



# Embedding sustainability

Eurasian Resources Group S.à r.l.  
Sustainable Development Report 2017



Our mission

Be the best at what we do.  
Navigate global change whilst  
holding true to our values.  
Responsibly unlocking the  
potential of the Earth and its  
people, ensure the prosperity  
of those who rely on us.

About this report

This annual Sustainable Development Report covers Eurasian Resources Group's (ERG) sustainability performance during the 2017 calendar year.<sup>1</sup> It covers ERG's own mining, processing, power generation, project development and transportation activity.

The contents of this report has been informed by the requirements of the Global Reporting Initiative Standards. Accordingly, it is focused on our most material Sustainable Development issues (p18-19). The report and its contents have not been subject to third-party assurance. It has, however been subject to an internal validation process and approval by the Board of Managers. For all queries in relation to this report, please contact: [press@erg.net](mailto:press@erg.net) or [press@erg.kz](mailto:press@erg.kz).

1. This follows our last Sustainable Development Review, published in 2017 and covering the 2016 calendar year.

Please note, this report is produced in English, Russian, Kazakh and Chinese. In the event of any inconsistencies, the English-language version shall take precedence.



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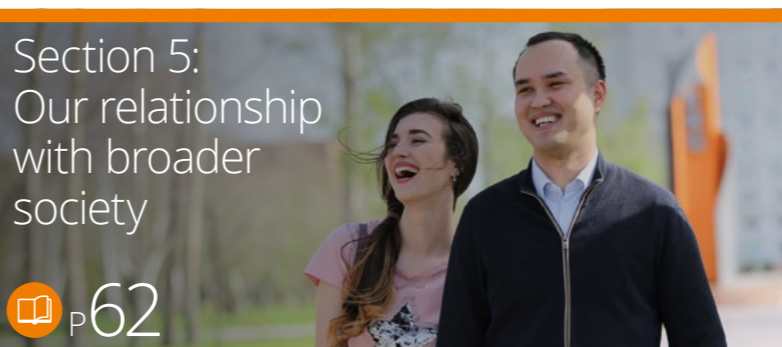
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**Notes on the preparation of this report**  
All references to 'ERG' or the 'Group' refer to Eurasian Resources Group S.à r.l. and its subsidiaries

# Our global footprint

Eurasian Resources Group (ERG) is a leading diversified natural resources group

ERG has integrated mining, processing, energy, logistics and marketing operations and a global workforce of more than 69,000 people. We operate in 15 countries across four continents.

ERG represents one third of the metals and mining industry in the Republic of Kazakhstan and is a global leader in high-carbon ferrochrome production. In Kazakhstan, the Group is the key supplier of iron ore, aluminium and alumina as well as a provider of electric power distribution and railway operation services. ERG is also a principal cobalt and copper producer through operations in Africa and has further development projects in coal, manganese, platinum, bauxite and fluorspar. In Brazil, ERG is pioneering an integrated iron ore mining and logistics project.

Our materials help meet the needs of industries and societies across the world and fuel future economic and social growth.

## Production regions

- ① Kazakhstan
- ② DRC
- ③ Zambia

## Development regions

- ④ Brazil
- ⑤ Mali
- ⑥ Zimbabwe
- ⑦ Mozambique
- ⑧ South Africa

## Corporate/sales offices

## EMPLOYEES

69,090<sup>1</sup>

Kazakhstan	62,100
Africa	6,651
Brazil	103
Corporate offices	236

## TOTAL TAX PAID

Over

US\$850m

Kazakhstan	81%
Africa	17%
Brazil	0%
Europe	2%

## COMMUNITY SOCIAL INVESTMENT

US\$111m

Kazakhstan	US\$105.5m
Africa	US\$5.5m
Brazil	US\$0.2m

1. This figure does not include contractors.



## ERG and China's Belt and Road Initiative

ERG is an active participant in China's strategic Belt and Road Initiative (BRI), which aims to improve trade links and promote economic growth across Eurasia, Africa and Latin America.

We are already benefiting from Chinese investments in our growth projects as well as Chinese construction and engineering expertise. In the longer-term, the initiative is likely to play an important role in underpinning future Chinese demand for our products. As such, we view the BRI as a strategic driver of our future growth.

Similarly, we are in discussions with our Chinese partners to support the construction and financing of our iron ore project in Brazil.

## Key commodities (2017)

Division	% of Group EBITDA <sup>2</sup>	Number of key operational assets	Key countries of operation
Ferroalloys	54.9%	4	Kazakhstan
Iron ore	9.4%	1	Kazakhstan
Alumina and Aluminium	17.3%	4	Kazakhstan
Other Non-Ferrous	9.7%	3	DRC
Energy	11.8%	3	Kazakhstan
Logistics	1.9% <sup>3</sup>	2	Kazakhstan and DRC

2. Please note, these percentages total more than 100% (105%) as they do not include our corporate offices which have a net negative impact on Group EBITDA.

3. SABOT's EBITDA is accounted in Other Non-Ferrous.

# CEO Statement



Benedikt Sobotka  
Chief Executive Officer

## Moving from stabilisation to sustainability

In the previous four years, we have successfully stabilised our business – by bolstering the integrity of our assets, entering into new strategic partnerships and implementing enhanced management practices. This, along with more favourable market conditions, has helped us achieve a 42.4% increase in underlying EBITDA in 2017.

Building on this platform, in 2017 we shifted our focus to the embedding of sustainability into our business. We mean this in the sense of not only operating in a responsible way and meeting stakeholders' expectations with respect to our environmental, social and governance performance, but also achieving true business sustainability. In particular, we are focused on the ability of our business to generate value in the long-term, irrespective of market volatility, and to generate sustained, shared benefits for our stakeholders – including our local communities.

## Getting our business and operations ready for the future

During the year, we made a number of important steps to help prepare our business for the future. This included the ongoing transformation of our business as well as the implementation of strategic growth and renewal projects, and a range of initiatives focused on operational efficiency and innovation.

### Transformation

Many of our transformation efforts were initiated during the 'crisis years' between 2014 and 2015. Most of these directly supported the stabilisation of our business, and we are continuing to pursue innovative ways to improve what we do.

Key examples of our transformation efforts in 2017 included the establishment of the ERG Academy in Kazakhstan – which will support the development of a common corporate culture and equip our employees with the skills to apply transformation in practice – as well as the centralisation of a range of Group functions. We also completed the implementation of SAP® across Kazakhstan to fully operationalise our process-driven approach. Meanwhile, in Africa we started to transition our assets to an integrated performance management system to help further align employee performance with corporate strategy.

### Growth and renewal

In 2017, we advanced the construction of our strategic Metalkol Roan Tailings Reclamation (RTR) project in the Democratic Republic of the Congo (DRC). Once complete, the Metalkol RTR project will make us a key player in the exciting and buoyant cobalt market. Similarly, we have undertaken a range of additional projects to support our production of ferroalloys and aluminium in Kazakhstan and of copper in Africa – ranging from the expansion of production at our Aksu Ferroalloys Plant in Kazakhstan to the Cut 3 project at our Frontier Mine in the DRC. Collectively, these initiatives will help ensure we are well positioned to benefit from projected future increases in demand for these metals, which is increasingly being driven by the global transition towards a greener economy.

### Efficiency and innovation

Meanwhile, the Smart Mine initiative at our SSGPO iron ore business in Kazakhstan represents our flagship project in terms of efficiency and innovation. This project demonstrates what digitisation, automation and data analysis can do in terms of improving productivity – whilst also supporting our broader effort to stabilise SSGPO's commercial position.

In combination with other factors, such as the shareholding of the Government of the Republic of Kazakhstan, our participation in China's Belt and Road Initiative (BRI), and ever-increasing demand for cobalt (as a result of electric vehicle battery technology development), these initiatives mean we are well-positioned for the future.

## Focus on Safety

The safety of our employees, contractors and communities is core to our Group values and to our long term, sustainable growth. It is with deep sadness, therefore, that I report the loss of six lives in 2017 – three employees and three contractors (2016: 15). I would like to express my sincere condolences to the families of those who died whilst carrying out work for ERG. While we have achieved improvements in our safety performance in 2017, clearly these tragic events are unacceptable and have added further impetus to our efforts to prioritise safety above all else.

### Strategic positioning with respect to China

China has always been a key market for ERG, which is a strategic supplier of metals to the country. The country accounts for 15%-20% of our total sales volumes – with ferroalloys representing the most significant proportion of such sales. Once our Metalkol RTR project enters production, we will also be well positioned to become the largest supplier of cobalt to China. As such, we are supporting – and will continue to support – Chinese growth as it transitions to a consumption-driven economy.

In addition, ERG is at the nexus of China's Belt and Road Initiative. The initiative aims to bridge the infrastructure gap in many developing countries in Asia, Africa and Latin America by coordinating the financial and technical expertise necessary to drive major industrial projects and infrastructure initiatives.

We work closely with numerous Chinese financial institutions and industry leaders in a range of sectors – and are proud of the positive working relationships that we have forged with Chinese companies working on a number of significant ERG projects. This includes construction and financing support for our Metalkol RTR project in the DRC (p24). We also anticipate potential collaboration on our iron ore project in Brazil in the future.

We are confident that the BRI will continue to offer us the chance to develop new commercial projects through joint ventures with Chinese partners.

## Addressing broader sustainability concerns

Beyond this, we have also made important steps in terms of making our business more responsive to our stakeholders environmental, social and governance concerns. This means understanding and addressing stakeholder concerns where possible, whilst also helping to support stakeholders' own objectives. By doing so, we aim to generate responsible supply chain assurance for our stakeholders, maintain and strengthen our legal, political and social licence to operate, and support the sustainability of our business.

### Kazakhstan

During the year, we benchmarked our operations in Kazakhstan against relevant European Union (EU) air emissions standards. This is with the aim of pre-empting local legislative developments and achieving 'beyond compliance' emissions performance. In a similar vein, we commenced a major investment programme to fit advanced filter technology to Aluminium of Kazakhstan's sintering workshop in the Pavlodar region. This will materially reduce our contribution to collective air impacts in the region.

We also continued our programmes to support the quality of life of our employees and their families in our mining towns and to promote, in partnership with local authorities, broader regional development. An important addition in this regard has been the establishment of our Student Entrepreneurship Ecosystem Programme to help turn regional universities into centres of entrepreneurial excellence. This will contribute to job creation, economic diversification and the development of local capabilities with the potential to support our business.

### Africa

At ERG Africa we implemented a new Safety, Health, Environment and Communities (SHEC) Policy, which is aligned with the International Finance Corporation (IFC) Performance Standards. This reflects our ongoing efforts to apply international best practice in this area. Similarly, we have updated our existing environmental and social impact assessments at our mines in the DRC as well as at Metalkol RTR, including their alignment with the IFC Performance Standards. Furthermore, we completed 11 Participatory Rural Appraisals (PRAs) in the DRC, helping our local communities identify their needs and implement (with ERG support) community action plans to address these.

Finally, we launched our Clean Cobalt Initiative at Metalkol RTR. This will give customers the confidence that our responsibly-produced cobalt does not include material from artisanal and small-scale mining (ASM) sources, is free of child labour and can be reliably traced back through the value chain to our operations. We are also focused on helping children in the DRC out of mining, and on supporting multi-stakeholder advocacy

through the Global Battery Alliance, which I am proud to co-chair. The Alliance, which was launched in 2017, is a World Economic Forum initiative aimed at achieving a responsible global battery supply chain.

### Safety challenges

The loss of six lives in 2017 highlights the need for us to continue improving our safety performance. In Kazakhstan we have rolled out a new corporate safety improvement programme, carried out enhanced training to support a 'safety first' working culture and implemented measures to improve contractor safety management (with contractors making up half of the Group-wide fatalities we experienced in 2017). Similarly, at Boss Mining in the DRC – where three of these fatalities occurred – we have strengthened the enforcement of our fatal risk protocols and tightened our management of contractors.

## Understanding what is important, measuring it and managing it

This year's report, which has been informed by the Global Reporting Initiative's (GRI) Standards, has taken us a step closer towards the application of international-level sustainability reporting. As our cross-Group data management systems mature, we hope to achieve 'Core' compliance with the GRI Standards in future reporting rounds. In addition, more complete datasets will help us to embed enhanced sustainability management practices and oversight in future.

A key component of this year's reporting effort has been our application of a corporate-level materiality process to determine our most important Sustainable Development issues. At the time of writing, we have completed the internal part of this process, the outcomes of which have informed the contents of this report. We will complete the external part of the process in 2018, to ensure the accurate representation of our stakeholders' interests in our decision-making.

The outcomes of the full materiality process will (along with key external frameworks such as the United Nations Sustainable Development Goals and the development priorities of our host countries) help inform the Sustainable Development elements of our new corporate strategy.

As such, in 2017 we made real progress in terms of embedding sustainability across our business. Whilst I am pleased with our progress in this regard, I am also realistic that there is more to be done. As a result, embedding sustainability will remain a key aim as we move forward.

Benedikt Sobotka  
Chief Executive Officer

## Business performance highlights in 2017

### REVENUES

**US\$5,048m**  
+31.5%

### UNDERLYING EBITDA

**US\$2,090m**  
+42.4%

### CAPITAL EXPENDITURE

**US\$685m**  
+27%

### FERROALLOYS PRODUCTION

**1,496 kt**  
+9.9%

### IRON ORE PRODUCTION

**10,585 kt**  
+7.9%

### ALUMINA PRODUCTION

**1,509 kt**  
+0.6%

Hereinafter – year-on-year comparisons

# Our business

How we create value

## Inputs →

Our ability to generate value is dependent on access to financial capital, skilled people, quality relationships and key natural resources. This is underpinned by our culture, and by access to necessary infrastructure and equipment.

### FINANCE

We seek to use all funds efficiently, whether obtained through financing or generated from operations or investments.

### PEOPLE

We rely on the skills, wellbeing and motivation of employees, contractors and service providers to generate value.

### RELATIONSHIPS

We seek to build and sustain constructive relationships with all our stakeholders that are based on mutual respect, transparency and trust.

### NATURAL RESOURCES

It is critical that our businesses responsibly manage all the natural resources used in our processes, given their finite nature.

### CAPITAL ASSETS

Significant financial investment in the purchase, development and maintenance of property, plant and equipment has provided us with the capacity to generate longer-term returns.



## Energy production

Generation of power for our operations and third parties in Kazakhstan



## Logistics

Logistics and railway services to support our own operations as well as third party businesses

## VALUE ADDING ACTIVITIES



Exploration & acquisition



Development



Mining



Processing & beneficiation



Smelting & metallurgy



Sales



Post-mining reclamation



OUR KEY  
STAKEHOLDERS

P16-17



GOVERNANCE

P10-11



OPERATIONAL  
EXCELLENCE

P20-27



EXTERNAL TRENDS,  
PRINCIPAL RISKS  
& MATERIAL ISSUES

P12-15  
P18-19

## → Outputs

### FINANCIAL

FREE CASH FLOW

US\$476m

REVENUE

US\$5,048m

UNDERLYING EBITDA

US\$2,090m

### SOCIAL

LTIFR

0.69

TAXES PAID (OVER)

US\$850m

COMMUNITY SOCIAL  
INVESTMENT

US\$111m

### ENVIRONMENTAL

CO<sub>2</sub> EMISSIONS

24.1 Mt CO<sub>2</sub>e

ENERGY CONSUMPTION

264,521 TJ

WATER WITHDRAWAL

1,972Mm<sup>3</sup>

# Our approach to Sustainable Development

Sustainable Development is about the responsible management of our environmental, social and governance impacts. For ERG, it is also about achieving:

- True 'business sustainability' by ensuring our culture, strategy, processes, technologies, decision-making and skills are fit for the future and can sustain long-term value generation
- Long-term, sustainable and profitable growth that delivers sustained benefits to our stakeholders, whether they be our employees, shareholders, customers, business partners, host countries or – in particular – our local communities

As such, Sustainable Development is integral to our business model – and increasingly integrated into our core business processes.

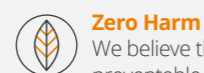
We are also exploring ways in which we can maximise our contribution to the achievement of relevant United Nations Sustainable Development Goals (SDGs) and minimise any negative impacts we might otherwise have. This includes the identification of 'priority' SDGs for ERG, selected on the basis of:

- Potential synergies between the achievement of each SDG and the performance of our business
- Our ability to make a significant contribution to the achievement of each SDG (or to potentially undermine the same)
- The degree to which achievement of each SDG is relevant to the regions in which we operate

By taking this approach, we can align our actions more closely with international stakeholder expectations. This, we believe, will be to the long-term benefit of both our business and broader society.

You can see more information on the relationship between our sustainable development performance and the SDGs on p19, as well as the front pages of each chapter.

## Sustainable Development principles



### Zero Harm

We believe that all injuries are preventable, and by taking the right measures we can minimise our long-term environmental impact



### Balance

Our decision-making process takes into consideration the long-term benefits of Sustainable Development, balancing and aligning the interests of our business and our stakeholders



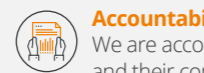
### Leadership

We work in challenging emerging markets and aim to embed an ethos of Sustainable Development across the Group



### Integrity

We are committed to operating transparently and ethically, and we are working towards a culture of mutual trust, openness and honesty



### Accountability

We are accountable for our decisions and their consequences, as well as communicating our actions to our stakeholders



### Innovation

We are constantly searching for, and implementing, better ways to operate – increasing productivity and operational efficiency in a sustainable way

## Strategy

In 2017, we initiated a process to develop a new 2025 Group strategy framework – which supports our Vision of being an international, sustainable, socially responsible and efficient mining company.

This was with the aim of ensuring that our business, which has faced serious commercial challenges in recent years:

- Is sufficiently robust – and flexible – to generate value in the long-term – irrespective of market volatility. As with others in the sector, the last downturn in commodity prices highlighted the need for ERG to optimise its business, including through operational efficiency, the creation of a sustainable portfolio and innovation
- Understands the needs of, and delivers sustained benefits to, our stakeholders – through the creation of shared value. By doing so, we will be better able to manage our strategic risks and capitalise on strategic opportunities

The strategy will ensure that we – as an organisation – concentrate on what really matters, helping us make better decisions and use our resources more effectively. It will also help us take a more integrated approach to the management of our business, by ensuring that we factor in the interests of our stakeholders into all that we do. This not only includes the interests of our shareholders, customers and lenders, but also our employees, local communities, host governments and societies.

The strategy will be cascaded throughout ERG to ensure that it becomes a living reality for every manager and every worker, irrespective of location or role. We will do so through:

- The integration of the Strategic Goals into employees' KPIs, thus directly influencing their remuneration
- Clear accountability for the delivery of strategic initiatives amongst senior managers
- A comprehensive, internal communications campaign
- Dedicated strategy training

The new 2025 Strategy will be focused on five key priorities, each of which is underpinned by defined Goals:

### Portfolio

Including the intensive and extensive development of our asset portfolio in Kazakhstan and abroad

- Asset development in Kazakhstan
- The optimisation of our portfolio of international assets
- The expansion of our mining portfolio
- Energy business development

#### Relevant section(s)

Section 1: Preparing our business for the future (p20)  
Section 4: Environmental stewardship (p54)

### Financial

Including the achievement of financial resilience and the payment of dividends to our shareholders

- Delivery of appropriate dividends to shareholders
- The achievement of an optimal capital structure
- The achievement of a manageable level of debt
- The maintenance of optimal levels of liquidity

#### Relevant section(s)

Section 1: Preparing our business for the future (p20)

### Sustainable development of the regions

Including contribution to the development and wellbeing of local communities in our operating regions

- The improvement of social wellbeing in our operating regions
- The prevention of pollution

#### Relevant section(s)

Section 3: Community development and wellbeing (p40),  
Section 4: Environmental stewardship (p54),  
Section 5: Our relationship with broader society (p62)

### Efficiency

Including comprehensive operational efficiency programmes at our assets and corporate offices

- The improvement of operational efficiency
- The development of mechanisms to support and maintain a culture of continuous improvement

#### Relevant section(s)

Section 1: Preparing our business for the future (p20)

### People

Including skills development, as well as employee safety and wellbeing

- Keeping our people healthy and safe
- Improved employee wellbeing
- The development of skills and knowledge
- The development of our talent pool
- Increased employee engagement and cohesion

#### Relevant section(s)

Section 2: Helping our people thrive (p28)

## We are guided by three Principles in all that we do:

### 1. Innovative metals and mining company

We will constantly look to strengthen our position in the industry and actively exploit new processes and technologies. Key to our approach is our focus on innovation and achieving the maximum benefit through our existing products and facilities, while also exploring opportunities to diversify our current portfolio with innovative products.

### 2. Long-term financial stability

This builds on our success in achieving a balanced capital structure and manageable level of debt as well as improving our operational efficiency over the past three years.

### 3. Embedded sustainability

We are a sustainable company dedicated to increasing both resource efficiency and contributing to the social development of our local communities in an environmentally responsible way. Sustainability is a natural outcome of running a business properly – in a way that goes beyond simply complying with local laws – and that supports our stakeholders across different generations.

# Governance

## Corporate governance

ERG is guided by its Board of Managers (Board), comprised of three founding shareholders and two representatives of the Government of the Republic of Kazakhstan. The Board is committed to ensuring that the Group strives to meet the highest business and ethical standards, and complies with local and international laws wherever ERG operates. It approves our Group policies and procedures, including our Code of Conduct.

