of Australia's largest mining and processing facilities in the thriving Australian mining town of Mount Isa. This has been one of the country's models for successful coexistence between industry and community for almost a century.

We are a residential mine, with around 98% of our workforce living locally; we focus on local employment, supporting local businesses, and investing in the community. Operating responsibly for the wellbeing of our people and our host community will always be our priority.

We understand the importance of keeping the community informed and consulting with it. We are transparent about our operations, our environmental performance and the challenges we continue to address to ensure continuous improvement across our site.

Air quality monitoring network

Our management of air quality, both on site and within the community, is of significant interest to our local stakeholders. We operate the most comprehensive air quality monitoring system of any Australian city. No resident is more than 1,200 metres away from a monitor that is connected to a network operating 24 hours a day, seven days a week.

Our dedicated air quality control centre monitors emissions and ground-level concentrations, and observes emerging weather patterns. It works predictively and reactively to minimise the impact of our emissions and ensure compliance with regulatory limits. Trained personnel work independently of our smelter teams, maintaining direct contact with our operations. An internal alert system keeps us aware of the potential need to reduce or stop production.

Open and transparent communication

Our engagement activities with the Mount Isa community include:

- Two community information sessions each year
- A community feedback hotline, including a formal grievance process tied directly to our sustainable development standards
- A comprehensive and regularly updated website
- Annual air quality presentations to key stakeholders
- Attitude surveys every two years to inform our community engagement and development
- Participation in a rich mix of local events and charitable causes
- Annual supplier forums to provide information and build capacity within local businesses

Launch of online portal and smartphone app

In 2016, we launched our smartphone app and web portal on air quality to keep the community informed about sulphur dioxide management and air quality in Mount Isa. It includes real-time data from our monitoring stations and a 24-hour forecast of westerly wind conditions.

In 2017, we will expand the portal's publicly available information to provide monthly details about our performance against key environmental indicators and limits.

Supporting community health

- Free blood lead testing: We have been offering free confidential blood lead testing since 1994. We encourage all residents, particularly those with young children, to use this regularly.
- Community development: since 2004 we've invested more than AUD35 million in north Queensland communities. In 2017, we will support additional targeted community health initiatives, including ones focusing on the indigenous community.
- Working collaboratively with government: We are a founding member of the Lead Alliance and part of the Mount Isa lead health management committee, led by the Queensland government. The Alliance works collaboratively to raise awareness of the risks of lead, minimise exposure and build on existing health management programmes.

Commitment to our host communities

In September 2015, the copper industry was facing a challenging period due to the low prices of copper. Katanga, one of our DRC copper mines, took the difficult decision to suspend operations at its subsidiary the Kamoto Copper Company (KCC). As an older facility, KCC was in need of upgrades to its infrastructure and systems to ensure its future viability.

Although we ceased production completely, we decided to retain 80% of our workforce, to reduce the negative effects that low global copper prices were having on our host communities. We also maintained and even increased our level of investment in the ongoing community development projects we have been funding for a number of years.

Bridge reconstruction

In September 2016, Mopani handed Mwekera bridge back to the community of Kitwe East, through Kitwe City Council. Mopani had led a collaboration with four other businesses to reconstruct this bridge, which had collapsed after heavy rains. This was in response to a community request from around 5,000 local people cut off from the central business district of Kitwe.

Access to water for local community

Our DRC copper assets Katanga and Mutanda are committed to supporting the development of local infrastructure for access to water. Katanga is currently working in partnership with Regideso (a public water distribution organisation) to improve Kolwezi's distribution system by upgrading its water filtration plant. The project entailed refurbishment of the plant's power supply and the donation of two pumps.

Katanga has also begun a water supply project for the community of Luilu. This is likely to include the drilling and equipment of two boreholes, and the construction of a community fountain system. Similarly, Mutanda has already drilled and equipped four wells for its neighbouring communities and rehabilitated 11 existing community wells.

Health initiatives: prevention work is key

Katanga and Mutanda provide high-level health facilities for our employees and their dependants; some of these are also available to other local residents. Katanga's facilities have held consultations with 67,100 patients in 2016, while Mutanda's have held consultations with 36,800. The main ailments they have dealt with have been malaria, upper respiratory tract diseases (such as flu, tonsillitis and sinusitis), gastro-enteritis and hypertension. They also provide community awareness programmes on subjects that include blood donations, tuberculosis, malaria and HIV/AIDS. Other programmes include:

Malaria: Katanga has provided coverage for 12,000 local households (more than 80,000 people) with its indoor-residual spraying programme. Mopani, our copper asset in Zambia, has provided training for the Katanga spraying team, covering spraying techniques, IRS tracking and community engagement. We also ran several campaigns in local communities and for our employees to raise awareness of the risk factors and transmission methods for malaria.

HIV/AIDS: see the *Workplace safety, health and PSM* chapter.

Vaccination campaigns: Katanga and Mutanda support vaccination campaigns against polio and measles, reaching more than 30,000 children from neighbouring communities.

Support for health zones and hospitals: Katanga and Mutanda donate drugs and basic equipment (for departments that include X-ray, laboratory, maternity and surgery) to improve the local community's access to drugs and health services. Katanga has also supported a training programme for local medical staff and its own medical staff on managing premature births.

Keeping children out of artisanal mining

Our DRC assets are located in regions where artisanal and small-scale mining (ASM) occurs. This is mining carried out by individuals, using hand tools and basic extraction methods. It is often dangerous, particularly as women and children sometimes take part. However, we are aware that ASM can be vital to the livelihoods of local people.

Our efforts have been focused on children living in communities with low school enrolment levels and high participation in ASM.

Our summer camps, run in conjunction with local educational authorities, have seen great success, with over 4,000 children participating in 2016. The camps offer children a meal every day, educational material, recreational and educational activities, and awareness campaigns on the risks of ASM.

Education: employment opportunities

Professional training was also a key element of our strategy for 2016 to encourage better and more varied employment opportunities for local people. More than 700 people from key local communities entered training programmes organised by INPP (National Institute for Professional Training). The programmes are sponsored by Katanga and Mutanda; they offer three to six months' training for skills development in several areas (such as welding, carpentry, catering, business administration and electrics).

Cooperatives for sustainable livelihoods

We support several cooperatives in the region to support the development of sustainable livelihoods for our host communities.

In 2016, Katanga and Mutanda supported 88 cooperatives with more than 3,000 members. Cooperative ventures include land-based work (such as farming, raising livestock and cattle, fish farming and beekeeping) and other activities (including welding, carpentry, brick making and sewing). We have donated materials and organised capacity-building schemes.

In focus: Ferroalloys

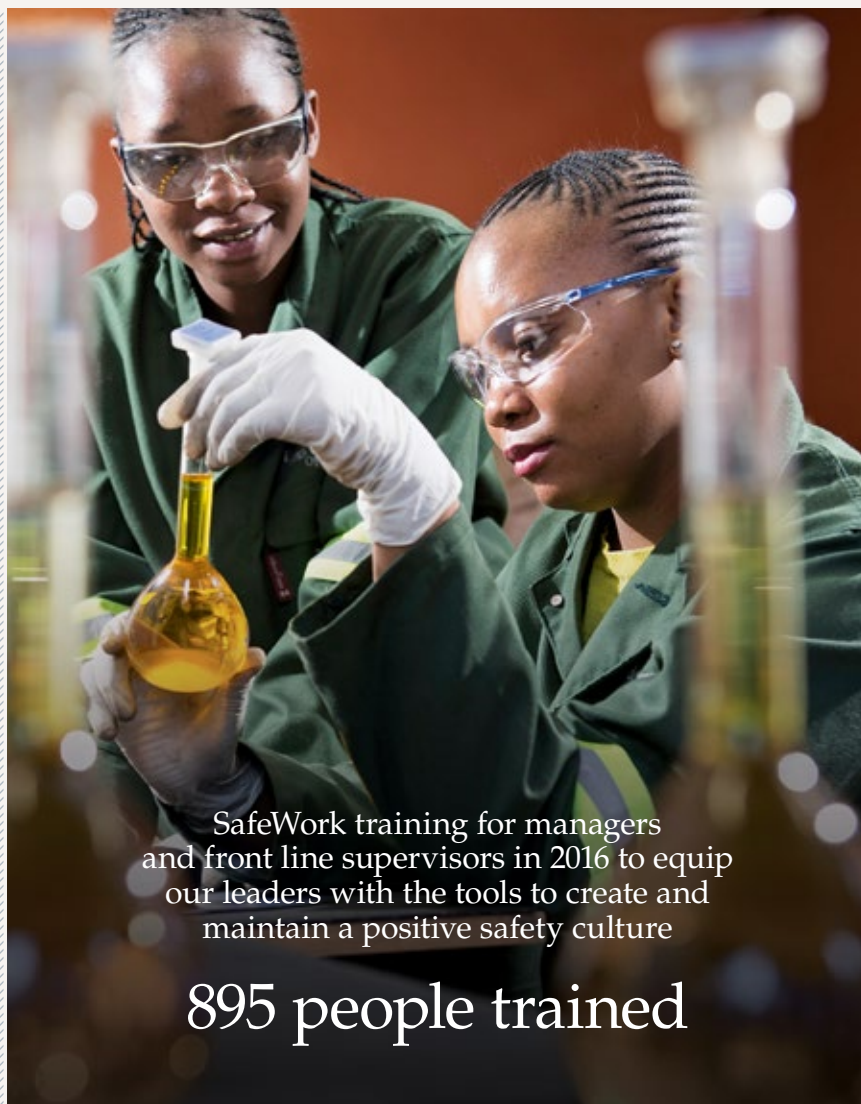


About ferroalloys

We deal in bulk and noble ferroalloys. Bulk ferroalloys include ferrochrome and chrome ore, ferromanganese, silicon manganese, manganese ore, and ferrosilicon. Noble ferroalloys include vanadium and molybdenum products.

We are one of the world's largest and lowest cost integrated ferrochrome producers, one of the largest producers of primary vanadium, and a producer of manganese ferroalloys.

In 2016:



SafeWork training for managers and front line supervisors in 2016 to equip our leaders with the tools to create and maintain a positive safety culture

895 people trained

Powers PNP, a Glencore-supported SME, employs

191 people

Initiatives implemented have improved energy efficiency and Scope 2 emissions at our smelters in 2016 compared to 2003 by

26%



Key

Ferroalloys

KPIs

	2016	2015	2014
Fatalities at managed operations	1	1	2
Lost time injury frequency rate (LTIFR) (per million hours worked)	1.14	1.24	1.46
Total recordable injury frequency rate (TRIFR) (per million hours worked)	3.89	4.13	4.58
New cases of occupational diseases	6	1	6
CO ₂ e Scope 1 GHG emissions (million tonnes)	4.39	4.48	4.16
CO ₂ Scope 2 (location based) GHG emissions (million tonnes)	6.88	6.71	6.39
Total energy use (petajoules)	31	31	29
Water withdrawn (million m ³)	19	21	19
Number of employees and contractors	18,867	17,401	19,276
Proportion of female employees (%)	16%	15%	16%

Ferroalloys

Safety

Safety is our top priority; we strive to operate without any loss of life or serious injuries. We expect all employees and contractors to put safety first in everything they do, and believe that strong leadership at all levels is key to establishing a strong safety culture.

We continually work to improve our safety processes; most recently we have been implementing catastrophic hazard management as an extension of our ongoing risk-based approach.

Safety initiatives across the business

Two key initiatives in 2016 were SafeWork training and our safety campaigns.

We started SafeWork training for managers and front line supervisors in 2016, which will run until 2018 to equip our leaders with the tools to create and maintain a safety culture. Training takes the form of a four-day programme:

Day 1:

Stepping up to be an effective leader in the workplace

Day 2:

Introduction to risk management and the high-risk work verification process

Day 3:

Pre-shift meetings; planned task observations; planned inspections; safety interactions

Day 4:

The supervisor's role; understanding incident investigations; legal accountability and responsibility

To date, 895 front line department heads and supervisors have attended the training.

At the end of 2015 we implemented a campaign called *Safe flight into 2016*; this focused on safety in the workplace.

Employees and contractors had the chance to be recognised for safety accomplishments; working safely earned both individuals and teams tickets to be placed into a lucky draw. The campaign was a success; we ran a follow-up campaign from February 2016 onwards.

- Every worker at our assets had to consider his or her own safety and be prepared to refuse work if appropriate
- Different teams cooperated to ensure safe working
- Workers' families could participate

Lucky draw tickets could be earned by individuals or teams; prizes included cash prizes, with a main prize of a car. Our workers' families participated and won prizes by submitting letters, posters, videos or voice messages on the subject of their loved ones working safely. The best entries were evaluated by a judging panel; the creators of the best three were invited to visit the site and shared their messages with the workforce.

Catastrophic hazard management

We believe that a catastrophic hazard management approach will help us to manage the fatal hazards specific to our business, as well as preventing catastrophic events. We have identified the material issues at our assets and developed a systematic approach to managing them.

Risk registers

Our current risk registers represent a significant body of knowledge, experience and effort, both regarding baselines and individual issues. We used that information as a starting point for identification of the catastrophic events relevant to our business. We identified a focus list of events with the greatest potential maximum consequence.

Bow-tie analysis

We analysed these potential events using the bow-tie methodology common to catastrophic hazard management, to identify appropriate critical controls. We listed all possible causes and consequences for each event and used information from our risk registers to determine suitable controls.

Critical control analysis and management

Using the ICMM critical control management guideline, we assessed our proposed controls to determine whether they were suitable as critical controls. We used the Group risk management software to analyse those controls and to determine triggers and minimum performance standards, allowing a fuller understanding of the parameters that make each control effective.

We used this understanding to review our current processes. Our goal is to ensure that we minimise the introduction of new measurements, logbooks or reporting sheets, and focused on achieving our targets with existing processes and tools as much as possible.

Our ultimate goal is to entrench critical control management at all levels of our organisation, in our day-to-day activities and processes. This approach will be built into our checklists, logbooks, management plans, daily and periodic reporting.



