

# Supporting key aspects of modern life



## ABOUT ERG

With a global presence and a workforce of more than 67,000,<sup>1</sup> ERG owns integrated mining, processing, energy and logistics operations in Kazakhstan, Africa and Brazil.

## OUR VISION

An international, sustainable, socially responsible and efficient natural resources company.

## OUR MISSION

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

## WHAT MAKES US DIFFERENT

A diversified portfolio, with low-cost operations and significant growth potential

Integrated mining, processing, energy, logistics and marketing operations

A major player in responsibly produced cobalt

A diverse and long-standing global customer base

Participation in China's Belt and Road Initiative – strategically positioned in the heart of Eurasia

An enduring presence in Kazakhstan, with a global operational footprint

## OUR VALUES



Safety



Unity



Efficiency



Development



Responsibility

FOR FURTHER DETAILS ON OUR VALUES SEE P. 99

## GROUP FIGURES

### FINANCIAL

**\$4,210M**

Underlying EBITDA  
(2020: \$2,023M)

**\$8,530M**

Revenue  
(2020: \$5,356M)

**\$1,830M**

Free cash flow  
(2020: \$333M)

### OPERATIONAL

**1,540kt**

Ferroalloys production  
(2020: 1,653kt)

**20.7kt**

Saleable cobalt hydroxide production  
(2020: 16.5kt)

**14,714kt**

Saleable iron ore concentrate and pellets production  
(2020: 13,114kt)

### SUSTAINABILITY

**0.93**

Lost time injury frequency rate (LTIFR)  
(2020: 0.61)

**25.1Mt CO<sub>2</sub>e**

GHG emissions  
(2020: 24.3Mt CO<sub>2</sub>e)

**\$6,240M**

Economic value distributed  
(2020: \$4,611M)

## About this report

This annual Sustainable Development Report covers ERG's sustainability performance during the 2021 calendar year.<sup>2</sup> This includes ERG's mining, processing, power generation, project development, transportation and digital activities.

This report has been informed by the Global Reporting Initiative (GRI) Standards, and, as such, is focused on our most material Sustainable Development issues (p. 14). Its content has not been subject to third party assurance. For all queries in relation to this report, contact: [sd.report@erg.net](mailto:sd.report@erg.net).

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

## Notes on the preparation of this report

All references to 'ERG' or the 'Group' refer to Eurasian Resources Group S.à r.l. and/or its subsidiaries. This document includes forward-looking statements. For information regarding forward-looking statements, refer to the inside back cover of this document.

Please note that the scales/borders of any maps in this report are indicative only.



For more information visit  
[www.eurasianresources.lu](http://www.eurasianresources.lu)

<sup>2</sup> This follows our last Sustainable Development Report, published in 2021 and covering the 2020 calendar year.

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<sup>1</sup> Excluding contractors.

# A leading diversified natural resources group

ERG represents one third of the metals and mining industry in Kazakhstan, and is the world leader in high-carbon ferrochrome production by chrome content. We are also a substantial supplier of iron ore, aluminium and alumina in Eurasia, as well as a provider of energy and railway services.

Our Metalkol RTR operation in the DRC is the world's second largest producer of cobalt.

Furthermore, we are a large producer of copper in Africa, with development projects focused on other minerals and metals in Mali, Mozambique, South Africa and Zimbabwe.

In Brazil, we are developing an integrated iron ore mining and logistics operation (BAMIN).

## BRAZIL

Our integrated BAMIN operation in the state of Bahia consists of the Pedra de Ferro iron ore mine, the FIOI railway and the Porto Sul port development. It represents one of the largest infrastructure development projects in Brazil, with planned production of 26 million tonnes.

**Key products:** Iron Ore  
**Employees:** 192

**Economic value distributed:** \$138M  
**LTIFR:** 0.0

### Sustainability context:

As a major infrastructure project, BAMIN requires the close management of its environmental and social impacts. It is expected to generate significant economic benefits for the state, including through its establishment of a major logistical corridor – and will export high-grade, low-impurity iron ore.



## KAZAKHSTAN

Kazakhstan is home to the majority of our operations and of our workforce. It hosts a number of ERG's businesses, including Kazchrome, SSGPO, Kachary Ruda, Aluminium of Kazakhstan, KAS, Eurasian Energy Corporation, Shubarkol Komir, 3-Energoortalyk and Transcom.

**Key products:** Ferroalloys, Iron Ore, Alumina/Aluminium, Energy, Logistics  
**Employees:** 63,899

**Economic value distributed:** \$4,194M  
**LTIFR:** 1.01

### Sustainability context:

We focus on improving socio-economic conditions in our remote mining towns, whilst also improving our air quality performance. We also recognise the importance of reducing our greenhouse gas (GHG) emissions in the country (p. 64).



## AFRICA

Metalkol RTR reprocesses historic tailings in the DRC and is a major global cobalt producer – as well as producing copper metal. Our Frontier mine sits on the DRC and Zambia border and produces copper sulphide concentrate. In addition, we are also developing projects focused on other minerals and metals across the continent.



**Key products:** Cobalt, Copper  
**Employees:** 3,539

**Economic value distributed:** \$1,194M  
**LTIFR:** 0.19

### Sustainability context:

None of our production comes from artisanal and small-scale mining. Nonetheless, we are addressing some of the challenges that can be linked with this activity. In addition, Metalkol RTR is reducing the environmental impact of historic tailings deposits by reprocessing them and storing them safely.

- **PRODUCTION REGIONS**  
Brazil | DRC | Kazakhstan | Zambia<sup>1</sup>
- **DEVELOPMENT REGIONS**  
Mali | Mozambique | South Africa | Zimbabwe
- **KEY CUSTOMER MARKETS IN 2021**  
China | European Union | Japan | Kazakhstan | Russia
- **CORPORATE OFFICES**

<sup>1</sup> Our Chambishi Metals operation in Zambia is currently on care and maintenance.

## OUR DIVISIONS

### FERROALLOYS



**\$2,512M**  
Revenue  
**\$1,402M**  
EBITDA

### IRON ORE



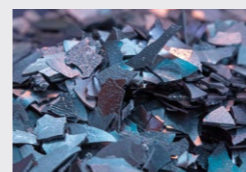
**\$2,085M**  
Revenue  
**\$887M**  
EBITDA

### ALUMINA AND ALUMINIUM



**\$1,013M**  
Revenue  
**\$416M**  
EBITDA

### COBALT, COPPER AND OTHER NON-FERROUS



**\$2,637M**  
Revenue  
**\$1,392M**  
EBITDA

### ENERGY



**\$591M**  
Revenue  
**\$220M**  
EBITDA

### LOGISTICS



**\$124M**  
Revenue  
**\$54M**  
EBITDA

# Maintaining our focus on Sustainable Development



“ In 2021, we delivered outstanding operational and financial performance – whilst further integrating sustainability into our business and enhancing our role in the global energy transition.”

In 2021, ERG demonstrated outstanding operational and financial performance. This underlines the degree to which we are both capitalising from, and supporting the recovery of, the world economy. In parallel, we continued to advance our work on sustainable metals production and responsible mineral value chain assurance. These efforts are critical if we are to achieve our true potential in the global energy transition.

Nonetheless, the year also presented major challenges. Tragically, 30 of our colleagues lost their lives to COVID-19 and related health complications. Similarly, the loss of a further 10 colleagues to work-related safety events shows there is still much more for us to do in terms of achieving Zero Harm. I send my thoughts to the families and colleagues of those affected and reiterate the company's commitment to doing even more to avoid fatalities in the future.

Unfortunately, 2022 has seen further challenges due to the recent civil unrest in Kazakhstan and the conflict between Ukraine and Russia. I offer my wholehearted condolences and sympathies to those affected by these events. Whilst the unrest in Kazakhstan did not have a material impact on our operations, the conflict in Ukraine has affected our logistics, as well as our dealings with those of our financing and commercial partners exposed to international sanctions. We have successfully adapted to these circumstances while remaining in full compliance with all applicable sanctions.

## BUSINESS PERFORMANCE

Our 2021 financial performance was outstanding, with revenue increasing by 59.3% to US\$8,530 million and EBITDA rising by 108.1% to US\$4,210 million. This was largely driven by price increases across many of our major commodities, as well as higher production output (most notably at Metalkol RTR).

At the same time, we reduced our debt by more than US\$800 million, including through principal payments and early repayments.<sup>1</sup> In addition, we extended our debt maturity profile, improved our financing costs and created additional liquidity reserves. In this context, in 2021 Standard & Poor's maintained our credit rating at B- and raised our rating outlook from 'Stable' to 'Positive', whilst Moody's upgraded our rating from B2 to B1, and improved its outlook to 'Stable'.

In June 2022, Standard & Poor's improved our credit rating to 'B / Stable'.

1 Other than that relating to our refinancing activities.

## STRATEGIC APPROACH TO SUSTAINABILITY

During the year, we established our Group-level Environmental, Social and Governance (ESG) Committee, which is responsible for:

- Integrating sustainable practices into our overarching Group strategy and decision-making
- Developing a long-term, corporate ESG Strategy

This will help ensure that we anticipate and respond to the sustainability expectations of our customers, finance providers, rating agencies, regulators and host societies, whilst helping us achieve long-term, continuous improvement.

The Committee has already overseen the establishment of ERG's Decarbonisation Think Tank and has worked on a range of 2030 ESG Goals. These include Goals relating to our GHG emissions, other emissions to air, our people, local communities and business ethics.

## SUSTAINABILITY PERFORMANCE IN 2021 Building a future-focused business

We continue to invest in the enhancement of our core businesses in Kazakhstan. Amongst others projects, this includes the Phase 2 development of our 10<sup>th</sup> Anniversary mine<sup>2</sup> and the development of our Slimes 2 reprocessing project. Outside of Kazakhstan, we are pursuing active growth, including ramped-up Phase 2 production at Metalkol RTR (now the world's second largest cobalt producer), and have achieved initial, full-year production of 1 million tonnes of iron ore at BAMIN's Pedra de Ferra mine. In the latter case, our ultimate focus is on the development of a large-scale integrated mining, railway and port project. Our winning of the FIOI railway concession marked a key milestone in this regard.

Furthermore, we are pursuing broader organisational improvements through our Digital Strategy, including the application of the Industry 4.0 concept. This has the potential to enhance multiple facets of our business.

2 10<sup>th</sup> Anniversary of Independence of Kazakhstan Mine.

## Protecting and developing our people

Regrettably, our safety performance worsened in 2021. As part of our efforts to improve future performance, we have set a 15% per year LTIFR reduction target in Kazakhstan up to 2030. We also implemented initiatives to improve our immediate performance, including better fatal risk controls, ongoing automation and enhanced hazard identification processes. Finally, we are continuing to enhance, automate and standardise our people management and related processes across the Group.

## Supporting our communities

In 2021, our total community social investment (CSI) amounted to US\$65.2 million (2020: US\$65.4 million). In Kazakhstan, our long-term regional development programme is focused on improving living standards for both community members and employees living in our mining towns. In Africa, our CSI efforts aim to help local communities to address key development priorities, including through the DRC's mandatory 'Commitments Register' framework, whilst in Brazil we are helping to support communities close to our BAMIN operation.

## Reducing our environmental impacts

In terms of the environment, we continue to take major steps to reduce our emissions to air in the Pavlodar, Aktobe and Kostanay regions of Kazakhstan. This includes the fitting of advanced filter technology under a 10-year, US\$393 million programme to meet relevant European Union (EU) standards for particulate matter.

We are well-aware of the significance of our GHG emissions in Kazakhstan and of the need to reduce our carbon intensity. Whilst we need to meet the immediate demands of our customers and of our business, we plan to reduce our carbon footprint. We are implementing a range of energy efficiency measures at our core assets in Kazakhstan, whilst also investigating the potential for off-gas fuelled power generation.

Furthermore, we are advancing plans for the construction of up to 155 MW wind generation project near Donskoy GOK, with the potential for additional, large-scale renewable energy projects in future.

Beyond this, the most significant impact we can have in terms of addressing climate change is through the delivery of the global commodities needed to support the global energy transition, including cobalt, copper and aluminium – as well as ferroalloys.

## Our broader role in society

During the year, we distributed US\$6,240 million in economic value to our stakeholders (US\$4,611 million). We also continued to enhance our risk-based Compliance Programme through the integration of broader 'business ethics' issues, such as supply chain due diligence, human rights and responsible mineral value chain assurance.

In 2021, we launched our Responsible Aluminium Framework, which will help demonstrate that we manage human rights and other sustainability issues in line with internationally accepted standards. Furthermore, in 2022 we received our first assured London Metal Exchange (LME) 'Red Flag Assessment' report for the aluminium we produce at KAS, helping ensure our compliance with the LME Responsible Sourcing requirements.

Importantly, we are continuing to demonstrate leadership with respect to:

- The multi-lateral promotion of responsible and transparent global battery chains, including through the Global Battery Alliance (GBA, p. 88) and the blockchain-based Re|Source platform (p. 90)
- The delivery of assurance around the cobalt and copper we produce in the DRC, including through the application of our Clean Cobalt and Copper Framework (p. 88)

Our ongoing efforts in this regard will help ensure that not only does the battery revolution play an essential role in global decarbonisation, but that it happens in a sustainable and responsible way.

Furthermore, we aim to deliver higher levels of assurance for the other commodities we produce, many of which are also instrumental in terms of reducing global emissions.

**Benedikt Sobotka**  
Chief Executive Officer

# Generating shared value

## An integrated business



## Inputs

### FINANCIAL CAPITAL

We focus on the efficient use of all our funds, whether obtained through financing or generated from our operations and investments.

### HUMAN CAPITAL

We rely on the skills, well-being and motivation of our employees, contractors and service providers to generate value.

### SOCIAL AND RELATIONSHIP CAPITAL

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

### NATURAL CAPITAL

It is critical that we responsibly manage all the natural resources used in our business model, given their finite nature.

### MANUFACTURED CAPITAL

Our capacity to generate long-term value is supported by significant financial investment in the development and maintenance of our assets, as well as in technology and digitalisation.

### INTELLECTUAL CAPITAL

Our accumulated and evolving intellectual capital helps support our strategic objectives and drive our growth, competitiveness and innovation.

## Our products and how they are used...

### FUTURE/TRANSITION METALS

- Cobalt**  
Lithium-ion batteries
- Copper**  
Infrastructure, transport and electronics
- Alumina/Aluminium**  
Infrastructure, construction and transportation

### OTHER METALS/PRODUCTS

- Ferroalloys**  
Steel industry
- Iron ore**  
Steel industry
- Coal**  
Power generation

## ...and our Group performance indicators

**0.93**  
LTIFR

**67,901**  
Employees

**25.1Mt CO<sub>2</sub>e**  
GHG emissions

**2,069Mm<sup>3</sup>**  
Water withdrawal

**\$4,210M**  
Underlying EBITDA

**\$8,530M**  
Revenue

## Economic distribution...

**SOCIETY**  
**\$6,240M<sup>1</sup>**  
Economic value distributed

**GOVERNMENTS**  
**\$1,426M**  
Tax expenses

**EMPLOYEES**  
**\$956M**  
Employee wages and benefits

**COMMUNITIES**  
**\$65M**  
Community social investment

**BUSINESS PARTNERS**  
**\$2,412M**  
Payments to suppliers

**FINANCE PROVIDERS**  
**\$677M**  
Payments to providers of capital

<sup>1</sup> For the full breakdown of this figure, see table on p. 78.

## ...and our broader impacts

Powering the energy transition  
SEE P. 13

Driving local, regional and national development in Kazakhstan  
SEE P. 50

Promoting industrial modernisation in Kazakhstan  
SEE P. 26

Supporting responsible cobalt value chains  
SEE P. 88

Improving socio-economic conditions in the DRC  
SEE P. 55

Catalysing economic development in Brazil  
SEE P. 57

Values

SEE P. 99

Strategy

SEE P. 8

Governance

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External environment

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Stakeholders

SEE P. 107

Risks

SEE P. 96

Material issues

SEE P. 14

# Embedding business sustainability

## Our approach

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

- Ensuring our business is resilient, fit for the future and able to generate long-term value
- Achieving the ongoing delivery of benefits to our stakeholders – including employees, shareholders, customers, business partners, local communities and host countries
- Playing our role in the global energy transition by meeting growing demand for key metals such as cobalt, copper and aluminium, as well as ferroalloys (i.e. in the context of new gas, wind and nuclear power generation infrastructure development)

This approach is demonstrated in our 2025 Strategy, which is ultimately aimed at achieving business sustainability.

Furthermore, we are a participant in the UN Global Compact and support the UN Sustainable Development Goals (SDGs).

This includes the identification of relevant SDGs for ERG,<sup>1</sup> selected on the basis of:

- Potential synergies between the achievement of the relevant SDGs and our own performance
- Our ability to impact the achievement of the relevant SDGs (positively or negatively)
- The degree to which the achievement of each SDG is relevant to our areas of operation

### UN SDG mapping

In 2021, we carried out an exercise to update and verify the mapping of our most material issues and our most significant impacts against the UN SDGs and their supporting UN Targets. This is with the ultimate aim of ensuring we maintain a focus on where we can have the most meaningful impact. The outcomes of this exercise are presented on p. 109 of the Appendix.

### ESG COMMITTEE

Our recently established ESG Committee has been tasked with the integration of sustainable practices into our Group strategy and decision-making processes. The Committee includes Group-level executives as well as senior, cross-discipline managers from across our business. It will play a fundamental, long-term role in helping us pursue continuous improvement – and respond to fast-evolving stakeholder expectations.

Amongst other projects, the Committee is overseeing gap analysis work to understand the degree to which we are meeting the management and reporting requirements of relevant sector sustainability frameworks, evolving EU regulation, finance providers and external rating agencies. The Committee is also focused on the development of a formal, long-term ESG Strategy. This includes the setting of 2030 ESG Goals, including those relating to GHG emissions, other emissions to air, our people, local communities and business ethics.

In 2021, the Committee met four times and reviewed the following issues (amongst others):

- Health and safety performance
- Environmental strategy
- Decarbonisation and energy strategy
- The strengthening of our Group-wide approach to tailings management
- Green financing opportunities
- ESG disclosure requirements (including the EU Corporate Sustainability Reporting Directive (CSRD))
- Evolving stakeholder expectations

In addition, we have established a Decarbonisation Think Tank to act as a decarbonisation centre of excellence, guide efforts to reduce our carbon intensity and carry out external stakeholder engagement on this crucial issue. We are participating, via the Think Tank, in a range of government-led initiatives to support broader decarbonisation efforts in Kazakhstan.

### SUSTAINABLE DEVELOPMENT PRINCIPLES



Zero harm



Leadership



Accountability



Balance



Integrity



Innovation

<sup>1</sup> Note that all references to associated UN targets are for the contextualisation of our impacts, risks, opportunities and performance only – and do not represent formal corporate targets.

### STRATEGIC PRIORITIES

#### Balanced portfolio growth

Steady growth and development of the asset portfolio in Kazakhstan and beyond

### STRATEGIC GOALS

- Further develop existing assets in Kazakhstan
- Increase returns on the existing portfolio of international assets
- Optimise our portfolio through new natural resource opportunities and/or divestment
- Further develop the Group's power generation portfolio, including through renewable energy generation and the addition of flexible balancing capacity

### KEY STAKEHOLDERS

- Shareholders
- Host governments
- Local communities
- Customers
- Suppliers/contractors
- Finance providers

#### A happy and professional team

Creation of opportunities for the professional and personal growth of our employees and the maintenance of their safety and well-being

- Deliver safe working conditions and improve employee health and well-being
- Deliver comfortable workplaces
- Improve ERG's employee proposition, including enhanced employee benefits
- Further enhance our corporate culture
- Develop our strategic skills and competencies, including our talent pool and leadership pipeline

- Employees
- Host governments
- Regulators
- Local communities

#### Sustainable development of our host regions

Contribution to the socio-economic development and well-being of communities in our regions of operation

- Improve the well-being and prosperity of communities in our regions of operation
- Maintain international environmental standards – including those relating to water, air and soil
- Support entrepreneurship and the development of the business environment in our host countries

- Local communities
- Regulators
- Regional governments
- Civil society

#### Efficiency in all that we do

A strong focus on pursuing efficiency across the Group

- Reduce unit costs by eliminating bottlenecks and improving productivity
- Improve organisational effectiveness
- Improve sales effectiveness
- Develop a culture of continuous improvement supported by relevant tools and mechanisms

- Shareholders
- Customers
- Employees

#### Financial stability

The maintenance of financial resilience, whilst delivering sustainable shareholder returns

- Maintain a sustainable level of dividend yield for shareholders
- Maintain high returns on invested capital
- Achieve and maintain an acceptable level of debt
- Maintain high levels of liquidity to support resilience in the face of changing market conditions

- Shareholders
- Finance providers
- Employees
- Suppliers/contractors
- Host governments
- Local communities

# Delivering strong operational and financial performance

## Operational performance and market conditions

In 2021, we demonstrated strong operational performance. In combination with higher prices for many of our major products, this helped us to significantly increase revenue and underlying EBITDA (see 'Financial performance' below).

Global supply chain disruptions and energy shortages (amongst other factors) created a more challenging supply chain environment. Nonetheless, we increased production of a range of products including copper metal, cobalt hydroxide and iron ore.

However, ferroalloys production decreased by 6.8% to 1,540kt (2020: 1,653kt), reflecting lower volumes of chrome ore delivered to Donskoy GOK's processing plants. However, production volumes are anticipated to increase in 2022, as additional chrome ore is delivered from the

**+25.5%**

saleable cobalt hydroxide production

10<sup>th</sup> Anniversary Mine<sup>1</sup> at Donskoy GOK and operational performance improves at Aksu Ferroalloys Plant's Furnace No.64.

We increased total production of iron ore pellets and concentrate by 12.2% to 14,714kt (2020: 13,114kt). This reflected our capital investment programme at the Kacharsky mine in Kazakhstan (p. 20), which helped us to meet higher customer demand. In addition, our integrated BAMIN iron ore operation in Brazil achieved annual production of 1,008 kt of ore in its first full year of operation.

Our aluminium production was relatively stable at 262.4kt (2020: 264.6kt). At the same time, alumina production fell slightly to 1,315kt (2020: 1,383kt). This reflected lower sales volumes resulting from temporary logistical bottlenecks.

**+18.1%**

saleable copper metal production

Group copper metal and cobalt hydroxide production increased to 94.8kt and 20.7kt, respectively (2020: 80.3kt of copper and 16.5kt of cobalt hydroxide). This reflected the ramp-up of Phase 2 production at Metalkol RTR (p. 19).

Finally, we increased thermal coal production by 3.5% to 29,891kt (2020: 28,871kt), primarily in response to higher customer demand. We also increased electricity generation by 8.2% to 16,000 GWh (2020: 14,793 GWh), after the grid operator reduced maintenance times for capital repairs at our power units to help meet record demand.

**+12.2%**

saleable iron ore concentrate and pellets production

## Financial performance

In 2021, our underlying EBITDA increased by 108.1% to US\$4,210 million (2020: US\$2,023 million), with Kazchrome and Metalkol RTR making key contributions in this regard. This was on the back of revenues of US\$8,530 million, which were up 59.3% on the previous year (2020: US\$5,356 million), driven by increased production at Metalkol RTR and higher prices for many of our major products. These positive dynamics were partially offset, however, by:

- Lower sales volumes of ferroalloys and alumina
- Hedging losses in respect to iron ore, aluminium and copper prices
- Higher operating expenses

**+108.1%**

underlying EBITDA

During the year, we increased capital expenditure to US\$735 million (2020: US\$572 million). This reflected increased investment to capitalise on favourable market conditions, as well as the rollover of spending on projects that were postponed in 2020 due to COVID-19.

### Debt position

In 2021, we reduced our debt by more than US\$800 million. This reflected regular principal payments and early prepayments.

In addition, we further consolidated and optimised our existing debt portfolio, helping to reduce our financing costs and extend our debt maturity. We also established additional liquidity reserves to further strengthen our financial stability.

**+59.3%**

revenue

As a result of the sanctions imposed in relation to the conflict between Ukraine and Russia, ERG renegotiated and amended the applicable terms of certain financing arrangements and terminated certain transactions with some of our finance providers. The Group continues to comply with all sanctions applicable to our business activities in accordance with relevant laws and regulations and our compliance policies.

**+28.5%**

capex

## KEY 2021 PRODUCTION AND MARKET DYNAMICS

Division	Product	2021	2020	Change	Dynamics
Ferroalloys	Ferroalloys	1,540kt (net)	1,653kt (net)	(6.8)%	<ul style="list-style-type: none"> <li>• Lower production reflected lower volumes of chrome ore delivered to Donskoy GOK's processing plants</li> <li>• Ferroalloys experienced a strong price environment, with ferrochrome prices hitting a 13-year high</li> <li>• Higher prices reflected lower ferrochrome output from China (due to domestic energy constraints), strong demand for stainless steel and higher underlying costs across the value chain</li> </ul>
	Saleable iron ore concentrate and pellets	14,714kt	13,114kt	12.2%	<ul style="list-style-type: none"> <li>• We increased iron ore production to meet higher customer demand</li> <li>• Iron ore prices reached record highs of US\$233 per tonne in May 2021, driven by economic stimulus measures and increased steel production in China</li> <li>• However, prices fell below US\$90 per tonne in November 2021, reflecting Chinese regulatory restrictions on domestic steel production and a weaker domestic property sector</li> </ul>
Alumina and Aluminium	Alumina	1,315kt	1,383kt	(4.9)%	<ul style="list-style-type: none"> <li>• Alumina production decreased slightly due to lower sales volumes after import restrictions were tightened in China amid the COVID-19 pandemic</li> <li>• High alumina prices were supported by production disruptions in South America and China</li> <li>• Aluminium production was broadly in line with 2020</li> <li>• The LME spot price for aluminium reached a 13-year high of US\$3,180 per tonne in October 2021</li> <li>• High aluminium prices reflected power restrictions and curbs on domestic production in China, as well as increased consumption and reduced inventories globally</li> </ul>
	Aluminium	262.4kt	264.6kt	(0.8)%	
Cobalt, copper and other non-ferrous	Saleable copper metal	94.8kt	80.3kt	18.1%	<ul style="list-style-type: none"> <li>• Increased copper metal and cobalt hydroxide production was primarily driven by Phase 2 ramp-up at Metalkol RTR</li> <li>• Average annual copper prices reached record highs, supported by the global economic recovery, a weaker US Dollar, COVID-19 vaccine roll outs and tight physical markets</li> <li>• Strong cobalt prices were supported by high demand (especially from the electric vehicle sector), as well as inadequate global production levels and supply chain disruptions</li> </ul>
	Saleable copper concentrate	102.4kt	103.3kt	(0.9)%	
	Cobalt metal	–	0.1kt	(100)%	
	Saleable cobalt hydroxide	20.7kt	16.5kt	25.5%	
Energy	Coal	29,891kt	28,871kt	3.5%	<ul style="list-style-type: none"> <li>• The year saw higher demand for thermal coal from international and domestic consumers</li> <li>• Major price benchmarks for thermal coal more than doubled year-on-year. This was driven by the global economic recovery, reduced natural gas supplies, low wind generation in Europe and a deficit in the global coal market</li> <li>• We increased electricity generation after the grid operator reduced maintenance times for capital repairs at our power units to help meet record demand</li> </ul>
	Electricity	16,000 GWh	14,793 GWh	8.2%	
Logistics	Logistics	52,139kt transported	53,076kt transported	(1.8)%	<ul style="list-style-type: none"> <li>• Transported freight was marginally lower due to logistical constraints at the Kazakhstan-China border</li> <li>• However, third-party freight forwarding increased by 5.7% due to increased domestic and foreign demand</li> </ul>

## Maintenance and improvement of our credit ratings

In June 2021, Moody's upgraded our rating from B2 to B1, while improving its outlook to 'Stable' and Standard & Poor's affirmed our B- rating, with an improved 'Positive' outlook. This reflected anticipated growth in our EBITDA and planned debt repayments, strong operational and financial performance at

Metalkol RTR and stronger commodity prices. Subsequently, in June 2022 Standard & Poor's improved our credit rating to 'B' with a 'Stable' outlook. This was on the basis of strong performance and reduced debt.

1 10<sup>th</sup> Anniversary of Independence of Kazakhstan Mine.

# Understanding and navigating global trends

## Responding to geopolitical events in 2022

### Conflict between Ukraine and Russia

Military conflict between Ukraine and Russia had a material impact on financing and commodity markets in 2022. In part, this was driven by a range of sanctions against the Russian government, various companies, major Russian banks and selected individuals.<sup>1</sup> Furthermore, the conflict impacted key export routes running through Ukraine, disrupting established commodity flows. These events had an impact on ERG, including the sanctioning of two major lenders to the Group, Sberbank of Russia and VTB Bank, as well as elevated prices for ferrochrome and non-Russian thermal coal.

In March and April 2022, we renegotiated and amended certain financing arrangements and terminated certain transactions and activities with Sberbank of Russia, VTB Bank, VEB and/or their subsidiaries.<sup>2</sup>

In addition, we suspended certain trading activities due to concerns about the longer-term viability of selected

counterparties in the context of their exposure to sanctions. We also established a centralised Global Crisis Team to help coordinate our Group-wide response. We continue to comply with all sanctions applicable to our business activities, in accordance with relevant laws and regulations and our compliance policies.

### Social unrest in Kazakhstan

There were also some challenges within Kazakhstan, which faced significant, albeit short-lived, social unrest in January 2022. Although this took place outside of our operating regions, a small number of employees at Donskoy GOK (Kazchrome) took part in broader social protests. This event was of a limited nature and did not have a material impact on our production. The incident was resolved peacefully and rapidly via constructive negotiations between management and the employees. The President of Kazakhstan has announced national political and economic reforms, which are ongoing.

In light of these events, we have strengthened some of our operational resilience measures and are working with the authorities to promote social development (p. 92).

## Increasing stakeholder focus on corporate ESG performance

### Issue

Stakeholder expectations of corporate environmental, social and governance (ESG) performance continue to evolve. This includes, for example, global finance providers increasingly linking their lending terms to ESG considerations, as well as customers and end-users factoring ESG into their purchasing decisions.

At the same time, governments and international bodies are implementing more stringent ESG requirements. This is being led by the EU, which is phasing in its Corporate Sustainability Reporting Directive (CSRD), amongst other measures.

Corporate ESG performance is likely to rise up the agenda in the context of the global energy transition, the residual socio-economic impacts of COVID-19 and the growing influence of the 'circular economy' concept.

### Implications for the sector

This is particularly significant for the metals and mining sector due to:

- Its central role in the global energy transition (see opposite)
- Its capacity to support broader socio-economic development in host countries
- The inherently high-impact nature of its activities
- The often high-risk nature of its operating environments

Growing focus is also being placed on mineral value chain transparency and assurance – with higher levels of accountability demanded at every stage of the value chain.

### Our strategic response

In 2021, ERG established a Group-level ESG Committee to support the ongoing improvement of our ESG performance. The Committee is guiding the development of Group-level 2030 ESG Goals and supporting action plans, as well as the enhancement of our ESG data management processes (p. 8).

We place particular emphasis on the socio-economic dimensions of ESG. In part, this reflects our multi-generational relationships with local communities in Kazakhstan. In 2021, we invested US\$58.1 million to help address a range of development priorities in the country (p. 52). Similarly, we are working to ensure that our role in supporting the global energy transition delivers lasting development to local communities in the DRC (i.e. through the implementation of our Clean Cobalt and Copper Framework, see p. 88).

In addition, our Environmental Strategy in Kazakhstan is helping to bring our environmental management practices in line with international best practice and supports our compliance with the country's new Environmental Code (p. 61). In Africa, we have implemented a Safety, Health and Sustainability (SHS) management system informed by ISO 14001.

<sup>1</sup> These sanctions were applied by the United States, the European Union, Switzerland and the United Kingdom, amongst others.

<sup>2</sup> This included the early termination of commodity derivative contracts; the early termination of multiple financing transactions; the termination of an undrawn committed credit facility; and the deferral of principal and interest payments for up to two years.

## Global decarbonisation – and the role of transition metals

### Issue

The global response to climate change will require the large-scale electrification of transportation and the transition towards renewable power generation, amongst other technological interventions. The importance of decarbonising the global economy is expressed in the 2015 Paris Agreement on climate change (of which Kazakhstan, DRC, Zambia and Brazil are signatories), as well as the Government of Kazakhstan's commitment to achieving carbon neutrality by 2060.

### Implications for the sector

Metals and mining companies face growing stakeholder pressure with respect to their carbon footprints. At the same time, decarbonisation presents potential growth opportunities. This includes increased demand for 'transition metals' such as cobalt to support the shift to electric vehicles (EVs) and related battery technology, as well as copper and aluminium for renewable energy infrastructure. In addition, ferroalloys are vital for the development of lower-carbon gas and nuclear power generation infrastructure, as well as for wind power infrastructure.

### Our strategic response

ERG is committed to playing its part in addressing this challenge, both now and in the medium/long-term. This includes our role in delivering the cobalt, copper, aluminium and ferroalloys needed to support the shift to a lower-carbon economy. In particular, Metalkol RTR – now the second largest cobalt-producing operation in the world – is playing an essential role in the global EV value chain (p. 90). ERG is also focused on achieving world-class mineral value chain assurance (see below).