The Board has established four committees to help it discharge its responsibilities in key governance areas. All Board committees have clearly defined terms of reference, which describe in detail their duties and the extent of their authority:

- Audit Committee: Responsible for overseeing the integrity of ERG's financial reporting, its internal controls and risk mitigation actions, the effectiveness of its Internal Audit function and the engagement of external auditors
- Compliance Committee: Responsible for overseeing ERG's Compliance function, including the monitoring of its effectiveness
- Remuneration Committee: Responsible for overseeing the remuneration of ERG's senior managers and monitoring of the Group remuneration system
- Sustainable Development and Mergers and Acquisitions (M&A) Committee: Responsible for overseeing M&A activity (including due diligence, the assessment and mitigation of related risks, structuring and implementation of projects, and post-acquisition integration),

as well as the integration of Sustainable Development into our business (through the Sustainable Development Council)

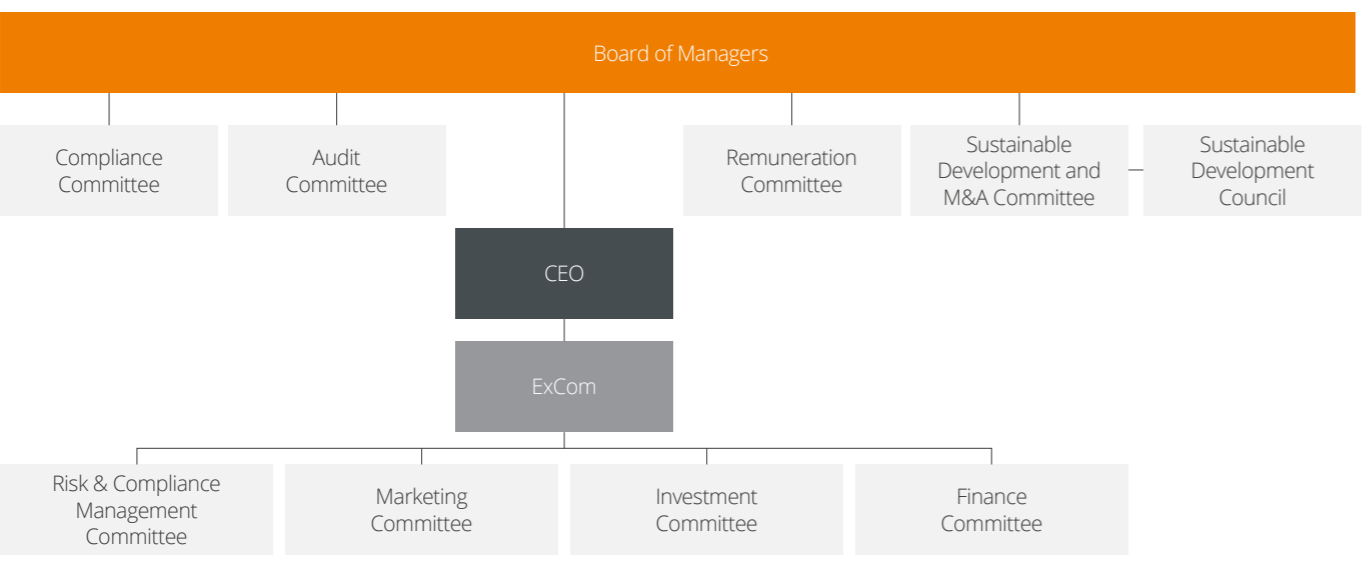
## Business sustainability leadership

Our Sustainable Development Council (SDC) acts as the working body of the Board's Sustainable Development and M&A Committee. Reflecting our more integrated approach to Sustainable Development, the SDC is responsible for considering key issues and initiatives around the following areas, all of which are aimed at supporting our business sustainability:

- Strategy development and strategic planning
- Architecture improvement and innovation
- Leadership programmes
- Financial and non-financial key performance indicators
- Business transformation



## Corporate governance structure



## Regional Health, Safety, Environment and Communities management

In Kazakhstan, our dedicated Health, Safety, Environment (HSE) Committee, which is made up of senior regional management and the General Directors of our production entities, defines our HSE strategy; reviews HSE policies, procedures and initiatives; sets the safety culture; and receives regular progress reports on controls implementation and improvements. The HSE Committee met regularly throughout 2017, reviewing reports on risks and mitigation actions presented by senior management, as well as addressing issues related to safe worker behaviour and contractor management.

In addition, there are two working bodies that oversee our community social investment (CSI) in Kazakhstan:

- A working group dedicated to the management of our memoranda of understanding with local governments, which account for the significant part of our CSI spending. When selecting projects, the working group considers a range of factors, including the socio-economic needs of our mining towns, our strategic priorities and the interests of all key stakeholders
- Our regional Sponsorship and Donations Committee, which aims to ensure that our CSI spending is carried out in a transparent and efficient way

In Africa, our Safety, Health, Environment and Communities (SHEC) performance is reported on a monthly basis to regional Executive Committee members, including ERG Africa's CEO; site General Managers; site SHEC managers, and selected senior employees. Participants in this process meet to analyse and discuss the cause of serious incidents, as well as preventative measures. The implementation of such measures is monitored by managers on a quarterly basis until issues are resolved. Specific attention is given to emerging trends in relation to:

- The causes of incidents
- Environmental compliance
- Progress against internal/external audit reports
- Corporate Social Responsibility
- Artisanal and small-scale mining
- Human Rights

At our operations in the DRC, we also continued to operate a formal Safety and Hygiene Committee as required under local law.



## Key external management system standards applied by ERG in Kazakhstan

OHSAS 18001	ISO 50001/EN 16001
Occupational health and safety management system standard	Energy management system standard
ISO 14001	ISO 9001
Environmental management system standard	Quality management system standard

## Key examples of Group- and regional-level participation in multi-stakeholder organisations

(member unless otherwise indicated)

Level of participation	Organisation
Group-level	• World Economic Forum (Strategic Partner Associate), including: 1. Global Battery Alliance (founding member and partner) 2. Partnering Against Corruption Initiative 3. Steward of Future of Economic Progress System • International Chromium Development Association
Kazakhstan	• Eurasian Industrial Association • Association of Mining and Metallurgical Enterprises • National Chamber of Entrepreneurs of Kazakhstan 'Atameken' • Association of Taxpayers of Kazakhstan • Kazakhstan Foreign Investors' Council • Kazakhstan for Sustainable Development Association
Africa	• Cobalt Institute (UK – Board representation) • Chamber of Mines of the DRC • Chamber of Mines of Zambia • Zambia Institute of Human Resource Management
Brazil	• Brazilian Mining Institute

# Understanding what matters

Our new 2025 Group strategy framework will ensure that we concentrate on what really matters – helping us make better decisions and use our resources more effectively. Our understanding of what matters most to our business and stakeholders is also underpinned by the following:



Analysis of external issues and dynamics	p12
Our risk management processes	p14
Stakeholder engagement	p16
Our materiality process	p18

## Analysis of external issues and dynamics

External issues and dynamics relevant to our business in 2017 include:

### Global metals demand and price trends

In 2017, prices for metals produced by ERG demonstrated healthy growth.

For example, economic growth in the main consuming regions helped drive robust demand for stainless steel (i.e. more than 6% year-on-year globally). In turn, this – along with other factors – helped push ferrochrome prices across all markets to their highest levels since 2011. In China, for example, prices increased by approximately 26% year-on-year, reflecting tight iron ore supply and higher ferrochrome production costs. Meanwhile, the mature ferrochrome markets experienced price increases of 40%-50%, reflecting both the strength of demand and the consolidation of the market under a limited number of high-quality suppliers.

Similarly, average iron ore prices saw 22% year-on-year growth. Stronger than expected Chinese steel demand, coupled with the shutdown of excess steel capacity in China and higher utilisation at steel mills, resulted in several waves of iron ore restocking. This was exacerbated by lower than expected supplies from major producers. At the same time, declining steel inventories, record levels of profitability at steel mills and environmental regulatory restrictions resulting in reduced production capacity in China, also supported increased demand for higher-grade ore.

The aluminium market began 2017 on a stronger footing, largely as a result of supply reform (such as cuts in illegal and non-compliant production capacity) and winter closures in China. Despite some initial market scepticism regarding the realisation of these reforms, the Chinese Government proved that its intention to reduce capacity was serious, helping aluminium cash prices surpass US\$2,100 per tonne.

It also proved to be a positive year for copper, which gained 30% in value year-on-year. While growth was slow in the first half of 2017, better-than-expected macro-economic data from China, as well as plans for a partial ban of scrap metal imports into the country, fuelled a major price rally from late-July.

Finally, cobalt experienced a bull market in 2017 thanks to expected long-term demand growth driven by electric vehicle technology.

#### Implications and responses

The recovery in prices across multiple products has played a major role in stabilising ERG as a business.

Nonetheless, we will continue to optimise our business, including through transformation, operational efficiency and innovation (p22-23 and p26-27). This is with the aim of ensuring we can withstand future price volatility, whilst continuing to deliver value to our stakeholders – thus ensuring the long-term sustainability of our business.

Furthermore, ERG is investing in a range of growth and renewal projects that will help ensure we benefit from the long-term shifts in metal demand that are expected as a result of global aspirations towards a ‘Green Economy’. This includes a focus on cobalt, copper, aluminium and ferrochrome (p24-25).

Finally, we are taking strategic steps to stabilise our SSGPO iron ore business (p26-27) – including through our innovative Smart Mine initiative, which leverages advanced digital technology.

### Belt and Road Initiative

China's Belt and Road Initiative (BRI) aims to create global trade networks and the physical/digital integration of international markets.

It includes a land-based ‘Silk Road’ across Eurasia (including Kazakhstan) and a sea-based route running between South East Asia, East Africa and the European Union.

In 2017, the BRI was reportedly underpinned by more than 40 national cooperation agreements. Furthermore, it is supported by financing from the recently established Asian Infrastructure Investment Bank.

#### Implications and responses

ERG is well-positioned to play a strategic role in the BRI, delivering the raw materials needed to help fuel manufacturing and economic growth in China. For example, China currently accounts for 15%-20% of ERG's sales – including high-quality ferrochrome for consumer goods, cobalt and copper. Likewise, Chinese financing and expertise in construction, engineering, technology and design (including large, state-owned contractors) continue to support our growth and renewal projects (p24-25).

This is supporting the diversification of ERG's portfolio and the sustainability of our business, whilst also helping ensure that we are well positioned to benefit from future market dynamics.

In this context, ERG is already working in partnership with the Chinese Government and Chinese financial institutions as part of the BRI. These projects are aimed at fuelling industrialisation and infrastructural growth, and are also improving the livelihoods of local communities. This includes the construction (in cooperation with Chinese contractor China Nonferrous Metal Industry's Foreign Engineering and Construction Co, the Export–Import Bank of China, the Industrial and Commercial Bank of China and the China Export and Credit Insurance Corporation) of our flagship Metalkol RTR project in the DRC. The project will be an important source of future cobalt supply for Chinese battery manufacturers (p24).

### Battery demand and the implications for cobalt

Cobalt-intensive battery technology is a key component in the global effort to reduce reliance on internal combustion engine vehicles. The trigger, alongside existing use of the metal in electronic devices, has been the development of more practical and affordable electric vehicles (EVs). Indeed, EVs – including both full electric and hybrid vehicles – may account for as many as one in every five vehicles sold by 2025.

The EV revolution has resulted in strong demand for cobalt, which is used in lithium-ion batteries to optimise the battery lifecycle and thermal stability. Cobalt prices increased significantly in 2017 as a result. The long-term fundamentals of cobalt remain strong. Demand for cobalt in electric vehicle batteries could grow by 200% by the end of the decade, and by 500% by 2025.

Around half of the world's cobalt reserves lie in the DRC, which is also responsible for more than 65% of global production. The DRC is likely to see sustained investment in cobalt projects over time. It is partly in this context that the Government of the DRC has introduced a new Mining Code in 2018, implementing more onerous fiscal terms on producers.

Given the security and human rights context posed by the DRC, there is concern that production from irresponsible and/or unregulated ASM operations is present in the global battery supply chain. This has raised significant concern with respect to the electronics and EV sectors, including amongst end users, NGOs and consumer facing brands (as well as their suppliers).

#### Implications and responses

The construction of the Metalkol RTR project will ensure that ERG enjoys one of the largest cobalt producing operations in the world – and is well positioned to benefit from the mineral's immediate price increase and long-term fundamentals.

Once at full production, Metalkol RTR is expected to produce around 105 kt of copper and 20 kt of cobalt per year (supplementing production from our Boss Mining and Chambishi Metals operations). Much of this output will be sold to the Chinese market – supporting battery manufacturing and the gradual global substitution of internal combustion technology.

We are aware, however, that we are operating in a sensitive socio-economic environment, characterised by poverty, active ASM and historical environmental degradation.

In 2017, we launched the Clean Cobalt Initiative to help ensure responsible, assured cobalt production, improve local communities' quality of life and support multi-stakeholder efforts to achieve responsible cobalt supply chains (p52). In addition, the Metalkol RTR project will actively ‘clean-up’ legacy waste in the area by reprocessing it and storing it in a responsible manner (p24 and p60-61).

### SDGs and the societal role of business

Adopted in 2015 by the United Nations (UN) Member States, the SDGs set the agenda for ending extreme poverty, fighting inequality and injustice, and protecting our planet by 2030.

The adoption of the SDGs sets an implicit challenge for companies, in terms of how they can positively contribute to the achievement of these goals – and also avoid undermining them.

- Key goals for extractive companies include:
- Number 7: Affordable and Clean Energy
  - Number 8: Decent Work and Economic Growth
  - Number 9: Industry, Innovation and Infrastructure
  - Number 11: Sustainable Cities and Communities
  - Number 12: Responsible Consumption and Production
  - Number 17: Partnerships for the Goals

The SDGs are likely to be an increasingly important benchmark that:

- Stakeholders can use to assess the positive and negative impacts of companies on society
- Companies can use to help guide their development of more sustainable business models that are aligned with the expectations and needs of a wide range of stakeholders

Indeed, the SDGs are already on the agenda of the mining sector, with the International Council on Mining and Metals issuing guidance on how the mining sector can contribute to the achievement of the SDGs – including how they can maximise their positive impacts and minimise their negative impacts in this regard. Similarly, the World Economic Forum has issued its own guidance to help the sector map its roles, responsibilities and opportunities across the SDGs.

#### Implications and responses

In this report, we have taken initial steps to relate our material issues (and own performance) to the SDGs.

This is part of a broader effort to better understand the relationship between our impacts, our operating environments and the UN-driven agenda.

This includes our identification of ‘priority’ SDGs for ERG – selected on the basis of potential business synergies, our actual or potential impact on their achievement and the degree to which each SDG is relevant to our areas of operation/local stakeholders (p19).

We believe that this approach will support our longer term business sustainability, by aligning our activities and decision-making with the priorities of our host governments, communities and other stakeholders.

Furthermore, the outcomes of this process will help inform a new Group strategy (p9) that will:

- Support the resilience and flexibility of our business
- Ensure we create shared value for our stakeholders

Risk management

Our risk management framework defines the oversight responsibilities for the Board and the Executive Committee. They are supported in this role by our Risk and Compliance Management Committee, as well as our Group Risk and Group Internal Audit teams. Our risks (and corresponding controls) are presented to the Board and the Risk and Compliance Management Committee on a quarterly basis.

Risk assessment is built into planning and decision-making, with each risk being assessed based on its potential health, safety, environmental, community, reputational, compliance and financial consequences. This allows us to adopt appropriate risk mitigation actions taking into account all underlying causes and consequences, and to embed sustainable business considerations into all that we do.

In 2017, we took steps to further enhance our Group-wide risk management system. This included:

- The updating of our risk management and internal control policies and guidelines in Kazakhstan (with plans for their future adoption across the Group)
- The development of a new Group-level project risk management methodology

Three Lines of Defence risk management model



ERG Group key risks

RISK DESCRIPTION

Political and regulatory risks

Political instability (in particular, in the DRC) and the introduction of new codes and regulations in our countries of operation.

Production and operational risks

Operational disruption and related safety/environmental impacts as a result of technical/mechanical failures and extreme weather.

Human resources risk

Inability to attract and retain personnel with the right skills and experience. This is in the context of a growing shortage of qualified personnel resulting in increased competition on the labour market in Kazakhstan and abroad.

RISK MANAGEMENT APPROACH

- Monitoring of potential changes in legislation and participation in professional bodies/associations
- Development of engagement strategies
- Assessment of capital investments against political risk and portfolio management

- Group seeks to identify catastrophic operational risks (pit slope failure, tailings dam failure, pit flooding, underground mine collapse, etc.), including through third-party engineering reviews, and implements effective controls
- Transformation of maintenance and reliability management
- Implementation of risk-based maintenance and reliability planning
- Operational site risk surveys are conducted on a regular basis by external independent surveyors
- Development of risk based maintenance programmes on a regular basis
- Long-term contracts with reliable power suppliers in Central Africa region
- Obtaining of appropriate property damage and business interruption insurance

- Competitive remuneration, including salary and performance-based remuneration, as well as social benefits. The Group develops and implements training and development programmes to cover its current and future requirements for qualified personnel
- Improved recruitment procedures and the implementation of actions aimed at personnel development and reduction of employee turnover
- Implementation of a social investment programme in the Group's regions of operation, specifically aimed at improving the quality of life for employees and their families

RISK DESCRIPTION

Financial risks

Limited access to financial resources, foreign exchange risk, liquidity risk, credit risk and tax risks.

Health, Safety, Security and Environmental risks

Potential regulatory and reputational impacts linked to operational activities that present inherent risks to the health and safety of workers and to the environment.

Compliance risks

The presence of the Group in operating environments that present high levels of inherent risk of non-compliance with laws relating to:

- The prevention of bribery and corruption
- Sanctions
- Tax legislation
- Supplier relationships
- Licencing
- Human rights
- Data protection (including the EU General Data Protection Regulation)

Capital project execution risks

Potential failure to deliver large-scale capital projects within agreed time, cost and quality criteria – reducing long-term profitability and damaging our reputation.

Information security

Potential operational, reputational, regulatory or other harm resulting from data leakage, mismanagement or theft – including loss of confidential data.

RISK MANAGEMENT APPROACH

- Continued enhancement of the Group's relationships with financing providers, close coordination with existing lenders and compliance with covenants
- Control of Group liquidity via monthly cash flow base and risk scenario analysis
- Development of treasury policies aimed at reducing levels of foreign exchange risk, liquidity risk and credit risk

- The prioritisation of safety during operations. Comprehensive safety reinforcement programmes are developed and implemented in all Group regions
- Application of a zero tolerance policy with regards to critical HSE risks, and resource allocation is prioritised for managing them
- Application of management systems to address Health, Safety, Security and Environmental risks
- Regular reporting on performance to management

- Application of Group policies and regular communication of a zero tolerance stance towards unethical activity
- Establishment of ERG Risk and Compliance Management Committee, which meets on a regular basis
- Ongoing operation of a whistleblowing hotline
- The execution of a counterparty due diligence procedure
- Adherence to international standards with regards to Human Rights
- Proactive efforts to comply with EU General Data Protection Regulation

- Implementation of a robust and transparent stage gate project management process to achieve successful project delivery
- Implementation of capital project risk management standards to major projects across the Group
- Securing of project financing and signing of effective memoranda of understanding with respective partners/suppliers where applicable
- Purchase of insurance for major projects (e.g. erection all risks, contractors' all risk and delay in start-up policies)

- Application of strict information security policies
- Implementation of information technology and information system audits

Introduction

1. Preparing our business for the future

2. Helping our people thrive

3. Community development and wellbeing

4. Environmental stewardship

5. Our relationship with broader society

Stakeholder engagement

Stakeholders are selected for engagement on the basis of:

- Their actual and potential impact on ERG's achievement of its business objectives
- ERG's actual and potential impact (positive and negative) on them

The identification, prioritisation and engagement of our stakeholders helps us:

- Understand the impact we have on others through our activities and relationships
- Minimise our negative impacts and maximise our positive impacts
- Monitor the effectiveness of our management activities
- Understand the risks and opportunities that our stakeholders represent to our business – and how our activities affect these risks and opportunities
- Identify and support partnerships to work together

Engagement takes place at the following levels:

- Corporate-level (i.e. strategic issues)
- Regional level (i.e. strategic/operational issues)
- Site-level (i.e. operational issues)



CATEGORY	STAKEHOLDER GROUP	ENGAGEMENT CHANNEL	ISSUES OF INTEREST IN 2017	RELEVANT SECTION
COMMERCIAL	Customers	<ul style="list-style-type: none"><li>• Interaction relating to product development</li><li>• Responding to customer surveys</li></ul>	<ul style="list-style-type: none"><li>• Supply stability/predictability</li><li>• Product quality/price</li><li>• Responsible production of cobalt</li></ul>	1
	Suppliers, business partners and contractors	<ul style="list-style-type: none"><li>• Engagement through business associations and initiatives</li><li>• Ongoing dialogue in relation to health and safety, training and auditing of performance</li></ul>	<ul style="list-style-type: none"><li>• Contract stability</li><li>• Predictable payments</li></ul>	1
FINANCIAL	Shareholders	<ul style="list-style-type: none"><li>• Updates to website, posting news, statements and operational reports</li><li>• Meetings and road shows</li><li>• Engagements focusing on financial services, their structure, volumes and value</li></ul>	<ul style="list-style-type: none"><li>• Sustainable business development</li><li>• Dividend generation</li><li>• Corporate reputation</li><li>• Cost performance</li></ul>	1
	Lenders		<ul style="list-style-type: none"><li>• Business performance</li><li>• Successful project execution</li><li>• Borrower risks</li><li>• Interest payments and principal debt</li></ul>	1
GOVERNMENT	National governments	<ul style="list-style-type: none"><li>• Engagement regarding the issuing of permits, compliance with regulations and supervision of activities</li><li>• Development of regulations and public policy</li><li>• Development of business-government partnerships (e.g. memoranda of understanding in Kazakhstan)</li><li>• Implementation of projects for socio-economic development</li></ul>	<ul style="list-style-type: none"><li>• Development of domestic skills and capabilities</li><li>• Innovative production approaches</li><li>• Legal/fiscal regime for mining in the DRC</li></ul>	1, 5
	Regional governments		<ul style="list-style-type: none"><li>• Regional socio-economic development</li></ul>	2, 3
	Regulatory bodies		<ul style="list-style-type: none"><li>• Environmental impacts, including emissions to air</li><li>• Workplace fatalities and injuries</li></ul>	2, 3, 4, 5



Photo credit: World Economic Forum

CATEGORY	STAKEHOLDER GROUP	ENGAGEMENT CHANNEL	ISSUES OF INTEREST IN 2017	RELEVANT SECTION
SOCIETY	Local communities	<ul style="list-style-type: none"><li>• Public hearings and meetings</li><li>• Socio-economic surveys</li><li>• Community social investment projects</li><li>• Information in local media</li><li>• Participatory Rural Appraisals</li></ul>	<ul style="list-style-type: none"><li>• Quality of life</li><li>• Employment generation</li><li>• Emissions to air</li><li>• Access to water</li><li>• Security and artisanal and small-scale mining in the DRC</li></ul>	1, 3, 4, 5
	NGOs, civil society organisations and media	<ul style="list-style-type: none"><li>• Membership in industry sector initiatives</li><li>• Multi-stakeholder initiatives and partnerships</li></ul>	<ul style="list-style-type: none"><li>• Information access and transparency</li><li>• Business ethics</li><li>• ENRC legacy impacts in the DRC</li></ul>	3, 5
	Broader society	<ul style="list-style-type: none"><li>• Implementation of CSI projects</li><li>• Press releases and other publications on CSI projects, financial information, information on project development</li></ul>	<ul style="list-style-type: none"><li>• Environmental impacts</li><li>• Employment generation</li></ul>	1
WORKFORCE	Employees and their representatives	<ul style="list-style-type: none"><li>• On-going dialogue between the management and teams</li><li>• Internal communication channels (Intranet, corporate publications, internal events etc.)</li><li>• Suggestions for ideas to improve productivity</li><li>• Meetings and surveys</li><li>• Ongoing dialogue through established industrial relations channels</li><li>• Collective bargaining agreements</li><li>• Accident investigations</li></ul>	<ul style="list-style-type: none"><li>• Conditions of employment</li><li>• Training and development</li><li>• Occupational health and safety</li><li>• External living conditions for employees and families</li></ul>	2
	Senior managers		<ul style="list-style-type: none"><li>• Capability development</li><li>• Professional development</li></ul>	2

Materiality process

This report has, for the first time, been directly informed by a new internal materiality process, which draws on ERG's ongoing risk assessment process and stakeholder engagement activity. This reflects our ongoing efforts to continuously improve our management of Sustainable Development – including strategy and reporting.