Ferroalloys *continued*

Health

Our ferroalloys assets use the three pillars of the Group health strategy: healthy workplaces, fit for work, and fit for life.

To fulfil the “fit for work” pillar, we have a comprehensive process to ensure that every person (employee or contractor) working at our assets is covered by a health and wellbeing medical programme. This programme has touchpoints when workers start their employment with us and when they leave, with regular check-ups during their employment.

We conduct risk assessments before developing a fitness specification for each occupational role. This risk assessment forms the basis for the development of a code of practice for the minimum standards of fitness to perform that role. Our risk assessments are the basis for determining the frequency of medicals, general and specific screening tests per occupation (e.g. vision screening for drivers and colour blindness tests for electricians).

The programme covers occupational health and wellbeing, with lifestyle assessments to identify potential chronic diseases like hypertension, diabetes, weight issues, special dietary requirements, epilepsy, asthma, high cholesterol levels, smoking-related issues and illegal substance abuse.

We use these assessments to create individual monitoring and intervention programmes, with regular follow-ups on medication usage and referrals to specialists if required.

We also ask our people to complete lifestyle questionnaires and give them the opportunity to participate in our voluntary tuberculosis and HIV counselling and testing (HCT) programmes. All test results are confidential; we ensure that anyone needing a treatment programme is enrolled. Our assets run continuous awareness campaigns with open days and special communications materials, to ensure that the whole workforce is aware of the programme.

We work towards the “healthy workplace” pillar by employing qualified occupational hygienists at our assets for continuous hygiene monitoring. Results from this monitoring are linked back to the occupational health centre for assessment. Our occupational hygienists undertake regular inspections and audits of the workplaces to maintain the required standards and rectify deviations.

Climate change

As a group, Glencore recognises the science of global climate change as laid out by the Intergovernmental Panel on Climate Change (IPCC) and acknowledges the need to continue reducing global carbon emissions. As our ferroalloys business is mainly based in South Africa, most of our concerns centre on the measures that this country will introduce to meet its COP21 commitments.

Improving energy efficiency and reducing emissions

The South African government has ratified the Paris Agreement. This requires sizeable reductions in the country's greenhouse gas (GHG) emissions, as well as committing itself to transition to a green economy. The government is proposing a carbon tax on power generated from fossil fuels as one way to meet its international commitments.

Our ferroalloys business is mainly located in South Africa; our ferrochrome production costs here are heavily exposed to fluctuations in energy prices and security of supply.

The South African government's future energy generation options, as laid out in the government's *Integrated Resource Plan 2010–30 (IRP)*, will directly affect the cost of production for our ferroalloys business, including any costs associated with GHG emissions. The IRP provides scenarios for forecasting future energy demand and identifies the increases in national energy generation that will be required. It considers the impact of installing different energy generation options that include, amongst others, fossil fuel, solar, wind and nuclear. It includes provisions for a carbon tax, which will further increase our costs, potentially leading to the closure of some ferrochrome assets and resulting in significant job losses.

To address this challenge, we have been improving energy efficiency through a range of initiatives, identifying alternative energy supplies and developing energy-efficient technologies, such as our proprietary Premus technology. Premus reduces the electrical energy consumption of smelters by using waste gas and heat, delivering substantial financial benefits over existing technologies.

Our ferroalloys business has also been planning and implementing new technology to address the challenges of rising energy costs and stricter emissions regulations:

- In 2007, we improved energy efficiency at our Wonderkop smelter by commissioning the Bokamoso pelletiser plant at a cost of ZAR800 million; this reduced the Scope 2 emissions of these smelters by 12.6%, compared to 2006
- In 2007 we commissioned significant upgrades at our Lion smelter, which resulted in Glencore's largest Premus smelter; at a cost of ZAR6.6 billion; Lion's Scope 2 energy consumption is now 28% less than the average South African smelter
- In 2012, we completed the Tswelopele pelletiser plant at our Rustenburg smelter at a cost of ZAR800 million, improving Scope 2 energy efficiency by 10.4% compared to 2006

During 2017, we will pilot co-generation technology at our Boshhoek smelter. This technology generates electricity from the heat of combusting waste carbon monoxide from our smelters to produce carbon dioxide. If successful, co-generation will reduce Boshhoek's Scope 2 emissions by 8% in the first instance. This could allow us to double capacity at the Boshhoek smelter and consider using the technology at our Lion and Lydenburg smelters.

In total, the initiatives implemented by our ferroalloys business, along with incremental operational improvements over this period, have improved energy efficiency and Scope 2 emissions at our smelters by 26% in 2016 compared to 2003.

Ferroalloys *continued*

Communities

Our ferroalloys business makes a significant economic contribution to our host communities and governments. The most significant derive from local employment and procurement, but we also have a responsibility to minimise local dependency on our operations, and promote healthy, sustainable communities with diversified and resilient local economies.

To this end, we undertake a range of community development activities, based on our Group-wide focus areas of capacity building (including education/training, enterprise development and economic diversification) health, and environment. We also take specific local needs into account.

A public-private partnership brings a new clinic to Bethanie

Bethanie is a town in the Bojanala district in the North West Province of South Africa. It is close to our ferrovanadium and vanadium pentoxide opencast mine, Rhovan. The town's current medical clinic struggles to treat the 3,500+ patients who visit it each month, travelling miles from several villages in this remote area.

Rhovan have entered into an exceptional private-public partnership with the provincial department of health to build a new, modern public hospital for local communities. Glencore is funding the hospital's construction, while the local department of health will stock it with the necessary equipment and employ the medical staff.

"We worked closely with the local tribal council and the North West Department of Health," says Dunkeld Molapisi, Senior Human Resources Manager at Rhovan. "The partnership was founded on a common goal and relied on excellent communication."

The new Bethanie clinic will boast top-class maternity and casualty wards. It also has general wards and ample space for the testing and treatment of HIV/AIDS and tuberculosis.

Glencore hired local construction company, Biz Afrika 985, to build the clinic. Owner Otto Tshepe recruited 114 people from four surrounding villages, in addition to using seven local subcontractor companies, which employ 70 local people.

The hospital is scheduled to open in mid-2017.

Supporting communities with skills training

A training centre funded and supported by our ferroalloys business has been working to alleviate unemployment and poverty in the greater Sekhukhune and Lydenburg areas for more than ten years.

The Eastern Limb Training Centre is the only training centre in this part of South Africa's Limpopo and Mpumalanga provinces that includes artisan training for residents of the 18 nearby rural villages. It offers local people the chance to learn from a range of transferable skills, suitable for both mining and unrelated jobs.

On-site internships are also offered at some of our assets in the region, giving learners practical work experience.

The centre's comprehensive programmes are fully compliant with all national certification requirements. "This means that our graduates' qualifications are recognised anywhere in South Africa," says Vorster Maloka, who supervises stakeholder engagement for our ferroalloys business. "Glencore employs about 15% of the candidates who complete the various training programmes, and many others find work at other employers in the area and beyond."

Jane Mabiloane, 55, from the village of Ga-Mapodile, is currently working towards her certificate in fitting and turning. "I'm very proud to be here at the training centre," she says. "I am a woman and I am older than most people, but I am a hard worker. I want to motivate the youth that education is the key to success."

The centre takes between 130 and 200 learners each term, and forms part of our ongoing efforts to create value for local communities by giving individuals the means to sustainably improve their standard of living.

Lydenburg gives local entrepreneurs a leg up

Lydenburg Smelter lies close to the small town of Lydenburg and its surrounding informal settlements and villages in South Africa's Mpumalanga province. As in many rural communities, residents have experienced poverty, unemployment and limited access to employment and business opportunities. To combat these problems, Lydenburg has started offering business and financial management assistance to local entrepreneurs.

"We believe in making tangible and meaningful contributions to the lives of our community members," says Conroy van der Westhuizen, Lydenburg's General Works Manager. "One of the ways we do this is by transferring skills, and nurturing entrepreneurialism within local communities."

Among the businesses supported by Lydenburg is Mashishing Brick Masters, a small brick making business that has become renowned for the quality of its bricks. Since it was founded in late 2015, it has not only provided bricks to Glencore community projects, but has also secured contracts with other mining companies and the local municipality.

Bulk transport company, Powers 'n Phuti Industrial Suppliers (known as Powers PNP), began working for Lydenburg in 2009 with one machine, operated by its founder Poweres Motsileng. Today, Powers PNP runs 55 machines at several Glencore assets, including 23 at Lydenburg. It employs 191 local people and has an annual turnover of ZAR65 million. Powers PNP also provides assistance with enterprise development to other fledgling businesses.

Lydenburg's long-term goal is to ensure that the businesses it helps become self-sustaining enterprises, independent of its operations, and that they continue to employ local community members and address local needs.

New daycare premises

Ratanang means "love one another" in Setswana, one of South Africa's 11 official languages. This makes it a fitting name for a new children's daycare centre building constructed by Wonderkop Smelter.

Situated in Thekwane, a rural area in the North West province, the daycare centre was first established in 2001 to help care for the community's orphaned and vulnerable children. At the time, there were no premises available, so for almost 16 years the centre has been temporarily housed in two classrooms at the local Tlhage Primary School.

A dedicated building has been necessary for some time, as the centre currently provides meals, supervised care and educational programmes for around 100 children under the age of four. In 2015, Wonderkop hired local business, OBD Constructors, to build the new centre. OBD provided employment for approximately 30 people from the surrounding community in the process.

"The new centre will open in mid-2017," says Ratanang Centre Manager Hashley Setshedi, "and has three spacious classrooms, large enough to accommodate more learners, as well as an office, kitchen and bathroom and a playground."

"Once the centre is up and running, Glencore will continue to help with its operational costs," says Peter Modubu, Wonderkop's Community Development Officer, "and will extend this to include support for its teachers through educational training and help with curriculum development."

The children at Ratanang will be prepared to start their formal schooling at Tlhage Primary School.

In focus: Nickel



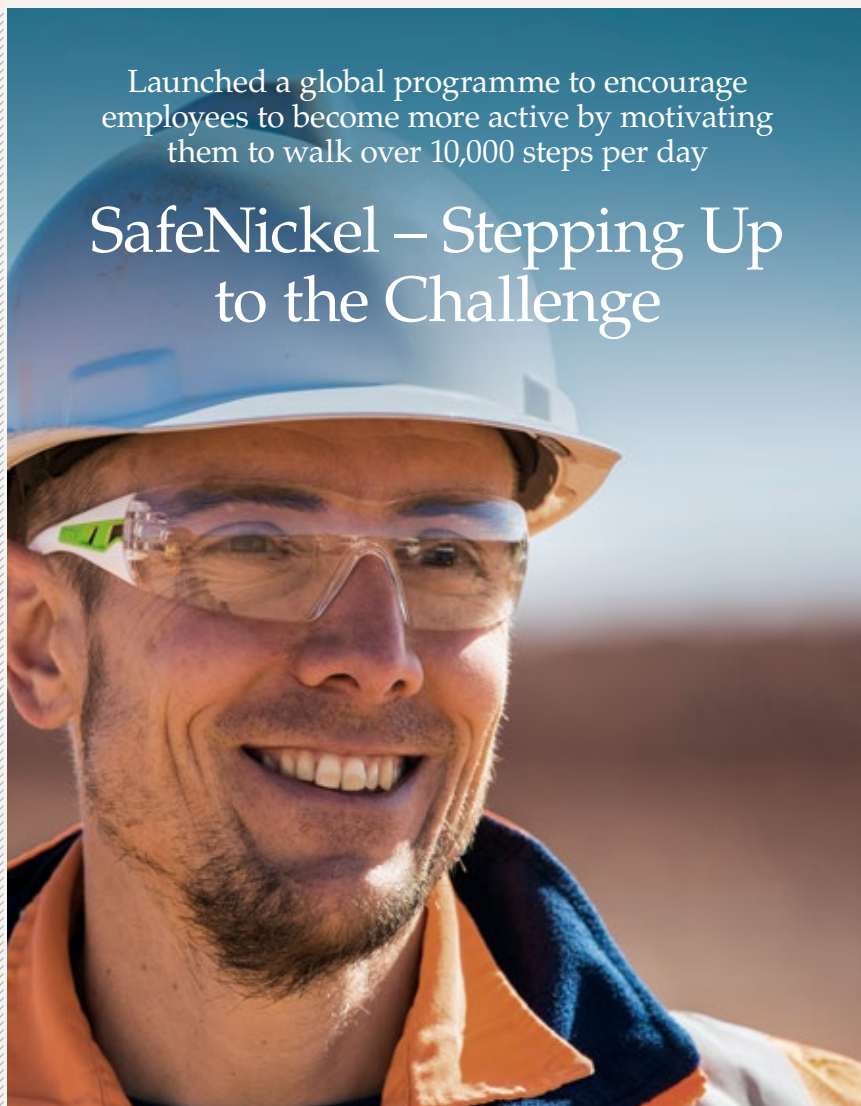
About nickel

We are a leading global nickel producer and trader. We deal in metal, concentrates, intermediates and ferronickel, as well as producing associated by-products such as copper, precious metals and platinum metals.

In 2016:

Launched a global programme to encourage employees to become more active by motivating them to walk over 10,000 steps per day

SafeNickel – Stepping Up to the Challenge



Raglan Mine won the F. J. O'Connell safety trophy from the Quebec Mining Association for the twelfth time

Nikkelverk is one of the first 20 companies in Norway to be certified against

ISO 50001:
Energy Management



Key

 Nickel

KPIs

	2016	2015	2014
Fatalities at managed operations	0	1	0
Lost time injury frequency rate (LTIFR) (per million hours worked)	1.12	1.15	0.93
Total recordable injury frequency rate (TRIFR) (per million hours worked)	6.25	6.59	7.20
New cases of occupational diseases	0	1	0
CO ₂ e Scope 1 GHG emissions (million tonnes)	2.31	1.82	1.96
CO ₂ Scope 2 (location based) GHG emissions (million tonnes)	0.07	0.07	0.12
Total energy use (petajoules)	31	25	27
Water withdrawn (million m ³)	107	69	71
Number of employees and contractors	6,402	6,515	8,001
Proportion of female employees (%)	15%	16%	17%

Nickel

Safety

Our nickel business continued to improve in 2016. Although we did not reach our injury reduction targets, we did reduce our total recordable injuries figure to 84 in 2016, compared to 109 in 2015. This is a 23% improvement year on year.