At the same time, we recognise the importance of reducing our own GHG emissions, particularly in Kazakhstan, where we rely on coal power generation. This includes increasing the proportion of energy we get from non-coal sources (p. 66). Given the nature of our fixed capital assets in the country and the nascent stage of Kazakhstan's renewables sector, this journey will take time.

Nonetheless, we are committed to reducing our carbon footprint on a medium- to long-term basis, whilst maintaining the sustainability of our business. This will include bringing our existing wind project in Kazakhstan online and expanding our renewable energy portfolio, as well as the implementation of our energy efficiency measures (p. 64).

## Broadening demands for mineral value chain assurance

### Issue

Demand for mineral value chain transparency and assurance is being driven by downstream companies, regulators, investors and trading exchanges, amongst others. There is particular focus on cobalt and its role in the global EV value chain. In part, this reflects the fact that more than two thirds of global production comes from the DRC.

Nonetheless, stakeholder focus continues to broaden to other metals – and sectors. This is reflected in:

- The EU's draft Directive on Corporate Sustainability Due Diligence
- Increasing reliance on the OECD Due Diligence Guidance<sup>3</sup> to deliver assurance
- The London Metals Exchange's (LME) Responsible Sourcing requirements

### Implications for the sector

The delivery of cross-value chain assurance is increasingly essential for building long-term customer relationships, securing access to leading global exchanges and meeting regulatory obligations.

This is particularly so in the context of the global energy transition and the anticipated increase in demand for metals. Collectively, the sector must demonstrate that we can not only help reduce global carbon emissions by delivering these metals, but can do so without generating other negative impacts in the value chain.

### Our strategic response

Our Clean Cobalt and Copper Framework (p. 88) ensures that Metalkol RTR:

- Conforms with, and goes beyond, the OECD Due Diligence Guidance
- Operationalises its commitment to the Responsible Minerals Initiative's (RMI) Responsible Minerals Assurance Process (RMAP)
- Actively improves living conditions for local communities

In June 2022 we received independent assurance of our Clean Cobalt and Copper Framework for the second time, demonstrating our compliance with the principles set out in the Framework.<sup>4</sup> In August 2022, RMI determined that Metalkol RTR was in conformance with the RMAP Standards for Cobalt Due Diligence Standard (2018) and Joint Due Diligence Standard for Copper, Lead, Nickel and Zinc (2021). We are also working with others to set credible, cross-value chain assurance standards and achieve high levels of transparency (p. 88).

Finally, we are pursuing efforts to deliver similarly high levels of assurance for other metals we produce. This includes our aluminium at KAS, which we produce under our new Responsible Aluminium Framework (p. 87).

<sup>3</sup> OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.

<sup>4</sup> See Metalkol RTR Clean Cobalt and Copper Performance Report 2022, <https://www.ergafrica.com/wp-content/uploads/ERG-Assurance-Report-Clean-Cobalt-and-Copper-2022-Signed-by-PwC.pdf>.



# Understanding what matters

During 2021 and early 2022, we updated our materiality assessment to guide both our sustainability reporting and our broader management approach. This builds on our comprehensive 2020/2021 materiality assessment update, which included engagement with 37 external stakeholders via direct interviews and an online survey.<sup>1</sup>

Our material issues are prioritised using a quantitative scoring system. This is based on an ‘inward/outward’ or ‘double materiality’ concept that focuses on:

- The potential/actual impact of ERG on stakeholders and their interests
- The potential/actual impact of stakeholders on ERG’s achievement of its business objectives and its financial performance

If an issue does not appear as material, it does not mean it is not relevant or is not being managed, but only that it is not of sufficient significance to be addressed in detail in this report.

For details on our materiality assessment process, see p. 105 in the Appendix.

## ASSESSMENT OUTCOMES

The assessment resulted in increased scores for a number of ERG’s most material issues, including:

- **‘Health and safety’**, reflecting the disappointing year we experienced with regard to our safety performance (p. 32) and the need to redouble our efforts to improve the same
- **‘Energy and climate change’**, reflecting our focus on reducing our carbon footprint on a medium- to long-term basis – plus the strategic growth opportunities presented by the transition to a lower carbon economy
- **‘Talent attraction, development and retention’**, reflecting the ongoing role this will play in securing the long-term sustainability of our business – plus the impact of technological and demographic change in reshaping talent management strategies
- **‘Community social investment’**, reflecting the strategic role ERG continues to play in supporting Kazakhstan’s national development priorities, particularly in the context of ongoing government reforms aimed at improving the socio-economic situation in the country
- **‘Ethics and compliance’**, reflecting the ongoing need for robust and comprehensive sanctions compliance programmes in the context of a dynamic geopolitical environment

In terms of ‘emerging’ issues that the sector should consider in future, internal stakeholders identified the need for metals and mining companies to:

- Deliver high levels of mineral value chain assurance across a range of metals (i.e. in addition to cobalt) given broadening stakeholder focus and anticipated regulation
- Develop clear strategies – supported by investment in lower carbon technologies and renewable energy – to actively navigate the risks and opportunities presented by the transition to a lower carbon economy
- Demonstrate that the sector can support the energy transition in a responsible manner that generates broader shared value and does not create additional negative impacts (i.e. beyond GHG emissions)
- Proactively monitor – and adapt to – the evolving non-financial reporting landscape, including compliance with new mandatory reporting requirements in the EU and other jurisdictions

## MATERIAL ISSUES

The table opposite sets out our material issues. Please note, as ‘Human rights’ cuts across multiple themes (e.g. employees, value chains and local communities), we have integrated it into these areas of analysis where relevant – rather than treating it as a separate issue. An overview of our broader approach to human rights can be found on p. 84.

For further information on our material issues, see p. 105 of the Appendix.

## Risk management

Our risk management framework helps us identify and understand potential threats to our business sustainability, and thus our most material sustainable development issues.

ERG’s principal risks are set out on p. 96 of the Appendix.

## LIST OF MATERIAL ISSUES<sup>2</sup>

Issues assessed	Material issues	Description
<b>Preparing our business for the future</b> <ul style="list-style-type: none"> <li>• Growth and asset maintenance</li> <li>• Technology, efficiency and digitalisation</li> <li>• Market conditions and financial performance<sup>3</sup></li> </ul>	<b>Growth and asset maintenance</b>	Replenishment and growth of our Mineral Resources and Ore Reserves – as well as the acquisition, development and/or maintenance of production, processing and other assets that collectively support ERG’s business sustainability
	<b>Technology, efficiency and digitalisation</b>	Enhanced operational performance through improved and/or innovative technological practices and processes
	<b>Market conditions and financial performance</b>	The impact of market conditions on the financial performance of the business, as well as the maintenance of sufficient capital/access to capital, financial flexibility and sustainable debt levels to help ensure ERG continues as a going concern
<b>Helping our people thrive</b> <ul style="list-style-type: none"> <li>• Health and safety, including COVID-19</li> <li>• Talent attraction, development and retention</li> <li>• Employee relations</li> <li>• Diversity and inclusion</li> </ul>	<b>Health and safety, including COVID-19</b>	Delivery of a safe and healthy workplace – and the promotion of safe working practices, including the protection of workers from COVID-19
	<b>Talent attraction, development and retention</b>	The maintenance of a skilled and capable workforce, as well as the development of our employees
	<b>Employee relations</b>	Relations with our workforce and their legitimate representatives on salient workplace and non-workplace (e.g. quality of life, family welfare, etc.) issues – and actions to address the same
<b>Community development and well-being</b> <ul style="list-style-type: none"> <li>• Community impacts</li> <li>• Community social investment</li> <li>• Indigenous people</li> </ul>	<b>Community impacts</b>	The positive and negative impacts of ERG, its activities and its business partners on local communities (excluding dedicated social investment, which is dealt with separately)
	<b>Community social investment</b>	Voluntary and/or mandatory spending aimed at enhancing socio-economic conditions in our countries of operation <sup>4</sup>
	<b>Managing impacts on air and water</b>	Responsible management of emissions to the environment – including particulates, NOx <sup>5</sup> , SOx <sup>6</sup> , process water and runoff <sup>7</sup>
<b>Environmental stewardship</b> <ul style="list-style-type: none"> <li>• Managing impacts on air and water</li> <li>• Energy and climate change</li> <li>• Waste recycling and management, including tailings</li> <li>• Responsible closure and transfer</li> <li>• Water availability</li> <li>• Biodiversity</li> </ul>	<b>Energy and climate change</b>	The use and/or production of energy in all its forms in the context of other users, as well as the production of associated GHG emissions – plus the impact of climate change on ERG and other stakeholders
	<b>Waste recycling and management, including tailings</b>	Responsible approaches to waste generation, management and disposal (e.g. overburden, tailings, slag, general industrial waste, etc.)
	<b>Value generation and distribution</b>	The generation of economic value by ERG – and the distribution of such value to its stakeholders
<b>Our broader role in society</b> <ul style="list-style-type: none"> <li>• Value generation and distribution</li> <li>• Ethics and compliance</li> <li>• Responsible value chains</li> <li>• Government relations and policy</li> </ul>	<b>Ethics and compliance</b>	Maintenance of Group/employee compliance with regulatory requirements, ERG’s compliance commitments and broader business ethics
	<b>Responsible value chains</b>	The responsible management of indirect supply chain impacts – and the delivery of assurance to downstream value chain participants regarding the responsible sourcing of minerals
	<b>Government relations and policy</b>	Relations between ERG, host country governments and other third-party governments, including positive and negative mutual impacts
	<b>Ethics and compliance</b>	Maintenance of Group/employee compliance with regulatory requirements, ERG’s compliance commitments and broader business ethics

2 As ‘Governance’ and ‘Risk management’ are integral to all our business processes, and thus to all the issues in the assessment, they are not treated as standalone issues. Please note, we have integrated issues relating to ‘Organisational transformation’ into ‘Technology, efficiency and digitalisation’ and ‘Talent attraction, development and retention’. This reflects a more integrated approach, as well as the cross-cutting nature of the issue.

3 See ‘Financial performance’ on p. 10.

4 Note that community-focused spending linked to our employees is addressed under ‘Employee relations’.

5 Nitrogen oxides.

6 Sulphur oxides.

7 Excluding carbon emissions, which are addressed separately under ‘Energy and climate change’.



1 See p. 20-21 of ERG Sustainable Development Report 2020.

# PREPARING OUR BUSINESS FOR THE FUTURE

Under our 2025 Strategy, we have prioritised **financial stability**. Amongst other things, this means maintaining acceptable leverage and sufficient liquidity. Two additional priorities identified in our 2025 Strategy are of particular relevance:

- **Efficiency in all that we do**, through unit cost reductions, organisational effectiveness and a culture of continuous improvement
- **Balanced portfolio growth**, through the development of our existing assets, improved asset returns and the development of new opportunities

Furthermore, in 2021 we established an Environmental, Social and Governance (ESG) Committee, tasked with the integration of sustainability practices into our Group strategy and decision-making processes. The Committee is guiding the development of Group-level 2030 ESG Goals and supporting action plans, as well as the enhancement of our ESG data management processes (p. 8).

In combination with our broader Sustainable Development efforts, this approach will help support our long-term business sustainability.

## 2021 HIGHLIGHTS

Ramped up Phase 2 production at our Metalkol RTR cobalt and copper operation

Achieved our first full year of initial production at our BAMIN integrated iron ore operation

Continued to implement our Group-wide Digital Strategy

## MATERIAL ISSUES



**Growth and asset maintenance**

READ MORE ON P. 18



**Technology, efficiency and digitalisation**

READ MORE ON P. 26



PREPARING OUR BUSINESS FOR THE FUTURE



## Growth and asset maintenance

### Strategic context

**Balanced portfolio growth:** Under our 2025 Strategy, we have prioritised steady portfolio growth and development. This includes the development of our assets in Kazakhstan, as well as increased returns on our international assets. Furthermore, we are focused on optimising our portfolio through new natural resource opportunities and/or divestment, while further developing our energy business.

#### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



### Increased capex on new and existing assets

In 2021, we increased our capex to US\$735 million (2020: US\$572 million). This was targeted at sustaining capital investments to realise the full potential of our existing assets, as well as new growth projects. The increase in spending reflected the rollover of capex from 2020 that was delayed due to COVID-19-induced uncertainty, plus our efforts to benefit from more favourable market conditions in 2021.

In addition, we are creating an advanced capital project management system, whilst enhancing team capabilities (see opposite).

### FERROALLOYS

#### Securing production volumes through Phase 2 development of our 10th Anniversary mine<sup>1</sup> (Kazakhstan)

We are advancing plans to increase production at Donskoy GOK's world-class chrome ore body, having initiated Phase 2 of development. This new phase will not only allow us to replace diminishing chromite output from Phase 1 of development and from the Molodezhnaya mine, but will enable us to increase output by more than 6 million tonnes of ore per year and, by extension, production at our ferroalloy plants.

In 2021, we selected the optimal mining methods for Phase 2, which include advanced sub-level caving (90%) and drift and fill mining (10%). In 2022, the project moved to pre-project planning, with a planned completion in 2023.

#### Development of the Slimes 2 reprocessing project at Donskoy GOK (Kazakhstan)

As part of our broader Slimes 2 project, we started construction of a new tailings reprocessing facility at Donskoy GOK. It will employ new chrome processing technologies and is made up of gravity, flotation, thickening and filtering sections. Stage 1 commissioning is scheduled for 2022, with expected overall production of more than 500 ktpa of chromium oxide concentrate.

#### Production ramp up at Smelting Workshop No. 4 at Aktobe Ferroalloys Plant (Kazakhstan)

In 2021, we ramped up high carbon ferrochrome production at Smelting Workshop No. 4 to its full design capacity. This follows the in-house implementation of productivity improvements and, amongst other initiatives, the installation of advanced filter technology (p. 61). The Workshop is equipped with direct current furnaces. We are now working to improve the Workshop's operational parameters.

### Ongoing roll out of 3D geomodelling across the Group

Our Group-level project due diligence and mine planning team are continuing to work with external experts to update our geological models and enhance our mining plans under our Efficient Mine project. This process has already been completed at Kazchrome's Donskoy GOK mine and at our Kacharsky mine, and is almost complete at Metalkol RTR. The programme is directly supporting our long-term mine and production chain planning.

1 10<sup>th</sup> Anniversary of Independence of Kazakhstan Mine.



### COBALT, COPPER AND OTHER NON-FERROUS

#### Ramp-up of expanded Phase 2 production at Metalkol RTR (DRC)

In 2021, we ramped up Phase 2 production at Metalkol RTR to 94.8 kt of copper and 20.7 kt of cobalt hydroxide<sup>2</sup> (2020: 80.3 kt and 16.5 kt, respectively). This included an increased grade and recovery rate. The operation is making a material contribution to Group EBITDA (p. 10).

We are exploring additional operational efficiency opportunities, including the installation of a new cobalt dryer, the development of back-up battery capacity

and the implementation of a metal balance study to further enhance recovery.

We are continuing to explore potential opportunities for the construction of a lithium-ion battery precursor plant, to be exclusively supplied with cobalt hydroxide from Metalkol RTR.

For further information on Metalkol RTR, see p. 22.

#### Expansion of the Frontier mine through the Cut 3 and Cut 4 projects (DRC)

In 2021, we continued to extend Frontier's life of mine through the Cut 3 project. This is focused on stripping up to 29 million m<sup>3</sup>

of overburden – in order to push back the pit boundaries and expose more than 45mt of economically recoverable ore.<sup>3</sup> Cut 3 has helped maintain production at the mine (102.4 kt of copper contained in concentrate compared to 103.3 t in 2020), making a material contribution to Group EBITDA (p. 10). Over the 2022-2024 period, the project will help support total mine production of 174 kt of copper contained in concentrate.

We also carried out an additional drilling campaign and slope stability assessment. These will help inform and further optimise another pit expansion ('Cut 4'), which if approved, has the potential to extend the life of mine by more than 10 years.

### Replenishing our resource base in Kazakhstan through ERG Exploration

The objective of our recently established ERG Exploration entity is to replenish our Mineral Resource base in Kazakhstan, in line with KAZRC standards (which are aligned with best practice standards including CRIRSCO/JORC). As it develops, ERG Exploration will manage exploration projects across the Group.

ERG Exploration is focused on around 40 opportunities in the Aktobe and Kostanay regions, including those relating to core minerals such as bauxite, chromite and iron ore – as well as copper, gold and rare earths. It applies common approaches and methodologies to all exploration projects in Kazakhstan, helping ensure the efficient use of capital and consistent exploration results.

In 2021, ERG Exploration put its first drill rig into operation and will add three more in 2022. Plans are in place to carry out at least 40,000 metres of drilling in Kazakhstan annually using an expanded drill rig fleet.

### Ongoing enhancement of our capital project management system

We are creating an advanced capital project management system, including a comprehensive capital project framework that defines relevant responsibilities, decision-making processes and implementation approaches. Under the new system, our ERG Capital Projects team is responsible for methodological and organisational development across all project categories, as well as the implementation of our most strategic projects.

In addition, we have:

- Established a new operating model and organisational structure
- Developed new performance management system architecture
- Established a Project Management Academy to enhance internal capabilities
- Defined a roadmap for the application of digital/IT capital project management tools
- Increased resourcing to support capital projects implementation across the Group

2 Phase 2 design capacity is 105kt of copper and 20kt of cobalt hydroxide.

3 The majority of waste stripping was undertaken in 2019, with stripping activity decreasing afterward.



**IRON ORE**

**Initial production at BAMIN (Brazil)**

The Pedra de Ferro mine (part of our BAMIN operation) saw its first full year of initial production, achieving output of 1 million tonnes of iron ore, with sales to both domestic and international customers.

We also won the concession to complete and operate the first 537km stretch of the FIOLE railway from our Pedra de Ferro mine to our Porto Sul port project (with the railway's construction more than 70% complete). This is a major step forwards in the development of the broader 26 million tonnes per year integrated BAMIN mining and logistics operation – and broader regional development (p. 57). Porto Sul is expected to be operational by 2026 when FIOLE will begin transporting its first loads.

Pedra de Ferro enjoys high-grade, low-impurity iron ore – helping our customers to substantially reduce their carbon footprints.

This gives ore from BAMIN an important competitive advantage compared to Australian ore exports to China. This is particularly the case as Beijing seeks to reduce the domestic iron and steel sector's GHG emissions and impacts on local air quality.

For further information on BAMIN, see p. 24.

**Upgrading of our iron ore processing facilities to maintain output (Kazakhstan)**

Our existing iron ore processing facility at Rudny, which has a production capacity of 17 million tonnes of concentrate and 8 million tonnes of pellets per year, requires significant investment to maintain efficient operations under the target production volumes. In 2020, we carried out pre-feasibility studies on two strategic options to support future production volumes, while reducing future costs and improving product quality. These included the construction of a new processing facility at the Kacharsky open pit mine and the upgrading (with an extension of life) of

the existing Rudny processing facility. In 2021, we decided to progress the latter option into the next stage of development, with feasibility studies and basic design work underway.

**Modernisation of our Kacharsky mine and expansion of output (Kazakhstan)**

In 2021, we launched a programme at the Kacharsky open pit mine<sup>1</sup> to apply modern, international-standard production methods and raise output from 16 million tonnes per year to 26 million tonnes per year. The programme, which is taking place as part of a new, 10-year Mining Plan, includes a transition from a railway-based transportation system to a high-productivity mobile mining fleet model based on 220 tonne dump trucks and 30m<sup>3</sup> capacity excavators. We have signed a contract for the supply, maintenance and repair of 42 trucks and six excavators, with the first trucks already working on site. The programme also assumes the development of a new auxiliary mining fleet over a three-year period and the construction of new support infrastructure and facilities.

**ALUMINA AND ALUMINIUM**  
**Ensuring stable alumina and aluminium production (Kazakhstan)**

We continued to implement ongoing technological enhancements at Kazakhstan Aluminium Smelter (KAS), including increased amperage during the electrowinning process and the use of new pot lining material. Despite disruptive logistical factors outside of our operations, this helped to broadly maintain aluminium production at 262kt (2020: 265kt). Beyond KAS, our alumina production fell slightly to 1,315kt (2020: 1,383kt).

In addition, work continued on the development of open pits at the Vostochno-Ayatsky and the Krasnogorsky bauxite sites, supporting the development of up to 1.1 mtpa and 1.0 mtpa, respectively.

Finally, we continue to explore the potential future advancement of our major KAS-2 expansion project, which was postponed in 2020.

**Reducing our emissions to air at Pavlodar Aluminium Plant (Kazakhstan)**

In 2021, Aluminium of Kazakhstan continued to take measures to reduce its impacts on local air quality under our multi-year Environmental Strategy (p. 61). This included the initiation of a US\$44 million programme to replace four advanced electric precipitators/hybrid filters at sintering furnaces No. 4 and No. 5 of Pavlodar Aluminium Plant (p. 61). This is in the context of our broader 10-year, US\$393 million programme to reduce our emissions to air in Pavlodar and beyond.

For further information on our Environmental Strategy in Kazakhstan, see p. 60.

**ENERGY**

**Working to reduce carbon intensity in Kazakhstan**

In line with global trends, we are working to reduce the carbon intensity of our products (p. 66). Given the nature of our legacy assets, our current reliance on coal-fired power and immediate demand for thermal coal, this is likely to be a long and capital-intensive journey for us. In 2021, we initiated a formal process to establish 2030 renewable energy and GHG reduction targets and plan to:

- Reduce new capex on coal mining and coal-based power generation
- Generate or source renewable energy to meet a certain percentage of our electricity demand, in line with national renewable energy targets

As such, we are working to increase, over time, the proportion of energy we get from non-coal sources, including wind. This includes plans to develop a portfolio of renewable energy projects, starting with the construction of up to 155MW wind generation project near Donskoy GOK (Khromtau-1 wind power project) – with potential to double generation capacity at the site. Beyond this, we have identified a number of potential sites across Kazakhstan for large-scale wind and solar power generation projects. We are now progressing to wind measurements with the aim to bring these projects to execution in the next 5-10 years (p. 66).

In addition, we are advancing plans to generate energy using off-gas from our production processes. This includes the conclusion of a feasibility study for an off-gas fuelled power station at Aktobe Ferroalloys Plant, with a capacity of up to 100MW – as well as the potential conversion of Aksu Ferroalloy Plant's boiler house and the development of an off-gas fuelled power unit at our Special Coke Plant (p. 65).

Finally, we are only focusing 'stay-in-business' capex on our existing coal-fired power generation units – and are implementing targeted repairs instead of full replacements, as well as more limited life extensions.

**OTHER PROJECTS**

**Construction of new Special Coke Plant at Shubarkol Komir (Kazakhstan)**

We initiated the construction of Shubarkol Komir's 400ktpa Special Coke Plant. This will provide cost-effective reductants to Kazchrome to support its smelting activities and will also make both domestic and international sales. In addition, the plant will produce more than 70ktpa of coal tar and oil from Shubarkol Komir's coal. We are continuing to explore the potential construction of a power plant that would be fuelled by waste gases from the new plant.

**NEXT STEPS**

In 2022, we plan to:

- **Ferrochrome:** Increase production capacity at Donskoy GOK, advance the Slimes 2 project and further modernise Aktobe Ferroalloys Plant's Workshop No. 4
- **Cobalt and copper:** Investigate opportunities to further increase production volumes at Metalkol RTR and complete the Cut 4 feasibility study at Frontier. In addition, we are planning to re-commission Boss Mining and continue evaluating options that could support the commercial sustainability of our Chambishi Metals operation
- **Iron ore:** Accelerate the modernisation of the Kacharsky open pit, upgrade SSGPO's existing iron ore processing facility and further advance our BAMIN operation
- **Alumina and aluminium:** Apply additional pollution controls under our 10-year air quality management programme (p. 60)
- **Energy:** Advance plans to construct our Khromtau-1 wind power project as well as plans to generate energy from off-gas and pursue our broader renewable energy ambitions (p. 66)

In Africa, we also plan to expand our work on a range of exploration and development projects, with the aim of supplying the minerals and metals required by the green energy transition.

<sup>1</sup> Previously owned by SSGPO, but as of 2021 owned by our JSC Kachary Ruda entity.

# Delivering responsibly sourced cobalt to power the battery revolution

Our Metalkol RTR operation in the DRC is the world's second largest producer of cobalt. By reprocessing and responsibly storing historic tailings in a safe, modern facility, it is:

- Supporting the development of affordable battery technology (p. 13)
- Delivering responsible value chain assurance (p. 88)
- Reducing local pollution risks (p. 68)

## NEW TSF

Following reprocessing, the spent tailings residue is pumped to the new, purpose-built Tailings Storage Facility (TSF) for permanent storage. The TSF is subject to regular inspection, monitoring and reporting.

## REPROCESSING PLANT

The 360ha plant uses hydro-metallurgical processing to extract cobalt and copper from the historic tailings. This includes the use of tank leaching, followed by solvent extraction and electrowinning to produce cobalt hydroxide and copper cathode.

## HISTORIC TAILINGS

Metalkol RTR reprocesses historical cobalt-copper tailings that had accumulated over decades of third-party mining activity at the site. This includes tailings deposited in the existing Kingamyambo tailings deposit and in the Musonoi River.



## SUSTAINABILITY CONTEXT

### Local stakeholders

The concession is located approximately 5km northwest of the city of Kolwezi and includes three small hamlets (Samukonga, Kipepa and Kashala). There are two larger settlements (the Gécamines mine village 'UCK' and Kamimbi II), which sit on the concession boundary and have populations that run into thousands. In addition, 16 families from the Samukonga community were successfully resettled into Kamimbi II in 2018 – in line with local law and the IFC Performance Standards (p. 47).

While Metalkol RTR's output does not include any artisanal and small-scale mining (ASM) production, ASM activity does take place on the boundary of its concession. In 2021, a significant number of artisanal miners were active outside of the fenced Kingamyambo tailings deposit (p. 47).

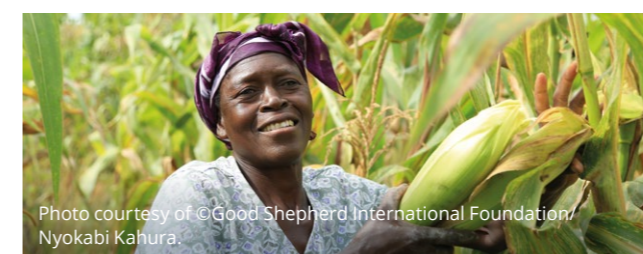


Photo courtesy of ©Good Shepherd International Foundation, Nyokabi Kahura.

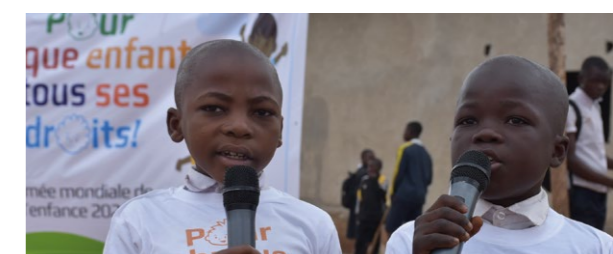
### IMPACT MANAGEMENT

Key impact management activities include:

- The application of an SHS Management System informed by the ISO 14001 environmental management system standard, with plans to achieve certification
- The implementation of comprehensive air and water monitoring plans (including community well testing), with results subject to independent laboratory analysis, third-party review and annual submission to the authorities
- Our legally mandated and voluntary Community Social Investment (see to the right)
- The application of dedicated ASM management plans, regular human rights impact assessments and the training of security personnel on the Voluntary Principles on Security and Human Rights

### Impacts, risks and opportunities

- The nature of the historic tailings poses ongoing challenges to local water systems, whilst sluicing and dredging activities at the operation require active environmental management
- The operation is in an already dusty environment, whilst local 'slash and burn' farming means there is limited vegetation – raising the potential for operational (and other) dust impacts
- Local people face very challenging living conditions. This includes extreme poverty, a lack of formal jobs and limited access to education – all of which help to drive ASM activity. Similarly, many have limited access to clean water
- Local ASM activity can expose participants to injury, exploitation, illegality and child labour. Nonetheless, ASM can also offer vital livelihoods and help participants support their families



### DEVELOPMENT INITIATIVES

Key development initiatives include:

- The launch of multiple alternative livelihood programmes as part of a three-year commitment under the mandatory Commitments Register framework (p. 55). This includes a Sustainable Agricultural Programme to provide seeds, tools and training to 467 households
- Ongoing work to prepare for the installation of a further 10 community water wells and solar-powered water distribution points
- Plans to construct two health clinics
- Ongoing financial support for the Good Shepherd International Foundation, which aims to improve living conditions for nearby ASM communities
- Support for the resettled Samukonga community, including the ongoing development of an alternative livelihood programme

## STANDARD-SETTING AND ASSURANCE

### Clean Cobalt and Copper Framework

The Framework is helping us deliver responsible mineral assurance across the battery value chain, including conformance with the OECD Due Diligence Guidance, whilst also improving living conditions for local people.

For further details, see p. 88

### Responsible Minerals Assurance Process (RMAP)

We are applying the third-party assured RMAP, which addresses conformance with (amongst other things) the OECD Due Diligence Guidance and EU Regulation 2017/821 on conflict minerals.

For further details, see p. 88

### Cobalt Industry Responsible Assessment Framework (CIRAF)

We continue to apply the CIRAF, a management and reporting framework focused on issues ranging from health and safety through to human rights.

For further details, see p. 88

**8Mt**

Reprocessed historic tailings from Kingamyambo and the Musonoi River in 2021

**\$1M**

To support the GSIF since 2017

# Delivering a world-class iron ore body – and supporting regional development

## Our BAMIN iron ore operation:

- Represents one of the largest infrastructure development projects in Brazil – incorporating major mine, railway and port developments
- Will create a new strategic logistical corridor to help integrate the regional economy and support exports from Brazil
- Has high-grade, low-impurity iron ore – and relatively low cross-lifecycle carbon emissions compared to the sector average

**26Mt**  
Planned production

**55,000**  
Estimated direct, indirect and induced jobs to be supported by FIOl<sup>1</sup>

**\$4,000M**  
Planned investment in Bahia

<sup>1</sup> Based on the estimation of Brazilian Ministry of Infrastructure.

### 1 PEDRA DE FERRO MINE

In 2021, our fully owned and licensed open-pit iron ore mine achieved its first full year of initial production, with output of 1 million tonnes and sales to international and domestic customers. The mine will use a dry-stack tailings storage facility.

**Status:** We plan to expand production to up to 26 million tonnes per year. The mine has a 20-year life of mine, with the potential to add at least a further 20 years as exploration and drilling progresses.

### 2 FIOl RAILWAY

In 2021, ERG won the concession to complete and operate the first 537km stretch of the FIOl railway. This will link our mine to our port. It will replace truck transportation for our iron ore, further reducing the operation's carbon footprint. FIOl will be able to handle 60 million tonnes of cargo per year, meaning the majority of its capacity can be used to support the logistical needs (and, by extension, the economic development) of the 19 municipalities it crosses.

**Status:** The stretch of railway is over 70% complete of construction, with completion due in 2026.

### 3 PORTO SUL PORT DEVELOPMENT

Our multipurpose, deep-water port will provide the single import/export point for the new FIOl railway. It will be able to receive ships of up to 220,000 tonnes and will potentially offer significant excess handling capacity to support non-iron ore imports/exports into and out of Bahia (e.g. grain, fertilisers, minerals).

**Status:** The port is under construction and is expected to be operational by 2026, when FIOl will begin transporting its first loads.



### SUSTAINABLE DEVELOPMENT PROJECTS

We place particular emphasis on supporting local business incubation, vocational skills training and ecological restoration, amongst other areas (p. 57). This is in the context of low incomes and limited employment opportunities faced by many communities living near our mine and port development.

**\$750,000**

Community social investment (CSI) in 2021

**76**

Programmes implemented or ongoing

### INTERNATIONAL SUSTAINABILITY STANDARDS

BAMIN is committed to aligning its integrated approach to sustainability with international best practice standards, including the IFC Performance Standards, which are incorporated into our ESG programme.

PREPARING OUR BUSINESS FOR THE FUTURE



# Technology, efficiency and digitalisation

## Strategic context

**Efficiency in all that we do:** Under our 2025 Strategy, we have prioritised the pursuit of efficiency at Group- and regional-level. This includes reducing our unit costs by eliminating bottlenecks and improving productivity.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



We seek to implement new technologies and achieve efficiencies, while carefully managing our resources and delivering results.

### WHAT WE ARE DOING

#### Operational efficiency

Our Operational Efficiency team in Kazakhstan continues to take a systems-based approach to achieving ongoing, incremental improvements in efficiency

and productivity. It is focused on the application of lean management principles and cross-cutting employee collaboration to improve 'how things are done'. This includes the pursuit of improvement opportunities identified by our employees.

Such opportunities are identified by a variety of means, including through:

- **Ideas Factory:** This initiative collected more than 31,900 employee ideas, of which 17,174 were accepted for

implementation – with anticipated savings of US\$25 million (2020: over 16,000 ideas submitted, 10,969 accepted and US\$9 million in anticipated savings)

- **Innovators' Forum:** Around 180 employees (representing 74 proposed projects) participated in our annual Innovator's Forum, which took place online (2020: more than 200 employees). This focused on the generation and practical implementation of innovation initiatives



## MRO PROCESS OPTIMISATION EXAMPLES IN KAZAKHSTAN

### Technical development and engineering projects

Implementation of 65 technical development and engineering projects with a focus on the use of new materials and spare parts, as well as the application of new repair methods and technologies.