This initial phase of work will be supplemented by an additional external review and feedback exercise in 2018, to verify the results and ensure the process complies with the requirements of the Global Reporting Initiative (GRI) Standards.

As well as informing future Sustainable Development reporting, the materiality process will help inform our Sustainable Development strategy.

Supporting materiality process



Material issues based on internal assessment

Material issues based on internal assessment				
Preparing our business for the future	Helping our people thrive	Community development and wellbeing	Environmental stewardship	Our relationship with broader society
Transformation	Health and safety	Community impacts	Water availability	Value generation and distribution (incl. local content)
Governance and compliance	Skills, capabilities and development	Community investments	Pollution prevention	Human rights
Efficiency and innovation	Diversity and inclusion	Artisanal and small-scale mining	Energy and climate change	Anti-corruption and business ethics
Risk management	Labour relations	Indigenous people and traditional communities	Waste management	Government relations and policy
			Responsible closure and transfer	
			Biodiversity	

Material Issues <sup>1</sup>		
The process identified our most material Sustainable Development issues.		Please note that this report is structured around each of these Material Issues, with individual content sections dedicated to them within each relevant chapter. <sup>2</sup>
1. If an issue does not appear on this list, it does not mean it is irrelevant or is not being managed, but only that it is not of sufficient significance to be addressed in detail in this report. 2. Please note, 'Community impacts' and 'Energy and climate change' are also covered in this report, despite not being identified as material issues. This is in recognition of the fact that – as well as being relevant to ERG – both are areas of specific interest to external stakeholders.		
MATERIAL ISSUE (in alphabetical order)	SHORT DESCRIPTION	RELEVANT UN SDGs
Anti-corruption and business ethics	Avoidance of unethical and/or illegal actions by the Group, its employees or its business partners (including bribery, fraud, facilitation payments, anti-competitive behaviour and breach of international sanctions).	16 PEACE, JUSTICE AND STRONG INSTITUTIONS
Artisanal and small-scale mining	The presence of – and interaction with – ASM communities within or near ERG's concession areas, including efforts to promote responsible mining practice, address risks related to human rights and labour rights, and deliver assurance to downstream actors in the value chain.	8 DECENT WORK AND ECONOMIC GROWTH 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 16 PEACE, JUSTICE AND STRONG INSTITUTIONS
Community investments	Voluntary and/or mandatory spending specifically aimed at enhancing socio-economic conditions inside and outside of ERG's local communities. <sup>3</sup>  3. Please note that community-focused spending linked to our employees is addressed under 'Labour relations'.	1 NO POVERTY 3 GOOD HEALTH AND WELL-BEING 4 QUALITY EDUCATION 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 11 SUSTAINABLE CITIES AND COMMUNITIES 17 PARTNERSHIPS FOR THE GOALS
Efficiency and innovation	Enhanced operational performance through the application of improved production processes, technologies and management approaches; innovation; enhanced productivity, performance and operational efficiency; and the generation/development of innovative ideas across ERG.	8 DECENT WORK AND ECONOMIC GROWTH 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Government relations and policy	Relations between ERG and host – and other third-party – governments, including positive and negative mutual impacts (e.g. policy, fiscal regimes, economic strategy, geopolitics, advocacy, state share ownership, etc.).	16 PEACE, JUSTICE AND STRONG INSTITUTIONS 17 PARTNERSHIPS FOR THE GOALS
Health and safety	Delivery of a safe and healthy workplace that does not undermine the physical or mental wellbeing of employees in the short- or long-term.	8 DECENT WORK AND ECONOMIC GROWTH
Labour relations	Bilateral relations with our workforce and their legitimate representatives on salient workplace issues (including pay, benefits, working conditions, collective bargaining, industrial action, etc.) and non-workplace issues (such as quality of life and family welfare in our local communities).	8 DECENT WORK AND ECONOMIC GROWTH 11 SUSTAINABLE CITIES AND COMMUNITIES
Pollution prevention	Responsible management of potentially harmful emissions to the environment. <sup>4</sup>  4. Excluding carbon emissions, which are addressed separately under 'Energy and climate change'.	6 CLEAN WATER AND SANITATION 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Skills, capabilities and development	Developing skill and capability levels within our workforce.	8 DECENT WORK AND ECONOMIC GROWTH
Transformation	The delivery of sustainable growth and reduced costs through the development of the integrity of our assets, the security of new business partnerships, the implementation of industry leading management and sustainable development practices as well as strengthening our ability to respond to a changing external environment.	8 DECENT WORK AND ECONOMIC GROWTH 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Value generation and distribution (incl. local content)	The generation of economic value by ERG in the short-, medium- and long-term as a result of its core business activities – and the distribution of such value to its stakeholders (e.g. operating costs, taxes/royalties, staff pay/benefits, dividends, finance costs and community social investment).	1 NO POVERTY 8 DECENT WORK AND ECONOMIC GROWTH
Waste management	Responsible approaches to waste generation, management and disposal (e.g. overburden, tailings, slag, general industrial waste, etc.). This includes waste-related risks, opportunities and impacts linked to physical integrity, recycling, marketing, pollution, environmental liabilities, etc.	12 RESPONSIBLE CONSUMPTION AND PRODUCTION

## Section 1

# Preparing our business for the future

Renewal, growth and innovation



### 1.1 Transformation



 P22

### 1.2 Development of our portfolio



 P24

### 1.3 Efficiency and innovation



 P26

## Materiality<sup>1</sup>

During the last four years, we have successfully stabilised and transformed our business

Key enabling factors included:

- A diversified project portfolio
- The maintenance of relationships with our existing business partners
- The Government of the Republic of Kazakhstan's stake in the Group
- Revision of the debt repayment schedule with key lenders
- Continuous cost optimisation programmes

It is now important that we build on this solid foundation to ensure we continue to generate sustainable value in the short-, medium- and long-term. This is not only in the interests of our shareholders, but is also vital for the future of a broader set of stakeholders, who benefit from the value we generate (p16-17).

As such, we must ensure we maintain a robust, flexible and sustainable business that not only survives changes in market conditions, but can successfully anticipate and address attendant risks and opportunities – and thrive as a result. It is in this context that we aim to embed sustainability throughout all aspects of our business and incorporate this as a key focus of our business strategy.

<sup>1</sup> i.e. why this issue matters to our stakeholders and/or to our business.

### Relevant Priorities in the 2025 Strategy

#### Focus area: Portfolio

- Asset development in Kazakhstan
- The optimisation of our portfolio of international assets
- The extension of our mining portfolio

#### Focus area: Efficiency

- The improvement of operational efficiency
- The development of mechanisms to support and maintain a culture of continuous improvement

### Key UN Sustainable Development Goals



Section 1: Preparing our business for the future *continued*

**Business performance in 2017**  
More favourable market conditions, in combination with our past and current efforts to support the sustainability of our business, have helped to support improved financial and production indicators in 2017. For example, in 2017 ERG achieved:

- Underlying EBITDA of US\$2,090 million (a 42.4% increase on 2016)
- A net debt to underlying EBITDA ratio of 3.39 (compared to 4.77 in 2016)
- An underlying EBITDA margin of 41.4% (up by 3.2 percentage points compared to 38.2% in 2016)

The year also saw an improvement in production levels, particularly with respect to ferroalloys, iron ore, aluminium and coal.

We aim to embed sustainability throughout all aspects of our business and incorporate this as a key focus of our business strategy



Group production			
Product	2017 (kt)	2016 (kt)	Change (%)
Saleable ferroalloys	1,496	1,361	+9.9
Saleable iron ore concentrate and pellets	10,585	9,809	+7.9
Alumina	1,509	1,500	+0.6
Aluminium	257	240	+7.1
Saleable copper (contained)	142.7	142.2	+0.4
Cobalt (contained)	2.5	5.1	-51.0
Coal	27,472	24,679	+11.3

1.1 Transformation

**Key Strategic Goals in the 2025 Strategy**

- The development of mechanisms to support and maintain a culture of continuous improvement

The global commodity downturn demonstrated that we needed to explore new ways of thinking, working and organising our business. To this end, we continued to develop and apply international standard management systems, practices and organisational structures – supporting our strategic objective of being a high performing organisation. This includes a strong focus on:

- Business process standardisation, improved planning, disciplined capital allocation, as well as enhanced costs/productivity
- Promoting innovative operational and management approaches across the business
- Achieving higher levels of employee engagement around common business goals

The key stage of our transformation journey (presented in the figure on the opposite page) started in 2014 in Kazakhstan, when the decision was made to enhance the central management and oversight of our entities. This involved the expansion of our corporate office, as well as the implementation of centrally approved management plans and processes for each entity, including:

- Five-year plans
- Budgets
- Key performance indicators
- Procurement plans

In parallel, we placed greater emphasis on the implementation of processes that focus on value-creation for ERG and all of its stakeholders. This was supported by a switch from a ‘functional’ approach to management (i.e. managing via individual functions) to a ‘process-driven’ approach (i.e. managing across different functions involved in any cross-cutting processes).

In 2016, a further evolution took place. Building upon our recently established process-driven approach to management, we established the Sustainable Development Council (p10), which was tasked with supporting the achievement of the Group’s strategic objectives, the achievement of sustainable development of the business and the generation of value for all stakeholders. It is in this context that in 2017 we continued to pursue these goals through our transformation efforts.

**Enhanced management practices**  
We continued to implement existing initiatives to improve the management of our business. Collectively, these have materially improved our management in the following areas:

- Sales: Including a focus on long-term contracts, enhanced market analysis and integrated coordination with our operations
- Capex: Including a detailed 10-year Group-level plan, the application of a best practice stage gate process, centralised management and monitoring of major projects, and periodic progress reporting to the Board

- Planning: Including tools to support short-, medium- and long-term planning, analysis of the consequences of decision-making and regular internal and external communication of our strategic plan. This includes the implementation of a new 18 month rolling forecast process based on drivers to help senior management understand the implications of their decisions – as well as internal and external influences on liquidity
- Procurement: Including centralised regional planning and analysis and automated processes

- Key transformation programmes first initiated between 2009-2015**
- SAP® implementation – a process that was completed across Kazakhstan in 2017, representing the ultimate operationalisation of our process-driven approach
  - Entity-level introduction of robust financial modelling and forecasting at regional and Group levels
  - Enhanced and centralised procurement planning and management processes
  - A new sales strategy – including the restructuring of our Sales and Operational Planning function to ensure integrated commercial decision-making and coordinated operational planning
  - Project Minus 10%, aimed at reducing costs by 10% through operational efficiency
  - A transparent, process-based system of KPIs

- Key transformation programmes first initiated in 2016**
- The introduction of uniform principles and management mechanisms for all assets within the Group (completed in 2017)
  - Introduction of common, cross-Group capital governance and project management processes and a dedicated Group-level Investment Committee
  - The integration of all Group planning processes at all levels
  - ERG 4.0 – including ongoing efforts to increase internal digitalisation
  - Establishment of a dedicated Operational Excellence team to drive productivity and reduce costs
  - Enhanced efficiency and restructuring processes to support transformation, including delegation of authority, cost management and office restructuring

- Key transformation programmes initiated in 2017**
- The centralisation of our sales and marketing companies’ financial functions and of our legal and IT services in Kazakhstan
  - The establishment of the ERG Academy, a strategic programme in Kazakhstan through which we deliver a structured training, development and leadership curriculum and support a coherent corporate culture
  - The transition of our African assets to a single integrated performance management system using Dynamics 365 software. This process will be focused on our Supply Chain, Finance and Human Resources functions and will be completed in 2019

- Implementation of Dynaway enterprise asset management system to enhance maintenance management at our Boss and CCC mines in Africa – in a process that will be completed in 2018
- In addition, we implemented Project Baobab in Africa, which saw more than 150 cross-disciplinary participants develop Functional Handbooks defining organisational structures, business processes, as well as business infrastructure and systems, amongst other elements. This will provide the foundation for the implementation of a process-driven management model in the region.
- Collectively, such measures have helped us achieve a balanced management system to support the resilience of our business.

- Planned transformation programmes for 2018**  
In Kazakhstan, we plan to:
- Implement a new maintenance and reliability management programme
  - Audit the application of SAP® at our entities and identify areas for improved performance
  - Roll out further digitisation projects beyond our Kacharsky mine (p26), including advanced vehicle dispatching systems
  - Implement a number of financial projects with the aim of further centralisation and ‘fast close’

Transformation journey



# 1.2 Development of our portfolio

**Key Strategic Goals in the 2025 Strategy**

- Asset development in Kazakhstan
- The optimisation of our portfolio of international assets
- The extension of our mining portfolio

During the year, we continued to develop our asset and product portfolio to support the future success of our business. This included key projects that will better position us to help drive, and profit from, future shifts in metal demand (p25).

**Cobalt and copper**  
**The Metalkol Roan Tailings Reclamation Metalkol (RTR) project in the DRC**  
In 2017, construction continued on our flagship Metalkol RTR project.

This is in the context of our participation in China's Belt and Road Initiative and receipt of Chinese investment for our development projects, including Metalkol RTR.

The new processing plant will reprocess legacy cobalt-copper tailings at one of the largest tailings deposits in the world, accumulated over decades of operations at the site. These tailings, which were released into the environment (including into the Musonoi River) by previous operators from the 1950s onwards, continue to cause pollution that affects local water and surrounding communities. By reprocessing and responsibly storing these tailings, we will become a major, low-cost cobalt and copper producer, as well as owners of a new strategic source of responsibly mined, low-cost cobalt to add to the global value chain. In turn, this will generate responsible supply chain assurance for our customers (p51 and p60).

**The Boss 50 project to increase copper output in the DRC**  
In 2017, we completed an investment of more than US\$50 million in a project to increase copper production at Boss Mining to 50 kt per year – an increase of approximately 16 kt. This was done through the construction of a new tank leach plant and supporting infrastructure.

**Frontier life of mine extension through the Cut 3 project in the DRC**  
In 2018, we are planning to continue investment in our Frontier Mine to extend its life. This includes the Cut 3 project, which assumes the stripping of up to 28 million cubic meters of overburden to push back the pit boundaries and expose over 300 kt of economically recoverable copper. This has the potential to extend the mine's life by up to four years. Once



implemented, the project could support average production of over 60 kt a year of copper contained in concentrate between 2019 and 2023 – and potentially lay the ground for a subsequent Cut 4 project. In turn, this would help ensure sustained value creation for ERG's local stakeholders, including employees and community members.

**Aluminium**  
**Adding value to aluminium through the KAS-2 project in Kazakhstan**  
In 2017, in response to increased demand for our aluminium, we initiated the KAS-2 project at our Kazakhstan Aluminium Smelter. This involves a prefeasibility study to expand overall aluminium smelting capacity and investigate further integration down the value chain by producing aluminium alloys in different forms such as slab, rod and T-shaped pig. If approved, the project will add value to our alumina reserves and power resources.

**Using advanced filtration to reduce emissions at Aluminium of Kazakhstan**  
We have started a significant investment programme to upgrade the filters at Aluminium of Kazakhstan's sintering workshop in the Pavlodar region. This cutting-edge filtration technology will result in significant reductions in particulate emissions. As a result, it will materially reduce our contribution to air pollution linked to multiple heavy industrial and mining enterprises in the region (as well as domestic coal-users).

Our Metalkol RTR project will make us a major producer of low-cost copper and cobalt – and add a new strategic source of responsibly mined cobalt to the global value chain

The DNK Phase 2 is expected to increase output of chrome ore and ensure stable production at Kazchrome

**Ferroalloys**  
**Development of DNK mine in Kazakhstan**  
Some of the mines supplying chrome ore to Kazchrome are expected to progressively produce lower volumes. In this context, we continued to develop the second phase of our DNK mine, which will potentially use block-cave mining to produce replacement production volumes. The project is expected to help increase production at the DNK mine and ensure overall production at Kazchrome will remain stable over the long-term. First ore from the DNK second phase is planned for 2023.

**Expanding production at the Aksu Ferroalloys Plant in Kazakhstan**  
In 2017, we commissioned a major rebuild of the Aksu plant's No.64 smelter furnace (under the continuing Workshop No.6 Renovation project) – including gas-tight sealing of the furnace. This will help us harvest ferroalloy gas and use some of it to heat charge materials during feeding. This programme is expected to improve furnace productivity by 50%, whilst also reducing energy consumption by up to 20% and (in conjunction with the installation of two modern gas cleaning devices) reducing our emissions to air. In coming years, similar renovations will be implemented at other furnaces in the workshop. After the full renovation is completed, the workshop is expected to produce up to 500 kt of high carbon ferrochrome a year.

**Other projects**  
In addition to the above, we are implementing additional growth and renewal projects to support our general business sustainability, including the following:

**Advancement of the Bahia Mineração (BAMIN) project in Brazil**  
BAMIN is a high-quality iron ore deposit with direct-shipping ore (DSO) and concentrate production potential.

- In 2017 we:
- Carried out work on the (now complete) project feasibility study
  - Placed strong focus on maintaining our environmental licences

In this context, BAMIN has achieved status as an example of environmental best practice in the State of Bahia. This is a vital enabling factor in

this strongly regulated and environmentally sensitive region. Once constructed, BAMIN is expected to produce 18 mt of iron ore per year, with a total mine life of 30 years.

**Major upgrade of the Aksu Power Plant in Kazakhstan**  
Power Unit No.7 of the Aksu Power Plant is currently planned for decommissioning in 2019, which would result in an intra-Group energy capacity shortage. In 2017, we developed a major conceptual project to reconstruct the unit that will involve the full replacement of the main generators and increase capacity from 300MW to 325MW. The prefeasibility study for the project is due to be completed by the third quarter of 2018, with the project then moving to feasibility, to prepare for the start of decommissioning and construction by 2019.

## Providing the raw materials for the 'Green Economy' of the future

Beyond our own environmental performance, we are proud to play a broader role in helping enable – through the production of aluminium, copper, cobalt and ferroalloys – the global 'Green Economy'. As noted by the World Bank<sup>2</sup>, these metals are expected to play an important role in supporting 'cleaner' technology

**Cobalt**  
Cobalt, which is a vital component in lithium-ion batteries used in electric vehicles. Growing production of electric vehicles is likely to significantly increase demand for cobalt. As such, increased supply of cobalt is likely to have a material impact on the gradual future transition from hydrocarbon vehicles to electric vehicles.

**Aluminium**  
Aluminium, which is integrated into photovoltaic generation structures, wind generation structures, and lithium-ion batteries, could play a key role in the reduction in the weight of future fuel-efficient and/or electric vehicles. According to the World Bank, the metal is expected "to benefit amongst other metals from a low carbon energy shift over the century".

2. World Bank, The Growing Role of Minerals and Metals for a Low Carbon Future, <http://documents.worldbank.org/curated/en/207371500386458722/pdf/117581-WP-P159838-PUBLIC-ClimateSmartMiningJuly.pdf>

**Ferroalloys**  
Ferroalloys, which are essential components in the manufacture of stainless steel, are required for the development of advanced coal-fired power stations (including boilers and pipework) and for gas turbine generation. Stainless steel also plays an important role in nuclear power generation structures.

**Copper**  
Copper, which is a key input material for renewable energy infrastructure and electric vehicles. For example, it is estimated that the motors used in electric vehicles use approximately four times as much copper compared to traditional combustion engines. The metal is also (like cobalt) an essential component for lithium-ion batteries, power inverters and charging infrastructure. Furthermore, the World Bank notes that the 'spread of distributed energy generation and electricity access is likely to increase future demand for more electrical cabling' resulting in greater demand for copper and aluminium.

# 1.3 Efficiency and innovation

**Key Strategic Goals in the 2025 Strategy**

- Asset development in Kazakhstan
- The improvement of operational efficiency
- The development of mechanisms to support and maintain a culture of continuous improvement

Efficiencies can be achieved through a variety of means, including the optimised use of our existing deposits, infrastructure and equipment. In addition, we also look for economically effective opportunities to replace legacy equipment where it will deliver sufficient returns – in terms of output, costs, environmental impacts or other variables that support our business sustainability.

Similarly, innovation and finding new ways of doing things through the application of advanced technology can help improve productivity. In Kazakhstan, this process is supported by our R&D team (consisting of approximately 85 people) made up of scientists and analysts based in Astana, as well as their colleagues located in laboratories across our entities.

**Operational Efficiency Management Process in Kazakhstan**

In 2017, we built on our existing Project Minus 10% by developing a structured and ongoing Operational Efficiency Management Process. Examples of key projects include:

- SSGPO railroad review: This saw continued efforts to adapt transportation infrastructure at the Sarbai pit, to allow access to economically recoverable iron ore reserves around the pit perimeter. This has saved an estimated US\$18.5 million in costs over two years and has extended the mine's life
- SSGPO vehicle performance monitoring: This saw (in the context of our Smart Mine initiative, see below) the application of a fuel measurement system that supports the tracking and minimisation of idle time within the fleet, producing savings of US\$15.9 million in 2017

During 2017, this management process delivered total cost savings of US\$114.5 million in Kazakhstan. This compares to general efficiency savings of US\$65 million in 2016 – an 88% increase.

**Innovator's Forum on Industry 4.0 and idea-generation in Kazakhstan**

We held our second Innovator's Forum, which involved a broad range of international experts, senior ERG managers, ERG employees, government officials and other sector specialists. Participants examined the opportunities that the Fourth Industrial Revolution could bring to the sector generally and ERG specifically – including in relation to production processes, automation and digitisation.

In addition, the Forum integrated an expanded competitive programme, focused on production improvements, operational efficiency and the introduction of innovative ideas. This produced an additional eight initiatives – adding to more than 800 internally-generated initiatives submitted by employees via our internal Ideas Portal (more than 450 of which are currently being implemented and monitored).

**Mine benchmarking and modelling in Kazakhstan**

We initiated a programme to engage the world's leading mining consultancies to analyse our mines and current mining plans, with the aim of identifying:

- Low capex operational improvements
- Transformational improvements that may require additional capital expenditure

The process, which will include international benchmarking against other operations, will be applied at all operational mines in 2018.

In addition, we continued the implementation of a Mine Modelling initiative (using advanced software) to help de-risk our mines in terms of operational disruption, ore accessibility and safety. In 2017, we launched the implementation of this initiative at Donskoy chrome mine.

**Stabilisation of our SSGPO iron ore business in Kazakhstan**

In response to reduced production and a significant fall in the price of iron ore, in 2017 we implemented measures to support the economic viability of our SSGPO iron ore business. This included:

- Application of the Smart Mine initiative at our Kacharsky mine (p26)
- An operational efficiency programme that generated almost US\$18.5 million in savings

We expect these initiatives to collectively contribute to enhanced production performance in 2018.

Other important initiatives include:

- A 2017 operational efficiency study at Aluminium of Kazakhstan and Eurasian Energy Corporation, which is informing work plans for 2018
- The rollout of a programme in 2017 to improve production capacity and reduce costs at Kazchrome operations. The programme is expected to increase high-carbon ferrochrome production by 10%, without major capital expenditure
- Planned application of predictive plant maintenance in 2018 and 2019, including the application of remote sensor technology

## Industry 4.0, digitisation and cyber security

As demonstrated by the Smart Mine initiative at our Kacharsky mine (SSGPO), we are actively working to prepare the Group so that it can reap the benefits of Industry 4.0

This includes the digitisation of production and application of sensor technology, the generation of data driven insight and cloud computing.