Throughout 2016, we continued to focus on catastrophic hazards management across our sites, improving our ability to monitor and maintain the effectiveness of the critical controls that protect our people from major incidents. Improving our process safety management systems has been an important part of this. These systems are specifically designed to control major hazards in our process plants. We will continue with these initiatives in 2017.

Working towards a culture of safety

Building safety into every aspect of a significant construction project is a demanding task. This is what Sudbury INO, our integrated nickel mining and processing site in Canada, achieved over a 30-month period as it completed the first phase of its process gas project (PGP), despite managing hundreds of additional contractors.

PGP is our response to the Ontario provincial government's regulations requiring a reduction in sulphur dioxide and dust emissions; it is critical for the long-term viability of Sudbury INO. The project required the involvement of almost every element of the asset's operations.

The project team achieved a Total Recordable Injury Frequency Rate (TRIFR) of zero over the course of the 465,796 hours worked during phase one of the project. This impressive safety record garnered Sudbury INO the 2015 *CIM Mining & Minerals Project Development Safety Award* for outstanding project safety systems, culture and performance.

Phase two of PGP is at the detailed engineering stage. Pending approval in 2017, it has a target completion date of September 2020. PGP will help modernise the Sudbury INO smelting complex and result in a significant reduction in sulphur dioxide and metal emissions, as well as improving plant hygiene. It will provide a strategic business advantage and demonstrate our ongoing commitment to our host communities and to the environment.

Sudbury INO celebrated another safety achievement in 2016; the Strathcona Mill passed two years with a zero TRI figure; employees worked 1.34 million hours during this period, safely handling, crushing and milling almost 4 million tonnes of ore and shipping 447,000 tonnes of nickel and 243,000 tonnes of copper concentrate. Strathcona also achieved three years without a lost time injury (an injury where an employee or contractor is unable to work following an incident). However, it recorded two restricted work injuries in December 2016, finishing the year with a TRIFR of 3.13.

Developing a sustainable safety culture

The safety performance at Raglan Mine, our nickel-copper mine in Nunavik, northern Quebec, has won the asset another F.J. O'Connell safety trophy from the Quebec Mining Association in 2016. This is the twelfth time the mine has won this prestigious trophy for its accident prevention and safety record.

While Raglan Mine's performance has continuously improved over its 20 years in operation, it is now determined to address the toughest challenge of all: achieving our goal of zero harm and sustaining that level of safety performance over time.

For Charles Levac, Raglan Mine's Health, Safety and Environmental Director, the answer is not found in statistics and procedures, but in the individual: "We believe the message must be personal – someone at home cares for you and wants you to return safely. You need to develop trusting relationships in order to persuade people to take the right decisions and steps to work safely. Do that and the performance and data will fall into place."

To refocus the safety mindset, Raglan Mine changed from a 'rewarding no accidents' culture to a 'reporting' culture, rewarding preventative actions that address risks, such as near misses or dangerous conditions. In support of this, management became more visible, logging over 2,200 hours in the field.

The efforts are paying off. In 2016, we addressed almost 6,000 reports of dangerous conditions, near miss reports increased to 700 and Raglan Mine posted a 40% reduction in its TRIFR.

Process safety management

Over 50% of the catastrophic hazards found within our nickel business are located at our process plants. This is one of the reasons that we have adopted process safety management (PSM) across our nickel business and are actively deploying it across all sites. We have also employed a process safety manager to lead learnings across the organisation.

PSM specifically targets scenarios where the likelihood of a catastrophic event is low, but the consequences of such an event would be disastrous. Their low likelihood typically means there are few, if any, early warning signs, unlike incidents covered by traditional health & safety management approaches. Beyond supporting systems, PSM also focuses on instilling good risk management practices and awareness in employees. It features a strong human element, particularly when it comes to managing change.

Koniambo Nickel, our mining and processing complex in New Caledonia, an island in the Pacific Ocean, began rolling out a PSM programme in 2013 to improve its identification, analysis, management and monitoring of risks and non-compliance related to process safety. This built on existing enterprise management (EM) systems for maintaining controls such as training courses, procedures and alarms. The programme ensures that critical processes are carried out correctly and that we have controls in place to mitigate any impact should an incident occur.

Rather than changing its entire EM system, Koniambo Nickel has woven many existing systems into an integrated approach, supplemented with targeted initiatives. PSM includes many elements commonly found in EM systems, such as health and safety procedures and systems, accident investigation, employee training programmes, and emergency response systems and procedures. In addition, elements more specific to PSM include: asset integrity management, temporary and permanent change management, and critical hazard and barrier identification.

To complete the rollout, the asset set up a PSM steering committee of representatives from different departments (technology, plant, maintenance, power station/utilities and HSE). The committee is responsible for defining PSM strategy and direction, as well as for maintaining and ensuring the proper deployment of the programme. Each committee member is required to ensure that process-related hazard controls are maintained and effective.

In 2016, it formed a team of 10 'PSM champions' from the departments represented in the steering committee. The champions actively participate in rolling out the PSM process in the field. As they have specific knowledge of their functions their feedback ensures that the processes are relevant and easily applied. They also support teams in the field as necessary. The champions supported two key initiatives in 2016.

More than 400 production and management personnel were trained on site on the PSM process in the first half of 2016. This took place in preparation for an external independent audit on behalf of the French regulatory authorities. Thanks to the intensive training programme, the results were positive, with only small corrective measures and follow-up actions required.

"The rollout of PSM at Koniambo Nickel enables us to improve our methods of risk management," says Eric Gardner, PSM Champion, Process Engineers (Technical Directorate). "We have been able to identify some elements – which arose during Koniambo Nickel's ramp-up – where the degree of discipline was not necessarily adequate. As a result, we have improved our ability to track and monitor any modifications and adjustments made to our processes and systems going forward."

Koniambo Nickel has also set up a PSM communication programme to raise awareness among its people.

A systematic approach to contractor safety

Nikkelverk, our nickel refinery in Norway, has built its safety programme around a continuous improvement initiative known as the Nikkelverk Business System. This initiative revealed a clear need to improve contractor safety performance in order to meet our goal of zero harm. While Nikkelverk had seen a reduction in safety frequency rates overall, the same improvement was not seen among contractors undertaking short-term work on the premises.

To address this issue, Nikkelverk reviewed its tendering and purchasing process and introduced the principle of 'two envelopes': the first envelope being for the supplier's HSE plan, the second for the tender price. If the first envelope does not meet the refinery's health, safety and environmental requirements, there is no need to open the second envelope. This sends a strong message to contractors that good quality work and safety planning go hand in hand.

Nikkelverk enhanced the training of project managers, superintendents and supervisors on how to involve and engage with contractors on site in order to think safety first. The leadership team made itself more visible on the floor and across the refinery, conducting more performance reviews and audits for the most critical contractors on site.

Nikkelverk also established a new position to further improve contractor safety performance, dedicated to increasing the safety competency and visibility of first line management, and of the project leads who run the refinery's capital projects.

In early 2017, Nikkelverk will host a contractor safety day with 25 of its largest contractors, to share best practices and increase their understanding of Nikkelverk's safety expectations.

Nickel *continued*

Preventing manual handling injuries

Murrin Murrin, our nickel/cobalt mining and refining operation in Western Australia, has developed a manual handling injury prevention initiative to help address the fact that over half of all injuries on site have been related to this issue. Manual handling covers tasks that involve bending, lifting, carrying, pulling, pushing or restraining, as well as the operation of machinery and exposure to vibration.

First conceived in 2014, the initiative has now evolved into a comprehensive manual handling safety system and the site has realised a significant reduction in back and shoulder injuries. However, early in 2016, it became clear that the reduction in finger injuries was less significant. In most instances, gloves were worn, illustrating that personal protective equipment alone is not sufficient to prevent injury. Greater individual awareness of personal safety and the safety of others was required.

Murrin Murrin responded by prioritising use of its manual handling risk assessment tool, to build a database for each department of tasks and their associated risks. During the last quarter of 2016, employees reported no manual handling injuries, demonstrating that zero manual handling injuries is an achievable goal.

Manual handling injuries accounted for approximately 64% of all work related injuries in early 2016. By year end, however, there was a 32% decrease in total manual handling injuries and a 17% reduction in recordable manual handling injuries as compared to 2015.

Health

We take a risk-based approach to protecting the health and wellbeing of our people, aligned with the three Group health management strategy pillars of healthy workplaces, being fit for work and being fit for life.

Apart from protecting our people against occupational disease, good working conditions also help with morale and maintain our productivity and efficiency. We run a range of initiatives to help improve the quality of life for our people.

Encouraging a culture of healthy workplaces

Our nickel business launched a new initiative called *SafeNickel – Stepping Up to the Challenge* in 2016. This initiative aligned with the Global Corporate Challenge (now the Virgin Pulse Global Challenge), a global programme to encourage employees to become more active by motivating them to walk over 10,000 steps per day, to create a true culture of health across our assets.

The concept is simple: employees embark on a 100-day virtual journey around the world with 50,000 other teams from across the globe. The more active employees are, the further they and their team advance in the competition.

More than 1,000 employees across the nickel business signed up to participate. Koniambo Nickel fielded 37 teams – each with seven members – out of a total 145 teams across the business. The Strath Slayers team from Sudbury INO finished first with a daily average of 26,332 steps. Together, the nickel teams walked a total of 1.2 billion steps or almost 777,000 km.

The challenge has helped make a difference in both the personal and professional lives of our employees deepening their commitment to adopt a healthier lifestyle and overall wellness. The benefits have been far-reaching: 77% exceeded 10,000 steps per day versus 15% before the initiative; 71% of employees say they feel less stressed; 70% are getting the recommended seven or more hours of sleep versus 57% previously; and 58% say they are concentrating better and feeling more productive.

Environment

Our nickel assets around the world can have direct and indirect impacts on the environment. We work to minimise our potential impact, complying with or exceeding relevant regulations. In addition to our internal Group standards for environmental performance, many of our assets are certified against external international standards, including ISO standards.

We are always looking for ways to improve our performance and reduce our environmental impact, including our use of resources, wherever possible. Many of our environmental projects and operational improvement initiatives are considered leading practice in the regions where we work.

Setting new environmental standards

In 2016, Raglan Mine, our nickel-copper mine in Nunavik, northern Quebec, was re-certified against the international environmental management standard ISO 14001. This allows Glencore to assure customers that its nickel production chain is now fully ISO 14001 certified from mining through to refining and processing. We are one of the only nickel businesses in the world to achieve this, assuring both internal and external stakeholders that we are effectively managing our environmental impact.

Raglan Mine is continuing to innovate in the field of renewable energy. Raglan Mine's wind turbine and storage facility won a *Towards Sustainable Mining Excellence Award* at the *Energy and Mines* renewables and mining awards in November 2016.

Like many isolated mining operations, Raglan Mine is off-grid and requires diesel to fuel its operations, which we wanted to replace with a renewable energy source. The turbine takes advantage of the most abundant renewable energy resource available, the arctic winds, by capturing and converting that power into energy. The project was unprecedented in scale: Raglan Mine formed a private-public partnership with TUGLIQ Energy (an independent power producer specialising in remote and complex energy diversification) and the federal and provincial governments to develop the facility. Raglan Mine consulted with the surrounding communities throughout the project and acted on their feedback.

In its first two years of operation, the turbine saved the mine from using 4.65 million litres of diesel, and reduced greenhouse gas emissions by 13,000 tonnes.

This pilot project is a fully developed and tested wind power and storage system that could be duplicated in northern communities and mining operations. We believe that it could help to transform northern Canada, paving the way for the more widespread adoption of greener energy alternatives.



Image copyright TUGLIQ

Nickel *continued*

Leading the shift to green energy

Nikkelverk is among the first 20 companies in Norway to be certified against the international standard *ISO 50001: Energy Management*. The aim is to continually reduce energy use, and therefore energy costs and greenhouse gas emissions, through the implementation of an energy management system.

ISO 50001 is Nikkelverk's fourth ISO certification. It is a management system standard based on continual improvement, similar to others such as ISO 9001 (quality management) or ISO 14001 (environmental management). This makes it easier for organisations to integrate energy management into their overall efforts to improve quality and environmental management.

ISO 50001 provides a framework of requirements that include:

- Developing a policy for more efficient energy use
- Fixing targets and objectives to meet the policy
- Using data to better understand and make decisions about energy use
- Measuring results
- Reviewing how well the policy works
- Continually improving energy management

Nikkelverk has always innovated in sustainable technology; in 1938, it opened a purification plant for gases containing sulphur dioxide, one of the first in the world. Today, the company is an international leader in environmental work, with a 90-99% reduction of emissions compared to those recorded when tracking and measurement first began in the early 1970s.

During the 2015 UN climate change conference in Paris, Norway's leading newspapers published a series of articles identifying industries and manufacturers that have come the furthest in terms of research, development and using new green technologies (also known as the 'green shift'). It spotlighted the processing industry for its significant improvements, with Nikkelverk seen as one of the leaders.

One example is the development of unique technology that will result in a 35% reduction in electrowinning energy consumption at our refinery. A five-year piloting period at our test plant has confirmed the potential of this technology; we are now aiming to implement it by 2022.

Enova, the Norwegian National Energy Agency, promotes environmentally-friendly restructuring of energy production and end use. The Norwegian Parliament has set up an energy fund that Enova uses to finance initiatives that support these goals. Enova has granted Nikkelverk one of the largest single allocations in their history: NOK380 million (approximately \$44 million).



Working with indigenous communities to improve local water quality

Sudbury INO, our integrated nickel mining and processing site in Canada, has been working with members of the Wahnapiatae First Nation community for nine years, to conduct water quality monitoring within the Massey Creek watershed, which surrounds the asset's operations.