In total, the programme includes 250 projects, the remainder of which will be implemented in 2022 and beyond.

### Enhanced repair cost planning

Introduction of a mechanism to help plan long-term repair costs, with a particular focus on cross-functional coordination. In 2021, implementation was focused on:

- Improved quality control of inventory budgeting
- Repair impact categorisation analysis
- Introducing a client-orientated approach to internal services (procurement, commercial control, asset management services), as well as key performance indicators

### Investigation and analysis of equipment failures

Our reliability teams analyse the root-causes of equipment failures and develop measures to reduce the number of outages.

Over 2021, these teams investigated more than 775 outages and implemented around 10,000 measures to help reduce the chances of reoccurrence.

### Cost saving in 2021

**\$14M**

**\$11M**

**\$24M**

### • Innovation portal (Erg-innovation.kz):

Our public innovation portal sets out some of our key operational challenges. Anyone with potential solutions to these challenges – whether early stage or already commercialised – are invited to have their idea assessed for potential development and, ultimately, commercial adoption. By the end of 2021, we had received more than 160 new proposals (2020: more than 100)

Our broader goal is to build a culture of innovation, constructive engagement and continuous improvement, which will enhance every area of our business over the long term.

### Organisational efficiency

We are continuing to improve organisational structures and transparency across the Group. In 2021, this included:

- The implementation of a cross-functional, integrated shared service model
- The 'flattening' and rationalisation of management structures, including the removal of redundant levels of management.
- The optimisation of our business processes

In addition, we are:

- Further enhancing the role played by ERG Capital Projects in terms of Group-level project planning, implementation and monitoring (p. 19)
- Continuing to optimise a range of processes at our Maintenance, Repair and Overhaul (MRO) function in Kazakhstan (see above)
- Advancing IT integration across our business

## The ERG Way Production System in Kazakhstan

The ERG Way Production System is focused on the development of a more effective working culture in Kazakhstan, where most of our assets and people are located. It supports efficiency across the product lifecycle, including through the application of lean management principles.

In particular, the system (which is implemented by our Operational Efficiency and Human Resources functions) aims to:

- Improve equipment productivity and achieve sustainable cost reduction
- Promote the application of common principles and effective employee/team interaction

- Support systemic change management in the production process, including through employee empowerment and cross-functional collaboration

In 2021, we re-initiated the roll out of the system to Kazchrome's and SSGPO's operations (following COVID-19 induced delays) and commenced its rollout at Aluminium of Kazakhstan, EEC and ERG Service.<sup>1</sup> In future, the system (which is supported by a dedicated training programme for managers and supervisors) will be rolled out to all parts of our business in Kazakhstan.

<sup>1</sup> ERG Service is our maintenance and repair division.

## PREPARING OUR BUSINESS FOR THE FUTURE CONTINUED

### Technological innovation

#### Kazakhstan

Our Kazakhstan-based Research & Development Centre (R&D Centre) helps drive technological innovation to support our operations. It works on an open system based on interaction with a range of internal and external innovation actors. This builds on our existing use of the Innovation Portal (p. 27) to engage external third-party solution-providers – and includes the use of specialised companies to help identify and evaluate startups and new technologies, as well as ‘scouting’ for new solutions that can be applied at our operations.

In 2021, this included a pilot project with international innovation platform Plug and Play. The Plug and Play network fosters startups and connects them to established companies seeking innovative technology and solutions that can enhance their businesses. The pilot project was initially focused on the Astana Hub business incubation organisation in Nur-Sultan, where it identified 21 companies that offered potential solutions focused on waste processing and carbon reduction.

The R&D Centre is working on a range of ongoing projects. This includes the development of, amongst other things:

- A process to pelletise fine chrome concentrate at Kazchrome’s Slimes 2 project (see below) for use in the furnace
- Production processes using vacuum heat treatment technology to produce slag-free, low-carbon ferrochrome for use in more complex and demanding products, including special alloys

- Pitch products from resin produced at Shubarkol Komir, which can support production at Kazakhstan Aluminium Smelter where it is used to make anodes. This would help address rising pitch prices and uncertainty regarding stability of quality/supply – with pitch quality materially impacting the smelter’s performance

In addition, the R&D Centre successfully completed 10 projects during the year. This included the implementation of an initiative to enrich high ash coal at Shubarkol Komir and convert it into a useable product, with production underway; the production of ash polymer products at EEC; and the enrichment of stabilised refined ferrochrome slags at Kazchrome.

More broadly, the R&D Centre is playing an instrumental role in:

- Pursuing the application of other advanced filter technologies to reduce our impact on air quality at key operations in Kazakhstan (p. 60)
- Developing a range of innovative waste recycling and reprocessing initiatives (p. 69)

#### Africa

In Africa, we are pursuing an innovative project to enhance the operational resilience of Metalkol RTR. In particular, we are focusing on how we can minimise lost production caused by temporary power outages, including through the potential installation of:

- Back-up battery capacity
- A direct, online generation system that runs in the background and can be applied instantly when an outage occurs

In 2021, we completed a concept study for the project, and we are now carrying out a pre-feasibility study. We are also carrying out a concept study into the potential development of a solar power project to feed into Metalkol RTR’s power supply.

### Digital innovation

We are continuing to build on our existing automation efforts and are working towards the application of the Industry 4.0 concept through our Group-level Digital Strategy. This includes:

- Developing employee capabilities, with a focus on robotisation and big data
- Ensuring we make cost-effective digital investment decisions
- Building adaptive/modular digital architectures to support our operations and business, including the internal development of resilient, ‘high-criticality’ digital solutions

The strategy will help us develop an integrated ‘universe’ of interconnected data across the company. The intelligent use of this data has the potential to materially enhance all of our activities, from exploration through to product delivery.

Examples of our automation initiatives include:

- The application of a Manufacturing Execution System (MES) to automated production processes at our more advanced metallurgical plants, including Workshop No. 4 at Kazchrome, and also at KAS. This builds on our existing automation efforts at these plants by improving performance and data transparency and, by extension, operational management, planning and metal extraction levels



- The ongoing application of automated production processes at our older metallurgical plants to improve general operational efficiency. This includes the automation of the casting process at Aksu Ferroalloys Plant to reduce fine metal losses
- Industrial testing of our Smart Mine vehicle dispatch system at SSGPO’s Kurzhunkul, Sarbay and Sokolov pits, and at EEC’s Vostochny coal pit. The system, which is already improving mine productivity in other parts of the company, enhances the management of dump trucks, excavators and other moving equipment. It does so using specialist dispatching systems and software, as well as real time, 4G-based positioning of personnel and equipment
- Planned implementation of an automated drilling and blasting system at SSGPO, with the process expected to be fully operational by the end of 2024. The system enhances safety by reducing employee interaction with drilling equipment, explosives and rock
- The development of ‘at source’ automated systems to monitor our emissions to air at multiple operations in Kazakhstan in real time. This is in addition to our application of remote, automated monitoring systems on the borders of sanitary protection zones around EEC and Kazchrome

Examples of our application of the Industry 4.0 concept include:

- The use of machine learning to generate additional production insight for employees managing smelting processes, helping them achieve higher levels of productivity
- The development of robots to support automated procurement processes, including the quotations request process

In addition, we have established a unified ‘data lake’, where we store all available operational data being generated across the company. This will allow us to apply additional artificial intelligence (AI) and Big Data processes in future, generating additional, value-adding insight into how we can improve our decision-making and practices.

### Using blockchain technology to support value chain assurance

We are continuing to work with a range of stakeholders to explore how blockchain technology can help enhance the traceability of the cobalt we produce at Metalkol RTR in the DRC. For further information, see p. 90.

### NEXT STEPS

From 2022 onwards, we plan to:

- Further reduce our general and administrative costs through process optimisation and a focus on shared service models
- Continue rolling out the ERG Way Production System to all parts of our business in Kazakhstan, including a significant expansion in training activity

In addition, we will pursue a range of technology-orientated development programmes, including those focused on:

- The online connection of every employee and machine to a MES to help accelerate digitalisation and ensure the most efficient management of resources and assets across the company
- The expansion of our existing ‘data lake’ beyond operational data, to include corporate data in one unified location
- The launch of a pilot programme to develop robots to enter potentially dangerous work environments. This will ensure these spaces are sufficiently safe for employees to operate in, prior to their entry
- The use of AI to carry out automated market price analysis. This supports decision-making during the procurement process and ensures high levels of price transparency

### EXAMPLES OF OPERATIONAL R&D PROJECTS IN KAZAKHSTAN

#### Slimes 2 reprocessing project at Donskoy GOK (Kazchrome)

Slimes 2 will use combined gravitation flotation technology to significantly improve the enrichment of chrome oxide-bearing tailings (p. 18).

In 2021, our R&D Centre developed solutions to support:

- Briquetting so the chrome concentrate can be used in our alternating current furnaces
- Improved recovery rates from flotation, including more effective reagents

#### Use of gas scrubbers to reduce emissions at Pavlodar Aluminium Plant (Aluminium of Kazakhstan)

We are investigating the use of gas scrubbers to improve the environmental performance of the sintering workshop. These could offer a more economical alternative to the hybrid filters we are currently fitting at key operations in Kazakhstan (p. 61).

As well as removing 90-95% of particulates, the scrubbers remove NO<sub>x</sub><sup>1</sup>, SO<sub>x</sub><sup>2</sup> and – in certain configurations – CO<sub>2</sub> from emissions. Initial results have been positive, with potential for further rollout.

#### Conversion of mine vehicles to LNG fuel (SSGPO)

In 2021, we carried out pilot testing of a converted liquefied natural gas (LNG) fuel system on an SSGPO dump truck. The results were positive, demonstrating fuel savings compared to diesel, as well as more limited environmental impacts.

We are examining the potential rollout of this technology, subject to LNG availability, the vehicle replacement cycle and alternative clean technologies such as hydrogen.

1 Nitrogen oxides.

2 Sulphur oxides.



# HELPING OUR PEOPLE THRIVE

Under our 2025 Strategy we have prioritised the development and maintenance of a **happy and professional team**. Our approach to people management is also guided by our new People Strategy, which was finalised in 2021. This includes a focus on:

- The development of our employees' skills and competencies
- The maintenance of employee safety and well-being
- Supporting the personal and professional growth of our employees
- The provision of comfortable workplaces and living conditions
- The enhancement, automation and standardisation of our people management systems and processes

Our new People Strategy helps to ensure that our people are at the heart of all that we do. At the same time, it will support the development of an innovative and flexible workforce to underpin the long-term sustainability of our business.

## 2021 HIGHLIGHTS

Finalised our new Group-wide People Strategy

Invested \$11m to enhance onsite facilities and employee accommodation in Kazakhstan

Continued to work towards ISO 45001 certification at Metalkol RTR in the DRC

## MATERIAL ISSUES



**Health and safety, including COVID-19**

READ MORE ON P. 32



**Talent attraction, development and retention**

READ MORE ON P. 36



**Employee relations**

READ MORE ON P. 40



HELPING OUR PEOPLE THRIVE



# Health and safety, including COVID-19

## Strategic context

**A happy and professional team:** Under our 2025 Strategy, we have prioritised our employees' safety and well-being. This includes the maintenance of safe working conditions and the improvement of employee wellness and health.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



In line with our Values, we put safety first. We aim to achieve Zero Harm – and we are committed to delivering a healthy, safe, productive and stable working environment for all our employees and contractors.

### OUR PERFORMANCE

We experienced a very challenging year with regard to our safety performance. Sadly, this included the loss of seven employees and three contractors (2020: three employees and one contractor). Eight of these fatalities occurred at our operations in Kazakhstan and two at our Frontier operation in Africa.

We express our sincere condolences to all those affected by these events. All fatalities are unacceptable, and we continue to focus on achieving Zero Harm.

Thorough investigations have taken place into each fatal incident to identify the cause(s), inform appropriate prevention measures and help minimise the risk of recurrence.

In Kazakhstan, our investigations into the eight fatalities (seven employees and one contractor) resulted in the following responses, amongst other measures:

- Strengthened oversight of drilling and blasting activities, including enhanced controls for the issuance and use of explosives, increased safety supervision and the application of additional video and GPS monitoring systems
- The application of additional two-way radio communication systems and the installation of new hazard alarm systems

- The rollout of enhanced safety policies and procedures relating to higher risk work
- The enhancement of safety measures relating to overhead powerlines, including the development of new safety policies and procedures, the installation of additional safety equipment and the rollout of targeted employee training
- Strengthened oversight of accident investigation reporting and related corrective actions

In Africa, two contractor fatalities occurred in a single incident at Frontier. Our investigation into this incident resulted in the following responses, amongst other measures:

- The rollout of enhanced water safety and drowning prevention protocols for all employees and contractors working near water
- The provision of role-specific training on water rescue techniques

Beyond these targeted preventative measures, we continue to focus on enhancing employee safety across our global operations (p. 33) and further strengthening contractor safety standards (p. 34).

Finally, lost time injuries (LTIs), including fatalities, rose to 108<sup>2</sup> (2020: 70). This resulted in an increased lost time injury frequency rate (LTIFR) of 0.93<sup>3</sup> (2020: 0.61).

### WHAT WE ARE DOING

#### Employee safety in Kazakhstan

During the year, we finalised our Safety Strategy and commenced the development of detailed action plans to support its rollout in 2022. In addition, we continued to apply our integrated, risk-based occupational and process safety management system.

In this context, we implemented a range of measures to help enhance safety at our operations. Key workstreams included:

- **Control of fatal risks:** The ongoing rollout of a multi-year programme to strengthen our fatal risk controls, including:
  - **Working at heights:** The installation of enhanced anchoring systems at multiple operations; the provision of remote safety training to around 7,000 employees (of which more than half also received onsite training); the establishment of a new training facility at SSGPO; and the provision of specialist training to internal safety instructors
  - **Transport safety:** The ongoing rollout of our advanced satellite control, analytics and transport management system across multiple operations
- **Safety targets:** The establishment of a target to reduce our LTIFR in Kazakhstan by 15% per year to 2030 (from a 2021 baseline)

### KEY SAFETY INDICATORS BY YEAR

Indicators	2021	2020	2019	2018	2017
Fatalities (employees only)	7	3	10	1	3
Fatalities (contractors only)	3	1	1	4	3
LTIs (employees only)	101	67	85	70	83
LTIs (contractors only)	17	13	17	13	10
LTIFR (employees only)	0.93	0.61	0.83	0.58	0.69

### KEY SAFETY INDICATORS BY REGION

Indicators	Kazakhstan	Africa	Brazil
Fatalities (employees only)	7	0	0
Fatalities (contractors only)	1	2	0
LTIs (employees only)	99	2	0
LTIs (contractors only)	17	0	0
LTIFR (employees only)	1.01	0.19	0

- **Process automation:** The ongoing digitalisation of our data management and reporting processes. This included the completion of the first phase of a new digital safety platform to enhance the management of incident investigations, remedial actions, safety risk assessments and audits
- **Risk assessment:** The undertaking of annual safety risk assessments using the Hazard Identification (HAZID) methodology, and the updating of related annual action plans
- **Safety standards:** The revision and enhancement of our Safety Risk Management and Incident Investigation standards
- **Safety culture:** The ongoing integration of 'safety dialogues' into our League of Professionals programme (p. 37), as well as safety training for production personnel and regular safety-focused site visits by senior regional managers under the ERG Way Production System (p. 27)

### Our response to COVID-19



Tragically, we lost 30 colleagues due to health complications related to COVID-19 or pneumonia in 2021.

We continued to implement a coordinated and comprehensive response to the virus. By the end of

the year, the majority of our employees in Kazakhstan had been vaccinated through government-run vaccination programmes, with many also having received their booster vaccines. We also supported government-run programmes in Brazil to help our employees access vaccines.

In addition, we continued to implement a range of preventative measures across our global operations and offices. These included:

- The use of thermal scanners and touch-free thermometers at check-points, on buses and at our offices
- The regular disinfecting of our facilities and vehicles, as well as the installation of air recirculators in crowded locations
- The distribution of personal protective equipment and hand sanitisers
- The application of social distancing procedures in workplaces and the use of remote or hybrid working arrangements where possible
- Awareness raising amongst employees and contractors

In addition, we established a post-COVID-19 rehabilitation programme in Kazakhstan, which provided medical support to our employees. We also provided medical support to employees at onsite health clinics at Metalkol RTR and Frontier.

1 With the exception of 3-Energoortalyk.  
2 Employees only.  
3 Employees only and including employee fatalities.

**Employee safety in Africa**

In Africa, we continued to apply our integrated SHS management system. This is supported through the application of the IsoMetrix software programme at all our operations.

In 2021, key safety initiatives included:

- **Management systems:** Continued work towards the certification of our SHS management system at Metalkol RTR to ISO 45001. This included the ongoing implementation of internal industrial hygiene audits in preparation for future external audits against the standard (see 'Next steps' on p. 35)
- **Key Performance Indicators (KPIs):** The rollout of a new remuneration-linked KPI for LTI-free hours for all employees at Metalkol RTR<sup>1</sup>
- **Safety culture:** The ongoing implementation of our Visible Felt Leadership safety programme at Metalkol RTR and Frontier, including regular cross-functional inspections by senior operation-level managers
- **Safety audits:** Ongoing, biannual safety audits across our Africa operations to support the continuous improvement of our SHS management system and fatal risk protocols

**Employee safety in Brazil**

At our BAMIN iron ore operation in Brazil, we continued to develop a comprehensive OHS management system. This is based on the requirements of ISO 45001.

We also commenced the rollout of a fatal risk control programme and implemented a new transport safety programme for employees and contractors. Finally, we updated our emergency scenarios and conducted related scenario-based planning and training in line with the ongoing development of the operation.

**Contractor management**

Regrettably, one contractor fatality occurred at our SSGPO operation in Kazakhstan and two contractor fatalities occurred in a single incident at Frontier in the DRC.

We implemented targeted preventative measures in response to these incidents (p. 32). Beyond this, we also took a range of steps to enhance our management of contractors more broadly.

In Kazakhstan, key steps included:

- The strengthening of safety controls for capital projects carried out by contractors, including the deployment of additional specialist safety engineers
- The ongoing, close management of contractor work schedules to ensure that dedicated ERG safety specialists are onsite to oversee higher risk activities

In Africa, key steps included:

- The undertaking of enhanced pre-transactional reviews of contractor safety management systems
- The embedding of fatal risk protocols into contractor onboarding processes and the expansion of the scope and number of contractor safety audits at Metalkol RTR
- The hosting of frequent safety dialogues with contractors at Frontier

At our BAMIN iron ore operation, we rolled out a new COVID-19 contractor protocol and continued to deliver comprehensive contractor safety inductions and training on our OHS policies and procedures.

**Occupational health**

**Kazakhstan**

Some of our workplace activities can, if not proactively managed, pose risks to the health of our employees. This includes potential exposure to dust, noise, vibrations and heat. In this context, we implement comprehensive occupational health programmes for all our employees.

In Kazakhstan, this includes:

- Mandatory annual medical examinations
- Role-specific, pre-shift medical examinations
- Workplace health risk assessments
- The provision of relevant medical treatment

For information on how we managed the impact of COVID-19 on our workforce, see p. 33.

**Personal health**

We are committed to addressing non-occupational diseases that can impact the health of our employees. In this context, we implement a range of initiatives to support the personal health of employees across the Group. See p. 100 in the Appendix for more information.



**Africa and Brazil**

In Africa, we continued to implement an Industrial Hygiene Programme at our Metalkol RTR and Frontier operations. This includes monitoring and analysis programmes, as well as employee awareness training – with a focus on dust, noise, vibration exposure and the use of acid in the production process.

At Metalkol RTR, dust exposure analysis carried out under the programme found that levels of silica dust at the Kingamyambo tailings storage facility continued to exceed internally set limits during the dry season. In response, we continued to carry out onsite dust monitoring, as well as water spraying to suppress dust at the site. We also continued to provide enhanced PPE and biannual employee medical examinations.

In Brazil, we contract a specialist external company to provide onsite health professionals at our BAMIN iron ore operation. This includes an onsite physician, a nurse, nursing technicians and ambulance drivers. We also provide annual occupational health assessments for all employees.

**NEXT STEPS**

In Kazakhstan, we are planning a range of measures to improve our safety performance and reduce the risk of harm to our people. These include:

- **Strategy:** The rollout of our new Safety Strategy, with a focus on the ongoing development of our safety culture and leadership across all levels
- **Working at heights safety programme:** The ongoing rollout of the programme, with a goal of providing role-specific safety training to a further 14,000 employees by the end of 2022 – as well as the installation of additional anchoring systems
- **Transport safety:** The ongoing region-wide rollout of our satellite control, analytics and transport management system, as well as the region-wide installation of driver fatigue monitoring systems, enhanced video surveillance systems and automated fire extinguishing systems for heavy vehicles
- **Enhanced machine safety:** The undertaking of a region-wide safety audit to inform the future implementation of 'lock out/tag out' (LOTO) safety systems. These will help ensure that higher risk machinery is safely isolated prior to the undertaking of maintenance or repair work

• **Personal health and well-being:** The expansion of our psychological support services through our employee medical centre. This will include online group wellness seminars and face-to-face support from clinical psychologists. We will also focus on awareness raising to help address the stigma associated with psychological illness

In Africa, we plan to further strengthen our safety performance by:

- **Safety management system:** Conducting an external audit of our SHS management system at Metalkol RTR against ISO 45001 as we continue to work towards certification
- **Visible Felt Leadership (VFL):** Launching an expanded VFL programme across our Africa operations to further embed our safety culture
- **Contractor safety:** Strengthening contractor safety management at Metalkol RTR and Frontier through the embedding of enhanced SHS performance standards into our procurement processes

At our BAMIN iron ore operation in Brazil, we plan to undertake internal safety audits of our OHS management system and related procedures.



1 This is in addition to existing safety KPIs in place at our operations in Africa.

HELPING OUR PEOPLE THRIVE



# Talent attraction, development and retention

## Strategic context

**A happy and professional team:** Under our 2025 Strategy, we have prioritised the development of our employees' competencies. This includes the building of their strategic skills and capabilities, the evolution of our corporate culture and the development of our talent pool and leadership pipeline. We also focus on enhancing employee benefits and improving our employee proposition.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



Our approach to people management focuses on attracting, developing and retaining an innovative and flexible workforce to support both the current and future needs of the business. These efforts are of increasing importance as global labour markets continue to undergo rapid change.

In line with our Values and our new People Strategy, we place particular emphasis on the development of our employees' strategic skills and competencies, as well as our high-potential individuals and leadership pipeline.

At the same time, we continue to focus on enhancing our employee proposition. This includes the ongoing delivery of competitive, performance-linked remuneration, as well as our efforts to improve employee benefits.

## WHAT WE ARE DOING

### Skills development

During the year, we further enhanced our skills development programmes to help embed innovative ways of working at every level of our global workforce.

This included the ongoing development of the 'ERG Digital University', which focuses on the centralisation of our training functions and the standardisation of our Group-wide skills development programmes. In particular, we rolled-out around 450 online and in-person courses for employees in Kazakhstan, including modules on management skills, emotional intelligence and project management.

We continued to deliver strategic skills development initiatives through our ERG Academy – with a focus on supporting the ongoing transformation of our culture, the implementation of the ERG Way Production System (see p. 27) and the rollout of our 2025 Strategy (p. 8). We also trained 91 managers in Kazakhstan on cultural change to further support our transformation efforts.

In addition, we have established strategic 'talent pools' to support the rapid development of our high-potential individuals, as well as our succession planning. The programme supports employees across a range of levels, including executive, functional and operational leaders, as well as high-potential young employees. During the year, key activities included the rollout of:

- A skills development programme for our workshop-level managers, with 76 employees completing modules in managerial and leadership skills at the Russian National University of Science and Technology (MISIS)
- A leadership development programme for our high-potential young employees (known as our 'LIFT' project), which saw 131 participants complete modules in leadership skills at the Narkhoz University in Kazakhstan

## Embedding a Group-wide approach to people management

Under our new People Strategy, we are focused on the ongoing enhancement, automation and standardisation of our people management systems and processes. This will help ensure that we apply consistent standards across our global operations and corporate offices, and help support the achievement of our Group-level strategic objectives.

In this section, we set out some of the key steps we are taking to achieve this.



We identify individuals for inclusion in these talent pools on an ongoing basis through our annual employee competency evaluation programme (see below).

In addition, we continue to focus on cultural transformation within our business in Kazakhstan and our corporate offices – as well as the broader implementation of our 2025 Strategy. In particular, we are seeking to foster a culture based on our Values – Efficiency, Safety, Responsibility, Development and Unity (p. 99). In 2021, this included large-scale cultural analysis carried out across our regions, as well as employee training to support the implementation of the ERG Way Production System (p. 27).

### Competency evaluation

In 2021, we continued to roll out our structured employee competency evaluation programme, with more than 3,500 Kazakhstan-based employees undergoing assessment.

In addition, we continued to transition the programme into a new digitised talent management system, with the aim of automating our objective-setting and competency evaluation processes. During the year, we rolled out the new system to our global corporate offices.

In support of this process, we commenced the development of new Group-wide employee competency models as part of a large-scale review of our organisational structures and culture (p. 27).

### Motivation and remuneration

During the year, we continued to expand the scope of our employee motivation system to support the cascading of our Group-level strategic objectives. This included the rollout of performance assessments and performance-linked bonuses for more than 13,000 production and administrative personnel in Kazakhstan, Africa and our corporate offices.

We also commenced the Group-wide rollout of the system outside of Kazakhstan with the implementation of performance assessments and performance-linked bonuses for non-production personnel at Metakol RTR in the DRC.

### People management in Kazakhstan

#### Talent attraction and development

In Kazakhstan, we continued to implement a comprehensive approach to the development of our current – and future – skills pipeline. Key initiatives included:

#### Schools, colleges and universities:

- The hosting of 38 educational tours for school pupils and more than 30 career tours for university students under our Open Days with ERG initiative
- The hosting of vocational guidance events for 2,240 students at colleges and universities across our operating regions
- The provision of technical internships for more than 2,200 students at ERG operations – 271 of whom were hired into full-time positions

### Young professionals:

- The ongoing implementation of our Youth Council programme, which supports networking and career development for young employees
- The hosting of an online scientific and technical conference to support the professional development of more than 110 young employees

### Experienced professionals:

- The continued rollout of our League of Professionals programme to support the development of our production specialists, with more than 380 employees participating in online technical training
- The holding of our annual "Bridge of Generations" event. This is aimed at promoting knowledge transfer through the application of mentoring and internal coaching tools. As part of the event, 500 experienced specialists were trained in mentoring and related skills
- The provision of training in the ERG Way Production System for more than 2,500 production specialists as part of our ERG Academy programme (p. 36)

### Differentiated pay rises

In 2021, we continued to undertake extensive analysis and benchmarking of employee salaries in Kazakhstan. The outputs from this process informed two rounds of differentiated pay rises for more than 60,000 employees (effective from July 2021 and January 2022 respectively). This supports our ongoing efforts to strengthen our employee proposition.

# The Atlas of New Professions in Kazakhstan



Issue	Action	Outcome
<p>Global labour markets are evolving at a rapid rate. This is being driven by digitalisation, automation, demographic shifts and changing societal attitudes (particularly amongst younger generations).</p> <p>In this context, the forecasting and management of future skills gaps is becoming ever more important (and challenging) for governments, companies, educational institutions and young job seekers.</p>	<p>ERG continues to support the Government of the Republic of Kazakhstan in the ongoing development of the Atlas of New Professions, a critical strategic planning tool that we helped launch in 2019. The Atlas includes advanced forecasting of the most critical and in-demand professions over the next 10-15 years.<sup>1</sup> In 2021, we supported a range of Atlas-related initiatives through BTS Education (an ERG subsidiary). This included:</p> <ul style="list-style-type: none"> <li>• The launch of the first 'Regional Atlas' in the Pavlodar region. This will support the regional government's ongoing efforts to transform the education system and labour market in Pavlodar</li> <li>• The provision of future-orientated career guidance and planning to more than 30,000 school pupils</li> </ul>	<ul style="list-style-type: none"> <li>• The revision and enhancement of curriculums at 17 colleges and 10 universities across the country</li> </ul> <p>In addition, the Government is using the Atlas to support its national strategic planning. For example, the Ministry of Labour and Social Protection of the Population continues to integrate the Atlas outputs into its multi-year labour forecasting model.</p> <p>BTS Education is also supporting the digitalisation of the Atlas. This includes the ongoing development of the EduNavigator.kz career guidance platform, which helps school pupils to identify future-focused career paths.</p> <p>It is envisaged that the Atlas will provide detailed strategic forecasting of the national labour market to support the Government's 2025 programme aimed at improving the income of the population. 'Regional Atlases' are planned for all regions of Kazakhstan.</p> <p>These outputs will provide a roadmap to support the Government's ongoing efforts to adapt the education system and align the national economy to future skills requirements. It will also help students and young job seekers to access vital guidance as they build their future careers. Finally, the Atlas will support ERG in the ongoing delivery of our future-focused recruitment and talent management strategies (p. 37).</p>

## People management in Africa and Brazil

In Africa, we continued to focus on the ongoing standardisation and enhancement of our human resources systems and processes. This included the development of a digitalised people management system that we plan to rollout in 2022. In addition, we undertook extensive benchmarking of salaries across our operations to ensure our employees are paid fairly.

At Metalkol RTR, we continued to expand our full-time workforce to support the ongoing Phase 2 ramp-up of the operation. This contributed to a further increase in the proportion of DRC nationals employed on a full-time basis, and we continue to make good progress towards related government targets. We also posted relevant job vacancies within local communities and hired local people where feasible. Furthermore, we continued to undertake structured skills assessments for our new and existing employees, implemented tailored skills development programmes and succession planning, and rolled out a new employee motivation system (p. 37).

At BAMIN in Brazil, we expanded our full-time workforce to support the ramp-up of commercial production at our Pedra de Ferro mine, as well as the development of the Porto Sul port. In this context, we continued to meet the local employment requirements of our licensing agreement, which mandates that a minimum of 60% of our workforce (including employees and contractors) are hired from local populations. In addition, we implemented a new talent management process to support the integrated performance evaluation and skills development of our employees, as well as the ongoing development of our leadership pipeline.

### Supporting the delivery of our capital projects

In 2021, we recruited around 300 highly qualified technical personnel to support the delivery of our strategic capital projects in Kazakhstan, Africa and Brazil. To find out more see 'Growth and asset maintenance' on p. 18.

## OUR PERFORMANCE

In Kazakhstan, we invested around US\$6 million<sup>2</sup> in training and skills development for our employees (2020: around US\$4 million). The increase primarily reflects the resumption of training programmes that had been postponed due to COVID-19.

As noted above, we rolled out our structured employee competency evaluation programme to more than 3,500 employees in Kazakhstan (2020: more than 3,500 employees). We also expanded the scope of our employee motivation system to more than 13,000 production and administrative personnel in Kazakhstan, Africa and our corporate offices.

In Africa, we spent US\$162,000 on such efforts (2020: US\$223,000) with plans to expand large-scale employee development events to our Africa region.

## NEXT STEPS

We will continue the rollout of our new People Strategy, including the cascading of the strategy across our global operations and functions.

Key activities will include:

- The ongoing development of the ERG Digital University
- The rollout of our employee motivation system to Africa and Brazil to support the further cascading of our Group-level strategic objectives
- The rollout of our digitalised SAP® human resources management system to Africa and Brazil
- The expansion of our structured employee competency models to additional functions in Kazakhstan
- The expansion of our talent pools framework across more than 230 roles, as well as the launch of a new executive leadership development programme

<sup>1</sup> The Atlas is based on the Skills Technology Foresight (STF) methodology, which was developed by the International Labour Organisation, the Russian Agency for Strategic Initiatives (ASI) and the Moscow School of Management SKOLKOVO.

<sup>2</sup> This includes mandatory training delivered under ERG's subsoil licensing obligations, as well as large-scale employee development events.

HELPING OUR PEOPLE THRIVE



# Employee relations

## Strategic context

**A happy and professional team:** Under our 2025 Strategy, we have prioritised the development of our employees' competencies and the maintenance of their safety and well-being. This not only includes employee wellness and health, but also the delivery of comfortable workplaces.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



In Kazakhstan, our approach to employee relations is shaped by the significant inter-connectivity between our workforce and local communities. We place particular emphasis on the social needs of our employees and their families in our operating regions (many of which are geographically remote and highly reliant on ERG's activities). We periodically carry out surveys of community members (including employees and their families) and undertake benchmarking of local socio-economic conditions to help identify and respond to these needs on an ongoing basis.

Our Group-wide approach to employee relations is supported by constructive engagement with our employees' unions. We respect the right of all employees to join unions and to freely engage in collective bargaining.

Furthermore, we are committed to respecting universally recognised human rights and labour standards. This includes the principle of equal opportunity and the maintenance of an inclusive, fair and non-discriminatory working environment. We apply these commitments to our workforce, our contractors and our suppliers.

See p. 84 to find out more about our Group-wide approach to human rights.