To enhance these initiatives, the Group started deploying a new major programme – building a single Manufacturing Execution System (Cloud MES) layer between all production systems at the business units and an existing single instance ERP solution. Cloud MES will be the base for collecting and harmonizing all operational data into a single, ready for further analysis 'data lake'. In its turn, the 'data lake' will give a big impulse to completely new big data and machine learning cases in the production processes. The Group is currently actively working on its first pilots in big data and machine learning cases.

In this context, we are prepared to mitigate a range of cyber security risks. In 2017, we carried out a gap analysis at our Kazchrome and European offices against the ISO 27001 information security management system standard. The results of this process have informed our work plan for 2018 and beyond, including the establishment of a centralised cyber security team in Astana and compliance to the ISO 27001 standard.

In addition, we plan to establish a venture fund to invest in high-potential digital projects and digital partnerships with the Government of the Republic Kazakhstan, within the context of its national digitisation programme.

## Smart Mine Initiative

We believe there are still significant opportunities to improve our operational efficiency and further reduce our costs

One of the means by which we are doing this is through our Smart Mine initiative, which we have rolled out at our Kacharsky mine (part of the SSGPO iron ore business).

This data collection and analysis project provides full transparency and automated control over a range of operational efficiency indicators – across the iron ore concentrate production lifecycle.

This includes:

- Production process monitoring
- Pit monitoring
- System modification
- Mine vehicle and logistics optimisation

The project is expected to deliver cost savings of US\$1.4 million per year and improve capital productivity as a result of reduced failures, improved equipment wait-times and enhanced coordination of our mine trucks. It has highlighted the strategic opportunities that digital data collection and analysis could represent for the rest of our business.

As a result, we plan to have completed the rollout of the initiative to our open-pits in Kazakhstan by the end of 2019. This is aligned with the Government's goal of promoting digitisation within the economy of Kazakhstan, and our aspiration to leverage Industry 4.0 to the advantage of our business and stakeholders.



## Section 2

# Helping our people thrive

Supporting employee safety, development and wellbeing



### 2.1 Health & safety



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### 2.2 Skills, capabilities and development



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### 2.3 Labour relations



 P36

## Materiality

As an operator of mines, as well as other heavy industrial facilities, the safety and wellbeing of our people is paramount

Providing a safe and healthy working environment is not only the right thing to do; it is also important for the maintenance of our operational continuity, efficiency and the motivation of our employees. In this context, we are fully committed to the achievement of Zero Harm.

Like any business, our ability to continue generating value is dependent on our attraction, development, motivation and retention of high quality, skilled employees. The transformation of our business makes this even more important to ERG. Achieving integrated management, enhanced planning, effective capital allocation, cost efficiencies and improved productivity also requires the evolution of our organisational culture.

Finally, as a diversified natural resources business with more than 69,000 employees, our labour relations have a direct impact on our productivity, efficiency and profitability. In this context, we take a truly holistic approach to labour relations that focuses as much on meeting the social needs and living standards of our employees and their families, as it does on the effective engagement of our people within the work environment.

Key issues in this regard include:

- Health and safety
- Skills, capabilities and development
- Labour relations

### Relevant Priorities in the 2025 Strategy

#### Focus area: People

- Keeping our people healthy and safe
- Improved employee wellbeing
- The development of skills and knowledge
- Development of our talent pool
- Increased employee engagement and cohesion

### Key UN Sustainable Development Goals



Workforce profile

At the end of 2017, we employed 69,090 people (2016: 68,623) – of which approximately 90% are located in Kazakhstan.

FEMALE EMPLOYEES  
**24%**  
of our workforce are women

TRADE UNION MEMBERS  
**+90%**  
More than 90% of the Group's employees are trade union members

NUMBER OF EMPLOYEES BY REGION  
**69,090**

Kazakhstan	62,100
Africa	6,651
Brazil	103
Corporate offices <sup>1,2</sup>	236

1. Includes offices in Europe, Russia, UAE and China.  
2. Headcount of corporate offices in Kazakhstan, Africa and Brazil are included within each relevant region.

How we manage our workforce  
Our commitment

We are committed to delivering a safe, attractive, productive and stable working environment for all our employees and contractors. Our commitments in this regard are supported by the requirements of our Health, Safety and Environment (HSE) Policy Statement, Human Rights Policy and our Code of Conduct.

Our HSE Policy Statement commits us to:

- Continually improving our performance
- Assessing and managing our risks
- Carrying out training, communication and reporting
- Implementing audit and review processes

Under our Human Rights Policy we are committed to respecting universally recognised human rights and labour standards. The policy includes commitments in relation to:

- The provision of safe and healthy work conditions
- Respect for employees' rights to freedom of association and collective bargaining
- The provision of a secure work place
- The prevention of forced and child labour
- Respect for equality, diversity and non-discrimination

These commitments are supported by the terms of our Code of Conduct.



Implementation of our commitments

In Kazakhstan, our overall approach to employee management is executed through entity-level human resource policies and frameworks. In late 2017, we established a Staff and Remuneration Committee in Kazakhstan, which meets on a monthly basis. The Committee supports regional-level coordination in relation to a range of areas, including organisational planning, recruitment, employee motivation, remuneration, talent management and social benefits.

Furthermore, all of our operations in Kazakhstan are certified to the OHSAS 18001 occupational health and safety management systems standard. In 2017, we began implementation of an integrated performance management system across our operations in Africa. This aims to embed a process driven and systematic framework to manage our employees in the region. We plan for the system to be fully operational in 2019. We also apply a Safety, Health, Environment and Communities (SHEC) management system at our operations in Africa that is aligned with OHSAS 18001.

We respect the right of our employees to join trade unions and bargain on a collective basis. More than 90% of our employees are trade union members.

All of our operations in Kazakhstan are certified to OHSAS 18001

2.1 Health and safety

Key Strategic Goals in the 2025 Strategy

- Keeping our people healthy and safe
- Improved employee wellbeing

We are committed to achieving Zero Harm

Ensuring the health and safety of our people – employees as well as contractors – is a fundamental tenet of our business. In line with our Group HSE Policy Statement, we are committed to the continuous improvement of all our working environments and to achieving Zero Harm.

In Kazakhstan, our dedicated HSE Committee, which is comprised of corporate and regional senior leadership, sets our strategy in relation to occupational health and safety, reviews related policies and procedures, sets the safety culture and receives regular progress reports to ensure that the implementation of safety controls and improvements are carried out.

In Africa, safety and broader sustainability performance is reported monthly to our regional Executive Committee, which includes the ERG Africa's CEO; site General Managers; site SHEC managers, and selected senior employees. At our operations in the DRC, we also operate formal Safety and Hygiene Committee as required under local law. Employees are represented on this Committee by trade union representatives.

Our health and safety performance is reported (through our Chief Financial Officer's report) to the Board on a regular basis.

Key issues and initiatives  
Safety improvements

The maintenance of a safe working environment for our employees is a precondition for our operational work. To this end, we took a number of steps in 2017 to support the continuous improvement of our safety performance.

Kazakhstan

In 2017, we rolled out our corporate safety improvement programme in Kazakhstan. This defines key areas of management focus, mid-term targets and new initiatives. Key areas of focus and progress in 2017 include:

- Motivation, competence and awareness: This included the rollout of our Employee Safety Motivation Policy to all operations in Kazakhstan as well as new safety KPIs for line



management personnel. In addition, we implemented an employee awards scheme to encourage the reporting of safety risks

- Safety management systems: This included our review and revision of our transportation safety procedures (in the context of our significant vehicle operations) and the implementation of an automated incident data management system to ensure timely and efficient communication of safety risks
- Equipment and workplace safety: This included an equipment risk assessment across all our operations, and the development of a five-year equipment renewal plan

We also conducted internal audits, and assessed the results with our corporate safety standards. The findings have informed our improvement plans for 2018.

Embedding a safety-first culture through ongoing training is a key component of our safety management strategy. In 2017, we trained around 100 health and safety trainers to help increase our capacity to deliver safety training across our operations in Kazakhstan.

Throughout the year, we also continued to deliver onsite safety training for operational employees including site inductions, role-specific training and regular team safety briefings. Furthermore, we expanded our training to prevent unintentionally hazardous behaviours to our remaining entities in Kazakhstan during 2017.

Additional measures to support our safety efforts included:

- Ongoing risk assessments across all operational roles to inform the development of risk mitigation actions in 2018 – as well as a gap analysis of our safety risk management standards

In 2017, we implemented a new SHEC Policy for our Africa region aligned with the IFC Performance Standards

- Implementation of a new programme to address the causes of frequent but low impact safety incidents (such as slips and trips) that disproportionately contribute to lost time injuries (LTIs)
- A cross-entity employee survey to benchmark safety culture against international standards
- Integration of operational risk assessments into capital expenditure planning
- Installation of video surveillance systems to more effectively monitor high risk roles and the ongoing use of drones to undertake high risk site surveys

Africa

In 2017, we implemented a new SHEC Policy for our Africa region. This is aligned with the IFC Performance Standards – including Performance Standard 2 (Labour and Working Conditions).

We are in the process of rolling out an integrated Isometrix software programme to further enhance audit standards across our operations in Africa. This includes an HSE module (in addition to environmental and social modules) to help centralise and standardise HSE audit standards, processes and outcomes, whilst also improving central oversight and the generation of value-adding safety data analytics. The programme will be fully operational in 2018.

Section 2: Helping our people thrive *continued*

We also carried out safety training, including:

- Refresher training for operators on adherence to Group safety procedures
- Awareness training for operational employees on Group policies and procedures relating to higher-risk aspects of operational safety

**Brazil**

We have implemented a range of safety measures to ensure the safe and predictable development of our iron ore project in Brazil. This includes the ongoing delivery of comprehensive safety training to all new employees and contractors and additional role-specific safety training for individuals in higher risk operational roles. We also run weekly ‘safety dialogues’ between management and operational staff to facilitate effective communication and safety incident reporting.

**Contractor management**

Sadly, recent fatalities involving contractors demonstrate why safety management in this area remains a critical focus area (including understanding potential gaps between contractor and employee safety standards and/or behaviours). In 2017, we conducted contractor forums at all our entities in Kazakhstan. The forums provided a platform for the communication of our corporate requirements, the gathering of feedback from our contractors and the generation of insight into how we can help our contractors stay safe.

We also introduced dedicated managers in Kazakhstan to strengthen oversight of our onsite contractors, and we plan to roll this out to our African operations in 2018. Efforts to further integrate contractors into our safety management processes in Africa, and to ensure their alignment with our safety standards, will remain a key focus area.

**Employee health**

**Occupational health**

Some of our workplace activities – if not proactively managed – can present latent risks to the health of our employees. This includes potential exposure to particulates, noise, vibrations and heat. As such, we implement comprehensive occupational health programmes for all our employees.

In Kazakhstan, this includes:

- Mandatory annual medical examinations
- Onsite role-specific medical examinations
- Workplace health risk assessments
- Provision of relevant medical treatment

In addition, we have implemented an Industrial Hygiene Programme across our African operations to help prevent occupational disease, protect employees’ health, monitor and maintain regulatory compliance, and manage key health risks.

**Individual health**

We are committed to addressing non-occupational diseases that can have an impact on the health of our employees. In 2017, we carried out cardio-screening for approximately 10,000 employees in Kazakhstan (2016: approximately 13,000). We also purchased additional defibrillators and trained more than 120 employees (2016: more than 70 employees) on basic defibrillator resuscitation techniques.

In Africa, we provide free medical support to employees and their families. We also:

- Participate in government vaccination campaigns and HIV/AIDS/tuberculosis programmes
- Implement malaria prevention measures at our Frontier Mine and Metalkol RTR work camps
- Provide antenatal healthcare at ERG Africa clinics

In Brazil, we vaccinate employees against seasonal flu and H1N1. We have also implemented a health programme (‘Saúde de Ferro’) that provides physical activity clubs for all employees.

10,000

Employees in Kazakhstan provided with cardio-screening



**Performance**

We regret to report that six fatalities took place during the year (2016: 15). Of these, three involved employees (2016: 10) and three involved contractors (2016: 5). Despite the reduction in fatal incidents, any fatality represents a major failure in performance. As such, we will not rest until we achieve Zero Harm. We would like to express our sincere condolences to the families affected by these tragic events.

Each incident was subject to comprehensive investigation and appropriate prevention measures have been implemented to reduce the risk of them reoccurring. Three of these fatalities took place at Boss Mining, where we are strengthening the enforcement of our fatal risk protocols (including the introduction of an additional fatal risk protocol relating to tramming and working near slow moving mining equipment), our contractor management practices and physical controls around key equipment.

Our investigations suggest that inadequate adherence to safety procedures, a lack of supervision over hazardous activities and insufficient control over contractors were contributory factors in some of these fatalities. In response, we have:

- Strengthened our technical controls, including enhanced contractor control procedures for explosives management and increased supervision for hazardous works
- Implemented audits of our health and safety management systems (including fatal risk protocols)
- Applied additional measures to improve our management of/engagement with contractors

In 2017, we also experienced 86 lost time injuries (LTIs) involving employees (2016: 94) resulting in a lost time injury frequency rate (LTIFR) of 0.69 (2016: 0.76).<sup>1</sup> This includes the reported employee fatalities.

Key safety parameters and indicators by region			
	Kazakhstan	Africa	Brazil
Fatalities (employees only)	2	1	0
Fatalities (contractors only)	1	2	0
LTIs (employees only)	73	10	0
LTIs (contractors only)	8	2	0
LTIFR	0.70	0.50	0.0

Key safety parameters and indicators by year <sup>2</sup>				
	2017	2016	2015	2014
Fatalities (employees and contractors)	6	15	10	17
Fatalities (employees only)	3	10	9	13
Fatalities (contractors only)	3	5	1	4
LTIs (employees only)	86	94	95	97
LTIFR (employees only)	0.69	0.76	0.74	0.70

1. Employees only.  
2. LTI and LTIFR include employee fatalities.

Over 7 million LTI-free hours at Metalkol RTR

In 2017, our Metalkol Roan Tailings Reclamation (RTR) project in the DRC reached a significant safety milestone of over 7 million consecutive Lost Time Injury-free hours.

This is particularly noteworthy as operations typically feature higher levels of inherent safety risk during their construction phase.

The team at Metalkol RTR worked closely with our main construction partner to achieve this milestone. This included implementing an intensive training programme and matrix to foster a safety-first culture across our multicultural workforce and to firmly embed our vision of Zero Harm into project planning. More than 5,441 training modules were provided to Metalkol RTR staff.





Contractor safety will remain a focus area as we endeavour to achieve and maintain effective safety standards across our operations

**Planning for the future  
Kazakhstan**

- In addition to the actions already undertaken in 2017, we are planning further measures to reduce the risk of fatalities. These include:
- Implementation of technological solutions to remove employees from higher risk activities
  - Provision of enhanced personal protective equipment for employees in higher risk roles
  - Revision of our safety standards and procedures for higher risk roles
  - Integration of 'lessons learned' into employee safety training programmes

Contractor safety will remain a focus area as we endeavour to achieve and maintain effective safety standards across our operations. In support of this, we are developing corporate contractor standards and implementing a range of additional measures to improve contractor safety.

- We will also plan to strengthen our safety culture by:
- Training additional health and safety trainers at the ERG Academy (p35), following our successful training of around 100 trainers in 2017
  - Establishing additional specialist safety training centres across our operations
  - Implementing a 'safety mentors' programme to promote a safety-first culture throughout our operations

**Africa**

- In our Africa region we plan to further strengthen our safety performance by:
- Implementing measures to address issues identified in our 2017 safety audits (e.g. hot work, excavation safety, rigging and slinging, and electrical safety)
  - Introducing dedicated managers to oversee onsite contractors at our operations
  - Enhancing our integrated SHEC management system, including through the integration of fatal risk protocols into performance management for senior staff
  - Delivering training on critical procedures to Metallkol RTR safety officers and contractor safety officers to ensure coordinated and cohesive team approaches

## 2.2 Skills, capabilities and development

**Key Strategic Goals in the 2025 Strategy**

- The development of skills and knowledge
- The development of our talent pool

Having made significant progress in transforming our organisation in recent years, we are now focused on embedding new and innovative ways of working throughout every level of our global workforce.

Our training and skills development efforts are particularly relevant in the context of an ageing workforce across the mining sector, increasing global competition for young mining specialists and the isolated locations of many ERG operations.

**Key issues and initiatives**

**Kazakhstan  
ERG Academy**

In 2017, we established the ERG Academy. We plan, deliver and monitor all our training activities through this strategic skills development programme. Throughout the year, employees received training on topics including Group strategy, operational and technical improvement, innovative thinking, people management and leadership skills. In 2017, we updated our ERG Academy curriculum following a high-level analysis of our operations' existing and required skills. This resulted in additional emphasis on innovation, change management and business transformation.

In 2017, the most significant training initiative delivered through the ERG Academy was our Summer Team project in which 6,500 employees were trained as part of Expo 2017 Astana. The programme focused on enhancing organisational learning, understanding external economic dynamics and their implications for ERG, as well as Group strategy and values.

Our employee development efforts place particular emphasis on identifying high-potential individuals for future leadership positions. In 2017, work continued on our OPS-100 initiative. This focuses on:

- Identifying the top-100 employees from our production units
- Developing individual plans to support internal succession planning at our operations
- Creating 'talent pools' to support the development of high-potential individuals

We also built on our 2016 assessment of production and technical staff competencies by:

- Developing individual training plans to address technical skills gaps
- Applying integrated annual appraisals at Group and operation level

Finally, the development of our potential and current young employees is vital to our longer-term ability to innovate and grow. This is in the context of a shortage of young mining specialists and outward migration from our operating regions. To this end, we are collaborating with over 70 educational institutions, including vocational colleges, mine training institutions and universities (p48). In 2017, for example, we ran a joint programme with the Nazarbayev University which included training in project management and innovation for the winners of our first Innovators' Forum.

**New employee evaluation programme**

In 2017, we launched a structured programme to assess employee efficiency with the aim of building a transparent performance and capabilities management system.

The programme included:

- An integrated evaluation exercise of 1,402 employees undertaken between November 2017 and January 2018. This included 381 corporate employees as well as 98 senior managers and 923 employees from our entities
- A '360 degree' assessment of top management

Based on these results, we defined a list of competencies that required further enhancement. This will inform the definition of specific development plans for each participant.

**Africa and Brazil**

In Africa, our skills development programmes focus on performance management and maximising the productivity of our workforce.

Key initiatives included:

- The rollout of an integrated performance management system which we plan to be fully operational in 2019
- The implementation of a succession planning and talent management programme to support and develop our future leaders (to be fully operational by mid-2018)

- The retraining of operators in DRC and Zambia on effective operational principles

In Brazil, we implemented a performance evaluation programme across all levels of our workforce. This resulted in individual professional development plans for all employees.

**Performance**

In Kazakhstan, we invested US\$4.2 million in training and skills development for our employees (including spending on mandatory training delivered under ERG's subsoil licencing obligations).

In Africa, we spent over US\$340,000 on such efforts during 2017.

**Planning for the future**

In 2018, we plan to increase the number of training sessions offered through the ERG Academy with a particular focus on 'lean management',<sup>1</sup> leadership training and communication of Group strategy.

We also plan to do the following in Kazakhstan:

- Establish two corporate-level and four operation-level technical training centres
- Build on the success of our OPS-100 initiative by creating a new leadership academy, introducing job shadowing and mentoring
- Automate our recently introduced performance management system
- Improve production and technical staff competencies through an enhanced training programme as well as a new talent management programme, structured competency frameworks and an online 'talent platform' to support career development

Other areas of focus will include a mentoring scheme for young employees, work-life balance and business simulation training.

<sup>1</sup> i.e. the development of streamlined business processes.



## 2.3 Labour relations

**Key Strategic Goals in the 2025 Strategy**

- Improved employee wellbeing
- Increased employee engagement and cohesion

In Kazakhstan, we place strong emphasis on meeting the social needs of our employees and their families. In particular, we aim to ensure they enjoy a decent standard of living in our local communities, some of which are geographically remote and highly reliant on ERG's activities.

A key component of our Group-wide approach to labour relations is our constructive interaction with employees' unions on issues ranging from pay and benefits to health and safety. We respect the right of all employees to join unions and to freely engage in collective bargaining. More than 90% of the Group's employees are trade union members, and collective bargaining agreements are in place at the majority of our operational entities.

Furthermore, we are committed to the principle of equal opportunity in employment and the maintenance of a fair and non-discriminatory work environment. We treat our

employees fairly, equally and without prejudice, irrespective of gender, race, age, disability or sexual orientation.

**Key issues and initiatives**

Our holistic approach to labour relations in Kazakhstan is driven by the significant overlap and interconnectivity between our workforce and local communities.

As such, in addition to the provision of our total employee rewards package, we invest in a range of social initiatives outside of the workplace. These initiatives are focused on materially improving the living, leisure, nutritional and health conditions of our employees and their families. This supports the development of a motivated, safe, productive, stable and loyal workforce – whilst also promoting broader community development (p37).