In 2016, the Wahnapiatae environmental consulting business, the Tahgaiwinini Technical & Environmental Services Group (TTESG), founded in 2011, conducted an aquatic assessment of Massey Creek to help us understand the health of the local fish population.

The assessment found that the population of brook trout in the lower reaches of Massey Creek has significantly increased from a catch of zero in 1995, to a catch of 15-20 in 2010, to a total catch of 225 individual brook trout in 2016. Additionally, the number of species caught has increased from three in 1995 to 12 in 2016.

The TTESG's assessment activities are part of the Massey Creek watershed biodiversity enhancement programme to monitor and assess the health of the watershed and measure our environmental performance within it.

The programme began in 2014 as a joint environmental working group initiative between the Wahnapiatae and Sudbury INO. The working group's main focus is to build the TTESG's capacity.

This was a key commitment within the participation agreement signed between Sudbury INO and the Wahnapiatae in 2008. The agreement established a framework through which we could work together toward a continuing mutually beneficial relationship that includes environmental stewardship, education and training, and community development.

The Massey Creek work with the Wahnapiatae community has developed into a model of collaborative management between indigenous communities and industry partners.

Taking the 'drag' out of industrial pumping

Murrin Murrin, our nickel/cobalt mining and refining project in Western Australia, has installed a new Drag Reduction Technology (DRT) device to improve feed ore slurry pumping capacity. The device was installed in 2015 at Murrin's hydrometallurgical plant, which was overloading as ore throughput increased.

The DRT technology was developed by Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO), following a successful full-scale plant trial at the site. CSIRO is confident that DRT has the potential to save mining companies millions of dollars each year on energy and water use, while boosting their productivity.

Almost all mineral processing plants must transport slurry, a semi-liquid mixture that can include water, ore and other material, through pumps at various process steps. Reducing water content, power demand and pumping inefficiencies results in significant operational and cost improvements.

The DRT device was a simple upgrade, requiring no additional tuning or attention other than an occasional water flush following a plant shutdown.

Nickel *continued*

Protecting New Caledonia's coral reefs

There is growing concern in the scientific community about the worldwide phenomenon known as coral bleaching. Corals have a limited temperature range within which they can live. When it gets too hot, the algae that thrive inside them are ejected, turning them white. If the algae aren't reabsorbed relatively quickly, the coral will die. The warmer air and ocean surface temperatures brought on by climate change have had the most impact on coral bleaching.

The island of New Caledonia is surrounded by coral reefs, prompting it to be listed as a UNESCO World Heritage Site. To preserve and protect this important ecosystem, Koniambo Nickel has been monitoring the health of coral growth around the nearby lagoons since 2000 and sharing the data with the French Research and Development Institute (IRD).

In February 2016, the IRD issued an environmental alert on a large-scale coral bleaching phenomenon in New Caledonia, the first time such an impact has been observed. In its alert, the IRD noted the region had experienced high heat levels, which lasted for several weeks and led to an increase in sea water temperature, in the time before the incident.

Koniambo Nickel installed 47 coral tracking stations around the site in 2002. In response to the IRD alert, our environmental team noted coral bleaching near two of the stations, although it was less evolved compared to other areas beyond the site. Our team advanced the timing of the site's semi-annual monitoring campaign to help the IRD assess the extent of any bleaching as quickly as possible, particularly in the site's area of influence.

Koniambo Nickel will continue to monitor and assess this dynamic and delicate phenomenon, passing along any important observations and data to the IRD.



Communities

We are committed to employing locally wherever possible. This extends to investing in education projects, skills development programmes and apprenticeships for local people. We emphasise diversity in our training initiatives and aim to employ workforces that reflect the demographics of the communities in which we operate.

We are committed to building and maintaining constructive, lasting relationships with our host communities and other local stakeholders. We respect the traditional decision-making mechanisms of our host communities and take the local context into consideration in all our engagement activities. Some of our assets are located on or near the traditional lands of indigenous people. We have formal agreements at a number of these, including impact benefit agreements in Canada.

Helping the future with an education today

Learning for a Sustainable Future (LSF) is a non-profit Canadian organisation created to integrate sustainability education into Canada's education system. LSF works with local school boards and provincial ministries of education to connect with educators from kindergarten to Grade 12. It aims to create fun, imagination-driven and engaging sustainability-themed projects that focus on young people as the drivers of change and the leaders of tomorrow. Examples of projects include composting, school gardens and anti-idling programmes that reduce carbon emissions.

A key aspect of LSF is its professional development programme for educators to help engage their students in addressing the increasingly complex economic, societal and environmental challenges of the 21st century.

Canada

In 2010, LSF began its programme delivery with the support of Sudbury INO, focusing on sustainability and community engagement. The programme included professional development workshops for teachers, youth forums for students and delivery of in-school action workshops, all held in French and English, as well as funding to support student-led action projects.

LSF conducted a two-day professional development workshop in November 2016, for First Nations, Métis and Inuit (FNMI) teachers in the area. The workshop supported our commitment to FNMI communities in the Sudbury INO area.

New Caledonia

In July 2015 and July 2016, Koniambo Nickel worked with two LSF teacher consultants from Sudbury to deliver a number of professional development workshops. More than 50 educators represented all the schools in the Northern Province of New Caledonia, where Koniambo Nickel is located.

LSF consultants also worked with teachers and their students in remote communities in the Northern Province to model innovative teaching strategies. They prepared a document summarising the professional development workshop that was provided to teachers across the archipelago.

Norway

LSF began working with Nikkelverk in 2015. Following discussions with the asset and the local University of Agder, LSF invited an Agder PhD student to participate in a professional development workshop in Canada. LSF developed a concept paper, proposing opportunities for LSF to collaborate with educators in Kristiansand, Norway. Discussions are underway regarding future opportunities in Norway.

Nickel *continued*

Leading practice in community engagement

The Raglan Agreement was signed twenty-two years ago. This was one of the mining industry's first Inuit impact and benefit agreements (IIBAs) and the first ever signed in Quebec. It was considered best practice in community engagement at the time, and used as a global template for many similar agreements that followed.

After 20 years in operation, Raglan Mine, our nickel-copper asset in northern Quebec, has submitted an environmental and societal impact assessment (ESIA) that seeks to extend mining operations to 2040 and beyond. This is known as the Sivumut Project. It is currently awaiting approval from the Kativik Environmental Quality Commission and Quebec's Minister of Sustainable Development, Environment and the Fight against Climate Change, for its global certificate of authorisation. It will then proceed to Glencore's board for final development approval.

However, building the vital acceptance from our host communities needed to reach this stage has been a journey that has lasted two and a half years.

The journey began in 2014, when Raglan Mine held a consultation on site with over 40 local people to understand how they felt about the current agreement and plan the consultation process for the new project. This covered topics from who should be interviewed, to how the interviews should be conducted.

Following its ESIA consultations in 2015, Raglan Mine returned to the communities to review the study with its Inuit partners and check that they agreed with the findings, before submitting it to the Kativik Environmental Quality Commission, responsible for evaluating and examining local projects.

The Raglan Committee normally meets several times a year to discuss matters of interest related to the agreement; it is composed of officials from Nunavik and Raglan Mine. In April 2016, the Committee established a sub-committee to review the Sivumut project. The sub-committee met every two weeks for six months to discuss how to provide more employee services, better support local Inuit business enterprises and generally improve life on site.

We finalised our proposals for extending the societal mitigation and improvement measures within the Raglan Agreement in December 2016; these were agreed in a public signing ceremony. The environmental mitigation measures are now under final review and will be presented to the villages in the spring of 2017.

Some of the key measures include:

- Maintaining mandatory intercultural training for new employees
- Reviewing the Tamatumani programme (see the case study [■ *A second start with Tamatumani*](#) for further details) to increase employability and the number of skilled jobs held by local Inuit
- Annual supplier meetings to encourage Inuit enterprise participation
- Increasing involvement in environmental monitoring, for example, two environmental fora per year in the villages of Salluit and Kangiqsujaq
- Hiring an Inuk from each of these communities as liaison officers for environmental monitoring activities

Updates on the implementation status of these measures, as well as Raglan Mine's overall business conditions, will continue to be shared with Salluit and Kangiqsujaq.

A second start with Tamatumani

The Raglan Agreement is a contract between Raglan Mine and its five Inuit partners: the Makivik Corporation, the communities of Salluit and Kangiqsujuaq, and their landholding corporations Qaqqalik LHC and Nunaturlik LHC.

Part of the Agreement includes Raglan Mine's commitment to offer permanent employment opportunities to the Inuit, foster their individual skills, and promote the economic development of Nunavik.

Tamatumani, which means "second start" in Inuktitut, is a skills development initiative for Inuit employees designed to attract and retain the largest possible number of Nunavimmiut (the people of Nunavut territory). The initiative also provides support to help them in their development and integration into the various departments at Raglan Mine.

It includes courses on French and essential skills and a transition-to-work programme that outlines Raglan Mine's expectations of its employees and offers applied technical training for specific positions. It also offers support to employees working to obtain their secondary school diploma with the Kativik School Board. Each Inuit employee is given an individual development plan, a useful tool to promote career development.

Raglan Mine also offers summer jobs to students in fields such as geology, human resources, mining, technology and health services, so that young people can gain first-hand experience working at this asset. Raglan Mine coordinates with its Inuit partners, including the Kativik regional government and school board, to clearly communicate information on recruitment activities.

Additionally, the Raglan Mine Education Fund grants scholarships to Inuit students.

Since Tamatumani was initiated in 2008, some key achievements are:

- 176 Nunavimmiut employees at Raglan Mine, representing 20.5% of the workforce
- 50 Nunavimmiut have graduated from the initiative
- 23 apprentices are participating
- 4 Nunavimmiut have successfully completed mine rescue training

Raglan Mine has also revamped its Rapid Inuit Development and Employment programme (RIDE), in which selected employees establish professional objectives to accelerate their career development. It has established a mentoring programme and worked to create new job opportunities and training programmes in various departments.

Diverse community partnerships

Minara Resources, operator of the Murrin Murrin site, is proud to enter its fifteenth year as a member of the Laverton Leonora Cross-Cultural Association (LLCCA).

The LLCCA is an association of local organisations, government representatives and mining companies. It works for the benefit of the local community in the North Eastern Goldfields of Western Australia. It facilitates programmes and services with a recent focus on youth engagement, skills development and community activities.

In 2016, the LLCCA continued its ongoing work with the Laverton School to deliver the Australian government's Keys for Life programme for young people. A significant proportion of incarcerations in the region are related to licensing and driving infringements. Keys for Life incorporates driver training, driver safety and legal licensing requirements around car ownership in Western Australia.

The Laverton Outback Gallery was established at the request of local artists in the region; it operates on LLCCA premises. The gallery has attracted artists, tourists and buyers and has a visible presence in the town. In 2016, approximately 30 local artists were represented at the gallery. In 2016, Murrin Murrin hosted art evenings at its fly-in, fly-out site in partnership with the gallery to give workers a chance to see local art and engage with artists to gain a better understanding of their local communities.

In focus: Oil



About oil

We trade in crude oil, refined products and natural gas. We source crude oil and oil products from a range of suppliers, with additional interests in oil and gas production sharing contracts. We also have a substantial shipping portfolio and access to a range of logistics, storage and investment capabilities.

In 2016:

The 12-month recordable injury frequency rate (per million hours worked) for our Chad assets has been reduced from

2.65 to 0.25

We are investing in further energy efficiency and CO₂ emission reduction measures, technology for newly-commissioned vessels

We are working with local communities in Chad to ensure they have access to clean water



Key

- Oil
- Storage terminals

KPIs

	2016	2015	2014
Fatalities at managed operations	0	0	0
Lost time injury frequency rate (LTIFR) (per million hours worked)	0.26	0.46	0.29
Total recordable injury frequency rate (TRIFR) (per million hours worked)	0.65	2.21	0.29
New cases of occupational diseases	0	0	0
CO ₂ e Scope 1 GHG emissions (million tonnes)	1.11	1.05	0.69
CO ₂ Scope 2 (location based) GHG emissions (million tonnes)	0.00	0.00	0.01
Total energy use (petajoules)	10	9	9
Water withdrawn (million m ³)	0.1	0.4	0.1
Number of employees and contractors	1,109	2,405	277
Proportion of female employees (%)	17%	24%	18%

Oil

Safety

We believe that all occupational fatalities and injuries are preventable, and that we can create and maintain safe workplaces for all our people with strong safety leadership. Oil production and transport has many challenges that are specific to the industry, but we maintain risk management, catastrophic hazard management, and process safety management at the heart of our approach.

Our SafeOil programme is a safety initiative that has been tailored to the requirements of our oil assets; we also strictly adhere to the legislation and regulations relevant to maritime transport, with our own standards for ship chartering processes.

Control of hydrocarbons

We extract, process, store and transport crude oil, refined oil products and natural gas. Our responsibilities include protecting the safety of our people and host communities, and safeguarding the environment, including the bodies of water that we traverse to transport products.

Across the Group, we create and maintain safe workplaces and processes by taking a risk-based approach, applying effective controls, with critical controls for fatal and catastrophic hazards. Our approach to environmental management is also based on risk assessment and management. The risk management process used across the Group is a comprehensive, robust and well-tested framework, with a register of risks and treatment plans. We continually monitor performance against those treatment plans, with regular internal reviews of effectiveness.

As part of the Group's general formalisation and standardisation of our auditing processes in recent years, we have developed an audit programme specifically for our oil assets. This draws heavily on the principles of process safety management (PSM), including a focus on assessing the effectiveness of process safety controls and knowledge within each asset.

Our SafeOil programme (see the case study [SafeOil](#) for further details) includes elements of process hazard analysis in three of its fatal hazard protocols: those for energy isolation; hydrocarbon containment, fire and explosion; and control of work. Our assets have been conducting gap assessments against these protocols; these are now mostly complete and we are focussed on remedying any gaps between the protocol requirements and practice.