## Workforce profile

**67,901**

Directly employed people<sup>1</sup>, as at the end of 2021

**90%**

Of employees located in Kazakhstan

**89%**

Of the Group's employees are trade union members<sup>2</sup>

**25%**

Of the Group's employees are female

### NUMBER OF EMPLOYEES BY REGION

Region	2021	2020
Kazakhstan	63,899	62,892
Africa	3,539	3,462
Brazil	192	86
Corporate offices <sup>3</sup>	271	261
Total	67,901	66,701

<sup>1</sup> I.e. employees holding a written contract of employment with ERG as at 31 December 2021. This figure does not include contractors.

<sup>2</sup> Collective bargaining agreements are in place at the majority of our operations.

<sup>3</sup> Includes employees at offices in Europe, Russia, the UAE and China. The headcount of our corporate offices in Kazakhstan, Africa and Brazil are included within each relevant region.

## WHAT WE ARE DOING

### Employee relations in Kazakhstan

Our approach to employee relations focuses on the delivery of comfortable working conditions, as well as on the social needs of our employees and their families.

Priority areas include:

- The ongoing improvement and standardisation of physical working conditions at our operations, and the enhancement of our employee benefits
- The raising of living standards for our employees and their families

We engage directly with our employees to help ensure we remain responsive to their views on a range of issues, including working conditions. During the year, we carried out two large-scale engagement surveys involving more than 25,000 employees.

### Delivering comfortable workplaces

In 2021, we continued to enhance workplace conditions to ensure our operations are all raised up to a common standard. This included:

- **Onsite facilities:** Investment of around US\$11 million to enhance onsite facilities and accommodation, including large-scale renovation projects at Aluminium of Kazakhstan, SSGPO, Shubarkol Komir and Kazchrome
- **Catering:** The rollout of a single centralised service provider for our canteens, with the aim of delivering consistently high standards across our operations. In addition, we invested US\$1.3 million in the renovation of 12 canteens



- **Transportation:** The ongoing implementation of our transport standardisation programme, which focuses on the staged modernisation of ERG-owned and contracted transport. This included the purchase of 25 new buses (2020: 12)

Whilst the above-mentioned employee engagement surveys identified generally high levels of satisfaction regarding onsite facilities and transport provision, some employees reported that standards of catering required further improvement.

### Raising living standards

We continued to raise living standards for our employees and their families in our operating regions. This included:

- **Housing:** The purchase of 485 apartments across our operating regions as part of our Affordable Housing Programme. These will be provided to employees on preferential financial terms – with a focus on young employees and employees in critical roles, as well as those with large and/or socially disadvantaged families
- **Social infrastructure:** Investment in social infrastructure across our operating regions, including health centres, sports facilities and cultural/recreational areas (p. 53)
- **Education and entrepreneurship:** Investment in a range of educational and entrepreneurship programmes to support regional socio-economic development and future job prospects for community members, including the children of employees (p. 52)

### Supporting employee well-being

We commenced the phased resumption of many of our employee sports and well-being programmes (which had been suspended due to COVID-19). This included the hosting of employee running clubs, chess tournaments and a range of team and individual sports competitions at our operations. Around 2,000 employees benefited from these initiatives.

## Supporting a diverse and inclusive workforce

We treat our employees fairly, equally and without prejudice, irrespective of gender, race, age, disability or sexual orientation. Our commitments in this regard are set out in our Human Rights Policy, and further supported by the terms of our Code of Conduct and our Supplier Code of Conduct.

This is not only the right thing to do; we recognise the multiple benefits of having a workforce that reflects a diversity of backgrounds, cultures, beliefs and genders. This includes the ongoing generation of new ideas and innovative ways of working.

We place particular emphasis on supporting gender diversity, in the context of the historic under representation of women in our industry. Female representation in our workforce is 25%. While this exceeds the global industry average (estimated at 8%-17%<sup>4</sup>), we recognise there is more to be done. We plan to introduce Group-wide KPIs for female representation in management positions as part our ESG strategy.

<sup>4</sup> McKinsey & Company, 13 September 2021: mckinsey.com; quoting Karina Fernandez-Stark, Vivian Couto and Penny Bamber, 'Industry 4.0 in Developing Countries, The Mine of the Future and the Role of Women', 28 January 2019: worldbank.org.



**Employee relations in Africa**

At our operations in the DRC, we apply a range of policies and procedures to support the maintenance of a fair and non-discriminatory working environment for our employees and contractors. This includes the application of the ERG Code of Conduct, the ERG Supplier Code of Conduct and our Human Rights Policy (p. 80). We also maintain a well-publicised hotline and site-based grievance mechanisms for employees to raise any potential concerns.

In addition, we provide competitive remuneration aligned with relevant collective bargaining agreements and legislative requirements. Permanent Congolese employees also receive school fees, housing, transport and family allowances, amongst other benefits.

During the year, we successfully concluded an engagement process with our employees' unions at Metalkol RTR to review our employee benefits framework. This resulted in an agreement to increase annual leave and to provide medical care for the parents of employees. We also concluded an engagement process relating to our new performance-linked bonus structure.

**Contractor working conditions at Metalkol RTR**

In November 2021, NGO Rights and Accountability in Development (RAID) published a report alleging cases of exploitation and labour abuses affecting Congolese workers at a number of industrial copper and cobalt mines in the DRC.

The report included allegations relating to Metalkol RTR, including its former and current contractors. These include breach of labour laws, bullying and harassment, excessive working hours, safety and health issues, and COVID-19 challenges.

The majority of allegations are historical and relate to practices alleged to have been undertaken by subcontractors. Until 2020, Metalkol RTR was a development project. This meant it required the extensive use of specialist subcontractors to carry out its construction, before it then moved into an operational stage.

In accordance with our Human Rights Policy, supplementary Metalkol RTR Human Rights Statement of Commitment, Code of Conduct and Supplier Code of Conduct, where allegations are made in respect of

third parties, Metalkol RTR follows up to ensure clarity and provide advice and support as needed, including audits and mitigation measures.

ERG and Metalkol RTR have reviewed and followed up on the allegations in the RAID report. We report on these and our management systems and controls in our Clean Cobalt and Copper Performance Report, which has been assured by an independent third party, PwC: <https://www.eurasianresources.lu/en/pages/sustainable-development/responsible-sourcing#clean-cobalt-and-copper-framework>

Metalkol RTR's detailed response is publicly available here: <https://www.ergafrica.com/cobalt-copper-division/metalkol-rtr/>.

For further information, see: <https://www.eurasianresources.lu/en/pages/sustainable-development/respecting-human-rights> and [https://www.ergafrica.com/wp-content/uploads/Metalkol-HR-Statement-of-Commitment\\_2021\\_ENG.pdf](https://www.ergafrica.com/wp-content/uploads/Metalkol-HR-Statement-of-Commitment_2021_ENG.pdf).



**Employee relations in Brazil**

In Brazil, we continued to build constructive and transparent relations with our employees' unions, in line with the ongoing expansion of our BAMIN iron ore operation. During the year, we successfully concluded the signing of a new collective bargaining agreement at our Porto Sul development project and at our corporate office.

In addition, we undertook an operation-wide employee engagement survey to help ensure we remain responsive to the views of our growing workforce. This resulted in an overall engagement score of 82% and the achievement of the externally recognised Great Place to Work® certification. Areas identified for further improvement included compensation and benefits, workload management and internal communication. These outputs will inform future areas of management focus in 2022 and beyond.

Finally, we continued to rollout our diversity programme. This included the launch of new online diversity awareness training for all employees and new hires. In addition,

BAMIN continues to participate in the 'Women in Mining Brazil' initiative,<sup>1</sup> which supports gender inclusion in the mining sector.

**OUR PERFORMANCE**

During 2021:

- 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

We did not experience any strike action in Kazakhstan, Africa or Brazil.

**NEXT STEPS**

In Kazakhstan, we plan to focus our employee relations activity on the following areas:

- **Housing:** The construction of a further 860 new apartments under our Affordable Housing Programme (which are scheduled for completion in 2025)

- **Catering:** The ongoing rollout of our centralised canteens service provider to the rest of our operations in Kazakhstan
- **Onsite facilities:** An investment of around US\$18 million in 2022 to further improve onsite facilities at our operations
- **Sports and wellbeing:** The relaunch of our sports infrastructure modernisation and standardisation programme (which was suspended due to COVID-19)

At Metalkol RTR in the DRC, we plan to further expand our directly employed, full-time operational workforce to support the ongoing Phase 2 ramp-up of the operation. We will continue to focus on the hiring of local employees, where possible.

In Brazil, we plan to conclude negotiations for new collective bargaining agreements covering all employees. In addition, we will take steps to address the findings of our employee engagement survey.

<sup>1</sup> Women in Mining Brazil is an initiative of International Women in Mining: [wimbrasil.org](http://wimbrasil.org).

# COMMUNITY DEVELOPMENT AND WELL-BEING

Our 2025 Strategy commits us to the **sustainable development of our host regions**. Community social investment (CSI) is particularly important to ERG as many local communities in Kazakhstan have effectively developed around our operations. In this context, we support socio-economic development and diversification in our mining towns and our broader operating regions. We also contribute to national-level social investment to help address some of the key socio-economic issues facing Kazakhstan.

We also play a key role in supporting the development priorities of local communities in our Africa and Brazil regions, many of which face material socio-economic challenges.

Our Group-wide approach is underpinned by the active management of both our positive and negative impacts on local communities. This includes structured and transparent stakeholder engagement to help ensure we remain responsive to the concerns and priorities of local stakeholders.

## 2021 HIGHLIGHTS

\$65.2m Group-wide community social investment

Continued to implement engagement mechanisms in Kazakhstan and Africa to help local communities shape their own development priorities

Launched vocational training centre 'Canteiro Escola'<sup>1</sup> at BAMIN to provide employment opportunities for low-income communities in Brazil

<sup>1</sup> 'Canteiro Escola' means site school from Portuguese.

## MATERIAL ISSUES



**Community impacts**  
READ MORE ON P. 46



**Community social investment**  
READ MORE ON P. 50





COMMUNITY DEVELOPMENT AND WELL-BEING



# Community impacts

## Strategic context

**Sustainable development of our host regions:** Under our 2025 Strategy, we have prioritised our contribution to the socio-economic development and well-being of communities in our regions of operation. This includes ongoing community engagement and the maintenance of international environmental standards, amongst other measures.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



In line with both our Values and our Human Rights Policy, we aim to minimise the negative impacts of our activities – and respect cultural and regional traditions wherever we operate. This is not only the right thing to do; it directly supports the maintenance of our social licence to operate. At the same time, we seek to maximise our positive impacts – ranging from job creation to local procurement (p. 72).

### WHAT WE ARE DOING

#### Managing our impacts in Kazakhstan

In Kazakhstan, we manage community impacts through our international standard environmental management systems. These focus on the detection, prevention and/or minimisation of harmful discharges to local water systems and to the air (p. 60).

We conduct comprehensive impact assessments and community consultations whenever undertaking major developments or operational changes. These are conducted in line with national legal requirements and relevant international standards.

In 2021, we held a range of public consultations relating to operational changes, including those relating to:

- The mining plan for the development and expansion of our Kacharsky mine
- The construction of a new Special Coke Plant at Shubarkol Komir
- The draft environmental impact assessment (EIA) for a new sludge processing plant at Donskoy GOK (Kazchrome)

In addition, local communities can raise grievances through our publicly available Group Hotline (see: <https://erg.integrityline.org/>).

Finally, we periodically carry out surveys of community members and undertake benchmarking of socio-economic conditions in our mining towns.

#### Managing our impacts in Africa

##### Impact and grievance management

In Africa, we manage our community impacts through our integrated Safety, Health and Sustainability (SHS) management system. We use the IsoMetrix software programme to help record, centralise and analyse SHS data and to facilitate more effective impact and grievance management.

We also apply site-based community grievance procedures across our operations. These are aligned with the International Finance Corporation (IFC) Performance Standards and the UN Guiding Principles on Business and Human Rights. They are publicised widely at our operations, including to local communities.

We are committed to respecting universally recognised human rights. In support of this, we train private security personnel on the application of the Voluntary Principles on Security and Human Rights (Voluntary Principles) at Metalkol RTR and Boss Mining in the DRC. In 2021, this included the provision of training to 422 private security personnel.

Finally, we continue to address community impacts in the DRC relating to a legacy complaint made against ENRC in 2013.<sup>1</sup>

##### Responding to ASM activity at our operations

While artisanal and small-scale mining (ASM) production is absent from our product (p. 56), ASM activity is present in the vicinity of our Metalkol RTR operation.<sup>2</sup>

Our structured approach to ASM management is guided by our:

- Dedicated ASM procedures and ASM management plans
- Human Rights Policy and related procedures
- Grievance procedure and site-based grievance mechanisms
- Socio-economic development procedures

In addition, we are engaging with relevant government agencies, including through the SAEMAPE,<sup>3</sup> in relation to the management of ASM.

At Metalkol RTR, a significant number of artisanal miners have established themselves on the boundary of our concession, outside of our fenced Kingamyambo tailings deposit. During the year, we worked with an independent NGO to deliver capacity building within the community. This focused on occupational health and safety, hygiene, waste management and basic financial management.

Whilst Boss Mining was in care and maintenance, there was increased illegal ASM activity at our Mukondo site. Following engagement with the Ministry of Mines, restrictions on access have been put in place and ASM activity is decreasing.

We will continue to focus on restricting access to critical mining areas, ongoing community engagement and supporting the creation of new community development initiatives.

For more information on how we manage ASM activity at our operations, see p. 102.

For more information on how we help improve socio-economic conditions for ASM communities, see p. 56.

##### Environmental and Social Impact Assessments (ESIAs)

In 2021, we continued to implement social and environmental management programmes to address issues identified through our ESIAs in the DRC. Activities included:

- The provision of training and support for community-based voluntary savings groups, which provide micro-financing for local development projects at Boss Mining and Comide
- The continued implementation of our Sustainable Agricultural Programme at Boss Mining and Comide (p. 55)
- The provision of training and support for community-led water committees near Comide, which manage potable water distribution facilities that ERG helped to fund (p. 55)

- The application of air quality monitoring and dust suppression measures at Frontier (p. 63)

At Metalkol RTR, we submitted our updated ESIA for approval in early 2021, as required under the mining permit renewal process.<sup>4</sup>

##### Resettlement at Metalkol RTR

We provide support to 16 resettled families from the Samukonga community. The families were successfully resettled in a new village (Kamimbi II) in 2018 – in line with local law and the IFC Performance Standards.<sup>5</sup>

In 2021, we continued to develop an alternative livelihood programme, which has faced delays due to COVID-19 and related procurement challenges. We have purchased 35 hectares of arable land for the project and plan to undertake a joint agricultural survey with the University of Lubumbashi in 2022. We also provide monthly deliveries of food and help maintain water supply systems, solar power systems and housing at the village.

The Kamimbi II and Samukonga communities will benefit from our broader sustainable livelihood programmes (p. 55).



1 The 2013 complaint was originally made by Rights and Accountability in Development (RAID), a UK-based NGO, on behalf of the chiefs of the Kisankala and Lenge villages and their communities. In April 2018, the UK National Contact Point (NCP) for the OECD Guidelines for Multinational Enterprises issued a Follow-Up Statement relating to the complaint.

2 ASM activity is not present in the vicinity of our Frontier operation due to the geological nature of the deposit.

3 The Strategy for ASM in DRC and a National Action Plan for the ASM Technical Services (SAEMAPE, formerly SAESSCAM).

4 In addition, the updated ESIA for Frontier was accepted by regulators in 2018.

5 The need for resettlement was identified through our ESIA, due to the proximity of the families to Metalkol RTR's new tailings storage facility. ERG funded the construction of the village, which offers a better standard of accommodation than the families previously enjoyed.



**Managing our impacts in Brazil**

At BAMIN, we play an important role in supporting the socio-economic development of low-income communities living near to our operation (p. 57). At the same time, we take a risk-based approach towards the management of our direct and indirect impacts – and maintain constructive engagement with local stakeholders. These efforts directly support our social licence to operate and thus the long-term success of the operation.

**Impact and grievance management**

During the year, we implemented a centralised grievance management system at BAMIN to strengthen oversight of community complaints, follow-up actions and response times.

In addition, we continued to implement our comprehensive community engagement programme, with a focus on addressing concerns relating to the Porto Sul development (see below). This included:

- The hosting of multiple public consultations and site visits
- The distribution of environmental and social awareness-raising materials

- Ongoing stakeholder surveys and mapping to help inform future engagement efforts and our mandatory environmental and social programmes (p. 107)

Finally, we continued to implement the recommendations of our ESIA,<sup>1</sup> including programmes to monitor air quality, water quality and water availability.

**Specific impacts at Porto Sul**

Under the terms of our licensing agreement, the development of our Porto Sul port project requires the compulsory purchase of 212 agricultural small-holdings. This will affect around 320 families, most of whom do not live on the land in question.

The compulsory purchase process began in 2019 and is being conducted by the government of the State of Bahia, with input from an independent trustee and the Public Defender's Office.

Owners are compensated, whilst the small proportion of people who are not owners (but who nonetheless live and work on the land in question) are resettled and also receive compensation.

BAMIN is monitoring the process to help ensure transparency and the maintenance of good relations with the communities surrounding the project.

In addition, we are focused on minimising any potential negative impacts that the port development could have on artisanal fishing, the most significant source of income for nearby communities. This includes a comprehensive joint fishing monitoring programme, and a compensation programme (under our licensing obligations) to address anticipated economic impacts.

**Mitigating dust impacts**

During the year, we addressed community complaints relating to iron ore dust from the Pedra de Ferro mine, as well as road dust from our local haulage routes. In September 2021, these impacts prompted community members from the municipality of Licínio de Almeida to protest outside BAMIN's road and rail terminals.

In response, we enhanced our dust suppression controls, developed alternative haulage routes and helped to establish a joint community monitoring committee.

**OUR PERFORMANCE**

In Kazakhstan, we conducted 35 public consultations related to project changes (2020: 25) (p. 46). No significant grievances were raised during these hearings or through any of the available community relations channels.

In Africa, 16 complaints were raised via our grievance mechanisms (2020: 17), 12 of which were resolved in 2021. These related to, for example, water impacts, employment opportunities and interactions between private security personnel and local communities, as well as workplace complaints.

Finally, we received 151 complaints via our community grievance management system in Brazil (2020: 22) – 130 of which were resolved during the year, with a further 19 resolved in early 2022. These related to,

for example, employment opportunities, community investment projects, local infrastructure development and site-related traffic. This increase reflects the ramp-up of operational activity at the Pedra de Ferro mine and the Porto Sul port development, as well as the establishment of a more comprehensive grievance management system in 2021.

**NEXT STEPS**

In 2022, we plan to conduct a range of public consultations in Kazakhstan, including in relation to operational activity at Kazchrome, EEC, KAS, Shubarkol Komir and Aluminium of Kazakhstan. In addition, we will continue to roll out our collaborative regional development programmes (p. 50) to help ensure we remain responsive to the priorities and concerns of local communities.

In Africa, we plan to undertake a full update of our ESIA's at Comide and Boss Mining in 2022, in line with our five-yearly licensing obligations. In addition, we plan to undertake refresher training on the application of the Voluntary Principles for private and public security personnel at Frontier and Comide.

At BAMIN, we plan to expand our impact management and community engagement programmes, in line with increasing levels of activity at the operation. This will include increased support for external efforts to prevent sexual exploitation associated with prostitution in nearby communities.



<sup>1</sup> This was completed and accepted by the Government in 2014.

COMMUNITY DEVELOPMENT AND WELL-BEING



# Community social investment

## Strategic context

**Sustainable development of our host regions:** Under our 2025 Strategy, we have prioritised our contribution to the socio-economic development of communities in our regions of operation. This includes improving community well-being and prosperity, while also supporting entrepreneurship and the development of the local business environment.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



Our community social investment (CSI) approach in Kazakhstan is driven by our long-standing relationships with local communities. We place particular emphasis on supporting socio-economic development and diversification in our mining towns – and across our broader operating regions. In addition, we contribute to national-level social investment to help address some of the principal socio-economic issues facing Kazakhstan.

In Africa and Brazil, we focus on addressing the most material development challenges facing communities in our operating regions. In the DRC, this includes an emphasis on improving socio-economic conditions for artisanal and small-scale mining (ASM) communities living near our operations.

Our Group-wide efforts are guided by ongoing engagement and collaboration with our communities to ensure we remain responsive to the priorities of local stakeholders.

## WHAT WE ARE DOING IN KAZAKHSTAN<sup>1</sup>

### Regional development programme

In 2021, we continued to deliver our three-year regional programme, focused on the long-term socio-economic development of our operating regions.

We implement this programme through partnerships with government at the national and regional levels, including through our regional memoranda of understanding (Regional MoUs). It is based on in-depth analysis of the specific development needs of each operating region, identified through targeted annual engagement surveys.

These workstreams have identified the following priorities:

- **Improvement of living standards** (including housing and utilities infrastructure, public transport and urban spaces)

- **Education and youth skills development** (including the support for local educational and entrepreneurship programmes)
- **Healthcare** (including the modernisation of medical institutions and the provision of advanced training for doctors)
- **Promotion of sports and well-being** (including the development of community infrastructure and youth sports leagues)

For the purposes of our reporting, we have structured the content below around our ongoing efforts to address these priorities. This includes initiatives under our Regional MoUs (i.e. the government partnerships through which we implement the regional development programme), as well as our direct social investments (i.e. which fall outside the scope of the programme).

# Supporting collaborative regional development



Our support for the development of our mining towns in Kazakhstan is based on the concept of 'participatory budgeting', which seeks to enhance collaboration between governments and citizens to address key development challenges. At the same time, we seek to engage local communities in decision-making around the allocation of our CSI spending (through our Regional MoUs).

In 2021, activities included:

### 1. Tugan Qala ('Home Town')

We continued to implement our Tugan Qala ('Home Town') programme<sup>2</sup> in the city of Khromtau (Aktobe region) – and expanded it to the cities of Aksu (Pavlodar region) and Rudny (Kostanay region). Under the programme, we help residents develop and submit their ideas for social investment projects via an online portal hosted by ERG. These projects focus on improving the urban environment, including public parks, playgrounds, sports facilities, lighting and landscaping. A multi-stakeholder panel provides an initial assessment of the submissions, with winning projects decided by residents via an online public vote.

In 2021, 44 winning projects were selected (11 in Khromtau, 16 in Aksu and 17 in Rudny). In 2022, ERG will fund the implementation of these projects through our Regional MoUs.

During the year, we also invested US\$115,000 through our Regional MoUs to fund the implementation of 10 social investment projects that were identified and selected during the 2020 pilot project in Khromtau.<sup>3</sup>

Finally, we invested US\$147,000 through our Regional MoUs to support the implementation of several social investment projects under our related ERG Town programme.<sup>4</sup> These projects were selected via a competition held in 2020, in which employees submitted ideas to support local development. They include the renovation of a learning centre for children with special educational needs (Aktobe region) and the launch of a public market to enable local communities to sell surplus produce from their private allotments (Pavlodar region), amongst other projects.

### 2. School of Active Citizens

We also launched our School of Active Citizens, which provides practical training to help employees participate in the government-run 'Public Participation Budget'. This national programme enables citizens to contribute ideas for social investment projects via a public online portal. Following initial consideration by a government-led committee, winning submissions are decided via an online public vote – and are then funded by regional government.

During the year, more than 90 employees received related training and ongoing support at our operations in the Pavlodar, Aktobe and Kostanay regions. This resulted in 27 projects being submitted via the online portal, nine of which will be implemented by local authorities in 2022. We will continue to expand the scope of the programme, including its rollout to other operations in Kazakhstan, in 2022.

<sup>1</sup> Projects that benefit our local communities (including, where relevant, employees and their families) are set out in this section. Projects that only target employees are covered in 'Employee Relations' on p. 40.

<sup>2</sup> We launched the programme, which was previously named 'Community Town', through a pilot project in Khromtau in 2020.

<sup>3</sup> A planned tenth project to construct a school running track was delayed due to operational challenges, but will be implemented in 2022.

<sup>4</sup> In 2020, we concluded our ERG Town programme, which has since been rolled into the Tugan Qala ('Home Town') programme.

## COMMUNITY DEVELOPMENT AND WELL-BEING CONTINUED

### Improving living standards

We are working to improve living standards in our mining towns and across our operating regions. Our primary aim is to support the long-term development of comfortable urban environments where multiple generations (including the children of our employees) will choose to live and work. This includes a range of strategic projects focused on supporting collaborative regional development (p. 51).

Other projects implemented through our Regional MoUs included the provision of funding for:

- Repairs to apartment buildings in the Aktobe region (US\$1.2 million)
- Multiple projects to support the enhancement and digitalisation of public service delivery in the Pavlodar region (US\$2.4 million)
- The development of public sports facilities in the city of Shymkent (US\$232,000)

### Education and youth skills development

We invest in local educational programmes to support future-orientated youth employment and regional economic diversification. In 2021, this included the launch of our new ERG Mektepke ('ERG for Schools') programme (p. 54).

In addition, we continued to support the Student Entrepreneurship Ecosystem programme (ecosystemerg.kz).<sup>1</sup> This programme helps to transform regional universities and colleges into hubs of

entrepreneurial excellence, with the long-term goal of supporting new start-up businesses throughout our operating regions.

In 2021, we invested a further US\$115,000 to support online training for more than 650 students and 30 teachers, as well as several online student skills competitions focused on start-up creation.

### Healthcare

We finance modern healthcare infrastructure through our Regional MoUs. This is with the aim of supporting the well-being of our current and retired employees, their families and the wider communities in our operating regions.

In 2021, this included a US\$463,000 investment to help equip an emergency department at a hospital in Aktobe, as well as a US\$63,000 investment to purchase modern medical equipment at a hospital in the Kostanay region.

### Sports and well-being

Community well-being is about more than narrow economic development. We invest in sports initiatives across our operating regions, with an emphasis on mass participation sports, community sports infrastructure and youth sports.

In 2021, this included the following initiatives (undertaken as part of our Regional MoUs):

- The ongoing construction of a large public table tennis centre in the Pavlodar region (US\$2.8 million)
- The provision of funding to support youth football teams and large-scale sports tournaments in the Kostanay region (US\$1.4 million)
- The completion of an ice-skating arena in the Pavlodar region (US\$547,000)

In addition, we continue to focus on increasing employee involvement in sports and helping to improve lifestyle choices (p. 41).

<sup>1</sup> The programme is being implemented in partnership with the Tel Aviv University Friends Association in Kazakhstan and the Almaty Management University (AlmaU).

# Our approach to CSI in Kazakhstan

We implement a multi-layered, responsive approach to CSI that seeks to address both regional and national development priorities – whilst also supporting the social needs of our employees and their families.

## STRATEGY

**Group CSR Projects and Sponsorship Policy and supporting process framework**

## IMPLEMENTATION MECHANISMS

**Direct social investment**  
Targeted at maximising our positive impacts and minimising our negative impacts on local communities

**\$36.7M**

Direct social investment in 2021

**Regional development programme**

This supports long-term socio-economic development in our operating regions (p. 50)

**Regional memoranda of understanding (Regional MoUs)**

Negotiated strategic partnerships with regional authorities

**\$21.4M**

Investment via Regional MoUs in 2021

## FOCUS AREAS

### National development

We contribute to national-level social investment to help address some of the principal socio-economic challenges facing the country and to help preserve our cultural heritage

### Regional development

A significant proportion of our CSI spending is focused on supporting broader socio-economic development (primarily through our Regional MoUs)

### Development of mining towns

Many communities have effectively developed as a result of our operations. As such, our CSI efforts aim to reduce community dependency on ERG over the long-term

### Employees living in our local communities

We use part of our CSI spending to improve the living standards of our employees and their families outside of work

## OUR AREAS OF IMPACT

**National response to COVID-19** (p. 33)

**National infrastructure**

**Regional response to COVID-19** (p. 33)

**Living standards** (p. 52)

**Education and youth skills development** (p. 52)

**Healthcare** (see above)

**Sports and well-being** (see above)

**The social needs of our employees and their families** (p. 41)



## FEEDBACK MECHANISMS

### Tugan Qala ('Home Town')

A programme to give communities in our mining towns, including our employees, the opportunity to shape local development priorities (p. 51)

### School of Active Citizens

A programme providing practical training to employees to support their active involvement in the government-run 'Public Participation Budget' (p. 51)

### Large-scale annual surveys

We undertake surveys of community members (including ERG employees) to help ensure our approach remains aligned to local priorities



## PARTNERS

**Government of the Republic of Kazakhstan**

**Local government**

**Civil society**

**Local communities**

**Employees and their representatives**

# ERG for Schools programme in Kazakhstan



Issue	Action	Outcome
We support external efforts to enhance educational provision across our operating regions. This helps support long-term regional economic diversification and provides assurance to current and future employees that their children can look forward to promising futures in our mining towns. These efforts directly support ERG's future skills pipeline.	<p>In September 2021, we invested US\$347,000 through our Regional MoUs to launch ERG Mektepke ('ERG for Schools'). This programme aims to transform STEM<sup>1</sup> education at around 350 secondary schools in our Aktobe, Kostanay and Pavlodar regions.</p> <p>ERG Mektepke provides professional skills training for teachers and school leaders. In addition, it will offer interactive learning resources to school pupils via a new ERG Digital Mektebi online platform.</p> <p>The programme is being implemented in partnership with leading third-party education providers, as well as the Ministry of Education and Science of the Republic of Kazakhstan.</p>	<p>During 2021, the programme delivered advanced professional development training to more than 3,500 teachers.</p> <p>In addition, we supported the development of the ERG Digital Mektebi platform, which was rolled out in early 2022. This will provide interactive learning resources to around 44,000 school pupils in our operating regions.</p>

## WHAT WE ARE DOING IN AFRICA

### Community investment framework in the DRC

At Frontier, we concluded formal consultations for the establishment of our new Commitments Register (see box). We are making final amendments to the Register as part of the government review and approval process. This comprises projects to help address key development priorities for six local communities over the next five years. These priorities were identified via the formal consultation process outlined in the box to the right. They include agricultural development, as well as access to water, healthcare and education. We plan to begin project implementation by the end of 2022.

At Metalkol RTR, we commenced the implementation of several projects under our Commitments Register, which was finalised in 2020. These projects form part of a three-year programme to help address the development priorities of nine local communities. In 2021, projects included:

- The launch of a new Sustainable Agricultural Programme to provide maize seeds, tools and capacity building for 476 households. During the year, 238 hectares of community-owned land were sown, with plans to expand the programme to around 500 hectares
- The construction of 16 fish farming ponds (out of a planned 30) to support alternative livelihoods for 145 households

Many of the priority areas identified via the Commitments Register process at Frontier and Metalkol RTR are already being addressed under our existing 'Community Action Plans' (p. 102 in 'Appendix').

Finally, at Frontier and Metalkol RTR we continue to develop relevant stakeholder committee structures and procedures to support the allocation of 0.3% of annual turnover to a dedicated community sustainability fund (in line with the requirements of the DRC Mining Code).

### Alternative livelihoods and food security

At our operations in the DRC, we support (outside of our Commitments Registers) alternative livelihoods to address food insecurity and a lack of formal employment opportunities, including for communities engaged in ASM activity (p. 56).

During the year, the first crops were harvested at our agricultural programme near Frontier. We also launched the second phase of the programme. This included the renovation of a milling facility to help both participants and the wider community achieve higher prices for their maize. In 2022, the programme generated income for a small number of community members, with plans to expand it further in future years. It is also anticipated that the new milling facility will benefit the wider community once fully operational.

In 2021, we invested US\$305,000 in the ongoing implementation of a Sustainable Agricultural Programme on land located near our Comide and Boss Mining operations.

### Educational access

Access to adequate formal education is an acute challenge for local communities in the DRC. Despite Boss Mining being on care and maintenance, we continued to fund educational initiatives in Kakanda. This included a US\$2.2 million investment (undertaken as part of our licensing obligations) to support more than 4,400 students (2020: 3,400) and 150 teachers (2020: 150).

In addition, we completed the construction of a new primary school in the Lenge community near Comide in the DRC. During the year, the school was handed over to local authorities, and we invested a further US\$16,000 for desks and other furniture. In 2020, we spent US\$165,000 to fund the construction.

At Metalkol RTR, we launched a pilot 18-month apprenticeship programme to provide vocational skills training for eight local students (four of whom are female).

### Infrastructure

We support infrastructure improvements and service delivery for local communities in the DRC. This includes the provision of power free of charge, as well as drilling wells and pumps to improve access to water. At Boss Mining, for example, we spent US\$586,000 to provide electricity to the nearby town of Kakanda.

At Metalkol RTR, we commissioned geophysical surveys to support the installation of 10 wells and solar-powered water distribution facilities for nearby communities (with drilling planned to commence in 2022)<sup>2</sup>. We also invested US\$13,000 to fund the maintenance of a solar power generation system in the Samukonga community.

### External context: Community investment framework in the DRC

The revised DRC Mining Code (published in 2018) incorporates mandatory community investment obligations for the mining sector. The Code requires all mining companies to contribute 0.3% of annual turnover to a community sustainability fund, which is managed by a multi-stakeholder body.