Furthermore, our approach supports our future skills pipeline by incentivising multiple generations of employees and their families to settle and thrive within our operating regions – including through youth job creation within our operations and outside them. This is particularly relevant given an ongoing trend for

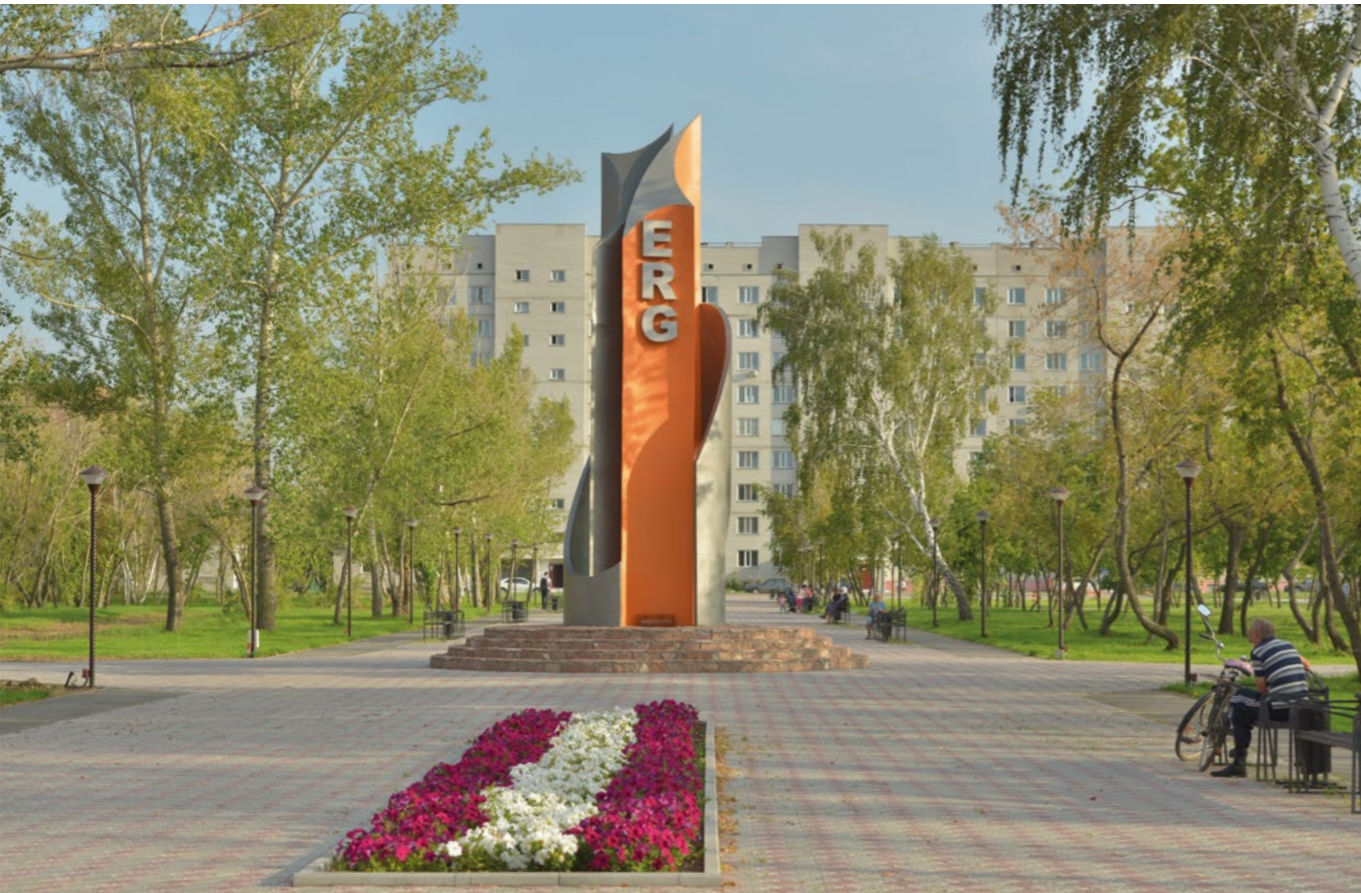
many young people to seek work in other parts of Kazakhstan – or abroad.

**Standardisation of workplace conditions in Kazakhstan**

As a responsible employer, a main area of focus is the ongoing standardisation of workplace conditions and employee benefits. This is with the aim of raising all operations up to Group-wide standards.

Initiatives in 2017 included:

- The launch of a healthcare services standardisation programme with the aim of improving the quality of healthcare for our employees
- An ongoing renovation and standardisation programme of onsite facilities, such as for example, canteens and showers (using local construction firms and suppliers where possible)
- The auditing of 73 employee canteens to assess compliance with Group-wide food service and quality standards. The results will inform a programme to address these issues and implement uniform standards across all operations



**Employee benefits in Kazakhstan**

We provide a range of workplace benefits to our employees. This includes:

- Competitive base salaries and bonuses for the achievement of production targets
- Additional financial support for employees who have large families or children with disabilities
- Extended maternity leave for female employees (in excess of what is required by law)
- High-value training and skills development programmes (p35)

In addition, in 2017 all staff at production entities in Kazakhstan received a pay rise.

**Employee social investment in Kazakhstan**

As part of our efforts to meet the social needs of our employees and their families, we delivered a range of benefits in 2017, including:

- The construction of affordable modern accommodation and its provision to employees on preferential terms of finance under our Affordable Housing Programme. This included three large-scale, multi-storey accommodation buildings in Kostanay and Aktobe for 200 employees and their families. We are implementing this programme in partnership with local authorities and financial institutions
- The launch of a programme to overhaul and modernise employee transportation networks in Aktobe, Kostanay and Pavlodar regions. This involved the phased implementation of quality standards for all ERG-owned and contracted transport, as well as close coordination with relevant local authorities to improve public transportation used by our employees
- Investment in a wide range of social infrastructure across our operating regions. This includes health clinics, sports centres, swimming pools, and cultural and recreation areas. These facilities are available for our employees and their families, with discounts provided for retired workers and disadvantaged and/or large families
- Investment in a wide range of educational and entrepreneurship programmes to support the development and future job prospects of the children of employees – as well as other community members. This includes our support for STEM Laboratories (p48), our Student Entrepreneurship Ecosystem Programme (p47) and the funding of scholarships at vocational schools and universities

**Supporting employee wellbeing through the ERG Sports Club in Kazakhstan**

In 2017, we established the ERG Sports Club programme to embed a more strategic approach to increasing sports participation and improving lifestyle choices amongst our employees in Kazakhstan

This included:

- The establishment of a new team, the primary focus of which will be the promotion of active and healthy lifestyles among employees
- Targeted awareness campaigns to more effectively promote healthy living
- The introduction of a sports infrastructure modernisation programme to standardise and upgrade our facilities across our operating regions, providing equal access and facility standards for all employees
- The introduction of a programme to train health and fitness instructors to support employee exercise and prevent sports injuries

Plans for 2018 include:

- The hosting of our second Group Spartakiad – an employee sports competition based on teams representing our entities. The first Group Spartakiad took place in 2016 and involved over 400 employees
- The hosting of our first ERG Marathon for employees and external stakeholders.

These are large-scale events involving a significant number of community members

**400+**

Employees involved in our first Group Spartakiad in Kazakhstan

Section 2: Helping our people thrive *continued*

Employee relations in Africa

During the year, we placed significant focus on improving direct employee engagement as well as the benchmarking and enhancing of our rewards package. Measures included:

- The implementation of Project Baobab, a cross-functional review to transform our organisational processes and structures – and to give our employees a ‘voice’ in shaping the transformation of our business (p23)
- The rollout of an employee engagement survey at Boss Mining and CCC in the DRC. This focused on issues including career development, pay and benefits, training and working conditions. Based on this, we launched several initiatives to improve employee engagement, training and internal communication
- The benchmarking of salaries across our operations in Africa, undertaken to assess the competitiveness of our remuneration packages relative to peers and to measure equity across our salary bands

Performance

In Kazakhstan, we did not experience any strikes or threats of strikes in 2017. This reflects positively on the consistent and constructive nature of our relations with labour unions, as well as our strong focus on addressing the social challenges faced by employees living in our local communities. Peers operating in the same regions have experienced recent instances of strike action.

In Africa, we experienced only two minor strikes:

- A two-day stoppage at Boss Mining by production staff demanding a salary rise
- A one-day strike at our Frontier Mine involving (mainly) production staff demanding the payment of production bonuses

No significant labour relations issues took place in Brazil during the year.

During 2017:

- We did not identify any of our operations as presenting risks to workers’ rights to freedom of association and collective bargaining
- There were no reported incidents of discrimination at our operations
- There were no incidents of forced labour or child labour at our operations



Planning for the future

In Kazakhstan, we plan to standardise our approach to human resources across our operations (including recruitment, training and talent management). In addition, we will also:

- Complete construction of 18 new accommodation buildings under our Affordable Housing Programme, providing housing to more than 1,300 employees and their families
- Continue implementation of our healthcare services standardisation programme. For example, in 2018 we plan to outsource the healthcare centres in Rudnyi (Kostanay region) and Pavlodar to improve the quality of healthcare services for our employees at SSGPO and Aluminium of Kazakhstan

- Continue work on our transport modernisation programme. This will include investing around US\$1.9 million to purchase 15 modern buses and more than US\$130,000 to renovate approximately 100 existing buses. We also plan to establish joint ventures with local transport providers to further improve transportation provision

In Africa, we are in the process of establishing a competitive rewards and remuneration framework based on market benchmarking undertaken in 2017. This includes the implementation of short- and long-term incentive schemes, where appropriate. We plan to complete this initiative in 2018.

In Kazakhstan, we are focused on standardising workplace conditions and employee benefits

## Section 3

# Community development and wellbeing

Supporting the development and wellbeing of our communities

## 3.1 Community impacts



 p43

## 3.2 Community investment



 p46

## 3.3 Our approach to artisanal and small-scale mining



 p51

## Materiality

Many of our local communities have effectively developed around our operations. As such, we do not manage our operations in a vacuum – but see them in the context of the local socio-economic ecosystems in which they are embedded

In Kazakhstan, for example, we play a significant role in the lives of our local communities. This is as a result of our current and historical generation of employment for local people, the relatively remote nature of our local communities, as well as a track record of delivering a range of public services, including housing, infrastructure, education and power.

Our African operations are located amongst rural communities. One of the main challenges facing our local community members, particularly in the DRC, is a lack of formal employment opportunities and high levels of poverty. However, the technical skills required to run our operations means our ability to employ local people is limited. Instead, we focus on supporting community-led social investment activities, including alternative income generating opportunities that are independent from our operations and support for basic services.

In this context, we are committed to actively managing both our positive and negative impacts on local communities. This – as well as close, ongoing engagement with our communities – is vital if we are to develop and maintain our social licence to operate and to continue accessing new growth opportunities.

Finally, whilst our operations in the DRC can deliver high levels of assurance regarding the provenance and conditions of extraction of the cobalt and copper we deliver to customers, we are aware of the challenges that exist on or near our concessions. These include illegal and/or hazardous artisanal and small-scale mining (ASM) activity that can be linked to a range of negative environmental and social impacts. As a responsible cobalt and copper producer, we are taking a number of proactive steps to address these challenges.

We also believe, however, that regulated ASM (i.e. legal ASM that takes place in government created artisanal mining zones outside of our concessions) is an important source of income for local communities. If carried out in a responsible way, regulated ASM can make a meaningful contribution to broad-based local economic development.

Key issues with respect to community wellbeing include:

- Community impacts
- Community investment
- Our approach to artisanal and small-scale mining

### Relevant Priorities in the 2025 Strategy

**Focus area: Sustainable development of the regions**

- The improvement of social wellbeing in our operating regions

### Key UN Sustainable Development Goals



How we manage our interactions with communities

Our commitments

We are fully committed to supporting community investment programmes that maximise our positive socio-economic impacts. In line with our new Group Corporate Social Responsibility (CSR) Projects and Sponsorship Policy rolled out in 2017, we focus on a range of issues including:

- Infrastructure and social welfare
- Education and support for youth initiatives
- Sports and promotion of healthy lifestyles
- Community training and development programmes

This is underpinned by close, ongoing community engagement to help us align our programmes with community concerns, needs and aspirations (p45 and p56).

We are equally committed to minimising our negative impacts on host communities. In line with our Group Human Rights Policy, this includes:

- Respecting the rights, cultural heritage and customs of local communities
- Engaging with local communities to assess the potential impact of our activities – including a focus on risks, impacts, remediation, mitigation and monitoring

- Integrating engagement feedback into project planning and community investment activities
- Seeking to avoid involuntary resettlements, and, where this is unavoidable, constructively engaging with local communities in line with relevant laws and international standards

Implementation of our commitments

In Kazakhstan, we implement our Group CSR Projects and Sponsorship Policy through a systematic process framework. This ensures a comprehensive, well-targeted approach to the identification, implementation, monitoring and review of our community investment.

Community investment in our operating regions takes place through two channels:

- Direct social investment: Targeted at maximising our positive impacts and minimising our negative impacts on local communities
- Social partnership investment: Negotiated strategic partnerships with local authorities targeted at broader socio-economic development of local communities (some of which are undertaken as part of our licencing obligations)

We are committed to maximising our positive impacts on communities – whilst minimising any negative impacts

In Africa, we implement a Safety, Health, Environment and Communities (SHEC) management system. Amongst other things, this provides a systematic framework to:

- Identify, assess and manage negative impacts on communities
- Manage, monitor and control community grievances and issues
- Maintain open and enduring relationships with community leaders
- Proactively engage and consult with communities through the project lifecycle
- Recognise the value of cultural heritage and cultural diversity, and protect cultural sites
- Identify, and support the development of sustainable social projects, with a focus on education, health, alternative livelihoods and the prevention of child labour



# 3.1 Community impacts

Key Strategic Goal in the 2025 Strategy

- The improvement of social wellbeing in our operating regions

We believe that responsibly managing our impacts is not only the right thing to do, but also helps maintain our social licence to operate. This is underpinned by ongoing community engagement to help ensure we are responsive to the concerns, needs and aspirations of local communities.

Our positive impacts on local communities (beyond the provision of targeted community development spending – see p46-50) include:

- Employment generation
- The purchase of goods and services from local/locally-based suppliers (p68)
- Broader local economic growth generated by third-parties
- The development of operational infrastructure that also benefits local communities (e.g. power, transportation, etc.)
- The payment of taxes and royalties, some of which are distributed at the local level (p68)

We are conscious, however, that unless properly managed, mining and other heavy industries can also undermine the interests of local people – including through inward migration, pollution, property damage, inflation and other factors.

Key issues and initiatives

Impact assessment

We conduct comprehensive impact assessments and community consultations whenever undertaking any major developments or operational changes – in line with national legal requirements and relevant international standards. In Kazakhstan, for example, we conducted around 40 public hearings in 2017 related to project changes, with the most significant being:

- Open-cast mining of a clay-rich deposit near the city of Aksu
- The refurbishment of the Aksu Ferroalloy Plant's Workshop No.6
- Construction of the DNK underground mine at Kazchrome



In Africa, we worked with an external consultancy to update the existing environmental and social impact assessments (ESIAs) at our operations in the DRC – including through the conduct of formal community consultations. This included, as part of our efforts to bring our management systems and practices closer in line with international best practice, their alignment with the requirements of the IFC Performance Standards.

As a result, in 2017:

- The updated ESIA for Boss Mining was completed and accepted by the government
- The updated Frontier Mine ESIA was completed and submitted for government approval
- Progress was made on updating the Metalkol RTR ESIA and it will be submitted for government approval in 2018
- Progress was made on updating the ESIA for Comide, but it is yet to be completed

In addition to the ESIAs, we have implemented a grievance mechanism procedure to help better identify and manage our negative impacts, supported by social management plans to address identified impacts.

In 2017, we also carried out a range of internal audits at our entities in the DRC – as well as Chambishi Metals in Zambia – against the requirements of the IFC Performance Standards. This was with the aim of identifying and addressing any existing gaps in process and performance – and the delivery of higher levels of future assurance to our national and international stakeholders. We also engaged with international NGO Pact to support the training of our security personnel on responsible human rights practices.

Under our licence agreement in Brazil, we are funding research to deepen our understanding of aquatic wildlife near to the port development, Porto Sul. Monitoring has been undertaken since 2013, and is maintained by a joint team drawn from Bahia Mineração (BAMIN), the community and the local fishing industry. The team is building and maintaining a deep understanding of fishing activities and water fauna in the area surrounding the port development, collecting all information in a central database for ease of analysis and tracking. In 2017, BAMIN invested around US\$200,000 in this programme. This is in addition to our undertaking of an updated socio-economic study of nearby communities.



**Legacy complaint against ENRC**

As noted above, we have grievance mechanisms and community engagement processes to identify potential complaints. We are committed to ensuring that these complaints are reviewed promptly and appropriate action is taken.

In 2016, the UK National Contact Point (NCP) for the OECD Guidelines for Multinational Enterprises issued a Final Statement After Examination of Complaint. This followed a legacy complaint against ENRC, made on behalf of the Chiefs of the Kisankala and Lenge villages and their communities near our Comide concession. The final statement alleged that ENRC had “not engaged effectively with two stakeholder communities on the concessions, and has not taken adequate steps to address impacts on the communities that arise from delays in taking forward mining projects”.

Whilst the complaint relates to ENRC legacy issues, we are committed to responding to the concerns of our local communities and to taking a ‘beyond compliance’ approach to managing our impacts. As such, we have set out some of the relevant activities we took in 2017 – in the context of the NCP’s recommendations:

- Communications channels and grievance procedures: regular meetings now take place with the representatives of both communities. A registry has also been set up to prevent future damage to historical and cultural sites in both communities. In addition, we have established a Participatory Rural Appraisal (PRA) process – and related Community Action Plan (CAP) – to support the Kisankala community in the identification of their own needs and the implementation of community-led programmes to address these needs.
- Staff/security contractor standards of conduct and mining schedule: regular meetings with representatives of both communities are used to raise awareness on scheduled mining activity and the security issues associated with the mine. Likewise, we have developed a list of rules for our employees and concession holding partners to abide by.
- Use of influence to ensure continuing unrestricted community access to the water supply provided in 2007-2008: the challenge of maintaining an ongoing supply of clean water at the Kisankala site has been resolved. We continue to provide water from the well at Kisankala free of charge and without the community paying any maintenance costs. Progress has also been made on drilling for a permanent water source for the community.

- Early work on community facilities: this is being addressed in line with the above mentioned PRA and CAP processes to ensure development efforts are fully led by the Kisankala community itself.

The NCP issued a Follow Up Statement in April 2018, in which it set out further actions that it believes are needed to fully satisfy their recommendations. We are examining these to inform our planning for 2018.

**Resettlement at Metalkol RTR**

In 2017, we concluded a successful community engagement process in relation to the planned voluntary resettlement of 16 families from the Samukonga community near the Metalkol RTR project in the DRC. The need for resettlement was identified through our ESIA due to the potential health and safety impacts related to the project. The new resettlement village (which will offer a better standard of accommodation) is under construction and the voluntary relocation is scheduled to take place in 2018.

In addition, we paid compensation for crops to more than 500 farmers in the operating region of Metalkol RTR.

**Participatory  
Rural Appraisals in Africa**

We believe that local communities should play an active role in – and take ownership of – their own sustainable development

In 2017, we completed Participatory Rural Appraisals (PRAs) within 11 local communities in the DRC.

The PRAs help communities identify their own development priorities – and create sustainable Community Action Plans (CAPs) to address these needs based on available capacities, the capabilities of local institutions and the availability of external assistance.

Examples of community priorities identified through the 2017 PRAs included:

- Food security
- Educational standards
- Health facilities
- Water distribution
- Sanitation

Following these collaborative discussions, the 11 communities each developed a CAP, the implementation of which will be managed by community-led committees. ERG will work closely with these committees to support relevant projects and to help address challenges as they arise.

We support the PRAs in parallel to – and in support of – our broader community social investment activities.

11

Participatory Rural Appraisals completed within local communities in the DRC in 2017



# 3.2 Community investment

**Key Strategic Goal in the 2025 Strategy**

- The improvement of social wellbeing in our operating regions

In Kazakhstan, our community investment efforts are driven by the inextricable, long-standing relationship between ERG and the local communities in our operating regions. We place particular emphasis on improving the lives of our employees and their families outside of the workplace (i.e. as local community members) as well as on supporting broader socio-economic development in our operating regions.

In Africa, we focus our community investment efforts on addressing the most material development challenges facing rural communities in our operating regions, many of which live in conditions of extreme poverty. To this end, we undertake community investment activities focused on infrastructure, education, healthcare and food security, amongst other issues.

In 2017, we initiated a socio-economic baseline study to help measure the impact of our community social investment (CSI) in the DRC. This will inform our future activities.

Community investment in Kazakhstan benefits a wide range of community members – including our own employees and their families

## Key issues and initiatives – Kazakhstan

### In Kazakhstan, our approach to CSI is framed by the following issues:



#### Legacy communities

Many local communities have, in effect, developed as a direct result of the existence of our operations over multiple decades. However, we are aware of the need to reduce community dependency on ERG through, for example, strategic investment in regional economic diversification and youth skills development. This is in the context of the finite life of some of our operations and our increasing application of automation.



#### Employees and local communities

This unique community context means we actively target part of our CSI spending on improving the lives of our employees and their families outside of the workplace (i.e. as local community members). These efforts focus on ensuring that our operating regions are places where multiple generations of employees and their families will choose to live and work over the long-term.



#### Government partnerships

A significant proportion of our community development spending is invested through negotiated strategic partnerships (or memoranda of understanding) signed annually with regional governments. These partnerships are critical for delivering broader socio-economic development for local communities with particular focus on infrastructure development, education and youth development, sport, healthcare and social cohesion.

In Kazakhstan, we aim to reduce community dependency on ERG by promoting economic diversification and youth skills development

Set out below are the projects that benefit our local communities (including, where relevant, employees and their families). Projects that only targeted and benefited employees are covered in 'Labour Relations' on page p37.

#### Improving living standards

We invest in improving living standards across our operating regions. Much of this is delivered through our negotiated strategic partnerships (or memoranda of understanding) with local authorities. In 2017, this included:

- The reconstruction of the Central Embankment of Aksu city in Pavlodar region (US\$613,000)
- The reinstallation of boiler facilities from residential buildings in the village of Shakhan in Karaganda region (US\$158,000)
- Repair of the Gornyak Stadium in Rudnyi city in Kostanay region (US\$129,000)

We also invested in a range of initiatives to support socially vulnerable and disadvantaged groups. This included:

- A contribution to the purchase of a building for use by the Pavlodar regional social rehabilitation centre for the disabled and elderly (US\$368,000)
- The funding of relief efforts for residents affected by floods in the Karasu district (Kostanay region) (US\$245,000)
- Sponsorship of SOS Children's Villages of Kazakhstan initiative to support children without parental care and families at risk (US\$26,000)

#### Entrepreneurship and business incubation

We invest in the future of our local communities through our support of entrepreneurship, business incubation and capacity building programmes. This includes particular emphasis on youth initiatives as a means of developing alternative economic opportunities for future generations (i.e. outside of our operations). By doing so, we:

- Promote regional economic diversification
- Deliver assurance to our employees that their children have a future in their hometowns
- Build local supplier, contractor and skills pools that our operations can potentially benefit from
- Help local communities to become more self-sustaining over the long-term

In 2017, we also participated in a range of other external initiatives aimed at supporting innovative new business in our operating regions.

For example, we supported a one-day event as part of the 2017 Skolkovo Start-Up Tour in Almaty, a competition aimed at identifying and supporting innovative new business start-ups. Out of 50 projects presented by participating entrepreneurs, 19 were selected in four areas: smart industry, new materials and energy, smart environment and e-commerce/fintech. At the event, ERG awarded a special grant to fund a project on the development of metal powder for additive technologies.

In addition, in 2017 we spent around US\$40,000 sponsoring Kazakhstan's first two Makeathon Tikkun Olam Makers (TOM) events.<sup>1</sup> These events are organised by Kazakhstan Tel-Aviv University Friends Association to help young inventors develop technologies to support people with disabilities. The inventors with the best ideas are then offered scholarships to help bring their ideas to fruition. The events in Kazakhstan resulted in the development of a new rehabilitation simulator for people with musculoskeletal conditions. The simulator has already been installed at a neurorehabilitation centre in Karaganda.

#### Tugan Zher<sup>2</sup> Programme

In 2017, we completed an initial baseline socio-economic assessment under our Tugan Zher Programme, an ambitious initiative launched in 2016.

This assessment has helped us to better understand the specific challenges and needs of our local communities, and particularly those of our employees and their families, in each of our mining towns (i.e. local cities that are economically dependent on our operations). The assessment is based on analysis across 16 development indicators, including standards of housing stock, transport infrastructure, water supply and sanitation, power infrastructure, healthcare and education.