In terms of transporting hydrocarbons, another significant area for consideration is the vessels that transport them by sea.

We vet all voyage-chartered and time-chartered vessels for safety assurance, in line with our ship chartering standards, before each voyage. We review and revise our chartering standards to stay in line with leading industry practice and incorporate any changes to industry standards or regulations.

Our marine team runs a programme of ship inspections; the team also carries out audits and reviews at the management offices of the vessels we own and those in which we have a joint venture. Ship inspections are conducted according to the Oil Companies International Marine Forum (OCIMF) Ship Inspection Report Programme (SIRE). SIRE specifically addresses concerns about sub-standard shipping; it is the most significant safety initiative accepted across the oil industry. Our mariners proactively visit ship manager's offices based on the performance of each vessel and its management, to ensure that procedures meet the required standards. We also check that operators and managers follow the relevant guidance to allow them to achieve the required key performance indicators for the correct part of the OCIMF's TMSA (Tanker Management and Self-Assessment) programme. The TMSA programme is a tool to help vessel operators and managers assess, measure and improve their management systems, complementing the International Maritime Organization conventions, codes and circulars; it is intended to encourage self-regulation and promote continuous improvement in the safety of merchant shipping.

Our inspection programme encourages vessel operators to assess their safety management systems against specific key performance indicators and provides guidance on leading practice. It incentivises them to improve standards and procedures for performance in crucial areas such as safety and environmental excellence.

Throughout the period for which each vessel is chartered, our experienced mariners monitor all port state control inspection records, vetting records (SIRE inspection reports), class records, any incidents, and general performance. SIRE inspections provide constructive feedback to each ship's crew and managers for continual improvement.

In 2016, there were no Tier 1 process safety events¹ at any of the oil assets where we have operational control; there was one Tier 2 event.

¹ A process safety event involves an unplanned or uncontrolled release of any material; they are categorised by severity into different tiers depending on the consequences, Tier 1 events having higher consequences than Tier 2.

SafeOil

In recent years, we have been working across the Group to adapt and localise our Group safety initiative, SafeWork (which was originally created for our mining assets), for use in our non-mining businesses. The version we have created for our oil assets is called SafeOil.

There are significant differences between oil production and mining processes; our oil activities require strong process safety management systems to ensure that we maintain control of the hydrocarbons we work with at all times. For this reason, SafeOil has been adapted to specifically address hazards common to the oil industry.

The oil industry's approach to safety is generally considered to be more mature than that of the mining sector. As a result, SafeOil has been about recalibrating behaviour and existing processes rather than introducing new ones. SafeOil is intended to act as a compass and to supply reference standards. It is also about generating management commitment to drive change where required and reporting on status, performance and risk through our internal reporting and assurance programmes.

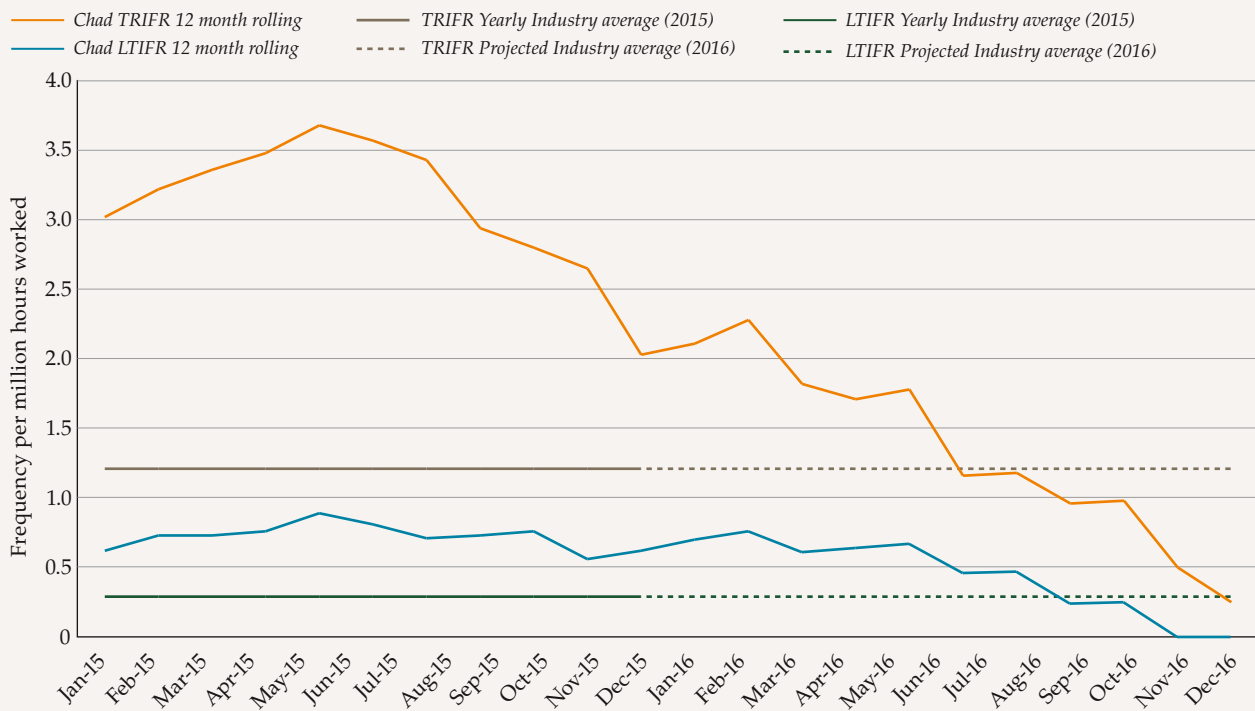
Chad is where the majority of Glencore's oil reserves are based. While it is a challenging operating environment, our extensive on-the-ground, international expertise has meant that we have the experience to drive good safety behaviour. However, when we acquired the assets in 2014, we compared the safety performance there to that of the rest of the sector and recognised there was more work to do to meet the expected safety performance for a project in its operational phase.

This performance has been turned around; we now have an industry leading performance for safety at oil production assets in Chad, as a result of combining a robust approach to leadership within our assets with the support of experienced sustainability teams. Implementation of the SafeOil programme has provided us with a better understanding of our safety requirements, and resulted in our finding areas for improvement. We also have better management information from the improved incident reporting, which allows us to identify trends and target them. Post-incident safety reviews improve awareness among our people of the factors behind each incident or HPRI, and how these can be mitigated, helping us to prevent similar incidents.

Since the introduction of SafeOil in January 2016, the 12-month recordable injury frequency rate (per million hours worked) for our Chad assets has been reduced from 2.65 to 0.25. This is now significantly better than the industry average, which is 1.21¹.

Glencore E&P Chad – TRIs & 12 month Rolling Injury Frequency

1 January 2015 to 31 December 2016



1 2015 data from International Association of Oil & Gas Producers.

Oil *continued*

Climate change

Climate change is an issue with clear relevance to our oil business. As a group, Glencore recognises the science of global climate change as laid out by the Intergovernmental Panel on Climate Change and acknowledges the need to continue reducing global carbon emissions. Our maritime product transportation is the main area where our business is able to address the need for emission reduction.

Addressing CO₂ emissions in shipping

Glencore has an interest in 31 ocean-going tankers, ranging from 37,000 DWT (deadweight tonnage: a measure of the vessel's maximum cargo capacity) to 115,000 DWT, plus two bunker (refuelling) vessels. The CO₂ emissions produced by these vessels form the majority of the carbon footprint for our oil business. We also use third-party, time-chartered vessels.

The International Maritime Organisation (IMO), a specialised agency of the United Nations, is the global standard-setting authority for the safety, security and environmental performance of international shipping. Its main role is to create a regulatory framework for the shipping industry; all the vessels we use conform to IMO standards.

International shipping is one of the most energy efficient modes of mass transport; the IMO has calculated that it contributes just over 2% of the total CO₂ emissions worldwide. The IMO has introduced a number of mandatory technical and operational energy efficiency measures that are contributing to a significant reduction in the level of CO₂ emissions from international shipping. These are brought together as the Energy Efficiency Design Index (EEDI), a non-prescriptive, performance-based mechanism that allows ship designers to choose their preferred technologies to meet the target requirements.

The EEDI requires a minimum energy efficiency level for different types of ship, expressed as grams of carbon dioxide (CO₂) released per mile travelled with a specific weight of cargo. The required energy efficiency levels are expressed as a percentage reduction compared to a baseline figure, which is the average energy efficiency of similar ships built between 2000 and 2010.

For the first five-year phase (2015-2020), the required level is 10% less than the baseline. For the second phase (2020-2025), the level is 20% less, and for 2025 onwards, 30% less. The incremental increases are intended to stimulate continued innovation and technical development in marine ship design.

Our normal five-year maintenance cycle requires that we bring each vessel into dry dock for servicing. Recently we have also been undertaking significant upgrades to their hulls, propellers and engine. 19 of our vessels were dry-docked in 2015; in all cases we undertook grit blasting of the underwater hulls and applied highly advanced self-polishing, biocidal paint. The biocidal ingredient should protect against weed or shell fouling on the hull and keep it smooth, with an expected fuel saving of 4% over our five-year cycle.

In many cases we also retrofitted devices to increase propeller efficiency, including propeller ducts (which help smooth the flow of water into the propeller, making it more efficient) and propeller boss cap fins (which make the propeller more effective).

All seven of our LR1 (75,000 DWT) fleet were fitted with propeller boss fins; the fuel saving is calculated at 2.65% in ballast condition and 1.65% in laden condition.

These energy conservation initiatives have resulted in savings of fuel consumption in the range of 3%, or 4,000 tonnes, based on the fleet being at sea for 180 days per ship per year. In 2016, three more ships were dry docked to undergo similar improvements.

Going forward, we will invest in further energy efficiency and CO₂ emission reduction measures, for newly-commissioned vessels going beyond the projected regulatory requirements. The Alpine Mary and Alpine Maria have already incorporated this technology; these 50,000 DWT vessels were delivered in late 2014. We worked with the Korean shipyard during the design process, requesting a radical hull redesign to make it more streamlined. We also ordered a modified design for the propeller, propeller boss and rudder (together referred to as the PROMAS system). The hulls were also coated with our supplier's most advanced biocidal paint. These changes led to an initial fuel consumption of 17.5 tonnes per day at a speed of 13 knots, a reduction from the original estimated consumption of 23 tonnes per day.

Human rights

We prioritise respect for human rights everywhere that we operate. Our general approach is aligned with the International Labour Organization (ILO) Core Conventions and the Protect, Respect and Remedy framework from the UN Guiding Principles on Business and Human Rights (UNGPs). It is outlined in our Group human rights policy. We pay particular attention to how human rights are handled in regions where our assets require additional security.

Security and human rights in Chad

Our oil business in Chad is primarily protected by private security, which is reinforced by two platoons from Chad's armed forces. Our asset has formal guidance in place for dealing with security forces; this guidance covers managing, and interacting with, both private security contractors and government security forces.

The guidance requires private security contractors to act in accordance with the Voluntary Principles and other internationally recognised human rights standards. They must also screen their security guards, to ensure that they do not employ any individual with a criminal record, or one who has been credibly implicated in human rights breaches. Clauses related to the Voluntary Principles have also been included in our business contracts; these will be reviewed and strengthened in early 2017.

Chadian law requires oilfield operations to be protected by government security forces. All our interactions with these public security forces are governed by our formal guidance, which addresses topics including: requesting support; use of company equipment; conduct of operations; and escalation mechanisms.

We have also signed a memorandum of understanding with the armed forces command, which addresses the following key topics:

- Our expectation that the armed forces conduct themselves in accordance with the Voluntary Principles
- Delineation of responsibilities and command structure
- Transparent and regulated provision of in-kind and financial support, requiring case-by-case approvals and mutual agreement
- Escalation mechanisms in case of incidents or allegations of human rights breaches

Our asset has a grievance mechanism for the use of local communities and other stakeholders (see community engagement study). Our security superintendents meet with local chiefs, and join community meetings to meet local people. All complaints are logged, investigated and addressed. In addition, the asset's head of security has regular meetings with the commander of the armed forces to discuss any concerns about their activities.

Responding to community complaints in 2015, we held a public consultation between public security forces, our asset and the community to discuss concerns, which mostly related to the armed forces' conduct at checkpoints. We identified and undertook a number of improvement actions during this consultation. Since the consultation, only one further complaint has been submitted in January 2016.

Our security contractor company offers basic induction training to its employees on human rights, including the Voluntary Principles; in addition, we have collaborated with Swiss entity COGINTA, which is due to deliver training focused on the Voluntary Principles to our security staff in early 2017.

In 2016, we completed an internal audit of the security practices at our asset. This included reviewing our relationship with public security officers and their compliance with the Voluntary Principles. The findings were positive, and included a recommendation to improve lodging facilities for the public security officers, which we have implemented.

Human rights and vessel security

Our shipping operations adhere strictly to the International Ship and Port Facility Security (ISPS) code, which provides comprehensive measures to enhance security and minimise potential and actual threats to ships and port facilities. We also follow the shipping industry's *Best Management Practices* against piracy. We have identified the most likely security threats to our shipping operations and completed bow-tie analysis on those risks for identification and management of the critical controls required.

Oil *continued*

The grievance management process

Our Chadian oil assets have a formal grievance management process to fairly and promptly receive, assess, respond to, and address grievances lodged by stakeholders. Members of the local communities who use this process do not lose their rights to pursue other remedies possible under Chadian law. The grievance process also allows us to identify any trends or systemic sources of concern that may arise in the local region and address these appropriately.

The process is aligned with IFC performance standards on social and environmental sustainability. It also refers to internationally recognised guidance on leading practice, including:

- *ICMM Human Rights in the Mining & Metals Sector, Handling and Resolving Local Level Concerns & Grievances*
- *The World Bank Group Ombudsman's Guide to Designing and Implementing Management for Development Projects*
- *IFC Policy and Performance Standards on Social and Environmental Sustainability and Policy on Disclosure of Information*
- *IFC Addressing grievances from project-affected communities: guidance for projects and companies on designing grievance mechanisms*

The first stage of implementing Chad's grievance process was to ensure that local stakeholders knew about it and how to use it. The process was publicised during consultation sessions with local communities. Community leaders, our community liaison and stakeholder relations teams, and our contractors were made aware of the process to spread awareness.