The Code also requires the establishment of a legally binding framework for CSI (or a 'Commitments Register'). This is to be renewed on a five-yearly basis in parallel with the updating of a mining operation's ESIA. The Commitments Register is based on formal consultation with relevant stakeholders to identify local development priorities and is reviewed and approved by local authorities. Progress made against these commitments is subject to independent monitoring on an annual basis.

In line with the requirements of our ESIA's, we also fund capacity building for community-led water committees at other operations in the DRC.

### Healthcare

The prevalence of relatively weak health indicators in our local communities in the DRC means we also focus efforts on improving healthcare services and behaviours. This includes the provision of support to government vaccination campaigns, as well as HIV/AIDS, tuberculosis and malaria programmes.

During the year, we continued to support a local community health clinic near Comide in the DRC. In addition, we implemented extensive COVID-19 prevention measures in the town of Sakania near Frontier, including the installation of handwashing and temperature screening facilities. In 2022, we plan to fund the construction of a community health clinic under our voluntary CSI commitments at Metalkol RTR, with plans to construct a second clinic under our Commitments Register framework (see above).

1 Science, technology, engineering and mathematics.

2 We launched the programme in response to community priorities identified through our Participatory Rural Appraisals (PRAs) – and in light of some of our own project impacts, including the fencing of the Kingamyambo tailings dam, which restricted water access for some community members. The facilities are managed by community-led water committees, with community members paying a small fee that is reinvested into ongoing maintenance.

## COMMUNITY DEVELOPMENT AND WELL-BEING CONTINUED

### Artisanal and small-scale mining

In line with our Clean Cobalt and Copper Framework commitments (p. 88), none of our production comes from ASM. At the same time, we acknowledge the important role that ASM can play in supporting livelihoods in the DRC. In this context, we support external initiatives that focus on improving socio-economic conditions for ASM communities and the transitioning of children out of artisanal mining activity. Key initiatives include:

- **The Good Shepherd International Foundation (GSIF):** Since 2017, we have supported the GSIF through a multi-year US\$1 million commitment. The GSIF aims to improve living conditions for ASM communities near Metalkol RTR, especially for women and children.

This includes a focus on alternative livelihood programmes, vocational capacity building and educational outreach<sup>1</sup>

- **Fund for the Prevention of Child Labour in Mining Communities:** ERG continues to support the Fund – an initiative of the Global Battery Alliance (GBA) that is administered by UNICEF.<sup>2</sup> In 2020, we donated US\$500,000 to the Fund, which focuses on child protection, education, health, water and sanitation, and social services within ASM communities

In 2021, the Fund:

- Provided social services to more than 15,000 people, including 1,000 vulnerable children working in mines, who were successfully reintegrated into educational programmes

- Reached over 2.5 million people to communicate the importance of ending child labour

In addition, we continue to explore opportunities to support the formalisation of responsible ASM in the DRC. During the year, we supported a Cobalt Action Partnership project (CAP – a collaborative GBA initiative chaired by ERG) to develop an ASM Cobalt Framework (p. 89).

Information on how we work with others to achieve responsible global value chains for cobalt and copper is provided in ‘Responsible value chains’ on p. 86.

### WHAT WE ARE DOING IN BRAZIL

At BAMIN, many local communities live in conditions of poverty, with limited access to formal jobs. In this context, we place particular emphasis on local business incubation, vocational skills training and employment opportunities, educational provision, infrastructure development and ecological restoration, amongst other areas. In 2021, we invested US\$750,000 in CSI programmes at our Pedra de Ferro mine and Porto Sul port development.

Key activities included:

- The launch of our ‘Canteiro Escola’ (or ‘Site School’) initiative (see case study opposite)
- Support for the planned construction and equipping of two mining and environmental science laboratories at a technical college in the municipality of Caetité
- The ongoing rollout of our Transformar (or ‘Transform’) project, which provides equipment, supplies and capacity building for 135 community-based entrepreneurs in the municipalities of Caetité, Licínio de Almeida and Pindaí
- The signing of a four-year agreement with the Universidade Estadual de Santa Cruz (UESC), which will enable around 1,000 students and lecturers to participate in social and environmental fieldwork at Porto Sul, and will support the hiring of local graduates at BAMIN

In addition, we continued to provide voluntary funding for the São José – Santa Casa de Misericórdia Hospital in the city of Ilhéus, which faces significant budgetary challenges. In 2021, we invested around US\$129,000 in this regard.

We also provided voluntary funding to support the local response to COVID-19. This included US\$195,000 to purchase 32 pulmonary ventilators for hospitals in Bahia, as well as the donation of facemasks, gloves and hand sanitiser to local communities.

### GROUP CSI CONTRIBUTIONS BY YEAR (US\$M)

Year	2021	2020
2021	65.2	
2020		65.4 <sup>4</sup>
2019		118
2018		115
2017		111

### GROUP CSI CONTRIBUTIONS BY REGION (US\$M)

Region	2021	2020
Kazakhstan	58.1	59.7
Africa	6.3	5.3
Brazil	0.8	0.4 <sup>5</sup>

### CSI CONTRIBUTIONS IN KAZAKHSTAN BY TYPE (US\$M)

Spending type	2021	2020
Direct investment	36.7	42.3
Regional memoranda of understanding <sup>6</sup>	21.4	17.4

### OUR PERFORMANCE

In 2021, ERG’s worldwide CSI contributions amounted to US\$65.2 million (2020: US\$65.4 million). This includes US\$21.4 million to fund Regional MoUs with local governments (2020: US\$17.4 million) under our regional development programme in Kazakhstan (p. 50). It also includes our support for national-level social investment projects in Kazakhstan. Most notably, this includes a US\$17.8 million donation to support the Foundation for the Development of Art, Cinema and Science in Kazakhstan, which focuses on the preservation of historical and cultural heritage.

### NEXT STEPS

In January 2022, we donated US\$69 million to support the creation of the government-run Kazakhstan Khalkyna public social fund. This will help support a range of national development priorities, including the enhancement of healthcare, education and social services, amongst other areas.

Furthermore, we plan to:

- Launch our new three-year regional development programme, which will run from 2022
- Expand our Tugan Qala (‘Home Town’) programme, including its rollout to the town of Kachar and the village of Oktyabrsky

- Launch our ‘ERG for Colleges’ programme to provide vocational teacher training (aligned to our future skills requirements) in our operating regions

In the DRC, we plan to:

- Establish Commitments Registers at our Boss Mining and Comide operations in 2022
- Implement several projects under our existing Commitments Registers, including:
  - The launch of poultry farming and vegetables production programmes at Metalkol RTR to support 1,020 households
  - The construction of two primary schools and two secondary schools for communities near Frontier

In Brazil, we plan to:

- Support the launch of an investment promotion agency to promote local economic growth and small-business development in the municipalities of Caetité and Ilhéus
- Support the development of an ‘Urban Development Master Plan’ to enhance broader economic planning in Caetité and Ilhéus, and to support the future expansion of our operation
- Open our newly-built mining and environmental science laboratories in 2022, which will offer vocational education to around 200 students annually

## Providing training and employment opportunities at BAMIN



Issue	Action	Outcome
Many local communities near BAMIN have limited access to formal employment opportunities, with youth unemployment presenting a particular challenge. In addition, our licensing agreement mandates that a minimum of 60% of our workforce (including employees and contractors) are hired from local populations.	In 2021, we launched a vocational training centre ‘Canteiro Escola’ <sup>3</sup> based at our Porto Sul construction site.  This is based on collaboration between BAMIN, our contractor EMPA S.A. Serviços de Engenharia (EMPA) and the not-for-profit education provider Serviço Nacional de Aprendizagem Industrial (SENAI). The school provides training in high-demand construction skills for young people from the lowest-income communities in the city of Ilhéus. In addition, it supports our skills pipeline, as well as our ongoing efforts to meet local employment targets.	During the year, the School trained 159 young people. This is with the aim of helping these individuals to access employment opportunities with BAMIN or other commercial operations in the region. In 2022, we plan to train around 400 people.

<sup>1</sup> In 2021, GSIF was unable to spend its allocated funds from ERG due to operational challenges related to COVID-19. As such, we have extended our partnership into 2022.

<sup>2</sup> The Fund is being implemented in partnership with the Government and civil society organisations in the DRC. Activities focus on supporting mining in DRC’s Copper Belt across two health zones (Kipushi in the Haut Katanga province and Kanzenze in the Lualaba province).

<sup>3</sup> ‘Canteiro Escola’ means site school from Portuguese.

<sup>4</sup> Restated to include mandatory CSI projects in Brazil.

<sup>5</sup> Restated to include mandatory CSI projects in Brazil.

<sup>6</sup> Including projects outside our operating regions in Kazakhstan.

# ENVIRONMENTAL STEWARDSHIP

Under our 2025 Strategy, we have prioritised **the sustainable development of our host regions**. This means carefully managing the resources and environment entrusted to us – including a focus on our climate change impacts and waste.

In Kazakhstan, we are taking major action under our 10-year Environmental Strategy to materially improve our particulate emissions, and we are developing a portfolio of renewable energy projects. Furthermore, we are continuing to strengthen Group- and regional-level management of all of our large-scale waste storage facilities, including through the application of our third-party risk review process.

Our operations in Kazakhstan are certified to the ISO 14001 environmental management system standard.<sup>1</sup> In Africa, our Safety, Health and Sustainability (SHS) management system is informed by ISO 14001.

<sup>1</sup> With the exception of 3-Energoortalyk as well as our ERG Service company, which provides repair and maintenance services for ERG's sites in Kazakhstan.

## 2021 HIGHLIGHTS

Continued to implement a 10-year, \$393m programme to reduce our emissions to air in Kazakhstan

Assessed the carbon transition risks and opportunities facing our business in Kazakhstan

Continued to strengthen Group- and regional-level management of our large-scale waste storage facilities

## MATERIAL ISSUES



**Managing impacts on air and water**  
READ MORE ON P. 60



**Energy and climate change**  
READ MORE ON P. 64



**Waste recycling and management, including tailings**  
READ MORE ON P. 68



ENVIRONMENTAL STEWARDSHIP



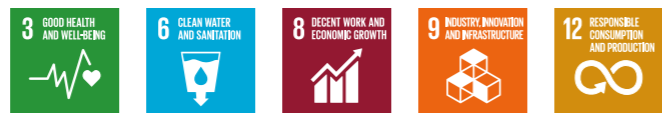
# Managing impacts on air and water

## Strategic context

**Sustainable development of our host regions:** Under our 2025 Strategy, we have prioritised our contribution to the well-being of communities in our regions of operation. This includes a focus on avoiding and/or minimising any potential negative environmental impacts, including through the application of relevant international standards.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



Our Environmental Strategy in Kazakhstan supports our Group 2025 Strategy and addresses issues including:

- Emissions reduction
- Water conservation
- Restoration of disturbed lands
- Waste management
- Biodiversity conservation
- Enhanced environmental monitoring

Emissions reduction remained a key area of focus in 2021. Our most significant impacts on air quality take place in and around the industrial city of Pavlodar.<sup>1</sup> There is growing stakeholder concern about the impact that the large number of industrial operations is having (alongside the widespread use of coal for domestic heating) on air quality in the region.

In this context, we are placing particular focus on better understanding and reducing our emissions to air in Kazakhstan, including through advanced filter technology and comprehensive air quality monitoring technology.

More broadly, we are actively managing our impacts on water quality in Kazakhstan, Africa and Brazil.

## WHAT WE ARE DOING

### Managing our emissions to air Kazakhstan

We are implementing a 10-year, US\$393 million programme<sup>2</sup> to bring our metallurgical and power generation operations closer in line with relevant European Union (EU) air quality standards

relating to particulate matter. Key areas of focus include the use of advanced filter technology and the conversion of selected boiler houses to gas, where possible.

We continued to take a range of actions to improve our air quality performance in the Pavlodar region and beyond, as set out opposite.

## Accelerated environmental action in Kazakhstan

In 2021, our annual update of our Environmental Strategy resulted in the addition of new project workstreams, as well as the accelerated implementation of several planned projects. These included:

- Implementation, where required, of automated water discharge monitoring
- Laboratory testing/analysis of wet emission cleaning technology, with the ultimate objective of further reducing particulate emissions at Pavlodar Aluminium Plant (p. 61)
- The start of design work to replace two filters at Pavlodar Aluminium Plant's Furnace No. 4
- The planting of 420,000 trees up to 2025 to promote biodiversity, air quality and carbon absorption – as well as improved quality of life

This is taking place in the context of Kazakhstan's new Environmental Code, which came into force in July 2021 (see opposite).

In addition, we also:

- Completed the pilot testing of a new water-spray based dust suppression system at Aluminium of Kazakhstan's Power Plant ash dump
- Continued the ongoing, annual application of reagents to more than 31 hectares of Aktobe Ferroalloys Plant's slag dump

### Air quality monitoring

We regularly monitor our gas and particulate emissions at, and around, our major plants. We also use spectrometry at selected operations to generate additional insight into the exact composition of our emissions.

In 2021, we started to develop 'at source' automated monitoring systems at Aluminium of Kazakhstan, KAS, EEC, 3-Energoortalyk, Kazchrome and SSGPO. In addition, we installed remote, automated monitoring systems<sup>3</sup> on the edge of defined 'sanitary protection zones' around:

- EEC's Power Station and Vostochny coal pit
- Kazchrome's Aksu Ferroalloys Plant, Aktobe Ferroalloys Plant and Donskoy GOK operation

We stream live air quality performance data from Aluminium of Kazakhstan's Pavlodar Aluminium Plant and Power Plant via public, digital dashboards in Pavlodar. We are also assessing (in the context of other third-party emission-sources) the health impacts of our operations on local populations in the Aktobe and Pavlodar regions.

### Africa

We apply air and water monitoring plans prepared by third-party specialists, which cover our sites as well as local villages. These are supported by independent laboratory analysis. Monitoring results are subject to third-party review and are submitted to the DRC Government on an annual basis.

Key emission sources include heavy vehicles and diesel generators (fine particulates), as well as extraction activity and road transport (dust). We use water bowsers and chemical suppressants to reduce the impact of onsite traffic. A lack of paved roads and third-party activity (including 'slash and burn' farming) also contributes to ambient dust in the DRC, especially during the dry season.

## External context: Environmental Code in Kazakhstan

Our Environmental Strategy is designed to bring our practices in line with international best practice and support our compliance with Kazakhstan's new Environmental Code. The Code, which came into force in July 2021:

- Requires the application of 'best available techniques/technologies' (BAT) where necessary
- Applies a new system of Integrated Environmental Permits (IEPs). Those operations that have IEPs in place receive significant environmental tax relief

In 2021, we obtained IEPs for Aksu Ferroalloys Plant, Aktobe Ferroalloys Plant, EEC's Power Plant, Pavlodar Aluminium Plant and KAS. This made us the first company in Kazakhstan to obtain the new IEPs.

## Examples of key air quality measures in Kazakhstan

### Pavlodar region Aksu Ferroalloys Plant

The upgrading of the filter at Smelting Workshop No. 4, with commissioning complete and additional filters to be fitted in future. The new filter will reduce particulate emissions to no more than 10mg/nm<sup>3</sup>.

### Aluminium of Kazakhstan

The commissioning of two advanced filters at a furnace in Pavlodar Aluminium Plant's sintering shop. These have reduced particulate emissions from the furnace by 90%. Similar filters will be applied to the other furnaces under a multi-year programme.

### EEC

The installation of an advanced filter at Power Unit No. 5. In 2021 this has reduced its particulate output by more than 10,000 tonnes.

Additional filter replacements will be applied to other power units over the coming years, reducing particulate emissions by up to 98%.

### Aktobe region Aktobe Ferroalloy Plant

The installation of smoke extractors at Workshop No. 1, as well as preparation for:

- The installation of new, more effective aspiration units at Workshops No. 1 and 2
- The replacement of filters at Workshop No. 2

In addition, we reconstructed the aspiration units at Workshop No. 4 to remove approximately 1,000 tonnes of particulates from our emissions to air.

### Kostanay region Kacharsky Mine

Ongoing conversion of the mine's boiler house from coal to gas – with plans for completion in the third quarter of 2023.

This will reduce its particulate, NOx<sup>4</sup>, SOx<sup>5</sup> and GHG emissions, whilst also improving efficiency.

1 The location of Aluminium of Kazakhstan's Pavlodar Aluminium Plant and Power Station, as well as Kazakhstan Aluminium Smelter. Furthermore, the broader region hosts EEC's Aksu Power Station and Vostochny coal pit, as well as Kazchrome's Aksu Ferroalloys Plant.

2 The value of the programme was updated in 2021 to reflect inflation, the integration of new projects, updated prices and engagement with new vendors.

3 As already applied at Aluminium of Kazakhstan's operations in Pavlodar.

4 Nitrogen oxides.

5 Sulphur oxides.



## ENVIRONMENTAL STEWARDSHIP CONTINUED

### Brazil

In Brazil, we monitor particulate emissions at our Pedra de Ferro iron ore mine (a key part of the broader B Amin operation), including through six PM10 and two PM2.5 monitoring stations around the operation. We are implementing supplementary dust controls as we better understand the operation's air impacts (p. 48). These include wind barriers, the spraying of our ore stockpiles and road spraying.

### Managing our water emissions Kazakhstan

We carry out both discharge and groundwater monitoring. In the latter case, this includes the use of observation wells around potential pollution sources – including our reservoirs, waste landfill sites, tailings storage facilities, slag dumps, ash dumps and similar structures.

In 2021, we continued to take steps to improve our water management performance, including:

- **Kazchrome:**
  - Completion of the reconstruction of a wastewater treatment plant at the Kazmarganets mine
  - A project at Aktobe Ferroalloys Plant to recycle storm sewage and use it in our production processes, with plans to install pumping equipment
  - Implementation of measures at Donskoy GOK to recycle process water

In addition, we are planning the construction of new stormwater treatment facilities at Aksu Ferroalloys Plant.

- **Aluminium of Kazakhstan:**
  - Initiation of Phase 1 construction of a new system to collect and treat pit water at the Krasnooktyabrsky Mining Unit
  - Initiation of the reconstruction of the Keregetas wastewater treatment facilities

## Enhancing our water balance

In 2021, in Kazakhstan we increased our focus on managing our water use. This included:

- The installation of more than 120 water metering devices at Donskoy GOK and Aktobe Ferroalloys Plant to better manage our consumption and discharges
- Water conservation projects, including the use of process water rather than fresh water to cool smoke extractors at Aktobe Ferroalloys Plant and power plant sampling points at SSGPO

### Africa

At Frontier, we pump significant volumes of groundwater from the pit into the natural environment. We use settling ponds to reduce (where needed) suspended solids in the water prior to its discharge.

Metalkol RTR recycles wastewater from the plant. We apply a comprehensive upstream/downstream water quality monitoring system to ensure we do not contribute to pre-existing water quality challenges in the area. This includes the testing of local community wells, where we also monitor water-levels.

Given the use of sulphuric acid at the operation, as well as the presence of nearby wetlands and communities, we apply a range of controls to avoid and/or mitigate potential spills. This includes automated acid truck unloading systems, specialised storage tanks and extensive bunding.

### Brazil

We carry out extensive water quality monitoring at our Pedra de Ferro iron ore mine. This includes monitoring of:

- Surface water, via 15 multiple sampling points and across 23 parameters
- Ground water, via multiple sampling points and across 16 parameters
- Discharge monitoring, via two sampling points and across four parameters

This is in addition to the monitoring of surface water and ground water levels, as well as rainfall.

Our Porto Sul port complex does not have its own water treatment plant, with effluents instead managed by a specialised, licenced company.

## OUR PERFORMANCE

### Kazakhstan

In 2021, our total annual particulate and gas emissions to air<sup>1</sup> in Kazakhstan continued to be within permitted annual total limits. There was a reduction in these emissions compared to 2020, due to the replacement of filters at EEC and Pavlodar Aluminium Plant.

Similarly, the volume and quality of our water emissions<sup>2</sup>, which remained at similar levels to 2020, were within permitted annual total limits.

### Africa

Air quality around Frontier (and PM10 particulate<sup>3</sup> emissions in particular) improved significantly following the implementation of additional controls. Nonetheless, temporary increases in PM10 levels coincided with traditional 'slash and burn' agricultural activity. In addition, sites to the north and the east of the mine showed elevated PM10 levels and depositional dust emissions. This appears to be linked to third-party road construction works.

In 2021, quarterly testing by internationally accredited laboratories indicated that the mine's water discharges were compliant with relevant regulatory limits.

At Metalkol RTR, our air emissions were within permitted average annual limits, and surface water monitoring, which is carried out on a daily basis, did not identify any regulatory exceedances. Whilst there were some temporary dust/PM10 exceedances, these appear to have been partially caused by external activity, including road traffic and third-party artisanal mining. In addition, daily surface water monitoring indicated out of range acidity levels at the incoming flow into the Muninga dam. This was caused by water flowing from historical heap leaches outside of our concession area, primarily during the rainy season. There were otherwise no material environmental exceedances at the operation.

### Brazil

The Pedra de Ferro mine's PM10 emissions have been within average annual regulatory limits since production started there. Nonetheless, in 2021 there was a single, temporary exceedance. This reflected a lack of historical insight into the likely interaction between the ore and local environmental variables such as wind and moisture during transportation. As a result, we are implementing supplemental controls that will address this issue (p. 48).

During the year, the mine's effluent treatment system was found to not be operating effectively – and a single non-compliance was identified. We subsequently installed an additional treatment system at the mine to address this issue.

## NEXT STEPS

In 2022, we will continue to focus on the following areas in Kazakhstan:

- The further rollout of advanced filter technology in Pavlodar and Aktobe, including the piloting of Coromax filter systems at Aluminium of Kazakhstan
- The commissioning of on-boundary automated air quality monitoring and the installation of 'at source' automated monitoring
- The ongoing conversion of the boiler house at Kacharsky iron ore mine from coal to gas
- The investigation of technologies to reduce (with the help of international partners) NOx and SOx emissions from our main energy generation facilities

Beyond 2022, we are planning to gain IEPs for our remaining assets in Kazakhstan.

At Metalkol RTR, we are planning to apply strengthened air quality measures, including road treatments, 'directional' dust monitoring and the monitoring of diesel engine running hours.

In Brazil, we plan to implement automated air quality monitoring and data management, in addition to software that will manage site-level environmental information.



1 Measured on a quarterly basis.

2 Measured on a quarterly basis.

3 Particulate matter that is 10 micrometres or less in diameter.

ENVIRONMENTAL STEWARDSHIP



# Energy and climate change

## Strategic context

**Sustainable development of our host regions:** Under our 2025 Strategy, we have prioritised our contribution to the well-being of communities in our regions of operation. Our focus on maintaining international environmental standards to support well-being in our operating regions includes the management of our carbon emissions and the use of renewable energy.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



ERG is one of the largest electricity producers in Kazakhstan, with the majority of our total installed capacity of 3,387 MW powering our own operations. Of the power we consume in the country, 81% (2020: 83%) is generated using coal produced by EEC.

Having carried out analysis of the risks and opportunities posed by climate change to our business (p. 65), we are working to increase the proportion of energy we get from non-coal sources. The nature of our fixed capital equipment and infrastructure, as well as the relatively nascent nature of Kazakhstan's renewable energy sector, means this is not something we can do quickly. Nonetheless we are committed to making this journey.

Our current focus is on reducing our carbon emissions on a medium- to long-term basis, without undermining the foundations of our business or our immediate customer commitments. This includes additional focus on bringing our existing wind project in Kazakhstan into operation, and significantly expanding our renewable energy portfolio in the coming years (p. 66). In 2021, we initiated a formal process to establish 2030 renewable energy and GHG reduction targets.

The majority of the power we use in the DRC is generated from hydropower.

## WHAT WE ARE DOING

Given national and international efforts to limit climate change, we work to:

- Improve our energy efficiency
- Reduce (over time) our reliance on coal-generated power
- Expand our renewable energy generation capacity

Nonetheless, in terms of our broader business, we are well placed to benefit from the commercial opportunities offered by our production of 'transition metals' such as cobalt, copper and aluminium. We also believe the energy transition will strengthen global demand for ferroalloys, as countries develop new gas, wind and nuclear power generation capacity.

### Energy efficiency in Kazakhstan

The majority of our energy-producing operations in Kazakhstan are certified to the ISO 50001 energy management system standard. In 2021, we applied 69 energy-saving measures under our 2021-2025 Energy Efficiency Plan. Collectively, these reduced our total energy consumption by more than 390 terajoules (2020: 284 terajoules).

### External context: Anticipated external carbon constraints

Kazakhstan's latest 2021 National Plan and emissions trading scheme do not apply restrictions on our emissions. The country plans, however, to reduce national GHG emissions by 1.5% per year between 2022 and 2025, achieve a 15% reduction by 2030 and seek carbon neutrality in 2060. As a result, it is likely that we will face future carbon restrictions.

In addition, the European Union's (EU) planned Carbon Border Adjustment Mechanism will apply some form of levy on non-EU imports based on their carbon footprint<sup>1</sup> – impacting our aluminium exports to the bloc.

Examples of energy-saving measures implemented following energy audits in 2021 include:

- **Kazchrome:** Installation of 'soft start' equipment on the electric motor of the furnace smoke extractor
- **EEC:** Application of more efficient equipment, control systems and processes to reduce the consumption of fuel oil used for firing up the boilers
- **3-Energoortalyk:** Installation of steam traps to reduce steam consumption

In addition, we:

- **EEC:** Sealed the boilers' gas channels to reduce the suction of air during the repair of the power units. Over 2021, this reduced energy consumption by 41 terajoules and decreased GHG emissions by 15,000 tonnes
- **EEC:** Reconstructed Power Unit No. 5. Over 2021, this reduced our energy consumption by 790 terajoules, and decreased GHG emissions by 300,000 tonnes (p. 61)

We are also investigating a range of more strategic projects to improve our future energy efficiency, including:

- The improvement of thermal efficiency at Pavlodar Aluminium Plant, including through potential improvements to its evaporation batteries
- The renovation of Turbine Unit No. 2 at SSGPO's power plant to increase its efficiency and extend its service life – as well as the replacement of Boiler No. 1 and Boiler No. 3 with more modern and efficient equipment
- The ongoing development of 'ideal' central heating and power plant (CHPP) models, to be applied at our power plants.<sup>2</sup> This is with the aim of understanding how we can achieve the highest level of energy efficiency at each facility

In addition, we continue to advance plans to generate energy using off-gas from our ferroalloy production process, thereby reducing our energy from conventional sources. We are in the process of concluding a feasibility study for an off-gas fuelled power station at Aktobe Ferroalloys Plant. Furthermore, we are:

- Investigating the potential conversion of the boiler house at Aksu Ferroalloys Plant to use off-gases, with the potential construction of a thermal power station using off-gases in future
- Considering the development of an off-gas fuelled power unit at our new Special Coke Plant (p. 21)



## Analysis of carbon transition risks in Kazakhstan

In 2021, we analysed the risks and opportunities posed to our business in Kazakhstan by the transition to a lower-carbon economy. This reflects the fact that Kazakhstan is where the vast majority of our carbon emissions occur (p. 67).

The analysis included a focus on Kazakhstan's Nationally Determined Contributions under the Paris Agreement, EU carbon price trends and projections, goal-setting compared to peers and price sensitivity. Key risks identified included:

- A reduction in carbon quotas and/or the application of energy consumption-based carbon taxes as Kazakhstan pursues carbon neutrality by 2060
- Increased capital costs associated with applying best available technology (BAT) in the context of Kazakhstan's new Environmental Code
- The introduction of the EU's Carbon Border Adjustment Mechanism and its application, in particular, to aluminium
- Increased interest rates as a result of the application of ESG criteria by finance providers
- Challenges in securing sufficient insurance coverage

In addition, parallel analysis was carried out into:

- Related supply and demand dynamics across our different product types
- The development of a Carbon Neutrality Model to help us understand the commercial and operational implications of shifting towards a carbon neutral business

The outcomes of this analysis will inform our future carbon and climate strategy.

We also plan to work with external experts to analyse the physical risks posed to our business by climate change.

1 Expected to come into force by 2023, with payments due from 2027.

2 With models already completed for SSGPO and pending for Pavlodar Aluminium Plant, EEC and Kazchrome.



3D model of our planned Khromtau-1 wind power plant in Kazakhstan.

### Renewable energy

Kazakhstan has national targets to generate:

- 15% of electricity from renewables by 2030 (i.e. wind, solar and small-scale hydro)
- 50% of electricity from renewables and alternative energy sources (e.g. nuclear power) by 2050

In this context, we are purchasing (as legally required) defined amounts of renewable energy, and we are continuing to advance plans to develop a portfolio of renewable energy projects. This includes a project near Donskoy GOK to develop up to 155 MW in wind generation capacity (Khromtau-1 wind power project). Following completion of a feasibility study in 2021, we plan to start construction in 2022.<sup>1</sup> There is potential to further expand our wind capacity at the site by an additional 150MW. Furthermore,

we have identified other promising project sites in Kazakhstan to develop additional large-scale wind and solar power generation projects in the next 5-10 years.

The fact that our operations in Africa largely rely on hydropower, significantly reduces their carbon footprint and limits opportunities for further GHG reductions. Given its occasional reliance on back-up diesel generators, however, we are examining opportunities to supply Metalkol RTR with solar power, thereby enhancing the reliability of its supply and reducing its cost base.

### Energy security in Africa

At Frontier and Metalkol RTR, we maximise our use of cheaper, domestically and regionally generated power (including hydropower) from DRC utility SNEL. Where necessary, we supplement this using imported power.

Both operations experienced an increased number of power outages in 2021. These related to longstanding, region-wide challenges such as a structural energy deficit, poor energy infrastructure and the impact of low water levels on hydropower generation.

In August 2021, the Zambian state power company (ZESCO) commissioned the first generating unit at the 750MW Kafue Gorge Lower hydropower project – with plans to commission additional generating units in future. It is anticipated that this will improve the regional energy balance in the coming years.

Finally, we are actively investigating innovative solutions to mitigate energy-related disruption at Metalkol RTR (p. 28), as well as the potential establishment of a solar plant to supply power to the operation.

### ENERGY CONSUMPTION BREAKDOWN (TERAJOULES)

Type	Energy source	2021	2020	2019	2018	2017
Direct	Coal	<b>226,857</b>	221,950	217,768	227,368	226,405
	Petrol	<b>102</b>	113	138	147	144
	Residual fuel	<b>6,566</b>	6,750	7,130	7,284	7,185
	Diesel	<b>10,278</b>	9,074	9,599	8,606	8,038
	Natural gas	<b>32,959</b>	29,014	31,306	28,949	19,921
	Kerosene	<b>14</b>	14	14	9	15
	Liquefied gas	<b>0</b>	0	1		
	Subtotal	<b>276,776</b>	266,915	265,956	272,362	261,708
Indirect <sup>2</sup>	Electricity	<b>2,811</b>	3,005	4,716	2,943	2,537
	Heat	<b>188</b>	168	204	211	207
	Steam	<b>66</b>	110	63	80	69
	Subtotal	<b>3,065</b>	3,282	4,983	3,234	2,813
<b>Total</b>	<b>279,841</b>	270,197	270,939	275,596	64,521	

### GHG EMISSIONS (TONNES CO<sub>2</sub>e)<sup>3</sup>

	2021	2020	2019	2018	2017
Scope 1 emissions <sup>4</sup>	<b>25,001,745</b>	24,204,499	24,026,847	24,672,108	24,014,808
Scope 2 emissions <sup>5</sup>	<b>125,590</b>	115,602	224,837	59,026	55,572
<b>Total</b>	<b>25,127,335</b>	24,320,101	24,251,684	24,731,134	24,070,380

### OUR PERFORMANCE

In 2021, our total energy consumption increased to 279,841 terajoules (2020: 270,197 terajoules). This mainly reflected increased consumption of coal at EEC's power station in Kazakhstan to help address a national energy generation deficit, and the related move of capital repairs at our power units from 2021 to 2022.

Meanwhile our GHG emissions, almost all of which occur in Kazakhstan, rose to 25.1 million tonnes of CO<sub>2</sub>e (2020: 24.3 million tonnes of CO<sub>2</sub>e). This largely reflects the above-mentioned increased coal consumption at EEC.

### NEXT STEPS

In 2022, we plan to:

- Update our energy efficiency strategy for our operations in Kazakhstan
- Advance plans to construct our Khromtau-1 wind power project and complete our assessment of additional, large-scale wind- and solar-generation sites in Kazakhstan
- Conduct feasibility studies for the development of our back-up battery capacity and direct generation system, as well as our solar power project, at Metalkol RTR

Beyond this, we plan to:

- Report against the requirements of the Task Force on Climate-Related Financial Disclosures (TCFD)
- Maintain our existing power units, whilst building up our own renewable energy generation capacity
- Limit the projected life of our coal-based power units
- Focus on portfolio investments that will, over time, help us support – and benefit from – the global energy transition

<sup>1</sup> Following the feasibility study, we decided to locate all 155 MW of our planned installed capacity at our Khromtau site, instead of splitting it between the Khromtau and Ekibastuz sites as we had previously been examining in 2020.

<sup>2</sup> Excluding internal purchases of internally-generated power.

<sup>3</sup> In addition, all of our production sites in Kazakhstan (which are subject to an emissions trading framework) are subject to government mandated GHG inventories, including reasonable assurance by an independent accredited body. This includes the calculation of our actual GHG volumes and information on relevant equipment changes that have occurred during the reporting period.