All of the initiatives cited in this chapter that were carried out under memoranda of understanding with our local authorities fall under the Tugan Zher Programme.

### Supporting youth job creation through the Student Entrepreneurship Ecosystem Programme

In 2017, we launched the Student Entrepreneurship Ecosystem Programme, a multi-year initiative to develop 'ecosystems' of talented entrepreneurs throughout our operating regions. The programme will support the transformation of regional universities into centres of entrepreneurial excellence. Over the long-term, this will contribute to the development of innovative business start-ups to support youth job creation and regional economic diversification.

The programme was successfully piloted in 2016 at Pavlodar State University, with assistance from the Kazakhstan Tel-Aviv University Friends Association. In 2017, it was live in nine universities (including in Aktobe and Karaganda).

One of the principal socio-economic challenges facing Kazakhstan is how to develop high-tech industrial growth that can provide employment for a growing generation of talented workers.

This challenge is particularly acute in our remote operating regions as many young people are taking up public and private sector jobs in the major cities, rather than utilising their entrepreneurial skills within their own communities.

The Student Entrepreneurship Ecosystem Programme is part of our response to this challenge. In addition to direct investment in the programme, ERG:

- Works closely with partner universities to help develop their 'transformation' strategies and related training programmes
- Offers its technical facilities and laboratories for use in research and development
- Supports students in business and financial planning
- Engages business mentors to advise students on monetising their ideas

1. <http://tomglobal.org/>

2. 'Tugan Zher' translates as 'Homelands' in Kazakh.

Education

We place particular emphasis on supporting educational programmes focused on the scientific and technical disciplines that will underpin future economic growth and job creation.

These efforts are also vital for the development of ERG's own future skills pipeline and provide assurance to current and future employees that their children can look forward to promising futures in our operating regions.

We support a range of educational institutions (and their students) in Kazakhstan, including mine training centres and vocational colleges. This includes, for example:

- Direct investments in infrastructure and facilities, as well as educational programmes for students
- The provision of scholarships for talented students at local educational institutions
- Scholarships and tuition payments for young people from local orphanages to train at the Khromtau Mining and Technical College, as well as the potential provision of employment opportunities at our own operations

70+

Educational institutions that ERG supports in Kazakhstan

Supporting future labour markets through STEM Laboratories

ERG is funding the establishment of STEM<sup>1</sup> Laboratories across our operating regions, with the first constructed in early 2018

These innovative institutions will increase access to modern teaching methods and educational technologies for school children in our remote operating regions in Kazakhstan. Pupils attending the Laboratories will be taught:

- Engineering
- Computer programming (including coding languages such as Scratch, Java, Python, etc.)
- Robotics
- 3D modelling

As such, we are helping future generations – including the children of our employees – to develop the necessary skills to excel in the job markets of the future. This, in turn, will contribute to long-term economic diversification and growth within our operating regions.

The programme is being implemented in partnership with local educational authorities, including the Education Department of Astana, and educational charity Bolashak Engineering.

Under the programme:

- ERG provides funding for technical equipment
- The Laboratories are staffed by the local authorities, who benefit from training and technical support delivered by Bolashak Engineering

The first Laboratory opened in February 2018 at a secondary school near Astana. As well as providing education for pupils from the local school, the Laboratory is open to all school children from grades 5 to 11 from the local Koktal housing estate.

1. Science, Technology, Engineering, Maths.



Healthcare

We finance enhanced healthcare infrastructure to support the wellbeing of our current and retired employees, their families and the wider communities in our operating regions. In 2017, this included the provision of funding for the construction and maintenance of health centres and medical centres near our operations in the Pavlodar and Kostanay regions.

Under our negotiated strategic partnerships with local governments, we have also implemented a programme to incentivise young doctors to live and work in our operating regions. In 2017, we invested more than US\$90,000 in the programme to provide financial support to 19 young doctors, most of whom commenced work in provincial hospitals in the Kostanay region.

Sports, culture and wellbeing

We are conscious that community wellbeing relies on more than narrow economic development. As such, we implement programmes to support the broader 'social fabric' and quality of life of local communities, including sports centres, swimming pools, holistic therapy centres, and cultural and recreational areas. These facilities are accessible to our employees, their families and local communities and we provide discounted access for our retired workers as well as for disadvantaged and/or large families.

Significant projects in this regard (undertaken as part of our negotiated strategic partnerships with relevant local authorities) included:

- Support for regional football and volleyball teams in the Pavlodar region (US\$4.3 million)
- The construction of a 50 metre, 300-seat swimming pool in the Usolsk district of Pavlodar city (US\$3.1 million)
- Support for football in Kostanay region (US\$1.1 million)
- Support for ice hockey in Kostanay region (US\$318,000)

Investment in cultural activities and infrastructure as part of our negotiated strategic partnerships with relevant local authorities included:

- The construction of the Palace of Youth Creativity in Aktobe (US\$1.8 million)
- The installation of children's playgrounds and street exercise equipment in parks in the cities of Pavlodar and Aksu (US\$631,000)
- The modernisation and improvement of the Shakhtar Culture and Recreation Park in Ekibastuz (US\$920,000)

Key issues and initiatives – Africa and Brazil

As a major cobalt and copper producer in the DRC, we are operating responsibly in one of the least developed countries in the world.

The local context means we face heightened community expectations around employment provision that we are – due to the nature of our operations – unable to meet. As such, we invest in social investment programmes aimed at making a lasting positive impact on the lives of our local communities whilst avoiding future dependency.

These conditions of underdevelopment also result in some local communities engaging in artisanal and small-scale mining (ASM) that, whilst offering money-earning opportunities to local people, can be associated with negative community impacts (p51).

At our iron ore project in Brazil, levels of underdevelopment are not as acute as in the DRC. Nonetheless, local communities face a range of challenges related to, for example, restricted water availability, poverty, unemployment and inadequate provision of public services (especially healthcare). This, in addition to historical voluntary resettlement, means we place particular emphasis on the careful management of our community impacts and social investment activities, which helps support this strategic growth project's social licence to operate.

Infrastructure

We invest in a wide range of infrastructure improvements to support community development near our operations in the DRC. This includes funding road and bridge repairs, providing power free of charge, and drilling wells and installing pumps to improve access to water.

In 2017, for example, we funded the construction of water wells and installation of solar-powered pumps in the villages of Kisankala, Kisanfu, Lenge, Kimfumpa and Sakania in the DRC. This was undertaken in direct response to community concerns identified through the Participatory Rural Appraisals (PRA) process (p45). Upon completion, ERG provided training to community-run water committees, which have since taken over responsibility for the maintenance and operation of the systems (with ongoing support from ERG).

In Brazil, we are working to address restricted clean water availability for local communities. Following unsuccessful attempts to drill for new water sources, we are planning to pump clean water from neighbouring concessions to meet community needs. We anticipate this will be completed in 2018.

Agriculture

We continued to fund an agricultural co-operative at Boss Mining, providing seeds and fertilisers to local families.

Education

Access to adequate formal education presents an acute challenge for local communities in the DRC. To help address this challenge, we support 17 primary and secondary private schools near Boss Mining.

In 2017, we also supported schools close to our other operations. This included our commitment of more than US\$90,000 in funding for the construction of new classrooms, the enlargement of existing classrooms and the provision of new equipment at Maseya primary school in Kisankala near our Comide operation. We identified this project through the Participatory Rural Appraisal (PRA) process after communities raised concerns that the inward migration of the children of artisanal miners was putting pressure on the school's capacity. The new classrooms will accommodate an additional 150 children, and could potentially help reduce the number of local children engaged in artisanal mining.

Healthcare

The prevalence of relatively weak health indicators in our local communities in the DRC means we also focus our social investment efforts on improving healthcare services and behaviours. For example, in 2017 we supported an existing medical clinic in the village of Kimfumpa near our Frontier Mine. In line with our Participatory Rural Appraisals (PRA) process, we helped the community submit a formal request to the local health authority to provide a nurse to staff the clinic. As a result of these efforts, the clinic now has a dedicated nurse. However, it still requires medicine and equipment before it can begin serving the local community. We plan to contribute funding towards these supplies in advance of the clinic's scheduled opening in 2018.

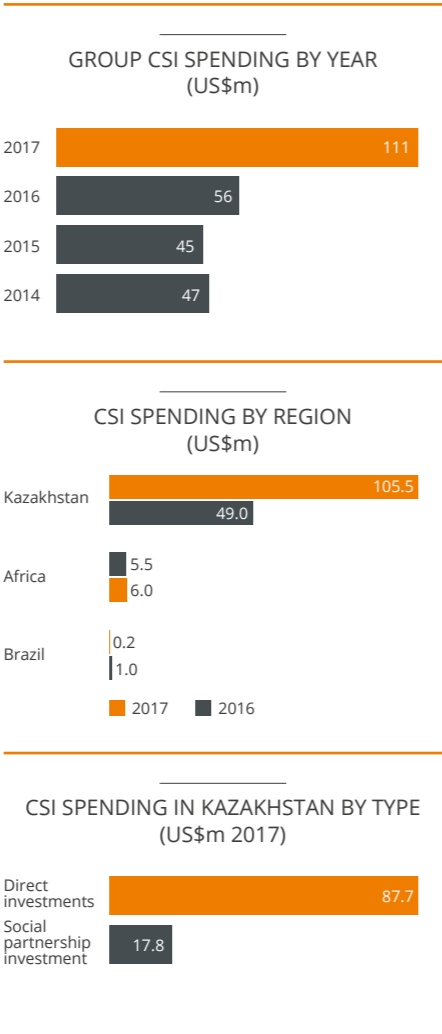
In Brazil, we continued to support the São José – Santa Casa de Misericórdia Hospital in the city of Ilhéus, which faces significant funding pressure. We mainly provide funding to support catering for employees, patients and visitors. In 2017, we invested over US\$200,000 to support the hospital.

Performance

In 2017, our worldwide community social investment (CSI) contributions were around US\$111 million (2016: US\$56 million).

The significant increase in CSI spending between 2016 and 2017 reflects donations totalling US\$61 million to the Foundation of the First President of the Republic of Kazakhstan – Elbasy (the Foundation). The Foundation is primarily using this funding to enhance community recreation and healthcare facilities in Astana and Almaty, whilst approximately US\$21 million of the funding is being used for the reconstruction of the Foundation's building in Almaty, which is used to deliver youth projects. Further additional funding will be assigned to the Foundation in 2018.

In addition, US\$15 million was donated to fund the completion of construction of the state botanical garden in Astana.



Planning for the future

We plan to build on our existing community investment programmes in Kazakhstan through a range of key projects including, but not limited to:

- Expansion of our Student Entrepreneurship Ecosystem Programme, including the rollout of additional events to support young entrepreneurs in our operating regions
- The opening of additional STEM Laboratories in Astana and in other cities in our operating regions (p48)
- Development of a comprehensive social strategy to raise living standards in our mining towns (i.e. to further standardise living conditions across our operating regions)

In addition, we plan to implement a more extensive benchmarking of community socio-economic conditions against relevant United Nations Standards and national average living standards (e.g. including availability of public services as well as standards of living). This will help us to better target future community spending to ensure local communities, including our employees and their families, enjoy a similar quality of life, irrespective of where they live.

In Africa, we are investigating opportunities to support alternative livelihoods outside of our operations. This includes, for example, community farming projects aimed at sustainably increasing agricultural production to generate income for local communities from the sale of surplus crops. This is in addition to ongoing efforts to commercialise our existing agricultural projects.



Photo credit: (Photo courtesy from) Good Shepherd International Foundation/Nyokabi Kahura.

# 3.3 Our approach to artisanal and small-scale mining



Key Strategic Goal in the 2025 Strategy

- The improvement of social wellbeing in our operating regions

As a cobalt and copper producer in the DRC, we are implementing a number of measures to address the negative impacts of illegal and/or irresponsible artisanal and small-scale mining (ASM) taking place on or near our concessions.

ASM-related child labour, along with other challenges associated with illegal and/or irresponsible ASM in the DRC, is a matter of intense international concern – particularly in relation to cobalt. As such, downstream actors in the metals value chain are making ongoing efforts to ensure that their own metal supply chains are not contributing to this serious issue. This means we need to provide our cobalt customers with assurance that there is no way that irresponsibly mined material from ASM sources can enter our own stock.

Key issues and initiatives  
Addressing local challenges linked to ASM activity

Illegal and/or hazardous ASM activity taking place on or near our assets can be linked to a number of negative community impacts. These can include:

- Child labour
- Poor health and safety standards
- Inadequate and exploitative working conditions
- Pollution resulting from improper processing practices

- Land degradation as a result of poor operational management
- Inward migration of artisanal miners and their families, placing strain on basic local services

In this context, we took a number of steps in 2017 to enhance our management approach to ASM and to help address irresponsible practices within local ASM communities. These included:

- The recruitment of an ASM mining specialist at ERG Africa with a specific remit to develop a more systematic management approach to ASM
- The undertaking of enhanced analysis of the drivers behind ASM in and around our concession areas
- The development of strategies to help us work side by side with ASM communities at our Boss Mining exploration sites in a safe manner. This included the holding of public consultations at ASM communities in Milebi, Mindingi and Menda, during which ERG representatives explained planned work methods, time schedules, behavioural rules for personnel and contractors, and grievance procedures
- The adaptation of our processes to ensure that confiscated ore from illegal ASM operations is stored and not used in our production

This is in addition to our ongoing support for a range of related projects under our Clean Cobalt Initiative (p52).

In 2017 we implemented a cobalt chain of custody and third-party assurance programme at Metalkol RTR

Delivering assurance to customers and end-users

We took steps to deliver higher levels of assurance to our potential cobalt customers, amid concerns that ore produced as a result of illegal and/or irresponsible ASM activity could enter the supplies of responsible operators in the cobalt value-chain. This is in the context of heightened global concern that the rapid growth of battery technology and electric vehicles could drive labour and human rights abuses linked to unregulated ASM communities in the DRC (the primary global source of cobalt).

This included starting work on the implementation of a cobalt chain of custody and a third-party assurance programme at the Metalkol RTR project. The programme is scheduled to be ready for first production in 2018. This assured chain of custody will enable customers to purchase cobalt from Metalkol RTR with confidence and easily integrate the mineral into their own responsible trading and production processes. Furthermore, it will help them deliver high levels of assurance to their own customers and end-users.

The Clean Cobalt Initiative

Responsibly produced cobalt remained a focus for ERG and the broader cobalt industry throughout 2017

Global demand for cobalt continues to grow due to the energy and battery demands of a fast-evolving global economy. Around half of the world's cobalt supply lies in the DRC. This means the development of reliable and ethical sources of the mineral requires not only efficient mining, but also the promotion of social development and human rights protections.

In 2017, ERG launched its Clean Cobalt Initiative at the Metalkol RTR project with a goal to ensure responsible, assured cobalt production while improving the quality of life for local children and communities. In particular, a core objective for ERG is the elimination of child labour in the cobalt supply chain. To achieve this, ERG developed a new strategy in 2017, and activity focused on three pillars:

- Building an assured chain of custody for cobalt: In 2017, we initiated the development of a secure traceability system for Metalkol RTR cobalt from extraction to customer, and a chain of custody aligned with OECD Due Diligence Guidance for Supply Chains to provide assurance to our customers of responsible production.

- Community development initiatives focused on helping children out of artisanal and small-scale mining: In 2017, we also pledged more than US\$1 million to support a three-year partnership with the Good Shepherd International Foundation in the Kolwezi area near our Metalkol RTR project. This partnership aims to help improve the living conditions in artisanal communities, especially for women and children. We also helped fund an independent study of how the Good Shepherd team has delivered its Child Protection Program in preparation for future improvement and rollout more broadly in the area. Finally, we have been working with the Good Shepherd Sisters to develop a plan for the completion of a new school.
- Driving advocacy for the achievement of responsible cobalt supply chains through value-chain partnerships: In 2017, with the support of ERG, the Global Battery Alliance – a World Economic Forum initiative – was launched to catalyse and accelerate action towards a socially responsible, environmentally sustainable and innovative battery value chain to power the Fourth Industrial Revolution. Under this initiative, technology, mining, manufacturing, automotive and energy businesses are working with UNICEF, the OECD, the African Development Bank and a range of international organisations and NGOs to create a responsible global battery supply chain. ERG is a founding member and co-chair of the Alliance.

We also participated in the Cobalt Industry Risk Assessment Framework (CIRAF), a programme of the Cobalt Institute. This framework will enable member companies, and the cobalt industry more generally, to conduct enhanced risk management in line with industry good practice and global standards focused on the responsible sourcing of minerals.

In 2018, we will publish our Clean Cobalt Initiative Framework and its commitments and will provide an annual report to stakeholders on our progress.



Performance

Our investment in the Good Shepherd International Foundation initiative is helping approximately 1,000 vulnerable children to access basic education and other services (e.g. counselling, healthcare and access to referral systems for physical abuse).

During the year, the initiative also supported:

- Over 180 families that participated in alternative livelihood activities to improve food security and income generating opportunities
- 228 girls and 128 women who participated in economic empowerment projects
- 3,294 community members who participated in civic awareness and capacity building sessions

Finally, ERG continues to support more than 8,000 students and over 200 teachers through our educational initiatives in Kakanda.

Planning for the future

Future planning in the DRC is currently focused on the following areas:

- The development of a new ASM Management Plan including a dedicated ASM Policy, engagement procedures and related management systems (such as an ASM incident reporting system)
- The development of partnerships to address ASM in our area of influence

US\$1m

Amount pledged to support a three-year partnership with the Good Shepherd International Foundation to help address socio-economic challenges near Metalkol RTR



## Section 4

# Environmental stewardship

Applying responsible operational practices to prevent harm



## 4.1 Pollution prevention



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## 4.2 Energy and climate change



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## 4.3 Waste management



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## Materiality

Our activities, whether it is the operation of open-pit mines, railway systems, smelting and refining facilities, or the generation of power, have the potential to negatively impact the local environment and contribute to global environmental issues such as climate change

This has potential implications for the health and quality of life of local people (current and future), broader human development and the natural environment. Furthermore, these potential impacts have significant implications for the Group, in terms of our compliance with local environmental regulations, our social licence to operate amongst local communities and the countries we operate in, our liabilities, and our reputation.

In this context, we believe it is incumbent upon us to produce a net positive impact as a result of our extraction, processing and marketing of mineral resources (as well as our other industrial activities).

The generation of value for our stakeholders is an obvious factor in this regard, but it is only one part of the equation. We also need to apply responsible management approaches that avoid and/or minimise associated negative environmental impacts where possible, including through the prevention of pollution and careful management of our waste.

Key issues in this regard include:

- Pollution prevention
- Energy and climate change
- Waste management

### Relevant Priorities in the 2025 Strategy

#### Focus area: Portfolio

- Energy business development

#### Focus area: Sustainable development of the regions

- The prevention of pollution

### Key UN Sustainable Development Goals



How we manage our environmental impacts

Our commitment

We are committed to preserving and maintaining healthy, natural environments through the application of sustainable practices wherever we operate. Our commitment is supported by the requirements of our Group Health, Safety and Environment (HSE) Policy Statement, which amongst other things requires us to:

- Develop, implement and improve HSE management systems and programmes that are consistent with international best practice
- Ensure the accountability of senior ERG managers at all sites for improving HSE performance through risk assessment
- Ensure that all personnel understand their HSE responsibilities
- Ensure HSE issues are taken into account in business planning and decision-making

This is supplemented by ERG Africa's Safety, Health, Environment and Communities (SHEC) Policy, which – amongst other things – commits us to:

- Systematically identify, assess, and manage all negative environmental impacts
- Strive for continuous improvement in environmental performance through the 'plan, implement, check and review' steps
- Minimise pollution, disturbance and/or degradation of ecosystems

In 2017, we updated our SHEC Policy to commit us to complying with, and where appropriate, exceeding applicable laws and regulations in the countries in which we operate. This includes working towards full compliance with applicable good international industrial practice guidelines, such as the IFC Performance Standards and the relevant SHEC components of the OECD Guidelines for Multinational Enterprises.

Implementation of our commitments

All of our operations in Kazakhstan are certified to the ISO 14001 environmental management systems standard. In 2017, we initiated a process to investigate potential improvements to our environmental risk management process in Kazakhstan. Areas of focus included the co-development of a well-defined risk procedure by our Environment and Risk Management teams. The procedure aimed to further enhance our ability to define and prioritise, using common criteria and measurement parameters, our environmental risks at both operational and Group level.

In Africa, we are committed to striving to continuously improve our environmental performance and to develop, implement and manage environmental management systems compliant with national and relevant international standards. This includes our ongoing efforts to align our existing SHEC Management System (embodied in our SHEC Management Manual and associated procedures) with the ISO 14001 and OHSAS 18001 management system standards.

Community engagement

We recognise the close link between our environmental performance and our social licence to operate, and thus the need for us to engage with our community stakeholders and civil society organisations in a transparent and constructive manner. For example, in Pavlodar (one of our main operating regions in Kazakhstan), we work closely with a range of local community representatives and NGOs on environmental management issues. In 2017, this included:

- Joint environmental monitoring with the Centre of Environmental Competence in Pavlodar region

All of our operations in Kazakhstan are certified to ISO 14001

- A total of 43 different community engagement events, including those focused on issues such as tree planting, fish stocking, and other related matters
- An ongoing programme of tours at our facilities for local college students and professors. These are aimed at demonstrating our environmental management systems and awareness-raising in general
- The delivery of training to local authority and media representatives on environmental issues

In addition, since 2016 we have submitted our environmental monitoring results to the national authorities for publishing via Kazakhstan's National Pollutant Release and Transfer Register, a structured database that provides transparency and facilitates public scrutiny.

In both Kazakhstan and Africa, we also carry out community consultations focused on the environment in the context of our impact assessment activity.

For further information on our environmental and social impact assessment activity (e.g. in relation to significant project changes), please see p43.

4.1 Pollution Prevention

Key Strategic Goal in the 2025 Strategy

- The prevention of pollution

Like most mining and heavy industrial companies, our activities can present a range of pollution risks unless they are managed effectively. These include, for example:

- The contamination of groundwater and/or surface water as a result of leaching or uncontrolled discharges
- Excessive discharges to air

As such, our international standard environmental management systems are heavily focused on the detection, prevention and/or minimisation of such emissions. Key control measures include:

- Maintaining water flow and its efficiency
- The treatment of processed water to render it safe for environmental discharge within prevailing national regulatory limits
- The treatment of emissions into the atmosphere
- Ongoing monitoring of air emissions (e.g. at the point of emission) and water in and around our operational sites
- Technical and engineering controls to minimise the risk of ground and water contamination

Key issues and initiatives

In Kazakhstan, there is strong stakeholder interest with respect to our non-carbon emissions to air and their potential impacts both on human health and on the environment. This is particularly the case in the heavily industrialised Pavlodar region. Although our emissions are within regulatory limits, there are concerns about the collective impacts of multiple economic actors in this region – including ERG – as well as (in winter and spring) domestic users of coal for heating.