Any external stakeholder can lodge a complaint or grievance, including individuals, groups and non-governmental organisations; this can be done in person, by phone call, or by email, letter, card or form. Each complainant receives a summary and brief explanation of the process; personal information is kept confidential. We report each grievance to the local canton chief as well as putting it through the process. Complainants are assured that we take their reports seriously and investigate promptly and professionally.

Grievances are screened and assessed by the stakeholder response team. When a grievance is related to a contractor, it is transmitted directly to that contractor with a reply expected within two weeks. All such communications are recorded and communicated to all appropriate parties to ensure compliance, and we support the contractor throughout the resolution process with the community. If a contractor does not address a grievance, this matter is raised with our stakeholder relations manager. Our environment and social management plan (ESMP), which is agreed with the Chadian government, states that we are responsible for the behaviour of our contractors and their compliance with our ESMP.

When working to resolve each issue we take community preferences, project policy, past experience, current issues and potential outcomes into consideration. The resolution process for a grievance caused by a one-off breach (for example, of an environmental standard or a traffic incident) will differ from that for complex and repetitive community grievances. We may choose to bring in an independent third party if our stakeholder relations team deems it necessary.

If the complainant or complainants are not satisfied with the response, or the actions taken to address the complaint, they may request that the issue is escalated.

We will only close the report of a grievance once it is determined either that the agreed corrective actions have been completed (including photographic or documentary proof), or that no action is needed. We then meet with the complainants for agreement to close the record, complete with a signature or thumbprint.

We monitor and report on the entire process to measure the effectiveness of our grievance management and the efficient use of resources. This also allows us to identify broad trends among the topics of grievances, and recurring problems. We can capture the lessons learned from each grievance and feed it into our continual improvement at individual projects and assets.

Issues raised in 2016

In 2016, our Chad assets reported 55 complaints relating to water. The village of Milaromkoro made a complaint about "access to water" regarding a well we had built for them as part of compensation activity. The well's foot pump was very hard to operate, particularly for women and children. The community asked us to improve the pump or to build another well. Our investigation revealed that the stiffness was due to the depth of the well; that region has very low groundwater levels. We are currently planning an upgrade to Milaromkoro's well to include an electric pump, generator, and its own water tower.

The other 54 complaints relate to flood damage from heavy rains, whether to farms, trees or houses. These floods are connected to the infrastructure and roads created for some of our projects. We found 44 of these complaints to be valid and compensated those affected. We are working to avoid these issues by undertaking further civil works (such as cleaning out rainwater drains, constructing and maintaining drainage channels) before the next rainy season.

Another frequent topic for complaints is dust. We recognise the difficulties caused by dust from the traffic on our access roads in Chad, and continue to work on finding further dust management solutions. We have recently awarded a contract for the rehabilitation of a road from Badila to Mbaikoro. The road is being covered with a sealant that acts as a dust suppressant; work is close to completion. We will monitor the performance of this enhancement and supplement it by adding a dust suppressant to the surface if necessary. In Mangara, in addition to annual road maintenance, we will also be sealing the main road in the same way.

The grievance management process continued

Improving access to water

Since we began operations in Chad in 2013, our oil business has worked with local communities to ensure they have access to clean water. Almost all Chad's village communities suffer from a lack of water infrastructure as they are often located far from cities.

We work with our host communities to carry out impact analyses and determine the best solutions for their needs; often the best way we can help them is with access to water. We determine their greatest needs in terms of basic infrastructure, and work accordingly.

Since Glencore began operating our oil business in the area, we have supplied 25 local villages with 25 water wells and two water towers, and carried out repairs to two existing community wells in the villages of Koutou and Kana.

We are currently investigating how best to help the community of Miladi with repairs to their existing water tower. We are also making plans to build an additional water tower for the village of Milaromkoro in 2017 to solve issues that the community have raised with the well we built for them recently.

In total, so far we have improved water access for 26 villages near to our operations.

Communities

Our oil assets in Chad are committed to building and maintaining constructive, lasting relationships with their host communities and other local stakeholders, in common with the rest of our business.

Local employment

We are committed to employing locally wherever possible. A key contribution to socio-economic development is employment, both directly and via contractors. Most of our oil terminals, located around the world, are completely staffed by local people.

Providing employment is particularly meaningful in Chad, which is where the majority of Glencore's oil production is based. In this region, one worker's wage supports, on average, eight to ten people, representing a significant uplift to local wellbeing. This is particularly true of the oil sector, which has comparatively high remuneration levels for the region.

Our oil business has recently created a committee to oversee and drive our programme to ensure that the significant majority of our workers are local across our business in Chad. This programme includes regular competency assessments to identify skills gaps and developing knowledge and competencies, as well as succession planning. 70% of the roles in our Chad assets are now assigned to local people.

In focus: Zinc



About zinc

We are one of the world's largest miners and producers of zinc, with a combination of mines and smelters that is unique for a single business.

We trade in zinc and lead concentrates, the raw materials used to produce zinc and lead, and valuable by-products such as sulphuric acid. We also deal in gold and silver, which are typically mined in conjunction with zinc, copper and lead ores.

In 2016:



Total recordable injury frequency rate at zinc assets has decreased year on year by

15%

Since 2003, MRM Community Trust has supported local projects totalling

\$12.3m

Since 2013, Kazzinc's TRIFR has decreased from 2.36 to 1.13



Key



KPIs

	2016	2015	2014
Fatalities at managed operations	1	2	5
Lost time injury frequency rate (LTIFR) (per million hours worked)	1.58	1.94	2.34
Total recordable injury frequency rate (TRIFR) (per million hours worked)	3.61	4.26	4.71
New cases of occupational diseases	17	79	86
CO ₂ e Scope 1 GHG emissions (million tonnes)	2.06	2.25	2.15
CO ₂ Scope 2 (location based) GHG emissions (million tonnes)	2.27	2.52	2.57
Total energy use (petajoules)	49	52	52
Water withdrawn (million m ³)	276	278	269
Number of employees and contractors	42,942	42,663	47,767
Proportion of female employees (%)	18%	18%	17%

Zinc

Safety

In 2013, we identified a number of ‘focus assets,’ which are generally sites in remote locations, with specific legacy issues around health and safety. Kazzinc, our zinc complex in Kazakhstan, was included on this list, as well as Sinchi Wayra in Bolivia.

We have been working to implement our SafeWork initiative, including its fatal hazard protocols, at this asset, including efforts to make sure that our contractors are trained on this subject and comply with our work requirements.

Health and safety at Kazzinc

Over the past year we have continued to work on improving the health and safety results at Kazzinc, our zinc asset in Kazakhstan. Some of the measures below are a continuation of initiatives from previous years, with new elements for 2016:

- Revising our health and safety educational and training material to help change the attitude of the workforce and managers at all levels
- Successfully involving contractors in our SafeWork implementation and securing their commitment to our Group safety requirements
- Launching the ‘Responsibility – Forward’ project to develop safety leadership skills within management
- Introducing a health and safety KPI system for managers at all levels
- Introducing the Group catastrophic hazard management approach
- Improving the process for investigating incidents and HPRIs for better root cause identification
- Establishing world-class professional training centres in Ust-Kamenogorsk and Ridder to provide training on Group fatal hazard protocols
- Continued implementation of Group fatal hazard protocols, which started in 2014 and will continue into 2017

Since 2013, Kazzinc’s LTIFR has fallen from 1.52 to 0.80 and its TRIFR has decreased from 2.36 to 1.13. Having seen seven deaths in 2013 and four in 2014, it suffered no loss of life in 2015 and one death in 2016.

Training approaches

We have implemented a number of different training initiatives and approaches as part of our efforts to instil and maintain a deep-seated safety culture at Kazzinc.

Responsibility – Forward: this is a project developed to cultivate and reinforce a responsible attitude to work, including safety issues, within our management. The methodology is designed to progressively improve safety attitudes until individuals take personal responsibility for all tasks undertaken within their view. The project will be completed by the end of 2018.

Theoretical and practical training for managers: we provide all our workers with regular training on SafeWork and the fatal hazard protocols (FHPs), as well as the occupational health and safety (OHS) training required by Kazakh legislation. Management is no exception. Theoretical FHP training is undertaken by our specialised training team, with support from department safety champions trained by the team. Most practical training is performed by trainers in our specialised training areas. In 2017, we started transferring the compulsory OHS training to the training team (rather training being undertaken by personnel from individual work units), improving training quality. The safety champions provide support during new protocol implementation, when many workers must be trained quickly. Retraining is undertaken by the training team. The team also performs regular audits to check awareness of FHP requirements.

World-class training centres: in 2015 we commissioned a training centre in Ridder, one of Kazzinc’s sites, for theoretical and practical FHP training, which includes: working at height, confined spaces, energy isolation, electrical safety, mobile equipment and lifting devices and cranes. It is still the only training centre in the FSU with a 4D mining mobile equipment simulator. This helps us train employees on how to use mobile drill units, load-haul-dump (LHD) equipment, haul trucks and mine locomotives. The number of errors made by operators when they go back to work is normally halved; it can be reduced by up to 10 times. We commissioned another centre in 2017 for Ust-Kamenogorsk.

Improving ergonomics in the workplace

During the year, we have undertaken a range of activities in order to better understand ergonomics in Kazzinc’s workplaces. This is part of our ongoing efforts to improve working environments for our people.

We have completed workplace assessments to improve our understanding of our people’s workplace exposure to hazardous production factors. On this basis, we are implementing improved monitoring in zones identified as being high-risk; we will continue our programme of timely lead and cadmium blood level diagnostics at Kazzinc’s metallurgical assets.

Health and safety at Kazzinc continued

We are developing an ergonomics improvement programme for underground work to minimise the impact of hazardous exposures. Through the creation of a unified underground job certification database we aim to ensure that all workers have received the appropriate training and skills development for their roles. In addition, we have begun the implementation of improved measures to mitigate or eliminate risks that can lead to the development of musculoskeletal system diseases.

We will continue with our efforts to encourage improvement of Kazakhstan's occupational safety system further at all our sites through:

- Efficient implementation of our PPE standardisation project
- Full implementation of our occupational disease preventive programme, which includes specific training and the provision of preventative equipment and measures
- Providing our asset-based clinics with specialised equipment for diagnosing, preventing and treating occupational diseases and supporting preventative measures for epidemics such as seasonal flu
- Supporting the treatment of employees affected by occupational diseases through health rehabilitation programmes
- Enhancing cooperation with state-run medical institutions to arrange preventive and clinical measures to reduce occupational disease

Safety management for contractors

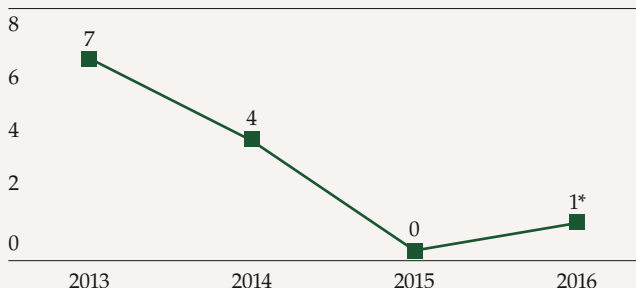
During 2016, the number of approved contractors to complete our admissions process more than doubled. Kazzinc's safety department and safety managers undertook a project to monitor how well our contractors comply with our contractual safety requirements. We also trained leaders from different divisions (e.g. our head of workshop and our site managers), our safety managers and our supervisors on managing work by contractors. All divisions were monitored, with between one and five inspections each.

In addition, Kazzinc is:

- Continuing to provide our people with training on effective contractor management
- Expanding Kazzinc's training centres to provide training for contractors
- Developing and implementing a monitoring system to assess contractors' engagement with SafeWork, with half-yearly assessments as well as improved supervision of contractor activity to ensure it is undertaken safely
- Regularly engaging with the management team for contractor companies
- Monitoring contractor company training standards and ensuring contractors understand and implement SafeWork

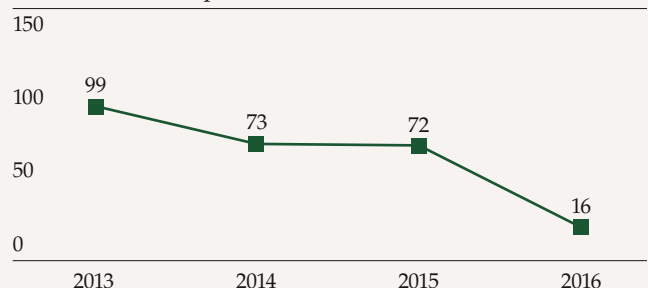
As a result of the programme, Kazzinc's contractor safety performance has steadily improved.

Fatalities



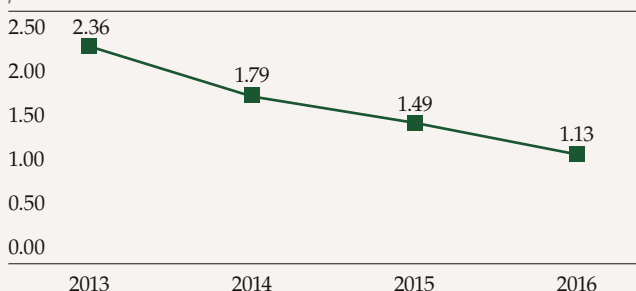
*Occurred at a new asset (Zhairem) acquired in 2014.