<sup>4</sup> I.e. GHG emissions that result from the consumption of direct energy for the generation of electricity and/or 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 are from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories – Stationary and Mobile Combustion.

<sup>5</sup> 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 used are as follows: (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.

ENVIRONMENTAL STEWARDSHIP



# Waste recycling and management, including tailings

## Strategic context

**Sustainable development of our host regions:** Under our 2025 Strategy, we have prioritised our contribution to the well-being of communities in our regions of operation. Our focus on maintaining international environmental standards with respect to water, air and soil includes strict regulatory compliance regarding the management of our waste.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



Our large-scale waste storage facilities in Kazakhstan and Africa are subject to regular, legally-mandated monitoring inspections. These are carried out by state inspectors, our internal teams and third-party specialists.

In Brazil, we plan to adopt a dry-stack tailings storage facility (TSF) system for BAMIN's Pedra de Ferro mine. Dry-stacked tailings offer:

- Reduced risk of liquefaction and catastrophic failure
- Reduced groundwater contamination potential
- A smaller disposal area
- A longer lifecycle
- Higher water recovery rates
- Higher reagent recovery rates
- Potential for accelerated rehabilitation

For details on how we recycle and reprocess our waste, see p. 69.

## WHAT WE ARE DOING

### Enhanced Group-wide management of our large-scale facilities

We are strengthening Group- and regional-level management of all of our large-scale waste storage facilities.

We also continue to apply our ongoing third-party risk review process<sup>1</sup>, carried out by international experts to supplement our existing internal analysis. This process, which was originally developed under a previous Group-level action plan, was completed in 2019 in Africa, whilst five of our operations in Kazakhstan were subject to review in 2020.<sup>2</sup> In 2021, we:

- Completed an initial third-party review at EEC's power plant ash dump
- Carried out annual follow-up reviews at all of our TSFs in Africa, following Covid-induced delays in 2020<sup>3</sup>

We are addressing a number of recommendations identified during our follow-up third-party TSF review process in Africa and Kazakhstan.

### Cleaning up historic tailings at Metalkol RTR

In 2021, our Metalkol RTR operation in the DRC continued to reprocess third-party produced historic tailings that had been dumped in the Musonoi River valley and dry-stacked at the Kingamyambo Tailings Dam. The former site is home to approximately 84.5 million tonnes of historical tailings spread over an 11km stretch of the river, whilst the latter is home to approximately 32.4 million tonnes of dust-emitting tailings.<sup>4</sup>

The operation will help to gradually reduce the impact that these deposits are having on local water quality, land degradation and air quality.

Following reprocessing at Metalkol RTR, these tailings are being re-deposited into a modern, closely-managed and centralised TSF. This facility is subject to regular inspection, monitoring and reporting – and is supported by both a dedicated Engineer of Record and an independent laboratory.



### ERG Recycling in Kazakhstan

ERG Recycling carries out our waste reprocessing, recycling and commercialisation efforts. This not only supports the 'circular economy' concept, but also helps reduce our environmental liabilities.

In 2021, these efforts continued to focus on Kazchrome – and its Aktobe Ferroalloys Plant. The operation is reprocessing slag, dust and other fine waste by converting it into high-quality chrome concentrate briquettes with at least 42% chrome content, whilst also producing building materials as by-products (including concrete for internal and external use). In 2021, the plant produced 16,687 tonnes of briquettes. Furthermore, the operation is running programmes to:

- Enrich 14.7 million tonnes of accumulated slag stockpiles. In 2021, 150,000 tonnes of slag were enriched, producing 4,800 tonnes of chrome concentrate (2020: 4,100 tonnes)
- Reprocess more than 170,000 tonnes of stabilised slags

Additional ERG Recycling activity in 2021 included:

- **KAS:** The commissioning of a new waste management facility to reprocess certain types of waste by the site as well as to produce recycled materials for commercialisation

- **SSGPO:** The implementation of a project at the Kurzhunkul pit to process overburden into crushed stone. This produced around 300,000 tonnes of stone for the filling-in of the operation's roads
- **Kazchrome:** The application of new equipment at the East Kamys Mine to increase the quality of concentrate obtained from its manganese ore dumps. In 2021, the mine processed around 200,000 tonnes of this material

At Kazchrome's Donskoy GOK operation, we started construction of a new tailings reprocessing facility (as part of our broader Slimes 2 project, see p. 18). This follows the successful trialing of innovative technology that will significantly enhance the enrichment of chrome-oxide bearing tailings (up to a 55% recovery rate) and – after these are smelted – the production of chrome concentrate. The new facility has a planned annual processing capacity of 1.7 million tonnes of tailings, with planned production of more than 500 ktpa of chromium oxide concentrate. In addition, it will further facilitate the reduction of the mine's tailings footprint.

In addition, we sell a range of waste for use as raw materials in other industries – including construction, metal production, chemical production and road construction.

### OUR PERFORMANCE

In 2021, Metalkol RTR reprocessed around 5.5 million tonnes of dry stacked historic tailings (2020: 6.5 million tonnes), as well as an additional 2.5 million tonnes extracted from the Musonoi River, prior to their relocation to our centralised, modern TSF. This overall increase reflects Phase 2 production ramp up at the operation.

In Kazakhstan, we sold around 1,000 kt of waste to third parties (2020: 465 kt), with tailings and waste bauxite sludge representing the most significant categories. This reduced the amount of waste we dispose of in specialised sites, saving us US\$649,000 in waste disposal costs (2020: US\$569,000).

### NEXT STEPS

In 2022, we plan to continue strengthening the management of our TSFs, including the carrying out of pilot satellite analysis of our TSFs at SSGPO to detect geotechnical changes. There is potential for this approach to be extended to our other large-scale waste storage facilities in Kazakhstan. In addition, we will continue to further advance our recycling initiatives in the region. Finally, the ongoing ramp up of Phase 2 production at Metalkol RTR will continue to reduce the footprint of legacy tailings at the site.

# OUR BROADER ROLE IN SOCIETY

Our broader role in society includes building a culture of mutual confidence and respect with both internal and external stakeholders. Our generation and distribution of economic value represents one of the most important benefits we deliver to our host societies. It is in this context that we have made **financial stability** a Group priority under our 2025 Strategy.

We have also prioritised the **sustainable development of our host regions** – including through community social investment, employment generation, tax payments and the promotion of local content.

We are committed to nurturing relations of trust and respect with our partners, including our host governments.

Furthermore, we are focused on responsibly managing any indirect supply chain impacts we may have, and on delivering assurance to our customers and other downstream value chain actors that our products have been produced in an ethical manner.

## 2021 HIGHLIGHTS

Distributed \$6,240m to our stakeholders

Applied recommendations produced by an independent review of our Compliance Programme

Piloted the Re|Source blockchain solution at Metalkol RTR to support cross value-chain transparency

## MATERIAL ISSUES



**Value generation and distribution**  
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OUR BROADER ROLE IN SOCIETY



# Value generation and distribution

## Strategic context

**Sustainable development of our host regions:** All elements of our 2025 Strategy ultimately help us generate value – both now and in the long-term. In turn, this supports our ability to pursue our objective of contributing to the socio-economic development of communities in our regions of operation. This includes our distribution of economic value, locally, regionally and nationally.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



Our long-term ability to generate shareholder value is ultimately contingent on our ongoing generation of revenues, as well as the delivery of shared economic benefits to our other stakeholders. This includes our host governments, host societies, contractors and suppliers, and employees.

## WHAT WE ARE DOING

### Value generation

Our provision of high-quality, responsibly produced minerals and metals to key export markets helps to support third-party economic activity, ranging from infrastructure development to the production of electric vehicles (p. 90). Similarly, in Kazakhstan, the power we generate, the rail services we provide and the machinery we manufacture are not only used by our own operations, but also benefit a range of domestic and industrial customers.

Beyond this, our most measurable economic impact comes in the form of our direct distribution of value to our stakeholders, including our:

- Suppliers
- Employees
- Providers of capital
- Host (and other) governments
- Local communities (and beyond)

In turn, this results in a range of additional, indirect and induced economic impacts. This distribution of value is intrinsically linked to our generation of revenue, which in 2021 saw a major increase of 59.3% (p. 10).

### Tax and payment transparency

Our Group Tax Policy commits us to following not only the letter but also the spirit of all local laws. In terms of transfer pricing, we:

- Conduct all internal transactions on an arm's length basis and determine pricing in line with the nature of the economic functions performed by each company (including capital use)
- Follow the methods and principles set out in the OECD Transfer Pricing Guidelines

We are reviewing the new Global Anti-Base Erosion rules (GloBE, also known as Pillar 2), which were published by the OECD in late 2021. This includes the implications of Pillar 2 for our own tax practices.

In addition, we continue to engage with the Extractive Industries Transparency Initiative (EITI) processes in Kazakhstan, DRC and Zambia.<sup>1</sup>

For further information on our approach to tax and payment transparency, see p. 104 in Appendix.

### Supporting local content

#### Kazakhstan

In line with relevant local content requirements – and subject to our equal opportunities policies – we seek to employ and develop nationals and to purchase goods and services from companies in our host countries.<sup>2</sup> Key categories of products and services that we source from suppliers<sup>3</sup> in Kazakhstan include raw materials, stripping, fuel, exploration, industrial clothing, drilling and blasting.

We work with the Ministry of Industrial Development, the National Chamber of Entrepreneurs of Kazakhstan 'Atameken'



and the National Centre for Industry and Export 'QazIndustry' to promote the development of new local businesses to support our own activities and the broader sector.

Our Import Substitution and Localisation Programme aims to help domestic suppliers achieve international standards and attract investment. This is done through the granting of long-term or offtake contracts for products and services.

In 2021, we entered into 23, five-year offtake contracts with a company in Pavlodar for foundry products, railway

spare parts and equipment components, worth a total of US\$29 million.

We are working with a number of official bodies to further advance our programme. During the year, we also entered into:

- Six voluntary agreements to promote local entrepreneurship with the Ministry of Industrial Development
- Five voluntary agreements to develop domestic supplier strategies with regional Akimats and Regional Chambers of Entrepreneurship, including those in the Pavlodar and Karaganda regions<sup>4</sup>

In addition, we hold annual ERG Supplier Awards in Nur-Sultan, covering categories ranging from 'Mining Equipment' to 'Professional Services'. As well as recognising the efforts of our suppliers, the awards support domestic companies as they improve their delivery standards and product quality, and, by extension, their export potential.

Additional initiatives aimed at promoting local content in Kazakhstan include entrepreneurship programmes targeting students (p. 52), digital start-ups (see below) and local communities (p. 51).

## Improving social resilience in Kazakhstan through our support for digital services

Digital technology offers both governments and citizens important opportunities to help build thriving and resilient societies. Similarly, digitalisation can play a major role in helping small- and medium-sized businesses to fulfil their potential. Nonetheless, progress in this fast-evolving area requires targeted investment – as well as experimentation.

In this context, ERG is an investor in the Eurasian Digital Ventures venture capital fund ('Fund'), which supports digital initiatives designed to improve quality of life, strengthen social resilience and support entrepreneurship.

The Fund's portfolio of services includes, amongst others, a platform for citizens to submit official appeals to government agencies (eOtinish, which is integrated into eGOV), and an official census service (Sanaq).

Other elements of the Fund's portfolio include:

- Digital identification technology (Digital ID), which is used by more than 6 million people to access online government services
- Educational programmes and career guidance services (Atlas of New Professions (p. 38) and EduNavigator), as well as online professional training (JumysBar)

4 Additional agreements were also signed in early 2022 with Akimats and Regional Chambers of Entrepreneurship in the Aktobe and Kostanay regions.

1 For information on EITI status in our other countries of presence, see <https://eiti.org/countries>.

2 In Kazakhstan, for example, our guidelines note that when choosing between local (i.e. defined, in line with Kazakhstan's legislation, as Kazakhstan-based producers) and foreign producers, preference will be given (all other things being equal) to local producers. In addition, local law integrates measures to encourage the selection of local producers during tender processes, whilst our contracts and subsoil licences also incorporate local content requirements.

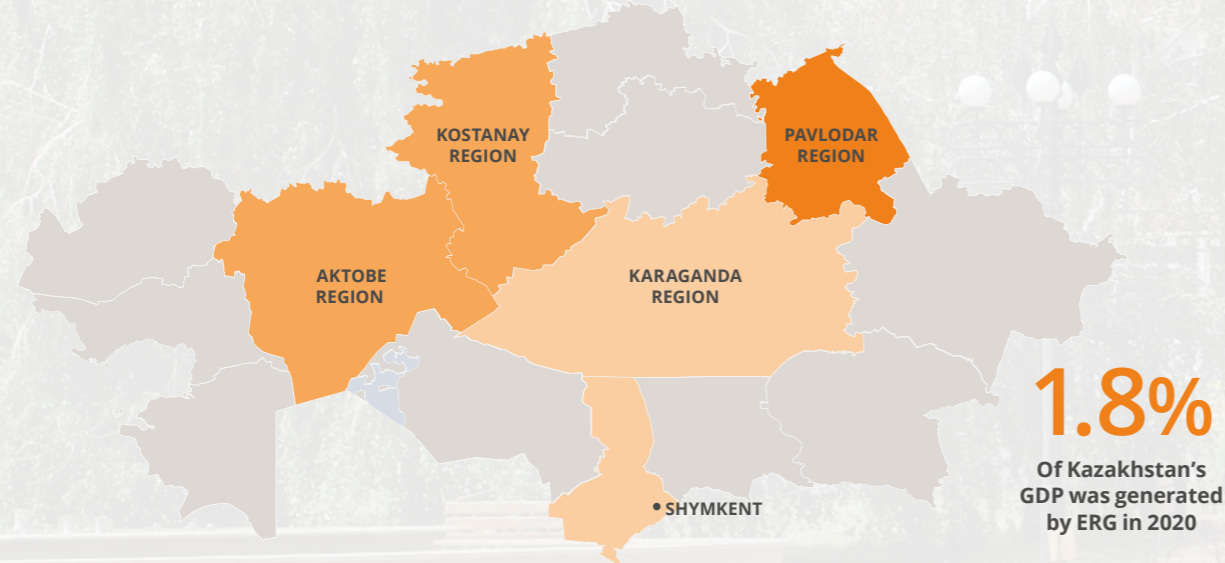
3 In this context, 'suppliers' refers to suppliers of goods and/or service providers.

# Contributing to regional socio-economic development in Kazakhstan

In 2021, we commissioned EY to undertake a follow-up study to assess ERG's impact at both a national level and within our key operating regions.<sup>1</sup>

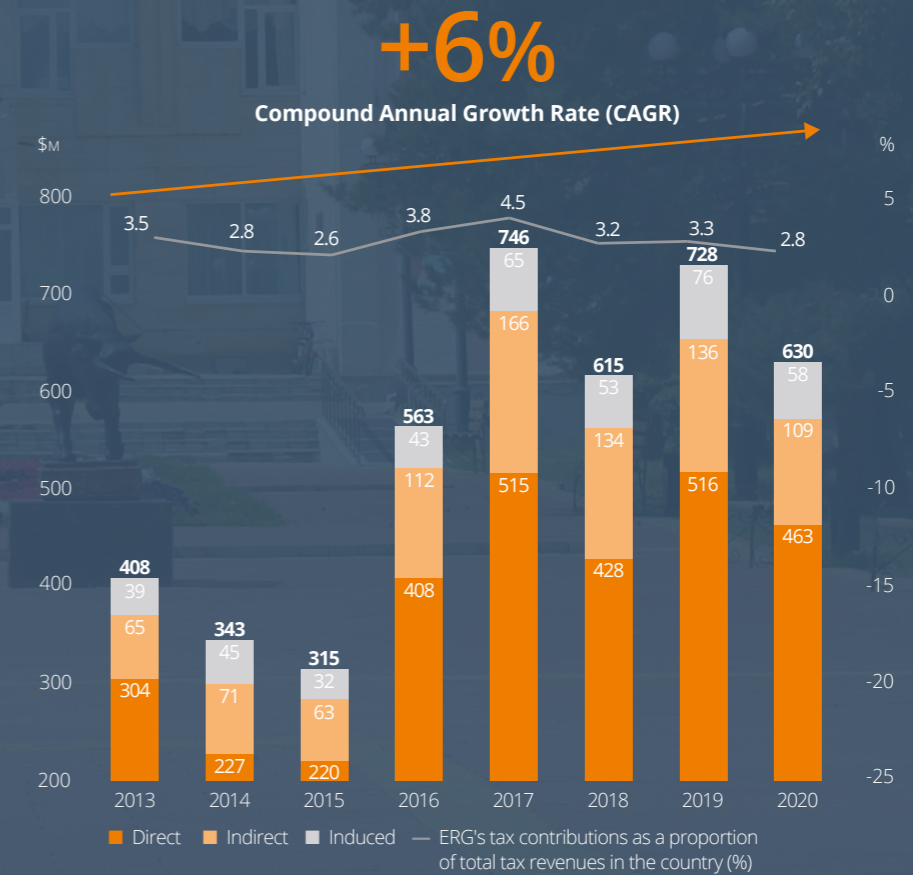
ERG was evaluated in terms of its direct impacts, as well as its indirect<sup>2</sup> and induced<sup>3</sup> impacts. Some of the key outputs from the study are set out below.

## 2020 CONTRIBUTION BY KEY OPERATING REGIONS



Regions	AKTOBE	KOSTANAY	PAVLODAR	SHYMKENT <sup>4</sup>	KARAGANDA	TOTAL <sup>5</sup>
<b>Contribution to GDP</b>						<b>\$2,955M</b>
Direct contribution (\$M)	219.8	513.6	788.5	1.9	78.8	
Total contribution (\$M)	523.0	704.2	1,365.3	7.6	142.2	
<b>Contribution to regional employment</b>						<b>137,298 people</b>
Direct contribution (people)	12,600	16,300	24,500	500	2,700	
Total contribution (people)	34,700	30,800	52,900	900	5,300	
<b>Contribution to labour income</b>						<b>\$824M</b>
Direct contribution (\$M)	90.8	117.9	163.3	2.3	20.6	
Total contribution (\$M)	187.4	190.9	293.7	4.2	36.1	

## DYNAMICS OF ERG'S TAX CONTRIBUTION FOR 2013-2020



## NATIONAL TAX CONTRIBUTION

In 2020, ERG accounted for 2.8% of all taxes paid in Kazakhstan. In addition, for every 100 tenge ERG contributed in tax, an additional 36 tenge was generated in other sectors of the economy. From 2013 to 2020, ERG's tax contribution grew by an average of 6% per annum (CAGR).

**2.8%**  
ERG's share of all taxes paid in Kazakhstan

<sup>1</sup> This is built on the findings of a study undertaken by EY in 2019.  
<sup>2</sup> I.e. the impact of our spending on local suppliers and contractors.  
<sup>3</sup> I.e. the impact of spending by our employees, as well as our contractors and suppliers.  
<sup>4</sup> The calculation includes the contribution of ERG to the development of Shymkent city only.  
<sup>5</sup> Including the contribution to other regions not reported in the table.

## OUR BROADER ROLE IN SOCIETY CONTINUED

### Africa

In 2021, we focused on ensuring that we are compliant with the strengthened local content requirements contained in DRC's 2018 Mining Code. This includes the procurement of most of our consumables and services from licenced companies based in the DRC.<sup>1</sup>

Given the relatively underdeveloped nature of local industry, our immediate priority has been to meet the technical requirements of the Mining Code. This includes, in the

short- to medium-term, reliance on local companies that import key inputs from abroad. Given the mature nature of the mining sector in the DRC and in Zambia's Copperbelt, we also rely on a number of well-established companies from the broader Southern African Development Community region.

Nonetheless, we are aware that the most value-adding form of local content is based on the promotion of direct local manufacturing and service provision.

As such, our future focus will be on working with companies in the DRC to help them achieve the requisite standards and capabilities needed to service our operations directly.

Key categories of products and services that we currently source from suppliers in the DRC and the broader Africa region include chemicals, contractor services, mechanical services, and fuel and lubricants.



### Brazil

The development of the BAMIN operation will generate considerable business opportunities for companies in the state of Bahia. We are committed to only working with suppliers who are aligned with our values and Environmental, Social and Governance (ESG) standards. As such, we have initiated a Local Supplier Development Programme to foster local suppliers across all segments of the operation, including the mine, railway and port (see on the right). The programme will help approximately 100 local suppliers achieve the quality and ESG standards necessary to be integrated into BAMIN's supply chain – and to explore business opportunities with other companies.

This is in addition to our ongoing partnership programmes aimed at supporting local entrepreneurs and microenterprises (including guidance on qualifications, entrepreneurship, training and income generation) and building the professional capabilities of local people.

## BAMIN Local Supplier Development Programme

### 1. OBJECTIVES

- Strengthen the local supply chain
- Help supplier companies improve and expand their business networks
- Establish a more efficient exchange of services and promote higher-levels of quality
- Contribute to regional development

### 2. COVERAGE

- More than 15 municipalities in the state of Bahia
- More than 100 local companies

### 3. SCOPE

- Provision of 80 hours of training
- Individual assessment at the beginning and the end of the programme
- Consultancy support
- Generation of business opportunities

### 4. CONTENT

- Environmental management
- Social responsibility
- Quality management
- Health and safety
- Planning
- Marketing
- Financial management
- Organisational management
- BAMIN supplier requirements

<sup>1</sup> With exceptions where Congolese expertise is unavailable or inaccessible.



## OUR BROADER ROLE IN SOCIETY CONTINUED

### OUR PERFORMANCE

In 2021, the economic value we generated increased by 53% to US\$7,994 million (2020: US\$5,209 million). This was primarily driven by higher prices for many of our major products, as well as increased cobalt hydroxide and copper metal output as a result of Phase 2 production ramp-up at Metalkol RTR. For further information, see 'Business performance' on p. 10.

Of this, US\$6,240 million, or 78%, was distributed to our stakeholders (2020: US\$4,611 million). This increase reflected, amongst other things:

- Higher corporate income tax, mineral extraction tax and royalty payments due to higher earnings
- Increased operating costs, reflecting (amongst other things) increased prices for materials, production ramp-up at Metalkol RTR, increased subcontractor

costs related to the Frontier and Kacharsky mines, and higher repair costs due to the roll-over of activity from 2020

- Higher capital expenditure, reflecting the deferral of investment from 2020 to 2021
- Increased wages and benefits, reflecting a higher headcount in Africa to support increased production, as well as the indexation of salaries in Kazakhstan to enhance our competitiveness in the labour market

### ECONOMIC VALUE GENERATED AND DISTRIBUTED (US\$M)

Type	Detail	Value in 2021				Total	2020	2019
		Kazakhstan	Africa	Brazil	Other		Total	Total
Economic value generated		5,521	1,980	80	413	7,994	5,209	4,874
	1) Operating costs/ payments to suppliers	(1,868)	(357)	(69)	(118)	(2,412)	(1,911)	(2,143)
	2) Employee wages and benefits	(624)	(139)	(5)	(188)	(956)	(802)	(869)
	3) Payments to providers of capital	(291)	(7)	-	(379)	(677)	(642)	(669)
Economic value distributed	4) Tax expenses	(773)	(613)	(11)	(29)	(1,426)	(683)	(609)
	5) Community social investment spending	(58)	(6)	(1)	-	(65)	(65)	(118)
	Other <sup>1</sup>	(580)	(72)	(52)	0	(704)	(508)	(754)
	Total	(4,194)	(1,194)	(138)	(714)	(6,240)	(4,611)	(5,163)
Economic value retained	Retained revenue	1,327	786	(58)	(301)	1,754	598	(288)

### DOMESTIC SPENDING IN KAZAKHSTAN (US\$M)

Procurement spend type	2021	2020	2019
Total volume of purchases from local producers (including intercompany procurement)	1,975	1,412	1,541
Total volume of purchases from local producers (excluding intercompany procurement)	908	775	867
Share of local procurement in overall procurement <sup>2</sup>	49%	52%	46%

### KEY LOCAL PROCUREMENT FIGURES (GOODS AND SERVICES)

<b>Kazakhstan</b>	<ul style="list-style-type: none"> <li>• 49% sourced from within the country (i.e. domestically produced) (2020: 52%)</li> <li>• 21%<sup>3</sup> sourced from companies operating in our local mining towns<sup>4</sup> (2020: 18%)</li> </ul>
<b>DRC and Zambia</b>	<ul style="list-style-type: none"> <li>• 85% sourced from domestically registered companies (2020: 70%)</li> </ul>
<b>Brazil</b>	<ul style="list-style-type: none"> <li>• 99% sourced from Brazilian companies (2020: 100%)</li> <li>• 40% sourced from companies located in the state of Bahia (2020: 27%)</li> </ul>

A rise in purchases from local producers reflected an increase in the total volume of purchased goods and services (as well as intra-group purchases), which was in turn driven by the opening up of the global economy in the context of the COVID-19 pandemic, increased capital expenditure and internal organisational changes. Nonetheless, the share of local suppliers in the total volume of purchases (excluding intra-group purchases) decreased, reflecting the internalisation of transportation and forwarding service activity in 2021.

We paid US\$1,083 million to governments in taxes and duties (2020: US\$739 million). This was primarily driven by the impact of higher copper and cobalt prices on Metalkol RTR and Frontier, as well as increased sales volumes at Metalkol RTR. The impact of increased iron ore, ferrochrome and aluminium prices on our operations in Kazakhstan also contributed to this increase.

Our effective corporate income tax rate (27.5%) reflects the statutory corporate income tax rates in the countries where we have our mining and processing operations, and where we pay more than 97% of our Group taxes (2020: more than 95%). In our Africa region, for example, our effective corporate income tax rate is approximately 37% and in Kazakhstan it is approximately 20%.

### TAX PAYMENTS AND ROYALTIES BY LOCATION (US\$M)

<b>Total<sup>5</sup></b>	2021	1,083
	2020	739
	2019	812
<b>Brazil</b>	2021	17
	2020	4
	2019	4
<b>DRC</b>	2021	325
	2020	133
	2019	102
<b>Kazakhstan</b>	2021	708
	2020	555
	2019	658
<b>Luxembourg</b>	2021	8
	2020	12
	2019	10
<b>Netherlands</b>	2021	6
	2020	6
	2019	10
<b>Rest of Africa</b>	2021	5
	2020	11
	2019	11
<b>Russia</b>	2021	7
	2020	4
	2019	4
<b>Switzerland</b>	2021	2
	2020	11
	2019	8
<b>UK</b>	2021	3
	2020	1
	2019	1
<b>Zambia</b>	2021	2
	2020	2
	2019	4

As well as submitting EITI reports in Kazakhstan, the DRC and Zambia, we filed the following with the Luxembourg authorities for the 2020 financial year:

- Report on Payments to Governments under the EU Accounting Directive (2013/34/EU)<sup>6</sup>
- OECD Country-by-Country Report under OECD BEPS Action 13

<sup>5</sup> Please note, the figures for total payments also include taxes paid in other countries (less than US\$100,000 in 2021), which are not listed separately in the graph for rounding reasons.

<sup>6</sup> EU, Directive 2013/34/EU: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013L0034>.

### TAX PAYMENTS AND ROYALTIES BY TYPE (US\$M)

<b>Income taxes</b>	2021	423
	2020	249
	2019	297
<b>WHT collected from suppliers</b>	2021	49
	2020	23
	2019	26
<b>Mining taxes</b>	2021	279
	2020	190
	2019	181
<b>Payroll taxes - borne by employer</b>	2021	106
	2020	79
	2019	88
<b>Payroll taxes - collected from employees</b>	2021	132
	2020	120
	2019	124
<b>Customs duties</b>	2021	16
	2020	17
	2019	26
<b>Environmental taxes</b>	2021	34
	2020	31
	2019	28
<b>Property taxes</b>	2021	21
	2020	19
	2019	19
<b>Other taxes</b>	2021	23
	2020	11
	2019	23

### NEXT STEPS

For further details on how we plan to maintain and grow the value that we generate and distribute, see 'Preparing our business for future' on p. 16.

<sup>1</sup> Capex is presented gross before taking into account any disposals of property, plant and equipment.

<sup>2</sup> Includes goods, works and services.

<sup>3</sup> Including intra-Group purchases.

<sup>4</sup> The following mining towns are included in calculations: Aksu, Ekibastuz, Arkalyk, Lisakovsk, Rudnyi and Khromtau.

OUR BROADER ROLE IN SOCIETY



# Ethics and compliance

## Strategic context

Compliance with the laws of our host countries and the application of strong ethical standards, including those relating to human rights, underpin all that we do. Any failure in this regard not only has serious legal implications, but also has the potential to damage our reputation, undermine our business relationships and impact the achievement of our long-term business objectives. This, together with the cross-cutting nature of our compliance requirements, makes it a key area of business focus.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



We are continually developing our Compliance function to ensure:

- A broader, 'beyond compliance' approach to business ethics
- The application of simple, value-adding standards to all parts of our business, irrespective of location
- Closer alignment of our global policies with evolving regulation and the environmental, social and governance (ESG) agenda, including the delivery of higher levels of external assurance

As part of this process, we are developing a more comprehensive approach towards third-party risk management, which extends beyond our established Counterparty Due Diligence (CPDD) process. This includes a focus on the active management of a responsible supply chain, including proactive human rights due diligence.

During the year, we carried out 'self-testing' of our compliance efforts across our mining, metals, digital and healthcare activities against international best practice, including the ISO 19600 compliance management system standard and the ISO 37001 anti-bribery management system standard. Along with the findings of the independent evaluation of our Compliance management system carried out in 2020 (p. 81), the outcomes have informed our activity in 2021.

## HOW WE MANAGE OUR RISKS

Risk-based management sits at the heart of our Group Compliance management system.

Our management system has been adapted to reflect the fact that ERG participates in regulated activities outside of its core mining, metals, transportation and energy business – including healthcare (p. 53-57) and digital activities (p. 28-29, 73). Furthermore, its scope has been expanded beyond pure compliance issues to incorporate broader issues around business ethics – including our management of human rights and aspects of ESG performance.

### Policies and procedures

Our compliance policies and guidelines are implemented by our Group-, regional- and local-level Compliance managers, with assurance oversight provided at Group-level. Key elements include our Code of Conduct, Group Supplier Code of Conduct and supporting policies and procedures – such as our CPDD process. In 2021, we updated:

- Our Code of Conduct to incorporate the Group's Values, as well as our Group Supplier Code of Conduct and our revised Agents Compliance Policy

### Key compliance risks in 2021:

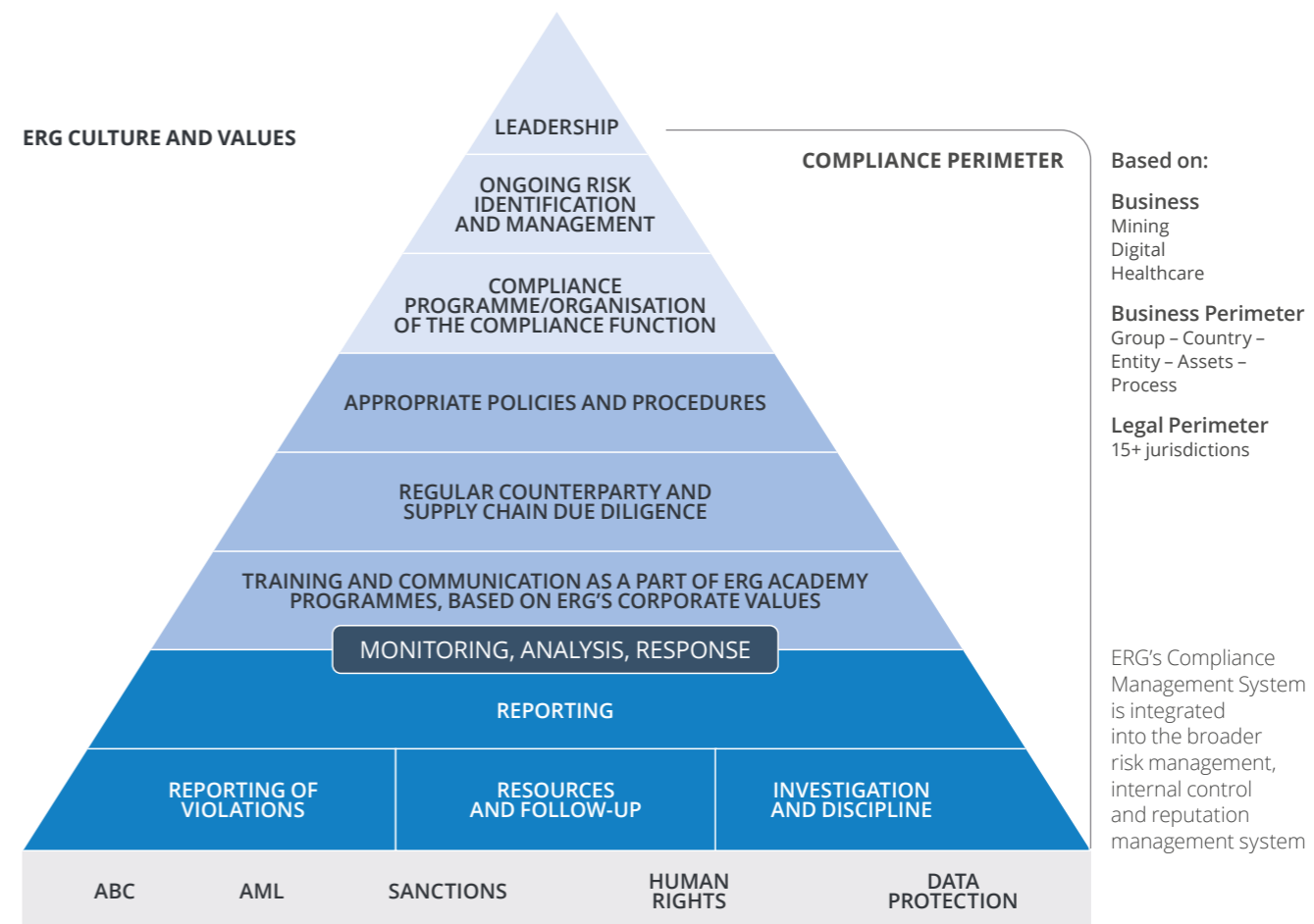
- International sanctions
- Data protection
- Anti-money laundering
- Human rights risks
- Anti-bribery and corruption

For further information, see Appendix.