The main sources of our own non-carbon emissions are from our power generation activities, and our metallurgical processes. We are actively seeking ways in which to improve our emissions performance and to achieve performance that goes 'beyond compliance'.

This is partly due to our desire to minimise our environmental and health impacts and partly in anticipation that national legislation will, in time, be further tightened in the context of the national transition to a 'Green Economy'.



In the interim, we continue to apply joint air quality monitoring in the Pavlodar region of Kazakhstan around our operations (p56). This helps generate assurance that our emissions are strictly in line with national limits. This is in addition to supplementary, independent government monitoring in populated areas beyond our impact zone – where community members request it.

Kazakhstan's legislation on a national transition to a 'Green Economy' raised the prospect of tightened regulations across a range of issues linked to companies' environmental performance, including non-carbon emissions to air.

In 2017, we carried out analysis to understand the gaps between current performance and international best practice. This included the engagement of an external consultancy to inspect our energy facilities, benchmark them against relevant European Union emission standards and provide recommendations to improve performance. The outcomes of this exercise are currently being analysed and will inform our future strategy in this area.

Performance

In 2017, all our operations in Kazakhstan – including those in the Pavlodar region – complied with applicable environmental emissions permits or were within the limits required by legislation.

Planning for the future

Our ability to improve performance is partially constrained by the fixed nature of our heavy equipment.

As a result, we are placing greater short-term emphasis on the application of alternative performance enhancement technology. This includes the application of advanced filtration technology to remove particulates from the emissions of our existing equipment at the sintering workshop of Aluminium of Kazakhstan in the Pavlodar region. In 2018, we will also launch the development of a comprehensive, staged plan to minimise air emissions from our broader operations in Kazakhstan.

Beyond this, we will examine capital replacement projects as a more strategic means of improving our underlying emissions performance.

In addition, in 2018 we will implement automated atmospheric monitoring at our aluminium business in Pavlodar. This will see the establishment of remote monitoring stations and sanitary protection zones around the entity. The stations will be equipped with devices that report emissions levels in real time to ERG environmental teams. This will support faster, more responsive management of our air emissions, whilst delivering accurate data to our stakeholders.

Beyond this, key areas of future focus for our R&D team in Kazakhstan include:

- Strengthened environmental impact monitoring through the use of mobile laboratories equipped with mass spectrometers
- Reduced dusting such as the potential processing of ash dumps at the Aksu Power Plant



# 4.2 Energy and climate change

Key Strategic Goal in the 2025 Strategy

- The prevention of pollution
- Energy business development

ERG is one of the largest producers of electricity in Kazakhstan. Our power stations in Pavlodar, Kostanay and Aktope regions have a combined capacity of 3,202MW and generate the equivalent of around 19% of the country's electricity, the majority of which is used by our own operations. 86.5% (2016: 87.0%) is produced from coal, a key source of greenhouse gas (GHG) emissions, extracted from our Vostochny open-pit mine. As such, we make a significant contribution to Kazakhstan's total carbon emissions. We are exploring ways to reduce this in support of the Government's move towards a greener economy, and in light of the Paris Agreement on Climate Change.

All of our entities in Kazakhstan are certified to the ISO 50001/EN 16001 energy management system standard. The results of energy audits carried out at these entities between 2014 and 2016 have informed our 2016-2020 energy consumption improvement programme.

The majority of electricity consumed at our operations in the DRC is generated through hydropower. GHG emissions that are produced are linked to fuel consumption from mining and hauling activities at our mine sites and to our logistics entity SABOT.

**Key issues and initiatives**  
**Policy context in Kazakhstan**  
Although Kazakhstan is a signatory to the Paris Agreement on Climate Change, the National Plan (which was published in 2017) and associated emissions trading scheme do not apply any restrictions on our emissions in the near-term. Nonetheless, in the context of planned national reductions in GHG emissions of 15% (unconditional)/25% (conditional) by 2030, we are developing and implementing measures to reduce our GHG emissions.

This is in recognition of the potential risk that tighter regulation in Kazakhstan could – unless adequately managed – have a material impact on our operational continuity, capital allocation needs and, ultimately, our profitability.

**Energy efficiency**  
Under our 2016-2020 energy consumption improvement programme in Kazakhstan, we implemented more than 380 energy efficiency measures during 2016-2017, reducing our energy consumption by over 3000 terajoules and generating cost savings of around US\$7 million. This mainly consisted of smaller-scale projects, including through energy services agreements, aimed at reducing our marginal energy consumption such as:

- The reuse of thermal power to heat our facilities
- Engine optimisation for our vehicles
- The replacement of standard lighting with energy efficient bulbs

**Renewable energy**  
In 2017, we continued to work on our renewable energy programme. Kazakhstan's 2013 Presidential Decree on a 'Green Economy' has set the following national targets for the share of energy to be generated using alternative sources:

- 3% by 2020 (wind and solar)
- 10% by 2030 (wind, solar, hydro, nuclear)
- 50% by 2050 (wind, solar, hydro, nuclear)

Related regulations require energy producing organisations in Kazakhstan – including our energy unit Eurasian Energy Corporation (EEC) – to purchase, at their own cost, renewable power as part of their overall energy portfolios. This is typically more expensive than the purchase of conventional power.

In this context, in 2017 we moved closer to the development of our own renewable energy generation capabilities, with plans to establish installed capacity of 150-180MW (depending upon capacity factors). This capacity will be

made up of a balanced mix of wind and hydropower generation. As planned, this configuration will help us to:

- Optimise our capital costs
- 'Balance out' seasonal generation variations for both generation methods
- Effectively integrate our projects into Kazakhstan's power network

Work in 2017 included:

- Wind power: The completion of a study of potential sites, and the selection of two – one near Donskoy GOK (Kazchrome) and one near EEC's Vostochny coal mine
- Hydropower: A study to assess the potential for small hydropower facilities in the East Kazakhstan and Almaty regions

In Africa, we are continuing to explore opportunities to improve our carbon performance by including our carbon emissions in our environmental and social impact assessments. This means that less carbon intensive and/or renewable energy sources and forms of generation will be considered for new projects.

**Performance**  
In 2017, we consumed 264,521 terajoules of energy globally (2016: 261,521 terajoules), with 86.5% of energy sourced from coal (2016: 87.0%). This moderate increase in energy consumption was driven by the extension of a dewatering system in Africa.

GHG emissions associated with our direct and indirect energy consumption totalled 24.1 million tonnes CO<sub>2</sub>-equivalent (2016: 24.1 million tonnes CO<sub>2</sub>-equivalent).

**Planning for the future**  
In 2018, we are planning to carry out a comprehensive carbon foot-printing/lifecycle analysis exercise of the aluminium that we produce. As a commodity, aluminium is energy intensive to produce. The exercise will:

All of our entities in Kazakhstan are certified to ISO 50001/EN 16001

- Give us valuable insight into how we can produce the metal in a more energy efficient, less carbon-intensive way
- Deliver insight to our customers as to the ultimate carbon footprint of the products that they produce (where such products integrate aluminium purchased from ERG)
- Potentially generate additional insight into how we might better manage our carbon emissions in other parts of the business

In addition, we conducted a feasibility study focused on the reconfiguration of the cleansing system at SSGPO's Kacharsky Power Plant, and the introduction of gas (rather than coal) generation into the energy mix. As such, it could have a material positive impact on our total GHG emissions.

Beyond this, key areas of future focus for our R&D team include:

- Reduced GHG emissions through efficiency enhancements to existing power and metallurgical plants, carbon storage and capture, the use of carbon dioxide and waste to produce marketable products, and the development of new sources of renewable energy
- Fuel diversification, including through energy generation using ferrogas and/or coke oven gas

**Energy efficiency planning at ERG Africa**  
We carried out, as part of a five-year energy efficiency programme, energy audits at Boss Mining, Frontier Mine and Chambishi Metals. This included the gathering of data, analysis of best practice and the identification of opportunities for improvement. These audits will inform the preparation of relevant business cases and the implementation of resulting action plans in 2018. The ultimate aim of the programme is to improve energy efficiency by approximately 10% across our African assets with anticipated cost savings of US\$2-3 million a year across the five-year period.

In addition, we commissioned a hydrocarbon expert to audit the use of diesel by our ERG Africa operations, with the aim of identifying and addressing losses and/or inefficiencies. The audit identified a number of opportunities for improvement, ranging from the harmonisation of management models across operations to a lack of infrastructure for measuring and monitoring fuel consumption. As such, we plan to do the following in 2018:

- Update our immediate fuel supply agreements
- Develop relevant fuel management policies
- Upgrade our fuel management infrastructure
- Rollout related training



Energy consumption breakdown (TJ)				
Type	Energy source	2017	2016	
Direct	Coal	226,405	225,288	
	Petrol	144	160	
	Residual fuel	7,185	6,909	
	Diesel	8,038	8,079	
	Natural gas	19,921	18,338	
	Kerosene	15	15	
	Sub-total	261,708	258,789	
Indirect	Electricity	2,537	2,377	
	Heat	207	278	
	Steam	69	77	
	Sub-total	2,813	2,732	
All	Total	264,521	261,521	

Greenhouse gas emissions (tonnes CO <sub>2</sub> e)		
	2017	2016
Direct emissions <sup>1</sup>	24,014,808	23,768,926
Indirect emissions <sup>2</sup>	55,572	365,746
Total (Direct and Indirect)	24,070,380	24,134,672

1. i.e. GHG emissions that result from the consumption of direct energy for generation of electricity, heat/steam, used in mining, production, and for ERG controlled transportation activities. CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O only. Conversion factors from 2006 IPCC Guidelines for National Greenhouse Gas Inventories – Stationary and Mobile Combustion.  
2. i.e. GHG emissions that result from the consumption of indirect energy purchased from third parties not owned or controlled by ERG. Based on operational control of assets. Conversion factors: (1) Purchased electricity – Country-specific WBCSD and WRI: GHG Protocol – Calculation tool for purchased electricity v4.3 (2008 values); and (2) Purchased heat and steam – Supplier data and default factors from 2006 IPCC Guidelines for National Greenhouse Gas Inventories – Stationary and Mobile Combustion.



# 4.3 Waste management



**Key Strategic Goal in the 2025 Strategy**

- The prevention of pollution

Like any business involved in mining, we produce large volumes of waste rock, tailings and sludges as a by-product of our activities.

All such waste is managed in accordance with our established environmental management systems and relevant legal requirements. This includes a focus on physical integrity and the prevention of groundwater and surface water pollution. In this context, we carry out regular inspections of our tailings storage facilities (TSFs). This is carried out both by our internal teams and external, suitably qualified experts.

For example, TSFs at Comide, Boss Mining and Frontier Mine in Africa were audited by an external consultancy in late 2016, and follow-up actions continued to be implemented and monitored closely in 2017. All identified actions have been or are in the process of being implemented, and updates on progress are reported to senior management on a monthly basis.

In addition to such 'high volume' waste, our operations also produce a range of operational waste such as wood, metal and other materials.

In Kazakhstan, our waste is categorised as 'Green', 'Amber' or 'Red' to reflect the relative hazard levels they represent. The minority of our waste is classified as 'Red' (and some 'Amber').

This type of waste is collected, transported, recycled and/or disposed of by suitably qualified specialist service providers. All waste is disposed of in line with national law. We check:

- That our contractors have appropriate processing areas, equipment, transport and qualified staff to take and process relevant waste, as well as relevant environmental permits
- That the recycling or processing method to be employed by the contractor or their sub-contractors is specified in our contracts

In Africa, waste oil is collected by our supplier or used (with government approval) by a local cement factory.

**Key issues and initiatives**

**Cleaning up legacy waste in the DRC**

The Metakol Roan Tailings Reclamation (RTR) project near Kolwezi in Southern DRC represents a unique opportunity for us to not only 'do no harm', but also to actively address decades of legacy pollution at the project, which took place for decades prior to our ownership. Such legacy issues include:

- The filling of the main local river valley with tailings
- The presence of open-pits, waste rock dumps and poor tailings facilities that produce dust

Under the project, we will reprocess the existing tailings in and around the river valley at a low-cost hydro-metallurgical plant. The resulting reprocessed tailings will then be consolidated

into a single, modern tailings storage facility that will be constructed according to international best practice, and will be monitored closely to ensure its structural integrity.

As the project progresses, it will (under the second phase of its development) add 105 kt of copper and 20 kt of cobalt to our production portfolio. Furthermore, it will also progressively address the extensive legacy of environmental degradation and pollution at the site, thus improving the quality of life of local and downstream communities, as well as local flora and fauna. This means that at the end of mine life, we will leave a site that is in far better condition than when we commenced operations.

One complication of this multi-decade legacy of inadequately managed mining waste (as well as the presence of artisanal and small-scale mining communities and other large-scale mining operations in the area) is the delivery of assurance to downstream communities that we are not contributing to water contamination. As such, comprehensive upstream and downstream monitoring remain key areas of focus.

**Making a commercial opportunity from waste in Kazakhstan**

The vast majority of our waste is generated from our mining (including the removal of overburden), processing and smelting activities. Whilst much of this waste is not readily recyclable and/or marketable due to a lack of demand, inadequate value to weight ratios or

the need for expensive conversion – there are opportunities for recovering, processing and selling certain categories of waste. This helps reduce our own environmental footprint, conserve natural resources and generate additional profits.

Furthermore, this approach is aligned with the shift of the Government of the Republic of Kazakhstan towards a more environmentally-friendly economic model. This was set out in the 2013 Presidential Decree on the transition to a 'Green Economy' and the national strategy 'Kazakhstan-2030'.

Under our ongoing 'Turning Waste Into Profit' initiative in Kazakhstan, we actively market:

- Spent refractory lining of ladles, mixers, electrolyzers, induction furnaces
- Carbon foam
- Graphite
- Coke dust
- Aluminium slurry

In 2017, we achieved a large increase in the volume/value of waste sold, partly due to improved governance and approaches to waste management (including enhanced analysis of marketing opportunities), as well as stronger prices for our waste products.

**Reprocessing of waste at Kazchrome**

Our Aktobe Ferroalloys Plant launched a project to briquette waste and dust from the chrome production process. This is with the aim of returning higher-grade waste back into production. Previously, such waste was sold to third parties and filter cake was recycled. A newly-established facility will extrude chrome briquettes and has a production potential of 80 kt per year.

**Performance**

In 2017, we sold 151,077 tonnes of waste to third-parties (2016: 58,000 tonnes) worth approximately US\$3.3 million. This saved US\$1.1 million in waste disposal costs, reducing our environmental footprint and our environmental liabilities, whilst also generating revenues for the Group.

**Planning for the future**

Depending on the ultimate benefits and our technological readiness, future waste processing efforts will be focused on:

- High carbon ferrochrome slags at Aksu Ferroalloys Plant (Kazchrome)
- High carbon ferrochrome aspiration dust at Aktobe Ferroalloys Plant (Kazchrome)
- Historical tailings of Donskoy GOK (Kazchrome)
- Microspheres and ash at EEC

Key areas of future focus for our R&D team with respect to waste management include:

- The processing of lower-grade dust by-products through our waste pelletisation project at our Aktobe Ferroalloys Plant, thus completing a 'closed-loop' for this type of waste
- The establishment of a new plant to process legacy sludges that have accumulated since the 1950s at our Donskoy chrome mine. We currently extract 80% of the residual chromium, and the new plant will aim to increase the recovery rate to 90%
- Testing of further recycling technologies for ferruginous sand



## Section 5

# Our relationship with broader society

Generating wealth and being a responsible corporate citizen



## 5.1 Value generation and distribution



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## Materiality

Our business does not exist in isolation. It has the potential to impact a wide range of stakeholders at both local and national level

This is especially the case given the significant role that we play within the Kazakhstan economy, the Government of the Republic of Kazakhstan's substantial shareholding in ERG and its representation on our Board.

Similarly, our African assets are in locations that pose a range of socio-economic challenges, making it incumbent on us to operate with sensitivity, and in a way that advances rather than undermines the interests of local people and broader society.

Our distribution of economic value, through procurement, wages, taxes and other means, collectively marks the most significant benefit we deliver to our host societies. Whilst we take great pride in driving broader value-creation, we also seek to 'do no harm' and, where possible, to positively enhance our operating environments.

This means we aim to operate in a responsible, transparent and ethical way, with respect not only to our own actions but also our interactions with host governments, business partners, contractors, suppliers and broader society.

Key issues in this regard include:

- Value generation and distribution
- Anti-corruption and business ethics
- Government relations and policy

### Relevant Priorities in the 2025 Strategy

**Focus area: Sustainable development of the regions**

- The improvement of social wellbeing in our operating regions

### Key UN Sustainable Development Goals



How we manage our interactions with society

Value generation and distribution

The sustainable generation of revenue is vital to our business. As such, our entire business model is geared towards maximising the value that we can create, both now and in the long-term.

Other issues

Our policies define our approach to interacting with society. These include our corporate compliance policies, which are implemented through our associated management systems. These policies reflect the regulatory environments we operate in and are regularly reviewed against:

- Our risks
- Shifts in local laws and regulations
- Evolving stakeholder expectations

Corporate compliance policies

Agents Compliance

Anti-bribery and Corruption

Anti-money Laundering

Anti-fraud

Competition Compliance

Conflict of Interest

CSR Projects and Sponsorship Policy

Data Protection

Gifts and Entertainment

Related Parties Contracts

International Economic Sanctions

Information Classification

Human Rights

These are in addition to our Code of Conduct, which is binding on all our employees, managers and Board members. It applies a range of obligations with respect to:

- Compliance with laws, rules and regulations
- Anti-bribery and corruption
- International trade, export controls, financial and political sanctions
- Human rights
- Political and non-political contributions, donations and sponsorships by ERG

5.1 Value generation and distribution

Key Strategic Goal in the 2025 Strategy

- The improvement of social wellbeing in our operating regions

Our ability to continue generating long-term value for our shareholders is supported by our delivery of tangible economic benefits to all our other stakeholders. These include our host governments, which grant us our mining/operating licences and regulate our activities; our host societies, from whom we derive our social licence to operate; and our employees, without whose skills and energy we could not create value. If we fail to share the value we create with these stakeholders (amongst others), it will – over time – undermine our entire business model.

Key issues and initiatives

In this context, we are proud of the positive economic impact we have on our host societies and beyond. In part, these derive from our products and services, and the impact that they have on enabling indirect economic activity and growth. This includes, for example:

- The extraction and value-adding processing of finite national mineral resources and the delivery of high quality, responsibly-sourced minerals and metals to industrial customers around the world
- The generation of power not only for our operations in Kazakhstan, but also for a range of domestic and industrial customers
- The provision of large-scale rail services to businesses in Kazakhstan

More directly, our most significant means of distributing value to the societies in which we operate are through our payments to:

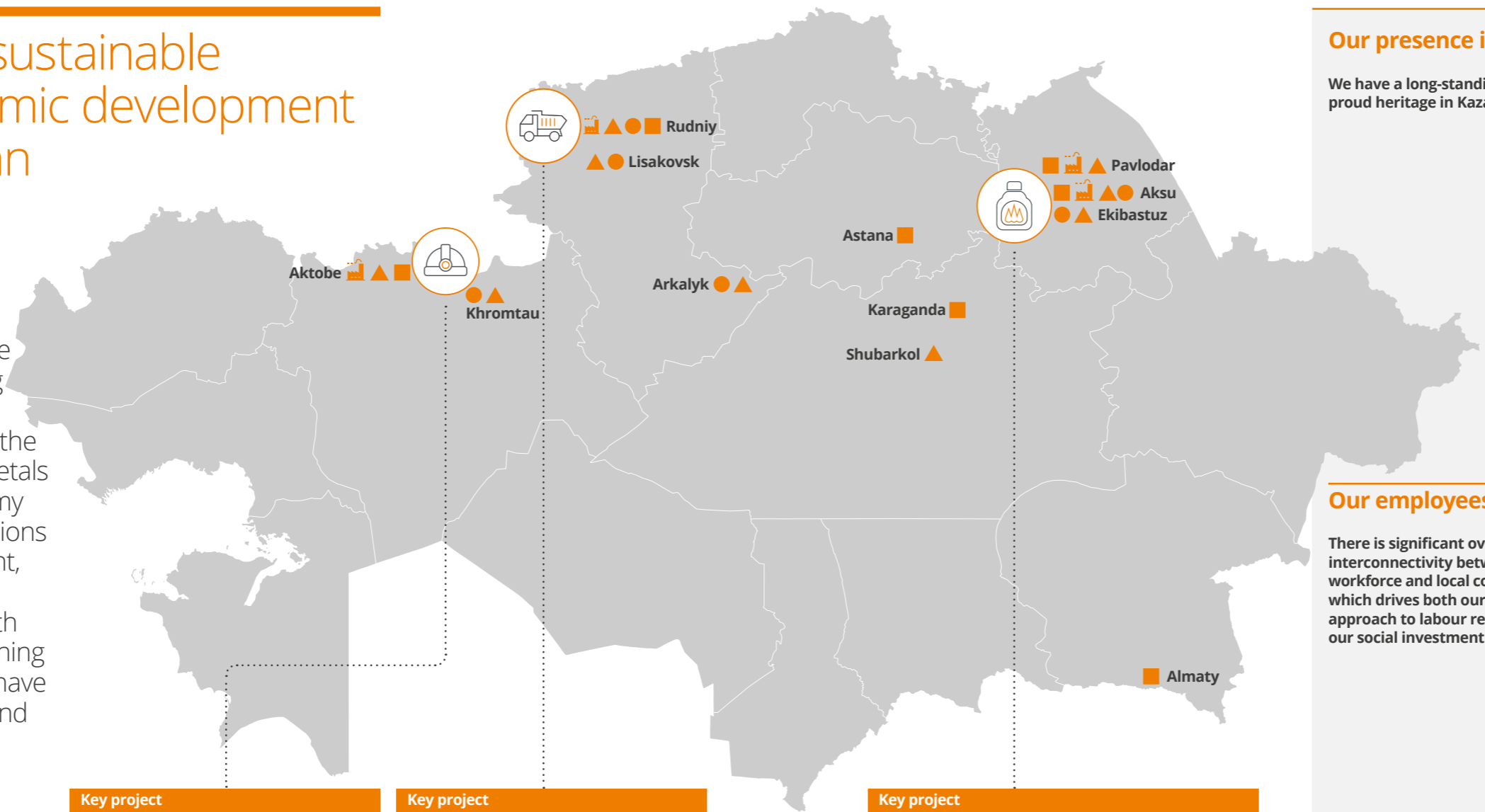
- Employees and individual contractors (in the form of wages and benefits)
- Service contractors and suppliers, many of whom are from the countries in which we operate
- Finance providers, including interest on debt and shareholder dividends
- Host governments, including through taxes and royalties
- Communities, through our community social investment spending

Our ability to continue generating long-term value for our shareholders is supported by our delivery of tangible economic benefits to all of our other stakeholders



# Supporting sustainable socio-economic development in Kazakhstan

ERG has a long heritage in Kazakhstan – playing an instrumental role in our operating regions, the national mining and metals sector, and the economy as a whole. Our operations have been an important, long-term source of employment and wealth generation for local mining towns, many of which have effectively ‘grown’ around our mines and plants.