New cases of occupational disease



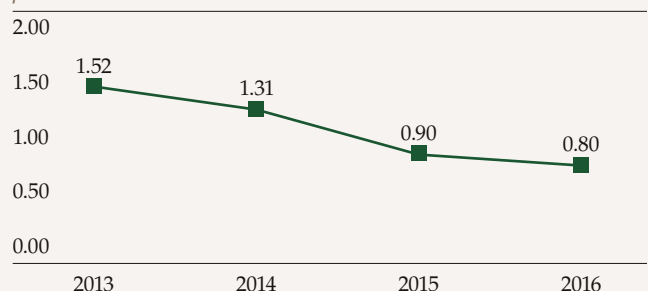
TRIFR

per million hours worked



LTIFR

per million hours worked



Zinc *continued*

Communities

We believe that Glencore's global presence and economic strength have a predominantly positive impact on our host communities. We are committed to building and maintaining constructive, lasting relationships with our host communities and other local stakeholders.

All our community consultation processes are designed to be inclusive, particularly for historically disadvantaged groups. We respect the traditional decision-making mechanisms of our host communities and take the local context into consideration in all our engagement activities.

MRM community engagement

McArthur River zinc mine (MRM), in Australia's Northern Territory, is located around 900 km south-east of the city of Darwin. Our mine site is approximately 65 km south-west of the township of Borroloola, which has a population of 1,100 people, 90% of whom are of indigenous background.

MRM is a fly-in fly-out operation, with most workers flying in from Darwin. In 2016, we began a major programme to engage local people in initiatives that could lead to employment at the mine. We believe employing locals will lead to a more stable workforce and benefit the local community.

While the mine has always enjoyed good relations with the community, and particularly the traditional owners and custodians for the mine site, regular and consistent engagement continued to be a key priority. This included a strong focus on presenting environmental information in a way that could be better understood and trusted by the local community. We were also committed to involving the community in the development of a draft environmental impact statement (EIS) for long-term waste rock management at the site.

Open community meetings

One of the key initiatives we undertook to strengthen our relationship with the community was to open up existing community meetings, which already included representatives from the four local language groups as well as a cross-section of other residents, to all residents in Borroloola. This has resulted in some positive benefits:

- All local residents are able to connect with senior MRM managers
- Local community can ask questions and raise concerns about our operations
- MRM personnel can provide regular updates on mine operations
- MRM personnel can discuss a range of topics in more detail
- Greater one-on-one engagement with local community members

The first open meeting was attended by around 50 community members including traditional owners, residents, business owners, government agencies and NGOs. They received an update on mine approvals, environmental performance, community initiatives and the EIS currently being drafted.

Community members questioned MRM about issues including job opportunities, water quality testing, indigenous people's involvement in monitoring programmes, and a proposed Gurdanji Ranger Programme.

Community participation in environmental programmes

Community members were also invited to join a number of environmental monitoring programmes. MRM donated a professional water quality monitoring kit to Borroloola School and is now working in partnership with students to monitor water quality in local waterways.

MRM are also working with Mabunji, an indigenous community based nearby, and the school, to establish production nurseries to provide plant seedlings for rehabilitation of the recently diverted river. Our people have conducted a number of vocational education classes in propagation and nursery management, aligned with requirements for Certificate II in Conservation and Land Management Training Package.

Community questions and concerns over the potential for metals in fish led to the establishment of an intensive community engagement programme to build trust in the environmental data collected by the mine. Initiatives included:

- A citizen science project, where local anglers could donate their fish carcasses (after filleting) for testing via freezers located throughout the community
- Consultation with residents about their fishing and eating habits
- The translation of fish names into the four local indigenous languages
- Involving local Sea Rangers in monitoring programmes
- An open day to demonstrate how fish monitoring is conducted, with hands-on experience

Citizen science projects are scientific programmes designed to include the local community, combining the expertise of researchers with the enthusiasm and resources of community members. This project followed the release of a report from the Northern Territory government, showing a low risk to human health from eating fish in the Gulf region. The project will provide data on the local barramundi population across a wider geographic range than fish surveys can normally reach. Anglers are asked to donate their unwanted barramundi carcasses and say where they caught them.

The project is in partnership with Indo-Pacific Environmental, an environmental consultancy. The consultancy has also been undertaking extensive consultation in the region to determine how fish are caught and eaten. The results show most people eat fish from local waterways well within the Australian recommended limit of three serves per week.

The independent monitor and MRM's own testing show that there are slightly elevated levels of minerals in fish in the region, although well within national food standards. Isotope ratios show the most likely cause is natural mineralisation of the area.

The programme complements MRM's own sampling programme, which surveys fish from a number of sites along the McArthur River and Bing Bong loading facility, and promotes local people contributing to, and learning from, scientific research.

Environmental impact statement

We are holding consultations with our local communities on our upcoming environmental impact statement (EIS) for the long-term management of waste rock at MRM. The EIS will guide future development of the mine, particularly with regard to how waste rock is stored. It involves multiple scientific studies and tests.

One important aspect is talking to the community and other stakeholders about how they would like to see the mine develop, as well as what they would like to happen at the site once mining has finished.

We consulted with almost 400 people, getting their views about our future proposals and integrating them into our plans. Consultations to date have included:

- Public meetings in Borroloola (100+ attendees)
- Stands at the Borroloola show in June and the Borroloola rodeo in August
- Presentation to Roper Gulf local authority in Borroloola
- One-on-one and group meetings with individuals who have expressed an interest
- A public meeting at King Ash Bay
- Meetings with traditional owners and their families
- Workshops with government agencies, including the Northern Territory Environment Protection Authority, the Department of Mines and Energy, the Department of the Chief Minister, the Department of Primary Industry and Fisheries, the Department of Health, the Department of Treasury and Finance, the Department of Land Resource Management and NT Worksafe; Parks and Wildlife, and the Commonwealth Department of Environment
- Site visits
- Meetings with a number of NGOs, including AFANT and the NT Cattleman's Association

Zinc continued

MRM Community Benefits Trust

The MRM Community Benefits Trust was established in 2007; it is funded entirely by McArthur River Mine. Over its ten years of operation, it has provided \$12.3 million to 76 projects that support culture and art, enterprise and job creation, community development, education, health, and the environment.

The trust is a partnership between the government of the Northern Territory, MRM and the community. It brings to life a long-term vision for the sustainability of the region, developed in consultation with the community.

Five of the nine directors on the trust's board are representatives of the community, one from each of the four local indigenous language groups and one elected by community member organisations. They provide a local voice in decision-making and help ensure community needs are targeted.

In 2016, the trust contributed over \$1 million to the development of a new child care centre in Borroloola to improve facilities and increase access to work opportunities for families. With places for around 30 children, the new building was custom designed following extensive consultation with the local community.

The Mabunji Aboriginal Resource Indigenous Corporation was able to leverage our trust's grant to attract \$875,000 further funding from the Department of Education and ABA. It also contributed \$750,000 of its own funds to the project.

Another grant of \$215,000 to Mabunji's li-Anthawirriyarrra Sea Ranger Unit funded the purchase of a custom-built sea vessel. The vessel supports its environmental work by giving visitors a unique opportunity to learn about conservation work. It is to be used to transport visitors to Barranyi National Park, the Maabayj turtle camp and other island sites. The ranger unit employs 19 staff and believes the new vessel will further enhance employment opportunities for local people.

Emerging regulation

Being aware of not only current legislation and regulation, but what is likely to come into law in the future, is of vital importance to our business. Across the Group, our activities are heavily regulated, and our operations are directly affected by evolving government legislation and policy.

Each of our businesses develops constructive relationships with the various levels of government in our host countries. We may do this individually, collectively with other organisations, or as part of an industry association. A continuing dialogue allows us to plan for regulatory changes and better react to them. In all dealings with governments, we work to the highest ethical standards.

Our zinc business has specific areas of regulation that are material to its operations.

Climate change

We believe that our sector has an important role to play in helping to design public policy on balancing critical economic and energy security issues with the reduction of greenhouse gas emissions. We engage proactively with governments, industry bodies, customers and research institutions.

The Emissions Trading System (ETS) is a cornerstone of EU climate change policy, and its main tool for reducing industrial carbon emissions. A robust ETS reform is vital for countries to deliver their COP-21 international climate targets.

Our zinc business also contributes to Eurometaux's (the European umbrella association for non-ferrous metals producers and recyclers) working group on energy and climate change. Metals are energy-intensive to produce, which means we face high carbon costs from the ETS. Eurometaux's stance is that companies who have invested in becoming more efficient should receive support to stimulate further innovations and keep them competitive internationally.

The Industrial Emissions Directive

This directive is the EU's primary tool for controlling air and water emissions from industrial installations. Other relevant legislation includes the Air Quality Package and the Ambient Air Quality Directive. As our zinc business has smelters in the UK, Spain, Germany and Italy, new developments surrounding this directive are material to our operations.

Under the Industrial Emissions Directive, the EU has defined the best available techniques (BAT) for production and preventing pollution in the non-ferrous metals sector in a reference document. The BAT reference document, published in June 2016, is the basis for permitting and controlling non-ferrous metals installations in Europe. Our assets already comply with the limits required.

We are involved in the development of the upcoming reference document on waste gas treatment in the chemical sector (WGC), which will include new SO₂ limits for sulphuric acid plants within non-ferrous metal processing. This will be carried out by the European Integrated Pollution Prevention and Control Bureau (EIPPCB), a body created to exchange information between EU member states, industry and non-governmental organisations, and to promote environmental protection and BATs. We are part of the Technical Working Group for this subject; with around 140 members from EU member states, EFTA countries, and other public and private organisations, the group will debate the characteristics and specifics of processes to set limits in line with the best available techniques.

We are also an active member of Eurometaux, the European umbrella association for non-ferrous metals producers and recyclers. Our zinc business actively contributes to Eurometaux's committees on environment, health and safety, and sustainability.

REACH

Many of our products and the chemicals fall within the scope of the EU's regulations on the registration, evaluation, authorisation and restriction of chemicals (REACH). REACH makes industries responsible for assessing and mitigating the environmental and occupational safety risks of the chemical substances that they produce and use. It requires all EU producers and importers of substances to register their products according to the requirements of the European Chemicals Agency (ECHA).

We continue to monitor developments at ECHA closely, to ensure our continued compliance with REACH. In 2010, we successfully completed the first REACH implementation stage, for high-volume importers and manufacturers. In 2013 we met the second registration deadline. We comply with the toxicity testing required by REACH and have completed the pre-registration phase for all relevant products and substances.

We have joined several producer consortia to share costs and information during the registration process. Our zinc business has taken leading roles in the International Zinc Association and the International Lead Association. We participate in the REACH consortia related to the metals we produce; these include zinc, cadmium, sulphuric acid, lead and precious metals.

Glossary

ASM

Artisanal and small-scale mining.

available blue water

According to the Aqueduct Global Maps 2.0 of the World Resource Institute (WRI) this is the total amount of water available to a catchment before any users are satisfied. It is calculated as all water flowing into the catchment from upstream catchments plus any imports of water to the catchment minus upstream consumptive use plus runoff in the catchment.

backfilling

Filling mined voids with non-hazardous material generally sourced from mine residues, to ensure long-term stability of excavations and minimise the effects of seismic activity.

baseline water stress

According to the Aqueduct Global Maps 2.0 of the World Resource Institute (WRI) this constitutes total annual water withdrawal (municipal, industrial, and agricultural) expressed as a percentage of the total annual available flow. Higher values indicate more competition among users. Arid areas with low water use are scored as high stress when calculating aggregated scores. The baseline water stress is calculated as water withdrawals divided by mean available blue water. Areas with less than 0.03m³/m² available blue water and less than 0.012m³/m² water withdrawal are classified as “arid and low water use”.

business segment

Glencore operations are divided into three business segments: Metals & Minerals, Energy Products and Agricultural Products. Each segment manages its own marketing, sourcing, hedging, logistics and industrial investments.

“care & maintenance” phase

A phase in the lifecycle of an asset where production is stopped, but with the potential to recommence operations at a later date; we manage conditions to ensure that the asset remains in a safe and stable condition.

CDP

CDP is an international, not-for-profit organisation that provides a global system for companies and cities to measure, share and disclose environmental information. See www.cdp.net for further information.

closure plan

A formal document detailing a costed conceptual outline of how the operation will be closed, taking into account the options available to deal with prevailing social and environmental issues. We set aside funds specifically for site closure, including land rehabilitation, based on this document.

CO₂e

Carbon dioxide equivalent is the universal unit of measurement for the global warming potential (GWP) of greenhouse gases, where one unit of CO₂e is the GWP for one unit of carbon dioxide. This unit allows us to discuss the equivalence of different GHGs in terms of their GWP. The GWPs used in this report are 1 for CO₂, 28 for methane and 298 for nitrous oxide, as per IPCC’s 5th Assessment.

commodity departments

Each of Glencore’s business segments are divided into a number of commodity departments, e.g. copper, nickel and ferroalloys within the Metals & Minerals business segment. See Who we are www.glencore.com/who-we-are/what-we-do/ for a full list.

concentrate

A natural commodity consisting of extracted and processed mineral ores; the first step towards producing refined minerals and metals.

COP21

The 2015 United Nations Climate Change Conference, COP21, was held in Paris, France, from 30 November to 12 December 2015. It was the 21st yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC). The conference negotiated the Paris Agreement, a global agreement on the reduction of climate change, the text of which represented a consensus of the representatives of the 196 parties attending.

critical control

A control that is crucial to preventing or mitigating the consequences of an event. The absence or failure of a critical control would significantly increase the risk connected to the relevant hazard, regardless of the existence of other controls. Controls include actions that should be taken, devices and technical systems.

direct energy

Energy used and generated by our operations, including energy generated by combustion in boilers, furnaces and vehicles owned or controlled by us. Sources include coal, coke, diesel, gasoline, biomass, biodiesel, fuel oil, jet fuel, kerosene, LPG, naphtha, natural gas, propane and recovered electricity generated on site. See *indirect energy*.

ECHA

The European Chemicals Agency is an agency of the European Union that manages the technical, scientific and administrative aspects of the REACH system and drives implementation of the EU's chemicals legislation.