- Our CPDD process to implement additional controls in relation to higher risk contracts and to incorporate elements of the OECD Due Diligence Guidance requirements (p. 83)

For further information on our compliance policies, see Appendix.

## COMPLIANCE MANAGEMENT SYSTEM



## Training and communication

We engage with our business partners, governance body members and employees via e-learning, face-to-face engagement and on-boarding assessments. This includes the development of our 'Ambassador Institute' in Kazakhstan, which aims to integrate compliance practices into our core business by promoting 'ownership' of the issue by process owners.

Dedicated compliance training is delivered to two key groups of employees:

- General employees, who focus on the Code of Conduct
- Specialists involved in higher-risk processes (e.g. community social investment, procurement, sales and finance), who receive additional CPDD, personal data protection, human rights and sanctions training

## Application of independent recommendations to our Compliance Programme

In 2021, we integrated a series of recommendations developed by an independent British law firm into our Group- and regional-level plans. This follows the benchmarking of our Compliance Programme against best practice in 2020. Key areas of focus included:

- The review of our policies, including updates to our Code of Conduct and CPDD process
- The evolution of the Compliance team structure, including the approval of additional head count to reflect changes to the business and external developments. In addition, this includes our increasing focus on embedding sustainability across the business
- The enhancement of our whistleblowing system, including trend analysis, benchmark analysis and classification
- The development of our Third-Party Risk Management (TPRM) framework, building on our existing CPDD process. This includes a focus on responsible supply chain management and the integration of ESG aspects

## OUR BROADER ROLE IN SOCIETY CONTINUED

In 2021, we placed particular focus on delivering training on our updated Code of Conduct through our e-learning platform in Africa and Brazil – with the rollout to Kazakhstan and our Corporate Offices having started in early 2022. We use the same platform to deliver training on anti-bribery and corruption, sanctions, data protection, human rights and our Group Supplier Code of Conduct. In addition, we updated our CPDD training materials to reflect new Conflict-Affected and High-Risk Areas (CAHRAs, p. 83) content.

### Sanctions Management System

Our Sanctions Compliance Programme is aligned with the US Office of Foreign Assets Control (OFAC) Framework for Compliance Commitments (2019) and the Guidelines on Implementation and Evaluation of Restrictive Measures (Sanctions) in the Framework of the EU Common Foreign and Security Policy (2018).

Key elements include:

- Clear policy statements, approved by the Board of Managers, committing ERG to compliance with all applicable international sanctions
- Training and awareness
- Real time updates to internal stakeholders on developments in relation to sanctions and potential impacts
- Risk assessment and ongoing monitoring of sanctions developments (internal and external)
- Sanctions screening against our CPDD database and third-party engagements

- Internal and external due diligence in relation to ownership questions
- Review of third-party engagements upon changes to sanctions, and analysis of the application of sanctions (including with specialist external sanctions counsel support)
- Implementation of any necessary changes to third-party engagements to ensure compliance with applicable sanctions, including, but not limited to, amendments and termination of contracts in accordance with applicable licences
- Scenario-planning in relation to future potential sanctions developments
- Inclusion of sanctions clauses, and related rights of termination, in contracts

### Russia-related sanctions

The above elements have been applied in connection with the ongoing conflict in Ukraine and the sanctions imposed against various companies and persons.

The Head of Group Compliance is part of the Executive Management Team formed to address this ongoing situation (with the participation of ExCom members and heads of all relevant departments) and to provide active management and decision-making in relation to:

- Counterparties and contracts under potential/actual sanctions risks
- Opportunities to involve alternative markets and business partners
- Monitoring of the implementation of mitigation measures

This has involved the constant monitoring of sanctions in accordance with our Sanctions Management Programme, with real time reporting of developments to our executive management and the provision of detailed analysis and reports to the Executive Management Team dealing with these sanctions, as well as our Executive Committee and the Compliance Committee.

We have developed 2022-2023 Sanctions scenarios with a focus on the potential impact on our liquidity and profitability, taking into account existing sanctions programmes and potential future sanctions.

ERG has suspended shipments of commodities to customers included in the sanctions lists. We are redirecting volumes from those customers to other clients and markets. The impact on our business activities has not been critical. ERG checks potential new clients for their presence in the sanctions lists.

Although interactions with suppliers under sanctions have been suspended, there were no disruptions to our supply chain. We switched to alternative suppliers, and check potential new suppliers for their presence in the sanctions lists as part of our CPDD/KYC processes. Stores of spare parts, materials and equipment necessary for production have also been stockpiled.

### Counter-Party Due Diligence

#### CPDD process

Our compliance managers conduct CPDD using reputable third-party information and compliance databases. This allows us to assign risk ratings in each case and identify appropriate mitigation actions. CPDD reviews cover:

- Sanctions violations
- Conflicts of interest
- Money laundering
- Bribery and corruption
- Data leakage
- Human rights infringements
- Other reputational issues/negative media coverage

In addition, in 2021 we developed a procedure to identify and assess CAHRAs<sup>1</sup> (CAHRA Procedure), which has been integrated into our CPDD process. We will continue to build on our existing due diligence practices, with a focus on aligning them fully with the five-step due diligence process set out in the OECD Due Diligence Guidelines.

For further information, see: <https://www.oecd.org/corporate/mne/mining.htm>.

### Third-Party Risk Management programme

We are developing a Third-Party Risk Management (TPRM) programme, which will build on our existing CPDD process and help us adapt to a fast evolving (and strengthening) ESG regulatory landscape. In addition, the TPRM will:

- Cover all of our counterparties, ranging from existing business partners to new suppliers
- Incorporate ESG metrics, as well as advanced analytics, to enable faster decision making
- Be initiated during the procurement/onboarding process, and will continue through the life of the working relationship
- Involve the further integration of work streams between internal functional areas involved in lifecycle contract management

Furthermore, it will combine a range of existing third-party risk management tools and processes into an integrated and systematic Group-wide system.

### Whistleblowing

We offer a confidential, anonymous Group Hotline operated by an independent third-party (see <https://erg.integrityline.org/>). We are committed to protecting whistleblowers who report suspected violations in good faith, while maintaining confidentiality where requested.

In 2021, we carried out a self-assessment of our whistleblowing system, which implemented the recommendations of external legal counsel involved in the Compliance Programme review, and we also commissioned further reviews by the same law firm. This included benchmarking against best practice and ongoing legal and regulatory developments, as well as retrospective data analysis, with the aim of developing a more sophisticated and robust system in 2022.

In addition, we:

- Developed a revised Whistleblowing and Investigation Policy and new Internal Investigations Manual
- Updated our classification of reported incidents, including ESG risks and incidents
- Reinforced our case analysis team with additional specialists

### SFO Investigation into ENRC

The Serious Fraud Office (SFO) launched an investigation into ENRC (the Company) on 25 April 2013, with a proclaimed focus on allegations of fraud, bribery and corruption relating to the acquisition of mineral assets in Africa. On 14 May 2015, the SFO confirmed that the Company's Kazakhstan operations are out of scope, and on 23 October 2018 re-confirmed this scoping limitation. No further changes occurred in 2021. During the course of the investigation, the Company has complied with all statutory requests made by the SFO in addition to voluntarily providing a large volume of material at the request of the SFO.



## OUR TPRM PROCESS FULL CYCLE COMPLIANCE COVERAGE



Key features of the TPRM will include:

- A central inventory of third-parties and selected 'fourth-parties'/subcontractors
- An expanded set of analysed risks compared to the CPDD process, including enhanced analysis of ESG risks
- Identification/scoring of multiple risk factors, which are jointly monitored with business users
- Full-cycle risk planning, contract management, monitoring and termination phases
- Scorecards to help monitor regulatory compliance and performance against internal metrics
- An accessible, end-to-end workflow tool that is integrated with adjacent platforms

<sup>1</sup> Conflict-affected and high-risk areas.

## Respect for human rights

Our Human Rights Policy commits us to respecting universally recognised human rights and labour standards (p. 103). These requirements are embedded in our Group Supplier Code of Conduct.

In 2021, we enhanced our human rights approach through the:

- Ongoing rollout of our Group Supplier Code of Conduct (p. 86)
- Implementation of our new CAHRA procedure (p. 83), which will help ensure our alignment with the OECD Due Diligence Guidance
- Implementation of our new Responsible Aluminium Framework (p. 87)
- Ongoing enhancement of our Clean Cobalt and Copper Framework (p. 88)<sup>1</sup>

We conduct ongoing risk assessments and monitoring. This includes:

- Risk assessments focused on our regions of operation (carried out in 2018-2019, with plans to update these in 2022)
- More regular risk assessments at Metalkol RTR (carried out four to five times per year)

- The commencement of the CAHRA review process in Kazakhstan

We plan to further enhance our human rights due diligence approach in 2022.

In addition, we have implemented the Supplier Code of Conduct and CPDD process, as well as targeted action plans in relation to higher risk areas to prevent any form of bonded, forced or compulsory labour, or child labour in our supply chains. We recognise, however, the risk that such practices could exist in some areas of our business and in relation to some of our business relationships, predominantly in Africa, and have implemented additional human rights and responsible supply chain procedures to mitigate these risks.

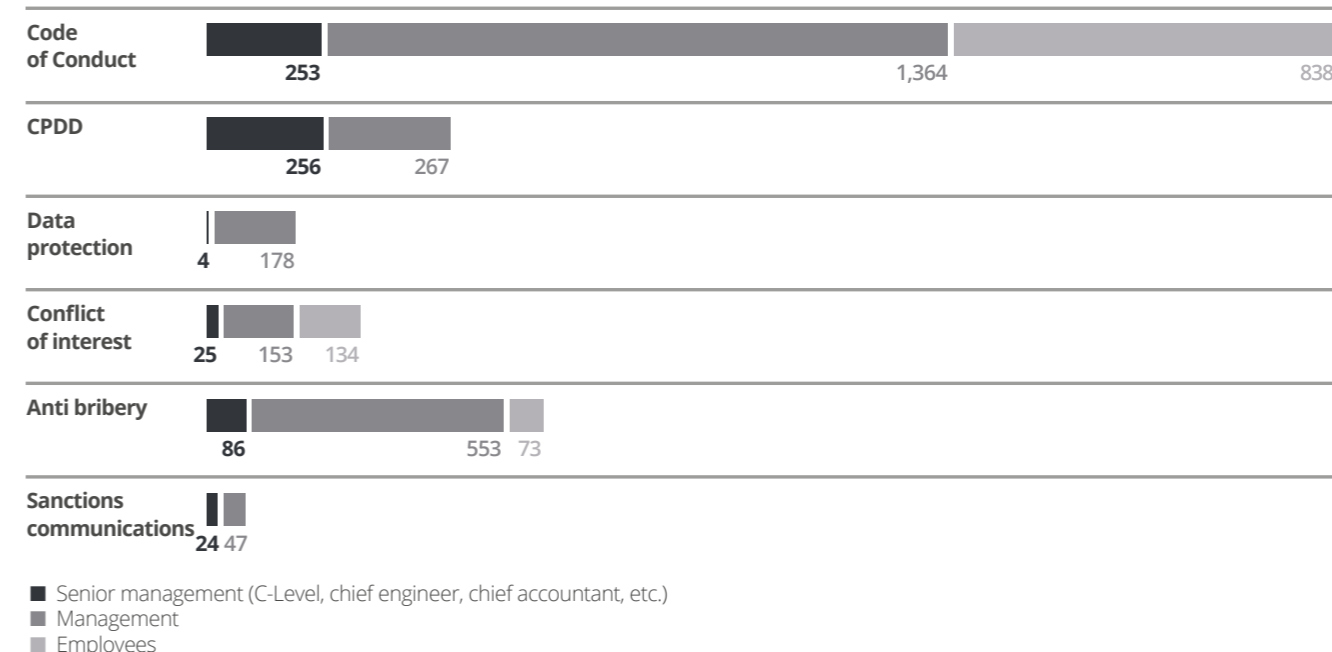
We assess our suppliers, who are required to comply with our Human Rights Policy, through the CPDD process. In addition, in higher-risk areas, our regional compliance officers conduct office/asset human rights risk assessments at appropriate intervals. Any identified risks (and associated controls) are recorded in the relevant risk registers, and mitigation actions are implemented.

We conduct training for our employees which addresses these expectations, and will be launching additional training on human rights and the Supplier Code of Conduct in 2022. Similarly, we carry out targeted audits and training of suppliers based on our risk assessment process.

For further information on:

- Our overall approach to human rights, see: <https://www.eurasianresources.lu/en/pages/sustainable-development/respecting-human-rights>
- How we ensure respect for human rights in relation to our cobalt value chain and artisanal and small-scale mining communities near our operations in the DRC, see: p. 46 and <https://www.eurasianresources.lu/uploads/1/files/Clean%20Cobalt%20and%20Copper%20Framework.pdf>
- Our compliance with the OECD Due Diligence Guidance, see: p. 83 and <https://www.eurasianresources.lu/en/pages/sustainable-development/responsible-sourcing>

## 2021 COMPLIANCE TRAINING FIGURES (NUMBER OF EMPLOYEES TRAINED)



## OUR PERFORMANCE

In 2021, we provided onboarding and annual Code of Conduct training<sup>2</sup> to 2,455 employees (2020: 1,308), reflecting an expansion of our programme.

In addition, we:

- Communicated our compliance policies and procedures to business partners, governance body members and employees via e-learning – including the ongoing rollout of our Group Supplier Code of Conduct
- Completed over 17,000 CPDD reviews (2020: 14,000) (p. 89)
- Received 317 reports and enquiries (289 reports and 28 enquiries) from our employees and business partners via our Group Hotline (2020: 319), including 95 confirmed Code of Conduct violations (2020: 75), which primarily related to procurement activity, fraud, theft and fair employment practices. Corrective actions were taken in relation to all confirmed reports, including, amongst others, enhancements to business controls, additional training, review sessions and disciplinary measures.

During the year, we were not subject to any material judicial findings or regulatory sanctions (including those linked to our social, economic and/or labour impacts). Similarly, we were not subject to any investigations, legal actions or findings in relation to internationally applicable sanctions.

## CODE OF CONDUCT REPORTS IN 2021 (NUMBER OF REPORTS BY CATEGORY)

Category	All reports	Confirmed reports
Procurement <sup>3</sup>	98	32
Fraud/Theft	59	29
Fair Employment practices	62	14
Health, Safety, Environment	10	5
Bribery and Corruption	2	0
Data Protection/Misuse of confidential information	1	0
Human Rights	3	3
Other <sup>4</sup>	54	12
<b>Total</b>	<b>289</b>	<b>95</b>

## NEXT STEPS

Key areas of focus in 2022 (and beyond) will include:

- The further integration of ESG elements, including through our planned TPRM process, OECD Due Diligence Guidance risk assessments in relation to CAHRAs and human rights risk assessment updates (p. 84), and training and audit processes
- The development of a Compliance School to enhance our internal capabilities
- The revision of our Human Rights Policy and the rollout of Group-wide online human rights training
- The rollout of Group-wide online Supplier Code of Conduct training
- The development of a Group-wide human rights due diligence programme (p. 84)



1 Formerly called the Clean Cobalt Framework.

2 Including a focus on human rights.

3 This category covers irregularities in the company's procurement procedures. For example, an unintentional error in the tender documentation, violation of the terms of contract conclusion based on the original terms of the tender, unreasonable rejection of tender applications, etc.

4 'Other' includes confirmed reports relating to conflicts of interests, amongst other areas.

OUR BROADER ROLE IN SOCIETY



# Responsible value chains

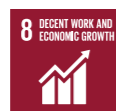
## Strategic context

Our commitment to contribute to the socio-economic development and well-being of communities in our regions of operation extends beyond our own activities. We also seek to promote responsible behaviours amongst our business partners, including our contractors and suppliers.

In addition, we want to deliver assurance to our customers and their value chain partners that the products we sell have been responsibly mined and processed, and are not associated with negative environmental, social or governance impacts. This is particularly the case with respect to the cobalt we produce in the DRC, given growing stakeholder demand for transparency and responsible performance around battery value chains.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



In addition to ensuring that our own supply chain is responsibly managed, it is important that we can demonstrate to downstream value chain actors that they can source minerals and metals from us with confidence. This includes a particular focus on our cobalt production, given global scrutiny of the conditions in which the metal is extracted, processed and/or traded in the DRC.

This is a fast-evolving area, with stakeholder expectations around responsible value chain assurance increasingly relevant to minerals and metals beyond cobalt.

### WHAT WE ARE DOING

#### Group Supplier Code of Conduct<sup>1</sup>

In 2021, we continued to roll out our recently developed Group Supplier Code of Conduct, which all suppliers are required to adhere to as a condition of doing business with ERG. Furthermore, suppliers are required to ensure that their subcontractors also agree to abide by its terms. The rollout included training and auditing activities

across the Group. We expect to complete the rollout process to all of our suppliers, as well as the Code's integration into our Third-Party Risk Management (TPRM) process (p. 83), in 2022.

The Group Supplier Code of Conduct is aligned with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD Due Diligence Guidance).

## Key requirements under the Group Supplier Code of Conduct

- Provide workers with a safe and healthy work environment consistent with the relevant ERG policies or procedures or applicable national and international standards, whichever is higher
- Maintain a zero-tolerance stance towards bribery and corruption
- Do not engage in any use of forced or compulsory labour or child labour
- Comply with the ERG Human Rights Policy – as well as the UN Guiding Principles on Business and Human Rights, the OECD Due Diligence Guidance and the Voluntary Principles on Security and Human Rights
- Co-operate with ERG's requests for due diligence information in relation to the supply of ore and mineral product

For further information, see: <https://eurasianresources.lu/en/pages/group-compliance/supplier-code-of-conduct>.

## Responsible supply chain management in Kazakhstan

The Group Supplier Code of Conduct supplements our existing responsible supply chain management practices in Kazakhstan. Prior to onboarding, each supplier and contractor is assessed in relation to its legal standing, commercial viability and compliance criteria, and is also subject to our expanded Counter-Party Due Diligence (CPDD) process (p. 83).

In addition, our contracts with companies providing onsite services integrate a range of 'beyond compliance' health, safety and environment (HSE) elements, ranging from company certifications through to compliance with international environmental conventions, as well as waste collection and disposal requirements.

Such contractors are subject to initial safety compliance assessments and are also subject to defined penalties for safety violations. Those involved in higher-risk tasks are subject to supplementary contractual oversight and control measures.

In early 2022, we introduced new sustainability-focused requirements into our contracts with major suppliers, including a request for their GHG emissions.

## Responsible supply chain management in Africa

We already implement our Group Supplier Code of Conduct across our operations in Africa, including Metakol RTR. This includes the distribution of the code to key suppliers, its integration into our terms and conditions, and its incorporation into our supplier CPDD onboarding process. In addition, we provide training for, and carry out audits of, our material suppliers at Metakol RTR. These processes will continue to be rolled out to the rest of the Group.

Some of our suppliers in Africa have higher than average risk profiles compared to Group norms. This includes Congolese, South African and Zambian companies that recruit local people/nationals, transport hazardous materials, use labour brokers or provide security services.

Given the local context – as well as strengthened local content requirements in the DRC's 2018 Mining Code (p. 76) – we are willing to work with local suppliers constructively so that they can meet our requirements.

## 'Responsible aluminium' as a basis for Group-wide supply chain management

### LME Responsible Sourcing requirements

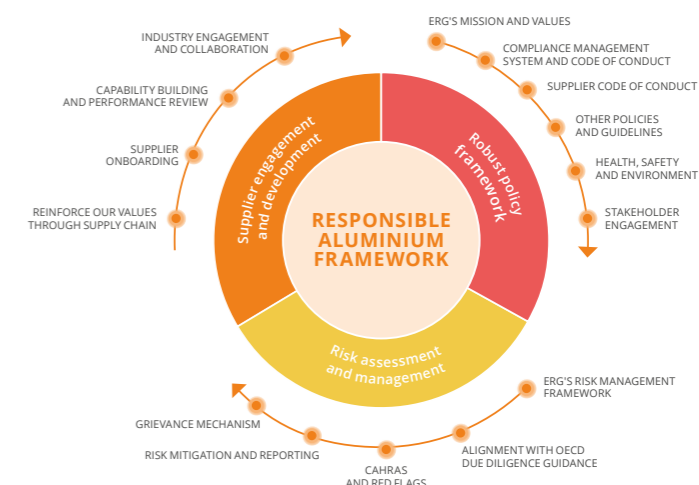
The aluminium we produce at KAS is an 'approved brand' of the London Metals Exchange (LME). We have full oversight and control of the origins of the ore in our aluminium supply chain.

From 2022, all LME approved brands need to comply with the LME Responsible Sourcing requirements (RS requirements). Amongst other things, these are aligned with the OECD Due Diligence Guidance and aim to help "companies respect human rights and avoid contributing to conflict through their mineral sourcing practices".

In 2022, we completed a 'Red Flag Assessment' report for the aluminium we produce at KAS (in accordance with the RS requirements). We received independent reasonable assurance, helping ensure our compliance with these requirements.

### Our Responsible Aluminium Framework

In 2021, we launched our Responsible Aluminium Framework, which will ensure we manage human rights, business ethics, environmental and health and safety risks in line with internationally accepted standards.



The new Framework renews our commitment to human rights and sustainable aluminium production in line with the OECD Due Diligence Guidance. Key elements include:

- Our CPDD process, which is aligned with the LME Red Flag Assessment template and includes a CAHRA assessment focused on conflict, governance and human rights
- Additional Red Flag assessments triggered by, for example, corruption cases, exposure to sanctions and/or unwillingness to accept our Group Supplier Code of Conduct
- The application of 'beyond compliance' HSE requirements to onsite suppliers/contractors
- Third-party assurance

The framework is first being applied to our aluminium value chain, but will be extended to our other product lines.

For further information, see: [https://www.erg.kz/files/Responsible%20Aluminium%20Framework\\_ENG.pdf](https://www.erg.kz/files/Responsible%20Aluminium%20Framework_ENG.pdf)

<sup>1</sup> Group Supplier Code of Conduct: [https://www.eurasianresources.lu/uploads/1/files/Supplier%20Code%20of%20Conduct%20document\\_English.pdf](https://www.eurasianresources.lu/uploads/1/files/Supplier%20Code%20of%20Conduct%20document_English.pdf).

## RMI's Responsible Minerals Assurance Process (RMAP)

The RMI standards have been developed to meet the requirements of the OECD Due Diligence Guidance, the EU's Regulation 2017/821 on conflict minerals and Section 1502 of the US Dodd-Frank Wall Street Reform and Consumer Protection Act. The RMAP is based on the independent, third-party assessment of smelter/refiner management systems and sourcing practices to validate their conformance with the RMI standards – and the responsible procurement of minerals in particular.

Metalkol RTR is conformant with the RMAP Standards for Cobalt Due Diligence Standard (2018) and Joint Due Diligence Standard for Copper, Lead, Nickel and Zinc (2021) (see below).



### Delivering value chain assurance around our cobalt production

We apply a range of initiatives to help ensure that our customers can buy cobalt and copper from Metalkol RTR with confidence. This includes a focus on:

- Applying strong internal and third-party standards within our own operations and supporting positive, on-the-ground change for local communities (p. 90)
- Working with others to set credible, cross-value chain assurance standards and achieve high levels of transparency

### Clean Cobalt and Copper Framework and RMAP

Our Clean Cobalt and Copper Framework<sup>1</sup> is the key means by which we seek to satisfy growing demand for responsible mineral assurance across the battery value chain, including conformance with the OECD Due Diligence Guidance. Furthermore, it is playing an active role in improving conditions for local people living and working near Metalkol RTR.

We have updated the Framework to integrate our commitment to the Responsible Minerals Initiatives' (RMI) Responsible Mineral Assurance Process (RMAP), including the carrying out of an annual assurance process as part of the Framework. We initiated our first RMAP assurance process in late 2021. The process was completed in early 2022 due to the need for additional enquiries related to the RAID report (p. 42).

This follows the initial Metalkol RTR Clean Cobalt Performance Report (published July 2019), which was independently assured by PwC. While we had planned a second independently assured Clean Cobalt and Copper Performance Report in 2020, this was delayed due to COVID-19 and was published in early 2022.

In June 2022, ERG received a positive assurance opinion from PwC, which verified Metalkol RTR's compliance with the statements made in its second Clean Cobalt and Copper Performance Report.<sup>2</sup> In August 2022, RMI determined that Metalkol RTR was in conformance with the RMAP Standards for Cobalt Due Diligence Standard (2018) and Joint Due Diligence Standard for Copper, Lead, Nickel and Zinc (2021).

### Cobalt Industry Responsible Assessment Framework

Given ERG's status as a leading member of the Cobalt Institute<sup>3</sup>, Metalkol RTR continues to apply the Cobalt Industry Responsible Assessment Framework (CIRAF<sup>4</sup>). CIRAF is a management framework that supports enhanced risk management and reporting focused on the responsible sourcing and production of cobalt.

### Working with others to deliver cross-value chain assurance

#### ERG and the Global Battery Alliance's Battery Passport

ERG is an actively involved founding member of the Global Battery Alliance (GBA) – alongside more than 100 organisations, including companies ranging from BASF to Tesla, as well as governments and civil society. The GBA aims to support the development of an ecosystem that will promote traceability, transparency and sustainable practices across the battery value chain (p. 90-91). Our CEO, Benedikt Sobotka, is Co-Chair of the Supervisory Council.

The flagship project of the GBA is the development of a Battery Passport. This is a digital representation of a battery that conveys information about key ESG and lifecycle requirements based on a comprehensive definition of a sustainable battery.

Key areas of focus for the GBA Battery Passport initiative include:

- Defining relevant ESG performance indicators for sustainable batteries
- Setting principles on data exchange and interfaces between value chain participants
- Ensuring interoperability of IT systems, as well as initial data quality
- Promoting mechanisms to support continuous improvement across the value chain

In 2021, the GBA Battery Passport initiative was supported by the:

- Initial identification of a draft suite of ESG indicators to reflect sustainable batteries that support the circular economy
- Development of draft rulebooks for two initial indicators relating to child labour and GHG emissions
- Holding of a workshop, with the German Government, on data governance and the battery passport

In 2022, the GBA Battery Passport initiative will focus on:

- Pilot testing the draft rulebooks, as well as track and trace functionality along the value chain (particularly in the context of EU proposals for a new Batteries Regulation)<sup>5</sup>
- Completing and launching finalised rulebooks for child labour, GHG emissions and human rights (with the development of the latter rulebook having started in 2022)
- Working with the Battery Pass Coalition, a project funded by the German Government and others that will develop rules for the content and technical interoperability of a battery passport that meets relevant EU regulations

1 In 2021, we expanded the Framework to include copper produced at Metalkol RTR, renaming it the Clean Cobalt and Copper Framework. For further information, see: <https://www.eurasianresources.lu/en/pages/sustainable-development/responsible-sourcing/clean-cobalt-and-copper-framework>.

2 See Metalkol RTR Clean Cobalt and Copper Performance Report 2022, <https://www.ergafrica.com/wp-content/uploads/ERG-Assurance-Report-Clean-Cobalt-and-Copper-2022-Signed-by-PwC.pdf>.

3 Cobalt Institute: <https://www.cobaltinstitute.org/responsible-sourcing/industry-responsible-assessment-framework-ciraf/>.

4 Having carried our first CIRAF assessment in 2019, we continue to maintain policies and management systems to manage these risks, in line with the OECD Due Diligence Guidance. See: <https://www.eurasianresources.lu/uploads/1/files/CIRAF-Statement-of-Commitment.pdf>.

5 Proposal for a Regulation of the European Parliament and of the Council concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0798>.

## Kazchrome awarded the Responsible Chromium label by the ICDA

In 2021, our efforts to ensure that chromium production is responsible and sustainable were recognised by the International Chromium Development Association (ICDA). Kazchrome was awarded the Responsible Chromium label, which verifies that it has gone above and beyond the standard requirement needed to responsibly source chromium in regard to a range of environmental, social and governance factors. As a result, the company is one of the first six worldwide to receive this status.

This followed an evaluation by the independent sustainability rating company Ecovadis, which awarded Kazchrome the Ecovadis Silver award. Kazchrome was ranked among the top 12% of companies in the global iron and steel industry.

Subsequently, in June 2022, Ecovadis awarded Kazchrome a Platinum award, representing a top-1% score.



- Preparing a GBA Battery Passport Minimal Viable Product (MVP) in January 2023 and launching a public consultation

For further information, see: <https://www.globalbattery.org/>

### ASM Cobalt Framework

The ASM Cobalt Framework has been advanced by the Cobalt Action Partnership (CAP)<sup>6</sup> of the GBA and is supporting the development of a common set of global expectations for responsibly-produced ASM cobalt sourced from the DRC. It has been developed, consulted on, and supported by global cobalt supply chain actors, governments, international organisations, NGOs, and other cobalt stakeholders.<sup>7</sup> Regular monitoring and assessment against the ASM Cobalt Framework will:

- Support official ASM formalisation efforts in the DRC
- Help improve mining communities' quality of life
- Channel industry investment into mine site improvements
- Ensure ASM cobalt is produced legally and meets global market expectations
- Provide all supply chain actors with more visibility of mine site performance

Consultation on the Framework was completed in 2021. The GBA has signed a memorandum of understanding with the RMI to continue work on the implementation of the Framework.

For further information, see: <https://www.asm-cobalt.org/> and [https://www.asm-cobalt.org/wp-content/uploads/2021/10/Report-from-Stakeholder-Consultations-on-the-ASM-Cobalt-ESG-Management-Framework\\_English.pdf](https://www.asm-cobalt.org/wp-content/uploads/2021/10/Report-from-Stakeholder-Consultations-on-the-ASM-Cobalt-ESG-Management-Framework_English.pdf).

6 Of which ERG was the Steering Committee chair.

7 This multistakeholder initiative builds on the work already undertaken by the RMI to further develop a draft framework for ASM cobalt that was initially composed by the founding members of the Fair Cobalt Alliance. This was shared with the RMI and the CAP for their feedback. Since then, the RMI and the CAP have held introductory meetings with key DRC and global stakeholders, benchmarked the framework against relevant DRC standards and laws as well as other ASM standards, and adapted the framework in line with key stakeholder feedback.

8 This followed another audit carried out by RCS Global on behalf of automotive brands in late 2020 and early 2021.

### Supporting the Fund for the Prevention of Child Labour in Mining Communities

ERG was a founder of, and first contributor (together with Umicore) to, the pilot Fund for the Prevention of Child Labour in Mining Communities, an initiative of the GBA administered by UNICEF. The Fund was piloted in cooperation with government and civil society in the DRC.

In 2021, the Fund provided services to more than 15,000 people, including those relating to child protection, education, health, water, sanitation and social protection. This included 1,000 vulnerable children working in ASM who were reintegrated into educational programmes in Haut Katanga (Kipushi) and Lualaba (Kanzenze). In addition, 2.5 million local community members were reached with messaging emphasising the importance of ending child labour, about 350 professionals and community members were provided with training and supplies, and support was provided to almost 80 social institutions.

For further information, see p. 56 and <https://www.unicef.org/drcongo/en/press-releases/multi-stakeholder-initiative-address-child-labour-mining-communities>.

### OUR PERFORMANCE

In 2021, ERG carried out over 17,000 CPDD reviews (2020: more than 14,000), including around 16,000 in Kazakhstan, around 400 in Africa and over 1,000 in other regions and corporate offices. Where these reviews identified compliance risks, we have implemented mitigation measures, up to and including refusal to enter into a contractual relationship.

In Africa, most of our counterparties involved in contracts with a value of more than US\$25,000 were assessed against the Group Supplier Code of Conduct. Our audits assessing a number of Metalkol RTR's suppliers and contractors against these requirements did not identify any material issues that required remediation or the termination of contracts.

Metalkol RTR was itself subject to a four-day audit by a specialist company, RCS Global.<sup>8</sup> This was carried out on behalf of three global automotive brands, as well as a major battery manufacturer. The results of the RCS audit were published in early 2022 and did not identify any significant issues.