- Power station
- Mining town
- Corporate office
- Operations

**Key project**

**Development of DNK mine (second phase)**

This project will replace output from our retiring chrome mines and increase ferrochrome production over the long-term (first ore from DNK second phase is planned for 2023).

**Key activities in 2017**

- Progressed second phase of mine development

**Impacts**

- Expected to increase our future production volumes of chrome ore per year

**Key project**

**Smart Mine Kacharsky, SSGPO**

The Smart Mine initiative uses digital technology and data analysis to improve operational efficiency and reduce costs.

**Key activities in 2017**

- Implementation of automated mining and vehicle management system

**Impacts**

- Anticipated cost savings of US\$1.4 million per year

**Key project**

**Renovation at Aksu Ferroalloys Plant**

Renovation activity will increase production volumes, enhance productivity and reduce energy consumption.

**Key activities in 2017**

- Initiated major rebuild of No.64 smelter furnace as part of the ongoing Workshop No.6 Renovation project

**Impacts**

- Expected to improve furnace productivity by 50% and reduce energy consumption by 20%
- Project also anticipated to reduce our emissions to air
- Workshop expected to produce 500 kt of high carbon ferrochrome a year (once this and other renovations are completed in coming years)

## Our presence in Kazakhstan

We have a long-standing and proud heritage in Kazakhstan

**80 years**  
of in-country operations

**1/3**  
Share in Kazakhstan's metals and mining sector (based on taxes paid)

**40%**  
Government's of the Republic of Kazakhstan shareholding in ERG

## Our employees and local communities

There is significant overlap and interconnectivity between our workforce and local communities, which drives both our holistic approach to labour relations and our social investment strategy

**62,100**  
Permanent employees

**US\$105.5m**  
Spent on community social investment

**450,000+**  
Approximate number of people living in ERG's six mining towns

## Broader economic impact

Beyond our operating regions, we play an important role in supporting national economic development

**US\$700m**  
Over US\$700m in taxes paid

**US\$250m**  
Over US\$250 million spent on domestic suppliers of goods<sup>1</sup>

**19%**

Contribution to national energy production<sup>2</sup>

1. Excluding intercompany procurement of goods.  
2. The majority of energy produced is used for our own operations.

Section 5: Our relationship with broader society continued

**Local content**  
In line with relevant local content requirements – and subject to our equal opportunities policies – we seek to:

- Employ and develop nationals
- Encourage the employment of nationals and use of local content by service contractors
- Use companies from our host countries to supply us with goods and services

Our ability to do so is determined by such individuals’ and companies’ technical, operational and business capabilities, as well as our own commercial considerations. We also support local capacity building where possible. For example, activities include:

- A new collaboration with the Ministry of Industrial Development and the National Chamber of Commerce in Kazakhstan to promote the development of new businesses to support our production processes. In 2017, we conducted pilot industrial testing with a number of local companies to identify opportunities for future collaboration
- Continued participation in the Student Entrepreneurship Ecosystem Programme (p47)
- Support for the Skolkovo Start-Up Tour in Almaty, Kazakhstan (p47)

In this context, during 2017 we increased our direct procurement of goods through local producers by approximately 40% in Kazakhstan. Our entities, which are operating under subsoil use contracts, have purchased over 5% of their goods and services from local suppliers operating in our mining towns.

Around 80% of our procurement strategies have been developed with local producers. Where appropriate, we involve local producers from disadvantaged groups into our value chain, such as the Society of the Blind in Kazakhstan.

In Africa, our local procurement spending with companies registered in the DRC was around 60% of our overall procurement spend. Of this local spend, approximately 60% was made up of long-term contracts.

In Brazil, almost all our procurement is from local suppliers.

**Tax and transparency**  
As a multinational corporation, ERG has an obligation and a responsibility to pay taxes and comply with the laws and rules in force in all countries where we do business.

ERG is committed to ensuring full compliance with all governing tax laws and rules. Our tax department works closely with management to provide guidance and ensure our operations are compliant with local laws.

We make a significant contribution to public finances in our host countries, both directly through the payment of taxes and indirectly through payments to suppliers, employees and community social projects. In 2017, we paid more than US\$850 million to governments in taxes and duties (2016: more than US\$600 million). The increase is mostly due to higher income tax payments as a result of increased taxable profit in Kazakhstan.

We agree with the principles behind the OECD Base Erosion and Profit Shifting (BEPS) initiative, which aim to realign taxation with economic substance and value creation. We therefore do not engage in aggressive tax reduction strategies. ERG’s effective corporate income tax rate reflects the statutory corporate income tax rates in the countries where we have our mining and processing operations, and where we pay more than 96% of our Group taxes (2016: more than 95%).

We are dedicated to providing transparency about any payments made to governments, and we believe this to be in the best interest of all our stakeholders. For over a decade, we have actively engaged with the Extractive Industries Transparency Initiative (EITI) processes in the countries where we have our main operations: Kazakhstan, the DRC and Zambia.

Extractive Industries Transparency Initiative (EITI) status of host countries		
Actual/potential extraction locations	EITI status/assessment	
Brazil	Non-participant	
DRC	Participant (Validation expected to be finalised by 1 July 2018)	
Kazakhstan	Participant (Meaningful progress)	
Mali	Participant (Meaningful progress)	
Mozambique	Participant (Meaningful progress)	
Zambia	Participant (Meaningful progress)	
Zimbabwe	Non-participant	

Performance

Economic value generated and distributed by type			
Type	Detail	2017 (US\$m)	2016 (US\$m)
Economic value generated	Revenue	5,048	3,840
Economic value distributed	Operating costs/payments to suppliers	1,791	1,421
	Employee wages and benefits	754	637
	Payments to providers of capital	628	562
	Payments to government	660	512
	Community social investment	111	56
	Total	3,943	3,188
Economic value retained		1,104	652

Planning for the future

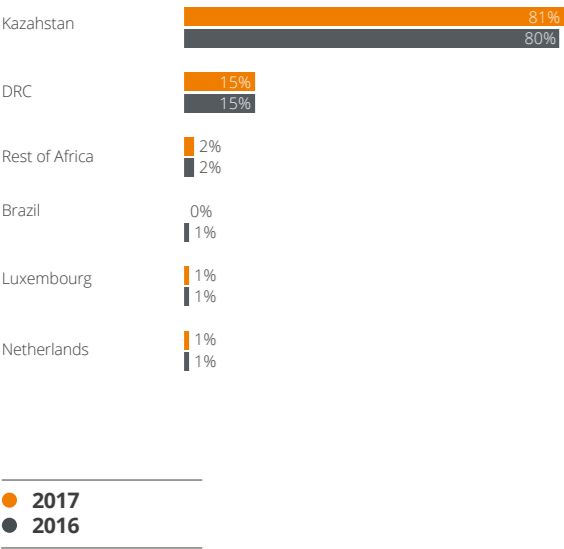
Our planned and potential growth projects will help support our future generation and distribution of value, including:

- The expansion of ferroalloys production in Kazakhstan through Kazchrome’s DNK mine second phase development as well as the renovation of the smelting shop at Aksu Ferroalloys Plant
- The construction of a new aluminium smelter in Kazakhstan
- The Metalkol Roan Tailings Reclamation cobalt and copper project in the DRC
- The extension of life of mine at Frontier in the DRC
- The development of the Bahia Mineração iron ore project in Brazil

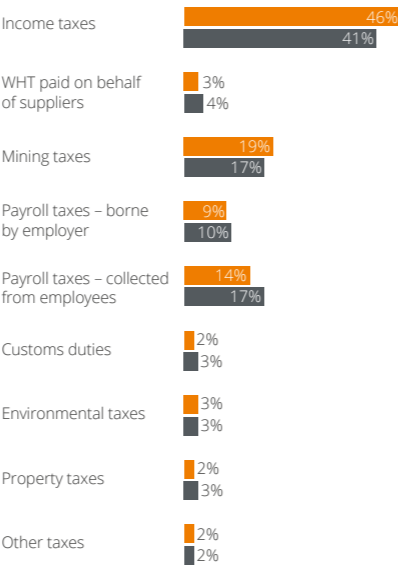
For further details on these growth projects, please see p24-25.



Proportion of tax payments and royalties by location



Proportion of tax payments by type



# 5.2 Anti-corruption and business ethics

ERG is committed to conducting its activities in accordance with all applicable laws and regulations and high ethical standards of business conduct. Furthermore, we are opposed to all forms of bribery and corruption, and do not engage in or tolerate their occurrence in any circumstances. It is against Group policy to offer, solicit, give or accept bribes in any form, for any purpose.

### Oversight

Our compliance efforts are overseen by our Board's Compliance Committee, comprised of two Board members and an independent chairperson. The Committee reviews, oversees and approves our compliance policies, systems and controls, whilst also monitoring the effectiveness of our compliance function. The committee met six times in 2017 with all members attending. At an executive level, the Risk and Compliance Committee was established in 2016 and commenced operation in 2017.

### Implementation

Our compliance policies and guidelines are implemented by our Group, regional and local compliance teams, in conjunction with the broader business. This includes the development and maintenance of a robust compliance strategy, structure, systems and tools based on risk assessment, internal screening, monitoring and auditing, as well as international best practice.

We provide compliance training programmes on the Code of Conduct (CoC), including targeted training for teams that face higher levels of exposure to corruption risks and associated policies. This includes those teams involved in, for example:

- Procurement processes
- High levels of interaction with officials

Furthermore, our employees and business partners are able to submit any reports or queries they might have regarding ethical and compliance risks. This includes through our confidential, anonymous and 24 hour Group Hotline operated by an independent third-party, and a dedicated email address. ERG is committed to protecting whistle-blowers who report suspected violations in good faith and to maintaining confidentiality where requested.

### Policies

We have policies and procedures addressing specific risks that we review regularly. These include our corporate compliance policies, including the following:

- **Anti-bribery and Corruption Policy:** this commits us to always acting responsibly, honestly and with integrity and to not engaging in or tolerating any form of bribery or corruption
- **Agents Compliance Policy:** this requires agents acting on behalf of the Group to apply with applicable laws and regulations, as well as our policies and the CoC
- **Anti-money Laundering Policy:** this commits us to not knowingly engaging in transactions involving money laundering or terrorism financing
- **Human Rights Policy:** this requires ERG and its employees and contractors to abide by human rights norms
- **Competition Compliance Policy:** this commits us to not engaging in or tolerating any form of conduct that fails to comply with applicable anti-trust and competition laws
- **CSR Projects and Sponsorship Policy:** this sets out the process, criteria and approvals necessary for ERG to commit to corporate social responsibility (CSR) projects or sponsorships
- **International Economic Sanctions Compliance Policy:** this commits us to avoiding breaching international economic sanctions imposed by relevant governments, supranational or international organisations

As noted above, these policies are supplemented by our CoC, which sets out more detailed obligations and guidance for our employees, managers and Board members. These policies and the CoC are supplemented by our Counterparty Due Diligence (CPDD) procedure and supporting compliance and anti-corruption reviews and training.

### Third parties

We conduct due diligence of third parties we engage with, using reputable information providers. This allows us to assign risk ratings in each case and identify appropriate mitigation actions. In 2017, we conducted 7,301 third party due diligence reviews<sup>1</sup> (2016: 2,751), with recommendations made as to additional information, controls and/or rejection where appropriate.

Our Agents Compliance Policy requires all agents acting on our behalf (including sales agents, tax consultants, lawyers, customs agents, acquisition intermediaries, etc.) to be subject to documented due diligence and comply with our CoC and all compliance policies. They are also required to confirm in writing on an annual basis that they have not engaged in any illegal, corrupt or unethical conduct in the performance of their duties for ERG, and that they remain in compliance with all applicable laws, regulations, rules and Group policies.

In 2017, we undertook steps to enhance our compliance performance and encourage a 'speak-up' culture

ERG manages engagements with third parties in accordance with internal policies, which include the International Economic Sanctions Compliance Policy. In accordance with this Policy, we do not engage in or tolerate any form of conduct which fails to comply with the requirements of applicable international economic sanctions laws and regulations. As such, we review third parties and potential transactions against international sanctions and designation lists, and, where appropriate, seek external legal counsel from qualified firms.

1. The number of counterparties that underwent the CPDD process increased in 2017, due to the implementation of a risk-based due diligence process as well as the lowering of the screening threshold for several types of transactions in selected jurisdictions.

### Key issues and initiatives

Business ethics is a particularly material issue for ERG given the nature of our operating environments, which pose relatively high levels of latent risk with respect to corruption. In 2017, we undertook a number of steps to enhance our compliance performance and encourage a 'speak-up' culture. This included:

- The rollout of our long-term Compliance Strategy and our Compliance Charter
- The establishment of an annual compliance planning system that is aligned with our business objectives and risk assessment processes
- The initiation of a process to integrate our existing compliance training system into the curriculum of our new ERG Academy
- The strengthening of our capabilities through the additional recruitment of regional compliance specialists
- An enhanced assessment of compliance risks through top-down and entity/facility-specific compliance evaluations, and the integration of additional controls into our business processes where risks have been identified

Furthermore, we introduced new and updated compliance policies with respect to CSR projects and sponsorships, communications and disclosures, and updated our Data Protection Policy.

In 2017, we became a member of the World Economic Forum's Partnering Against Corruption Initiative (PACI). This is a cross-sector agenda-setting platform that works with business leaders, international organisations and governments to address corruption, transparency and risks in emerging markets. In addition, we also became a participant in PACI's 'The Future of Trust and Integrity' project, which aims to identify and develop practical solutions to promote trust and integrity through behavioural change, organisational innovation and the adoption of technology.

### Legacy issues relating to ENRC

The Serious Fraud Office (SFO) is an independent UK Government department that investigates and prosecutes serious or complex fraud and corruption. The SFO forms part of the UK criminal justice system with jurisdiction in the UK.

Between 2011 and 2013, ENRC was engaged in an internal investigation into certain matters, including allegations around its operations and assets in, and transactions involving, Kazakhstan and Africa (in particular, the DRC). Throughout that period, ENRC provided the SFO with a considerable volume of information resulting from this investigation.

In late April 2013, the SFO decided to open a formal investigation into ENRC. The SFO confirmed, in May 2015, that it is "not at present actively investigating the Company's operations in Kazakhstan".

However, the SFO has not indicated to ENRC the precise scope of their investigation in Africa. ENRC is represented by specialist external counsel for the purposes of all matters regarding the SFO process. The investigation is ongoing.

### Litigation and arbitration

The Group is involved in ongoing litigation and/or arbitration with a number of parties. This includes the governments of Zimbabwe, Mozambique and the DRC in relation to taxes and royalties. In addition, we are engaged in ongoing litigation/arbitration with a construction contractor in relation to work carried out in Kazakhstan, a joint-venture partner in the DRC, a mining contractor in relation to work carried out in the DRC and construction contractors in relation to works carried out in Zambia. All such cases are pending final decisions/judgments.

### Data protection

In May 2018, the European Union's (EU) General Data Protection Regulation entered into force, applying to all companies operating within the EU and the personal data that they process. This applies to personal data processed within the EU, and abroad, if such data has been exported from the EU. Any failure to comply with the Regulation may result in a number of escalatory sanctions, ranging from warnings, reprimands and suspensions on data processing to fines of up to €20 million or 4% of global turnover (whichever is greater).

In 2017, we engaged third party specialists to review our existing data protection arrangements and carry out a gap analysis against the requirements of the Regulation. This has informed a well-defined work plan, which has been implemented in 2018 to address any identified gaps.

This will run alongside a programme to raise employee awareness and develop their capabilities with respect to this issue. We are confident these efforts enable us to comply with the Regulation.

### Performance

#### Anti-corruption

During the year, all of our sites in Africa, Brazil and Kazakhstan were assessed for corruption-related risks as part of regional and entity-level application of our Group-wide risk management system (p14-15).

As a result, we have applied relevant mitigation actions, including the development and Board approval of the CSR Projects and Sponsorship Policy, budget analysis and reconciliation, employee training, communications from management, a review of hospitality procedures and the development/implementation of controls on gifts and similar payments.

We also saw an increase in the number of reports and queries raised by our employees and business partners through our Hotline. These rose from 78 in 2016 to 327 in 2017 – an increase of 319%. Our analysis suggests that

this is not reflective of a worsening in our business environment or an increase in corrupt activity, but instead reflects the growing strength of the 'speak-up' culture that we are encouraging within the business, including through training.

### Business ethics

In 2017, ERG was not subject to any:

- Material judicial findings or regulatory sanctions (including those linked to its social, economic and/or labour impacts)
- Investigations, legal actions or findings in relation to anti-competitive behaviour and/or internationally applicable sanctions

In late 2017 and early 2018, the Government of the United States brought into effect a number of new sanctions and designations that impacted individuals and companies with links to Russia and the DRC. When new sanctions are introduced, we review these against existing third-party arrangements, and if necessary, terminate arrangements to ensure that we are compliant with the sanctions. We have conducted this exercise in relation to the recent sanctions and designations introduced by the US.

### Planning for the future

We are planning to build on the solid compliance culture we have built in 2017 – with the strength and capability of our Compliance team – by further developing our compliance management system in 2018. This includes its further alignment with international best practice, including the ISO 19600 compliance management system standard.

# 5.3 Government relations and policy

The governments of our host countries are some of our most important stakeholders.

This reflects their potential impact on our business in terms of public policy, legislation, regulation and the awarding of new licences. Furthermore, given the Government of the Republic of Kazakhstan is a 40% shareholder in ERG, its potential impact on the Group is even more marked.

All engagements with government are carried out in line with our CoC and, where relevant, our accompanying compliance policies. Under our CoC, ERG will not, directly or indirectly – other than in exceptional circumstances approved in advance by the Board – make political contributions.

Any political contribution must be authorised in accordance with internal ERG regulations and applicable law. Whilst we respect and support the right of employees to participate in political activities, this must be conducted purely in a personal capacity and not on behalf of, or in connection with, ERG.

Likewise, we will not do business with persons or entities where such a business transaction would be in violation of applicable national or international sanctions laws and rules (p70).

**Key issues and initiatives**

**Mining Code in the DRC**

In March 2018, the Government of the DRC signed a new Mining Code into law, despite opposition from mining operators in the country. Amongst other things, the revised Mining Code introduces:

- An increase in royalties on base metals from 2% to 3.5%
- The imposition of a royalty on 'strategic metals' of up to 10%
- A 50% tax on 'super profits' (i.e. income realised once commodity prices rise 25% above the anticipated price included in each project's bankable feasibility study)
- Removal of a provision protecting licence holders from changes to the tax and customs frameworks they are subject to for 10 years
- A requirement for a 10% local shareholding in new mining enterprises

This is in a context in which cobalt has increased significantly in price in recent years due to growing global interest in electric vehicles and the batteries that power them. The DRC is home to around half of the world's reserves of cobalt and accounts for more than 65% of global production. Copper has similarly seen a significant increase in price since the start of 2016.



The current provisions of the updated Mining Code could impact the profitability of our business as well as those of other operators in the country. We recognise that the DRC and its people should benefit from the extraction of their national mineral resources. Nonetheless, we also recognise that, in combination with an uncertain political situation in the country, the terms of the new Mining Code may discourage much needed investment in the country, just as copper prices strengthen and demand for cobalt grows in a substantial and sustained way.

**Relationship with the Government of the Republic of Kazakhstan**

Our relationship with the Government of the Republic of Kazakhstan is deepened by virtue of:

- Its holding of a 40% interest in ERG
- Its representation on our Board of Managers
- The strategic economic role played by ERG in Kazakhstan in terms of its contribution to national GDP, the mining and metals sector, power generation and logistics

This helps ensure constructive engagement with respect to our business plans and strategy both within Kazakhstan and outside it. This is particularly relevant given the backdrop of the macro-economic uncertainties in the industry and the prolonged period of volatility in commodity prices.

Furthermore, we are proud to be in a position to play a positive role (where it is aligned with our own business objectives) with respect to the Government's broader national vision and strategy. This includes, for example:

- Foreign trade (for example, via our active participation in China's Belt and Road Initiative)
- Economic development (for example, through our transformation and efficiency initiatives, our focus on organisational and technological innovation, our ongoing investment in employee skills development and focus on digitisation/Industry 4.0)

- Social development (for example, through our extensive social investment in our local communities in Kazakhstan), as well as our donation of US\$61 million to the Foundation of the First President of the Republic of Kazakhstan – Elbasy in 2017 (p50)

- Environmental protection, as informed by the Paris Agreement on Climate Change and Government's aspirations with respect to a 'Green Economy' (for example, through our energy efficiency and renewable energy initiatives)

This is in addition to our constructive engagement with the Government of the Republic of Kazakhstan (alongside other stakeholders) in structured regulatory consultations. For example, in 2017 the Government established a multi-stakeholder working group to examine changes to environmental regulation.

Our participation in this working group, alongside a number of sector organisations and NGOs, means we are able to provide the Government with practical insight into the implications of such changes to industry and contribute to more effective regulation. This consultation process has, for example, resulted in the implementation of simplified environmental permitting procedures.

**Belt and Road Initiative**

ERG is an active participant in China's strategic Belt and Road Initiative (BRI) – a development strategy framework proposed by China in 2013 focused on improving trade links with a wide range of countries in Eurasia, Africa and Latin America, and promoting economic growth. This includes major Chinese investment in an international infrastructure development programme that is one of the most significant in recent history. Kazakhstan is a key country in this initiative in terms of geographical location, logistics, natural resources and cross-border trade.

We are already benefiting from Chinese investments in our growth projects. This includes financing and construction support for the resumed development of our Metalkol RTR project in the DRC, a new long-term source of environmentally responsible and ethically produced cobalt and copper.

In particular, China's Export-Import Bank and the Industrial and Commercial Bank of China have acted as key finance partners for ERG, playing an influential role in our growth. Furthermore, the BRI is also helping to underpin the marketing of our products in China, our largest destination market for our raw material outputs. These products are a key input into the country's infrastructure development, value-added manufacturing and economic growth.

As such, we see the BRI, and by extension China's international trade strategy, as playing a crucial and positive role in the future growth of the Group.

**Performance**

ERG did not make any contributions (financial or in-kind) to political parties in 2017.

As a 40% shareholder in our Group, ERG pays dividends to the Government of the Republic of Kazakhstan – directly contributing to the national budget. In addition, we work on a range of projects with regional governments in Kazakhstan aimed at supporting socio-economic development in our areas of operation. These include:

- 'Win-win' community projects negotiated with the governments and focused on investment in our local communities. These have improved the living conditions of our employees (including through the provision of decent, affordable housing), whilst also helping to meet governments' community development objectives (p46-49)
- Mandatory socio-economic development contributions required under our operating licences. These are paid to the governments directly, which then implements corresponding programmes informed by national and local policy

In Kazakhstan, we work with regional governments on a range of projects to support socio-economic development







**Eurasian Resources Group S.à r.l.**  
9, rue Sainte Zithe L-2763 Luxembourg  
Luxembourg

[eurasianresources.lu](http://eurasianresources.lu)

T: +352 24 84 53 1  
F: +352 26 84 58 99  
E: [info@erg.net](mailto:info@erg.net)