EITI

The Extractive Industries Transparency Initiative aims to strengthen governance by improving transparency and accountability in the extractives sector (oil, gas and mining). EITI promotes revenue transparency by monitoring and reconciling payments from mining businesses and government revenues at the country level.

ferroalloys

Various iron alloys that have a high proportion of one or more other elements, e.g. manganese, chrome or silicon.

fugitive emissions

Emissions that emanate irregularly from many diffuse sources, such as gas leakages from equipment, and, in the case of dust, the movements of trucks and machinery in dusty areas.

GHG

Greenhouse gas.

Greenhouse Gas Protocol

Standards and guidance for corporate accounting and reporting on GHG emissions, which help governments and business leaders to understand, quantify, and manage GHG emissions (e.g. CO₂). The protocol separates GHG emissions into different scopes depending on source.

GRI

The Global Reporting Initiative is a network-based organisation that develops and disseminates voluntary sustainability reporting guidelines; there is a specific supplement for the mining and metals industry.

grievance process

A formal mechanism that local community members or other stakeholders can use to register concern about real or perceived actions by nearby operations, with the objective of resolving problems before they escalate.

hazardous

Dangerous, as defined by national legislation.

hours worked

Total hours worked by employees and contractors at our industrial sites, including overtime but excluding any scheduled or unscheduled absence (e.g. holidays or sickness) during the reporting year.

HPRI

High potential risk incidents are incidents that could have potentially resulted in a catastrophic (Category 5) or major (Category 4) outcome.

HSEC

Health, safety, environmental and/or communities.

ICMM

The International Council on Mining and Metals is an industry trade body dedicated to establishing and promoting leading sustainability practices.

IFC

The International Finance Corporation is part of the World Bank Group; it finances private sector ventures and projects in developing countries and provides these with advice and guidelines.

ILO

The International Labour Organization is a United Nations agency that seeks the promotion of social justice and internationally recognised human and labour rights.

ILO Declaration

The Declaration on Fundamental Principles and Rights at Work was adopted by the ILO in 1988, with the core categories of collective bargaining, discrimination, forced labour and child labour.

indirect energy

Energy used by our sites, but supplied by third parties, often as electricity. This includes electricity, steam and heating/cooling. See *direct energy*.

Glossary *continued*

“industrial activities”

Glencore term covering assets and activities related to commodity production and processing, as separate from marketing activities. See “*marketing activities*”.

IPCC

The Intergovernmental Panel on Climate Change assesses scientific, technical and socio-economic information on the risk of human-induced climate change. It was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO).

ISO 9001

A quality management system standard (not a performance standard) issued by the International Organization for Standardization (ISO). It is a voluntary standard that can be independently audited by certifying bodies.

ISO 14001

A management system standard, similar to ISO 9001, but covering environmental impacts and risk.

LBMA

The London Bullion Market Association is an international trade association, representing the London market for gold and silver bullion, which promotes refining standards, trading documentation and the development of good trading practices.

LTI

Lost time injuries are recorded when an employee or contractor is unable to work following an incident. We record lost days as beginning on the first rostered day that the worker is absent after the day of the injury. The day of the injury is not included. LTIs do not include Restricted Work Injuries (RWI) and fatalities.

LTIFR

LTIFR is the total number of LTIs recorded per million working hours.

“marketing activities”

Glencore term covering trading and sales activities as well as the infrastructure and resources used in transporting products from our industrial sites to customers. See “*industrial activities*”.

MARPOL

The main international convention for preventing ships from polluting the marine environment, whether by operational or accidental causes.

mixtures

In the context of product safety regulations, a mixture or solution comprising two or more substances, where each substance is defined as a chemical element and its compounds in the natural state, or obtained by any manufacturing process, including any additive necessary to preserve stability and any impurity deriving from the process used.

nitrogen oxides

A range of related chemical compounds, collectively indicated as NO_x, which can react to form GHGs. Examples are nitric oxide and nitrogen oxide.

occupational disease

Any chronic ailment or illness that occurs as a result of work or occupational activity; these are typically identified as being more prevalent in a given body of workers than in the general population, or in other worker populations. An occupational disease is different from an occupational injury.

OCIMF

The Oil Companies International Marine Forum is a voluntary association of oil companies with an interest in the shipment of crude oil and products.

OECD

The Organisation for Economic Co-operation and Development is an international organisation that provides a forum in which governments can work together to share experiences and seek solutions to tackle economic, social, environmental and governance challenges.

overburden

The rock and soil that lies above a coal seam or ore body and must be removed for mining activities.

petajoule

A measure of energy equivalent to a thousand trillion joules, or 10¹⁵ joules, usually used to express energy consumption by cities or major industries.

PM

Particulate matter, or dust, usually from industrial sources.

protected area

A location that receives protection because of its natural, ecological or cultural value.

PSM

Process safety management.

REACH

Registration, Evaluation, Authorisation and Restriction of Chemicals is the European Union's chemicals control act.

Scope 2 (location-based) emissions

This definition method applies grid emission factors to all purchased electricity, regardless of contractual purchase arrangements for renewable electricity.

Scope 2 (market-based) emissions

This definition method applies GHG emissions from contractual arrangements; supplier-specific emission factors are applied when relevant and available, but where they are not, the country's residual or grid emission factor is applied.

stranded asset

A financial term to describe an asset that has become obsolete or non-performing well ahead of its useful life, and must be recorded on a company's balance sheet as a loss of profit.

sulphur dioxide

A chemical compound (SO₂) produced by various industrial processes, including the combustion of sulphur-containing fuels. SO₂ is a pollutant gas and a precursor to particulates in the atmosphere. It can be captured and converted to saleable sulphuric acid.

tailings

The residue of an industrial process, especially residue that contains mineral ore.

TRIFR

Total Recordable Injury Frequency Rate = number of fatalities + lost time injuries (LTIs) + restricted work injuries (RWIs) + medical treatment injuries (MTIs) per million hours worked.

UNGPs

The United Nations Global Compact principles cover human rights, labour, environment and anti-corruption.

Voluntary Principles

The Voluntary Principles on Security and Human Rights (Voluntary Principles) Initiative is a multi-stakeholder initiative involving governments, companies and NGOs, which promotes a set of principles for oil, gas, and mining companies to guide them in providing security for their operations in a manner that respects human rights.

waste rock

Mineral wastes produced during mining, excluding overburden. It includes the parts of ore deposits that are not processed for economic reasons. Waste rock is either used for backfilling or stored at the surface.

water discharged

Total of water effluents discharged over the course of the reporting period to subsurface waters, surface waters, sewers, treatment facilities, etc.

water input

Total amount of water withdrawal plus water entrained in ore that is processed. See "*water withdrawal*".

water output

Total amount of water discharged plus water entrained in waste material and final product and water lost to evaporation and other losses. See "*water discharge*".

water withdrawal

Total amount of water drawn into the boundaries of the reporting organisation from all sources for any use over the course of the reporting period. Includes surface water, ground water, rainwater, potable water and non-potable water imported from third parties.

WHO

The World Health Organization is the directing and coordinating authority for health within the United Nations system, which sets many internationally-recognised norms and standards.

workforce

References to our workforce include both employees and contractors.

Assurance statement



Independent assurance report to Glencore Plc on selected information in its 2016 Sustainability Reporting

An overview of the scope of our assurance work

We have been engaged by Glencore Plc (“Glencore”) to perform a limited assurance engagement on the following selected sustainability information (“Subject Matter”) presented in Glencore’s “Sustainability Report 2016” and the “Our Approach to Sustainability” and “GRI Data book” documents for the year ended 31 December 2016 (these documents together comprising Glencore’s “2016 Sustainability Reporting”). Each of these documents are available on Glencore’s website <http://www.glencore.com/sustainability>.

Selected Subject Matter for assurance

Glencore’s assertion in relation to:

- the alignment of its policies to the International Council on Mining and Metals (ICMM) ten Sustainable Development Principles and Position Statements as stated on page 16 of the Sustainability Report 2016 (ICMM Subject Matter 1)

- the approach that it has adopted to identify and prioritise its material sustainable development risks and opportunities as stated on page 17 of the Sustainability Report 2016 (ICMM Subject Matter 2)
- the existence and status of implementation of systems and approaches used to manage and report the selected material SD risks and opportunities as presented in the “Our Approach to Sustainability” document, and related key performance indicators and presented in Table 1 below (ICMM Subject Matters 3 and 4 respectively)
- its self-declaration of preparing its 2016 Sustainability Reporting in accordance with the Global Reporting Initiative’s (GRI) G4 Core Option as stated on page 18 of the Sustainability Report 2016 (ICMM Subject Matter 5)

Reporting Criteria

The Subject Matter has been assessed against the criteria provided in the ICMM Sustainable Development Framework Assurance Procedure and the definitions and approaches in the Glencore Corporate Practice (GCP) database field definitions document (together the “Reporting Criteria”). This document is available upon request from Glencore.

Table 1: ICMM Subject Matters 3 and 4

Material risks and opportunities	Report page reference ¹	Key performance indicators	Assured figure
Catastrophic Hazard Management	22	<i>Reported KPIs not within scope of current year assurance</i>	
Workplace safety, health & PSM	25	Total number of Fatalities employee and contractor	16
		Total Recordable Injury Frequency Rate employee and contractor (injuries per million working hours)	4.05
		Total Lost Time Injury Frequency Rate employee and contractor (injuries per million working hours)	1.40
Climate change	31	Total direct and indirect energy consumption (PJ)	222
		Total Scope 1 GHG emissions (million tonnes of CO ₂ e)	22.9
		Total Scope 2 GHG emissions (million tonnes of CO ₂)	12.7
		Total Scope 3 GHG emissions from electricity transmission and distributions losses (million tonnes of CO ₂)*	1
Water and effluents	34	Total water withdrawal (million m ³)	970
		Total water discharge (million m ³)*	759
		Total number of major (Category 4) and catastrophic (Category 5) spills*	0
Waste and air emissions	37	<i>Reported KPIs not within scope of current year assurance</i>	
Human rights and raising grievances	40	<i>Reported KPIs not within scope of current year assurance</i>	
Community engagement and commitments	43	Total amount of community investments (US\$ million)	84
		Total amount of Payments made to Governments (US\$ million)	3,963
Product Stewardship	47	<i>Reported KPIs not within scope of current year assurance</i>	
Human resources	50	<i>Reported KPIs not within scope of current year assurance</i>	
Compliance	53	<i>Reported KPI not within scope of current year assurance</i>	

¹ References are provided to the Sustainability Report 2016.

* KPIs indicated with an * are included in the GRI Data book only

Our assurance conclusion

Based on our procedures described in this report, nothing has come to our attention that causes us to believe that the selected Subject Matter, stated above and on the indicated pages of 2016 Sustainability Reporting, for the year ended 31 December 2016 have not been prepared, in all material respects, in accordance with the Reporting Criteria.

Respective responsibilities of Directors and independent assurance provider

The Directors are responsible for the preparation of the sustainability information and statements contained within Glencore's 2016 Sustainability Reporting. They are responsible for determining Glencore's sustainability objectives and for establishing and maintaining appropriate performance management and internal control systems from which the reported information is derived.

Our responsibility is to express a conclusion on the selected subject matter based on our procedures. We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE 3000 Revised) Assurance Engagements other than Audits or Reviews of Historical Financial Information issued by the International Auditing and Assurance Standards Board. This standard requires that we comply with the independence and ethical requirements and to plan and perform our assurance engagement to obtain sufficient appropriate evidence on which to base our limited assurance conclusion. We performed the engagement in accordance with Deloitte's independence policies, which cover all of the requirements of the International Federation of Accountants' Code of Ethics and in some areas are more restrictive. The firm applies the International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

The evidence gathering procedures for a limited assurance engagement are more limited than for a reasonable assurance engagement which is akin to a financial audit, and therefore less assurance is obtained than for a reasonable assurance engagement.

Work performed

Our limited assurance procedures included, primarily:

- Making enquiries of management and senior executives to obtain an understanding of the overall governance and internal control environment, risk management, materiality assessment and stakeholder engagement processes relevant to the identification, management and reporting of sustainability issues and selected performance indicators.

- Evaluation of the design of controls and functionality of the Group sustainability information management and reporting database (GCP database) at a corporate level.
- Analytical Reviews and trend analysis of reported data per asset at a corporate level
- Conducting physical reviews at a sample of assets, selected on a judgemental basis on materiality of contribution to reported group KPI data, geographic coverage (Africa, Asia, Australia, Europe, North & South America) and commodity coverage (Coal, Copper, Ferro Alloys, Nickel, Zinc and Agriculture). This work was performed to:
 - corroborate consistency in understanding and application of Glencore corporate sustainability policies and the GCP field definitions
 - identify systemic challenges to sustainability management and data measurement, collection, reporting and control processes, or issues pervasive to region, department and / or group, for the selected subject matter

We believe that our evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

Inherent limitations

Inherent limitations exist in all assurance engagements due to the selective testing of the information being examined. Therefore fraud, error or non-compliance may occur and not be detected. Additionally non-financial information, such as that included in Glencore's Sustainability Reporting 2016 documents is subject to more inherent limitations than financial information, given the nature and methods used for determining, calculating and sampling or estimating such information.

Our work has been undertaken so that we might state to the Company those matters we are required to state to them in this report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than Glencore for our work, for this report, or for the conclusions we have formed.

While we acknowledge that this report will be published on the Glencore website, the maintenance and integrity of that website is the responsibility of the Directors of Glencore. The work that we carried out does not involve consideration of the maintenance and integrity of that website and, accordingly, we accept no responsibility for any changes that may have occurred to this report and Glencore's Reports since they were initially presented on the website.

Deloitte LLP

London, United Kingdom
8 May 2017

Contacts

We welcome feedback on this report or on any other aspect of sustainability at Glencore. You can send general comments to gcp@glencore.com

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Disclaimer

The companies in which Glencore plc directly and indirectly has an interest are separate and distinct legal entities. In this document, “Glencore”, “Glencore group” and “Group” are used for convenience only where references are made to Glencore plc and its subsidiaries in general. These collective expressions are used for ease of reference only and do not imply any other relationship between the companies. Likewise, the words “we”, “us” and “our” are also used to refer collectively to members of the Group or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies.



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