### NEXT STEPS

In 2022 (and beyond), we plan to:

- Complete the rollout of the Group Supplier Code of Conduct to all parts of our business
- Implement our new Third-Party Risk Management programme, including a focus on suppliers
- Rollout a Group-wide responsible supply chain programme based on our Responsible Aluminium Framework
- Advance our delivery of cross value-chain transparency for cobalt from Metalkol RTR via the launch of the Re|Source blockchain project (p. 90-91)

# Driving cobalt value chain transparency through the Re|Source project

Cobalt and Copper produced at Metalkol RTR comes with a high degree of operation-level assurance. In 2020, we joined forces with other industry leaders in the Re|Source consortium, which offers a pioneering technological solution for the tracing of responsibly sourced cobalt from the mine to the electric vehicle.

## Clean Cobalt and Copper Framework

Our Clean Cobalt and Copper Framework is delivering responsible mineral assurance, demonstrating that we conform with (and go beyond) the OECD Due Diligence Guidance and helping improve living conditions for local people near Metalkol RTR (p. 88).

### DELIVERING ON CLEAN COBALT AND COPPER FRAMEWORK

We apply a range of initiatives to help ensure that our customers can buy cobalt and copper from Metalkol RTR with confidence. As part of the application of our own Clean Cobalt and Copper Framework, this includes a focus on:

#### 1 The application of strong third-party standards within our own operations, including:

- Responsible Mineral Assurance Process (p. 88)
- Cobalt Industry Responsible Assessment Framework (p. 88)

#### 2 Initiatives to promote positive, on-the-ground change for local communities, including:

- Supporting the development of the ASM Cobalt Framework (p. 89)
- Fund for the Prevention of Child Labour in Mining Communities (p. 89)
- Multi-year support for the Good Shepherd International Foundation (p. 56)

## Re|Source: Tracing cobalt from mine to electric vehicle

Re|Source is a collaboration between more than 20 partners – from miners to manufacturers – that uses blockchain technology and zero-knowledge proofs<sup>1</sup> to link digital data flows with material flows on the ground. This drives transparency across the value chain, whilst ensuring data integrity and the protection of commercially sensitive information. In particular, it traces battery material and relevant sustainability indicators from mine origin to end-producer. This enables downstream actors to determine where their cobalt has come from and perform upstream and midstream due diligence.

It was founded by ERG and other major cobalt producers and is being developed with inputs from a wide range of battery value chain stakeholders, including industry bodies such as the Cobalt Institute and the Responsible Minerals Initiative. Re|Source's guaranteed data protection and decentralised data management solution will help support effective collaboration throughout the entire industry, whilst ensuring participants comply with relevant anti-trust legislation.

### PILOT TESTING AT SITES

In 2021, we ran multiple pilots to test the system in real operating environments across the cobalt value chain, from participant mine sites in the DRC (including Metalkol RTR) to downstream participant sites in China, Finland and South Africa.

At Metalkol RTR, this included the testing of 'big bag' registration modules that ensure the integrity of data relating to the origin of the cobalt, as well as the secure transfer of these bags and the capturing of the chain of custody. We are also researching 'smart seal' technology for the bags, which will support automated data transfer without the need for human intervention.

At our partners' sites, testing included other Re|Source modules, such as the mass balancing module. This uses complex algorithms to calculate input cobalt mass and output cobalt mass during processing, generating additional traceability assurance.

### ROLLOUT IN 2022

In 2022, the solution will be applied on an 'end-to-end' basis at major participant sites, starting at the point of mining. This will include its application to all cobalt production at Metalkol RTR, which will enable customers to trace their cobalt back to the operation and will confirm the application of responsible production standards – as well as mine-to-electric vehicle tracing.

Beyond this, the scope of Re|Source has been extended to include other critical battery materials, such as nickel and lithium. Similarly, the functionality of the solution allows for the future addition of a broad spectrum of ESG-related data and indicators to supplier sustainability due diligence, audits and other customer requests.



Cross value chain transparency and assurance

## Global Battery Alliance: Battery Passport – defining responsible battery standards

The Global Battery Alliance's (GBA) Battery Passport is an in-development 'quality seal' to be carried across the value chain and deliver assurance to consumers.

Re|Source, which could be an enabling digital platform for the initiative, is working closely with the GBA and participates in the Battery Passport initiative (p. 88).

<sup>1</sup> I.e. whereby one party can prove to another party that a given statement is true, without having to convey any additional information beyond this fact.

OUR BROADER ROLE IN SOCIETY



# Government relations and policy

## Strategic context

Our host governments count amongst our most important stakeholders. This reflects the actual and potential impact of public policy, legislation and regulation on our business. Furthermore, the Government of the Republic of Kazakhstan's significant shareholding in ERG makes this a particularly important relationship.

### Relevant UN SDGs

SEE P. 109 FOR ASSOCIATED UN TARGETS



ERG adheres to the highest principles of ethical business conduct with respect to its relationships with its host (and other) governments. These principles are set out in our Code of Conduct and compliance policies (p. 103).

## WHAT WE ARE DOING

### Relationship with the Government of the Republic of Kazakhstan

ERG is 40% owned by the Government of the Republic of Kazakhstan, which is represented on our Board of Managers. In January 2022, the Deputy Prime Minister and Minister of Finance, Mr. Yerulan Zhamaubaev, was appointed to the Board of Managers. Furthermore, we play a strategic economic role in Kazakhstan at the national, regional and local levels (p. 50).

We engage constructively with the Government with respect to our operational activity, corporate strategy and our support (where it fits with our business objectives) of the Government's broader national vision and strategy. In 2021, specific areas of engagement included:

- Draft Presidential Decree on a 2060 Low Carbon Development Doctrine, which is expected to be issued in 2022.

This includes its relationship with the Environmental Code and the need to address energy security and continuity of power supply

- Taxation policies towards the metals and mining sector, in the context of global metal prices, the COVID-19 pandemic and efforts to attract investment

In addition, in early 2022, the Government implemented measures to mitigate the impact of the evolving geopolitical situation on Kazakhstan's existing economic and trading relationships and, by extension, its companies. In this context, ERG is engaging with the Government on an ongoing basis as it seeks to avoid and/or minimise any associated negative consequences.

More broadly, we continue to engage the Government in ongoing discussions around:

- **Regional development:** The promotion of socio-economic development in our regions of operation, including through our memoranda of understanding with regional governments (Regional MoUs) – and beyond (p. 52)
- **Broader economic growth:** Economic growth and the enhancement of national capabilities, including through the promotion of digital innovation (p. 28), entrepreneurship (p. 41) and professional development (p. 37)

- **Green Economy:** Alignment with – and support of – the Government's 'Green Economy' concept, its climate change commitments and the new Environmental Code, which came into force in July 2021 (p. 61)

### Government relations in Africa

The Government of the DRC holds interests (including via state mining company Gécamines) in a number of ERG subsidiaries in Africa, including Metalkol RTR, Frontier and Boss Mining. We continue to engage constructively with the Government, including in relation to the implementation of the 2018 Mining Code and its impact on investments in the country.

In 2021, other areas of engagement with the Government of the DRC included:

- **Delivery of community benefits:** This includes ongoing government oversight of our Commitments Register and community social investment (CSI) plans (p. 55), as well as the consideration of new, government-proposed projects
- **Evolving regulatory and fiscal environment:** Regulatory changes in the DRC affecting our local legal and tax obligations (p. 55), as well as our tax arrangements. Engagement takes place through the Chamber of Mines DRC and on a bilateral basis



- **Clean Cobalt and Copper Framework:** This includes engagement relating to the ongoing implementation of the framework at Metalkol RTR (p. 88)

We are committed to investing in the DRC and ensuring its people benefit from our operations there. This includes our ongoing investment in Metalkol RTR (which is now the world's second largest producer of cobalt and is playing a strategic role in powering the global battery revolution), our ongoing investment in Frontier (which we are actively developing) and our plans for the recommissioning of Boss Mining.

We actively engage with all governments in our host countries, including in Zambia and other jurisdictions where we have assets in care and maintenance.

### Government relations in Brazil

BAMIN won the FIOL railway concession in April 2021. Following signature of the contract in September 2021, we started to actively engage with the 19 municipalities that will be directly impacted by the railway.

## OUR PERFORMANCE

In line with our Code of Conduct, we do not, directly or indirectly, make political contributions other than in exceptional circumstances approved in advance by the ERG Board of Managers. Any political contribution must be authorised in accordance with internal ERG policy and procedures, and applicable law. In 2021, ERG did not make any contributions (financial or in-kind) to political parties.

Given our unique history and role in Kazakhstan, we work with regional governments in the country to support socio-economic development in our areas of operation. This includes:

- Community projects implemented in partnership with regional governments through our Regional MoUs (p. 50)
- Mandatory socio-economic and infrastructure development contributions in our operating regions, as required under our operating licences

In addition, we promote socio-economic development near our operations in the DRC under the Commitments Register framework as mandated by the country's 2018 Mining Code.

## NEXT STEPS

In 2022, we plan to:

- Continue to promote local and regional socio-economic development in Kazakhstan through our Regional MoUs with relevant regional governments
- Engage with state bodies and organisations in Kazakhstan on the obligations of subsoil users, taxation, environmental requirements, transport and logistics support, as well as other regulatory issues affecting the mining, metals and energy industries
- Continue engaging with our host governments in Africa in relation to our ongoing operational and exploration plans
- Continue engaging with relevant government bodies in Brazil in relation to the ongoing development of our integrated BAMIN operation



# Governance, management structures and risk management

## CORPORATE GOVERNANCE

The shareholders of ERG appoint the Board of Managers of ERG (the Board), oversee the financial performance of ERG and pass resolutions on certain matters reserved for the shareholders.

The Board is comprised of five members:

- Dr Alexander Machkevitch (founding shareholder)
- Mr Patokh Chodiev (founding shareholder)
- Mr Shukhrat Ibragimov (appointed in 2021)
- Mr Bakyt Sultanov (representing the Government of the Republic of Kazakhstan since 2013)
- Mr Yerulan Zhamaubayev (representing the Government of the Republic of Kazakhstan since 2022)<sup>1</sup>

The Board determines and implements the strategy of the Group, appoints the Group CEO and other senior managers, and considers key transactions. 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. The Board approved our Code of Conduct and Group Compliance policies.

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:

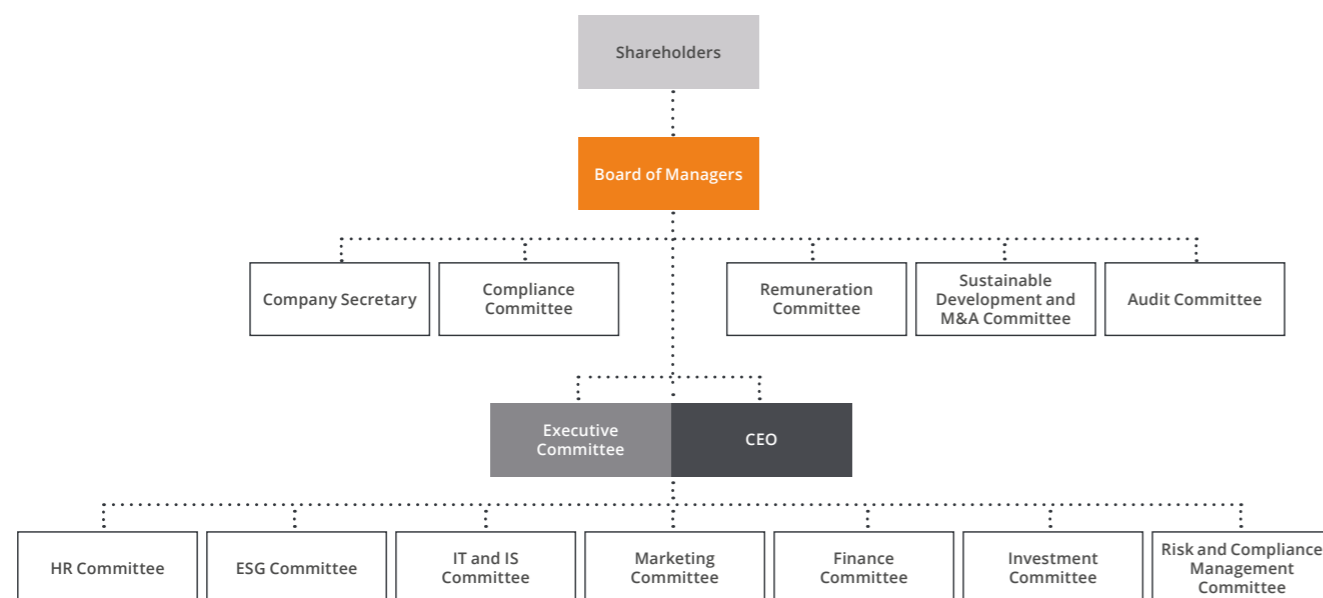
- **Compliance Committee:** Responsible for review, oversight and approval of the Group compliance systems, policies and controls, as well as for monitoring the effectiveness of the Group compliance function

- **Remuneration Committee:** Responsible for overseeing the remuneration of ERG's senior managers and monitoring the Group remuneration system

- **Sustainable Development and Mergers and Acquisitions (M&A) Committee:** Responsible for overseeing M&A activity (including due diligence, assessment and mitigation of related risks, structuring and implementation of projects, and post-acquisition integration), as well as supporting Group-wide transformation and business sustainability

- **Audit Committee:** Responsible for overseeing the integrity of ERG's financial reporting, the effectiveness of its internal controls and risk mitigation actions, the effectiveness of its Internal Audit function and the engagement of external auditors

## GROUP CORPORATE GOVERNANCE STRUCTURE



<sup>1</sup> Mr Yerulan Zhamaubayev replaced Mr Beibut Atamkulov, who resigned from his role on the Board in early 2022.

## Executive Committee (ExCom)

ExCom is a permanent, collegial management body, which operates at Group level. It is authorised to pass resolutions on matters within its competence and to provide consultations and recommendations in relation to matters pertaining to the Group's business. Its resolutions, consultations and recommendations are necessary for the coordination of the Group's business and the provision of assistance to the management bodies of relevant Group companies.

ExCom's strategic function is to:

- Guide the overall performance of the Group
- Act in line with targets and strategies approved by the Board
- Develop a long-term financial plan and key performance indicators
- Implement standards and policies for key processes, including their communication to regional level
- Identify and allocate key resources for the Group to fulfil its key obligations and tasks

## ESG Committee

Our Environmental, Social and Governance (ESG) Committee is tasked with the integration of sustainability practices into our Group strategy and decision-making processes. The Committee includes Group-level executives as well as senior managers with various backgrounds from across the Group. This includes expertise in climate, biodiversity and water resources management. Key areas of focus include:

- Group policy (and accountability)
- The establishment of 2030 ESG Goals, including in relation to our greenhouse gas (GHG) emissions, other emissions to air, our people, local communities and business ethics
- Analysis and monitoring of ESG-related projects
- Reporting
- The development of related competencies across the Group

## REGIONAL HEALTH, SAFETY, ENVIRONMENT AND COMMUNITIES MANAGEMENT

### Kazakhstan

We have established the following regional committees (amongst others), which are made up of senior regional management and the CEOs of our business units:

- Environmental Protection Committee
- Industrial and Occupational Safety Committee
- Investment Committee

These committees:

- Define our environmental and safety strategy
- Review relevant policies, procedures and initiatives
- Receive regular progress reports on the implementation and improvement of controls

In 2021, our Environmental Protection Committee oversaw a range of issues in Kazakhstan, including the update of our Environmental Strategy (p. 60) to reflect changes to guidelines relating to Best Available Technologies (BAT) for large fossil fuel-burning facilities and to integrate new GHG emissions reduction projects.

Similarly, the Industrial and Occupational Safety Committee examined a range of issues in Kazakhstan. These included, for example, a review of potential automation options for higher-risk activities, the finalisation of our Safety Strategy (p. 33), the development of new training programmes focused on risk assessment and transport safety, the approval of new safety-related KPIs, and a review of fatal safety incidents and related mitigating actions.

### Africa

In Africa, our Safety, Health and Sustainability (SHS) performance is reported on a monthly basis to regional Executive Committee members, including ERG Africa's CEO; site General Managers; site SHS managers; and selected senior employees. Participants in this process discuss the cause of serious incidents, as well as preventative measures.

Specific attention is given to:

- The causes of incidents
- Environmental compliance
- Progress against internal/external audit reports
- Corporate social responsibility
- Artisanal and small-scale mining (ASM)
- Human rights

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

### Brazil

At BAMIN, we plan to establish a dedicated Sustainability Committee. The primary role of the Committee will be to establish a long-term strategy for the implementation of BAMIN's ESG programme, as well as to prioritise the mitigation of risks and the management of relevant topics identified via the operation's materiality assessment process.

**RISK MANAGEMENT**

Our risk management framework defines the oversight responsibilities of the Board and ExCom. Our Risk and Compliance Management Committee, as well as our Risk Management, Internal Control, Internal Audit and Compliance teams, support them in this role.

Our risk management system is designed to help ERG to identify, assess and manage risks affecting our business sustainability – as well as our most material Sustainable Development issues – in accordance with our approved levels of risk appetite. Our Group Risk Management Policy is informed by the International Standard for Risk Management (ISO 31000), and recommended ISO 31010 techniques are applied when assessing risk. In addition, business continuity management practices are applied in accordance with the ‘Good Practice Guidelines’ of the British Business Continuity Institute, as well as the recommendations of the international business continuity standard ISO 22301.

Our ongoing efforts to identify and manage risks are critical for the successful achievement of our objectives. Our key risks are regularly reviewed by our Risk and Compliance Management Committee, ExCom and the Board to ensure visibility of our overall risk exposure and to support the prioritisation of our mitigation actions.

The risk management function helps to implement these actions in a timely manner, thus ensuring the proactive mitigation of our key risks, in accordance with approved levels of risk appetite.

Our principal risks are set out in the table below. There may be additional risks yet unknown to the Group and other risks that currently are not believed to be material, which could have a significant impact on our business performance and financial results. ERG has implemented crisis management processes that include three levels: the Global Crisis Team, regional crisis teams and entity-level crisis teams.

The global geopolitical situation is currently highly volatile. In particular, military conflict between Ukraine and Russia had a material impact on financing and commodity markets in 2022. In part, this was driven by a range of sanctions against the Russian Government, various companies, major Russian banks and selected individuals. The conflict also impacted key export routes running through Ukraine, disrupting established commodity flows. ERG implemented a range of measures in response to these events, including the establishment of the above-mentioned Global Crisis Team to help coordinate our response (see p. 12 for further details). We continue to comply with all sanctions applicable to our business activities in accordance with relevant laws and regulations and our compliance policies.

**PRINCIPAL RISKS AND SELECTED MITIGATION ACTIONS**

Key risk areas	Selected mitigation actions
<p><b>Political risks</b> There are varying degrees of political stability in our host countries. We conduct our business in complex environments, which are characterised by ever-changing political dynamics and the potential for unexpected risks.</p>	<ul style="list-style-type: none"> <li>Monitoring and analysis of political and macro-economic trends in our regions of operation</li> </ul>
<p><b>Public policy risks</b> There are a number of factors that could affect our regulatory context and present risks to our business. This includes the introduction of new (or changes to existing) laws and regulations by our host governments.</p>	<ul style="list-style-type: none"> <li>Monitoring of potential legislative and regulatory changes</li> <li>Representation of our interests through professional bodies/associations</li> <li>Monitoring of compliance with our license and permit obligations</li> </ul>
<p><b>Personnel management risks</b> The fact we operate in remote locations poses risks in terms of our ability to attract personnel with the skills and experience we need, and in terms of the outflow of qualified personnel.</p>	<ul style="list-style-type: none"> <li>Maintenance of competitive remuneration packages</li> <li>Training and development to maintain the skills pipeline</li> <li>Implementation of an effective incentivisation and retention system</li> <li>Implementation of social support programmes for personnel (see ‘Social risks’ opposite)</li> </ul>
<p><b>Health, safety and security risks</b> The nature and location of our operations mean they have, in the absence of appropriate controls, the potential to affect the physical well-being and health of our employees, contractors and community members. This includes the potential for COVID-19 infections both inside and outside of work.</p>	<ul style="list-style-type: none"> <li>ISO 45001-certified occupational health and safety management systems in Kazakhstan – as well as management systems in Africa that are informed by ISO 45001 (p. 32)</li> <li>Zero Harm approach towards critical health and safety risks</li> <li>Safety management system audits</li> <li>Integration of safety targets into managers’ KPIs</li> <li>Risk assessment using Hazard Identification (HAZID) methodologies</li> <li>Dedicated programme to address COVID-19 risks in our workforce, while maintaining operational continuity (including PPE, social distancing, changed working patterns, screening, testing and other related approaches)</li> </ul>

**Key risk areas**

**Social risks**

Our business activities may negatively affect nearby communities, including in relation to their human rights (see p. 84 for an overview of ERG’s approach to human rights). Therefore, there is a risk this could affect our social licence to operate. Similarly, a failure to deliver broader social benefits to our workforce, many of whom live in relatively remote mine towns, would result in a loss of talent and skills and would make it hard to recruit new employees.

**Environmental risks**

The nature of our activities and processes mean they have, in the absence of appropriate controls, the potential to harm the environment.

**Climate change risks**

We face regulatory and market risks in relation to our GHG emissions that require the implementation of appropriate management actions.

**Compliance and governance risks**

We are subject to a range of internal and external compliance obligations, including those relating to sanctions, confidentiality, data protection, human rights, money laundering/ financing of terrorism, and bribery and corruption. Any non-compliance in this regard could result in financial and non-financial sanctions, as well as reputational damage.

**Price risks**

A substantial decline in, or volatility around, commodity prices could materially affect our business, including our financial results and our liquidity.

**Production and operational risks**

Challenging operational environments have the potential to result in business interruption, damage to physical property, unplanned downtime, asset shutdowns, and uncertainty in geological formations and mineralisation.

**Selected mitigation actions**

- Community social investment (including through our Regional Memoranda of Understanding with regional governments, aimed at promoting socio-economic development in our mining towns in Kazakhstan) (p. 57)
- Application of the Commitments Register framework (p. 55) as well as the Clean Cobalt and Copper Framework (p. 88) in the DRC
- Social attitude monitoring in our host regions, and the maintenance of community grievance mechanisms (p. 49)
- Implementation of employee housing programmes (p. 41), as well as the improvement of local urban environments (p. 52)
- ISO 14001-certified and/or aligned environmental management systems (p. 58)
- Implementation of our Environmental Strategy in Kazakhstan, including the phased implementation of advanced filter and air monitoring technology at our key operations (p. 60)
- Group-level, large-scale waste storage facility risk review process (p. 68)
- Short-term implementation of wind-power project in Kazakhstan, the longer-term development of larger-scale renewable energy projects (p. 60) and (over time) the reduction of our reliance on coal-generated power
- Implementation of energy efficiency measures at our operations in Kazakhstan, as well as ISO 50001-certified energy management systems in Kazakhstan (p. 64)
- Analysis of our carbon transition risks to better understand and manage exposure, and inform future carbon strategy (p. 63)
- Factoring-in of GHG emission implications when making long-term investment decisions, with the aim of reducing our emissions where it is commercially feasible to do so (p. 64)
- Group Compliance Programme, including training/monitoring of adherence to policies and guidance (Code of Conduct, Supplier Code of Conduct, etc.) (p. 85)
- Updated counterparty and supply chain due diligence processes, including a focus on human rights/OECD Due Diligence Guidance<sup>1</sup> (p. 80)
- Sanctions Compliance Programme (p. 82)
- Data protection programme (p. 107)
- Maintenance of whistleblower system (p. 83)
- Termination of transactions with some of the customers due to sanctions restrictions (the Group complies with the requirements relevant sanctions laws and regulations, as well as the ERG International Economic Sanctions Compliance Policy and the ERG Sanctions Compliance Programme)
- Regular review and forecast of short- and medium-term market fundamentals (consumption, supply, availability, etc.)
- Maintenance of long-term sales contracts that link commodity prices to benchmarks
- Price analysis and hedging of commodity prices
- Development of alternative sales channels
- Risk-based reliability planning and maintenance
- Maintenance of a resilient power supply system/long-term contracts with reliable suppliers
- Control of input materials, including the introduction of a raw material control system
- Implementation of business continuity management processes
- Infill drilling and ore body modelling
- Maintenance of property damage/business interruption insurance

<sup>1</sup> OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.

Key risk areas	Selected mitigation actions
<p><b>Supply chain and logistics risks</b> The Group's large supply chain exposes it to risks related to contractual non-compliance by suppliers, shortages and delays in transportation, price fluctuations and international sanctions.</p>	<ul style="list-style-type: none"> <li>• Creation and maintenance of supplementary stocks of critical items (including PPE)</li> <li>• Regular review of supplies of critical reagents/materials</li> <li>• Quality/specification/completeness controls related to the supply of goods and services</li> <li>• Long-term contracts and category strategies for key goods/ services (including formula pricing)</li> <li>• Maintenance of our own fleet of railway wagons</li> <li>• Supply chain analysis to identify the risk of losing key suppliers due to sanctions and logistical restrictions</li> </ul>
<p><b>Capital project execution risks</b> A failure to deliver major capital projects within planned timeframes, budgets and quality criteria could negatively affect long-term profitability and reputation, including our ability to attract future financing.</p>	<ul style="list-style-type: none"> <li>• Systematic, transparent and stage-gated project implementation process</li> <li>• Enhanced project due diligence, including independent project reviews prior to stage gates</li> <li>• Contingency planning based on quantitative schedule and cost risk analysis</li> <li>• The insurance of construction risks and risks relating to the delayed start-up of critical capital projects</li> <li>• Monitoring/control of project deadlines, budgets and ramp-up, etc.</li> </ul>
<p><b>Financial risks</b> Risks relating to the ability of the Group to carry out necessary operational and investment activities, and the potential for these to be undermined by credit risks, liquidity risks, foreign exchange risks and interest rate risks. Also, any deterioration in cash flow and profitability that could adversely affect our ability to meet our existing financial obligations, including debt repayments, and lack of access to commercially viable external financing.</p>	<ul style="list-style-type: none"> <li>• Maintenance of strong relationships with existing non-sanctioned lenders as well as the renegotiation and amendment of the applicable terms of certain financing arrangements and the termination of certain transactions with some of our lenders (the Group continues to comply with all sanctions applicable to our business activities in accordance with relevant laws and regulations and our International Economic Sanctions Compliance Policy and Sanctions Compliance Programme)</li> <li>• Regular updating of our cash flow plan and control of the Group's liquidity level</li> <li>• Compliance with covenants</li> <li>• Monitoring of the Group's open FX position</li> <li>• Monitoring of tax legislation compliance</li> <li>• Credit control process implementation, including the setting of counterparty credit limits and alignment control</li> <li>• Identification of new sources of financing to maintain liquidity of the Group and work on improving the debt portfolio, as well as financing opportunities and conditions (subject to current sanctions restrictions)</li> </ul>
<p><b>Information technology and information security risks</b> In the context of our digitalisation and the enhancement of our information technology (IT) landscape, we recognise that this exposes us to potential risks, including, but not limited to: loss of access to IT infrastructure; disruption of business processes including Industrial Control Systems; internal and/or external fraud; data leakage and data breaches; non-compliance with information security regulations; and other related risks.</p>	<ul style="list-style-type: none"> <li>• Vulnerability management (and patching), regular external and internal network perimeter scanning, penetration testing and 'red teaming'</li> <li>• Strengthening of infrastructure, services and operating systems to reduce vulnerabilities</li> <li>• Classification of company data and the setting of controls all company data according to its criticality</li> <li>• User awareness training</li> <li>• Continuous improvement of our detection and response capabilities by our Security Operations Centre and Information Security teams using sophisticated tooling (e.g. endpoint detection and response, web filtering, Data Leakage Prevention)</li> <li>• Improvement of our email security through training and simulated phishing campaigns for all users, as well as critical user groups (e.g. IT, executive management)</li> <li>• Implementation of identity and access management framework</li> <li>• Implementation of network security controls (e.g. encryption of structured critical data, network segmentation) in our IT and OT environments</li> <li>• Backup testing and disaster recovery exercises for all critical systems</li> </ul>

# Management approach

## OUR VALUES

**Our Values reflect how we want to do business and guide us on our journey towards true business sustainability. We apply our Values in every decision we make, at all levels of our business – from the most senior manager to the most junior employee:**

### Safety

- We put safety first
- We ensure safe labour conditions for all our employees and contractors, and continuously work to prevent any injuries occurring in the workplace

### Efficiency

- We do not work for the sake of it – we are focused on delivering results
- We manage our resources carefully to achieve results
- We prioritise the most relevant issues
- We minimise tasks that do not add value

### Responsibility

- We fulfil our obligations to our employees, their families, customers, partners, shareholders and society
- We carefully manage the resources and the environment entrusted to us
- We build a culture of mutual confidence and respect within the Group, as well as with partners and customers

### Unity

- We work together as a team of passionate people aiming to achieve our set goals
- We respect the cultural and regional traditions where we operate

### Development

- We appreciate our employees and create conditions for their development
- We efficiently implement new technologies and develop as a company
- We ensure the sustainable development of the Group

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

- ISO 45001 Occupational health and safety management system standard
- ISO 50001 Energy management system standard<sup>1</sup>
- ISO 14001 Environmental management system standard
- ISO 9001 Quality management system standard
- ISO/IEC 27001 Information security management system standard

## HOW WE MANAGE OUR PEOPLE

See 'Helping our people thrive' on p. 30

### Our commitment

We are committed to delivering a safe, attractive, productive and stable working environment for all our employees and contractors. Our commitments are supported by the requirements of our Health, Safety and Environment (HSE) Policy Statement, our Human Rights Policy, our Code of Conduct and our Supplier 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 workplace
- 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 and our Supplier Code of Conduct, as well as our collective bargaining agreements.

<sup>1</sup> Including our energy generating assets (i.e. Kazchrome, SSGPO, EEC and Aluminium of Kazakhstan with the exception of 3-Energootalyk, which was purchased in 2018) and KAS.

### Implementation of our commitments

Our overall approach to employee management is guided by our new People Strategy and is defined by our business units' Human Resources policies and frameworks.

In Kazakhstan, our Staff and Remuneration Committee, which meets on a monthly basis, 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 (other than 3-Energoortalyk) are certified to the ISO 45001 occupational health and safety management system standard. In 2021, we continued to embed our integrated, risk-based occupational and process safety management system in Kazakhstan (p. 33). In line with domestic laws, all our employees and contractors in Kazakhstan receive mandatory health and safety training as part of the induction process. In addition, employees in relevant roles undertake mandatory training focused on energy efficiency and energy management (based on the ISO 50001 management system standard), as well as on the continuous improvement of our quality, environment, health and safety management systems (based on ISO 9001, ISO 14001 and ISO 45001).

Our Metalkol RTR operation in the DRC is working towards the certification of its SHS management system to ISO 45001. At our other operations in Africa, we apply an SHS management system that is informed by ISO 45001. This is operationalised through the application of IsoMetrix software, which supports the 'plan-do-check-act' cycle by tracking SHS audits and improving central oversight and data analytics. We have also integrated IsoMetrix into a mobile application to improve the efficiency of onsite safety audits at Metalkol RTR and Frontier.

In Africa, we undertake regular internal safety audits at our Metalkol RTR, Frontier, Chambishi Metals, Comide and Boss Mining operations to assess the strength of our fatal risk protocols and related safety procedures.

At our BAMIN iron ore operation in Brazil, we are establishing an Occupational Health and Safety Management System, and have a range of controls and procedures that apply to both our employees and contractors.

## Personal health

We are committed to addressing non-occupational diseases that can impact the health of our employees. In this context, we implement a range of initiatives to support the personal health of employees across the Group.

For information on how we managed the impact of COVID-19 on our workforce, see p. 33.

### Kazakhstan

We provide free medical services to employees at our dedicated medical centre in Kazakhstan – including the provision of medical advice for those suffering with COVID-19.

In addition, we provide enhanced employee healthcare cover (in excess of what is required by law). This includes dental care, additional medication allowance and certain preventative health treatments. In 2021, we invested US\$5 million in these programmes (2020: US\$6.6 million).

During the year, we continued to implement our preventative examination programme, which is now centrally managed through our medical centre. This includes diagnostic examinations for detecting coronary heart disease in men over 40 and screening for breast cancer in women over 40. We also launched a remote advisory service that provides rapid medical advice via telephone consultations with healthcare specialists.

For information on our physical activity programmes and employee sports events in Kazakhstan, see p. 41.

### Africa

In Africa, the health and well-being of all employees is addressed through a range of company initiatives. This includes the provision of free medical support to employees and their families. In addition, we:

- Implement malaria awareness and prevention measures for employees at Metalkol RTR and Frontier, including spraying and fumigation
- Provide antenatal healthcare at Metalkol RTR and Boss Mining
- Carry out HIV/AIDS awareness raising and prevention activities at Boss Mining, as well as voluntary screening and anti-retroviral treatment (in partnership with the Government)
- Engage with the local government health department near Metalkol RTR, with a focus on HIV/AIDS awareness raising, prevention and treatment
- Participate in government vaccination campaigns

At Metalkol RTR, we have entered into agreements with two clinics in Kolwezi and Lubumbashi to provide enhanced healthcare to our employees and their families. In 2021, we also ran a breast cancer awareness campaign at Metalkol RTR, and offered screening for early detection and prevention. At Frontier, we offer medical support to employees and their families through an onsite clinic and through affiliated local hospitals.

At our corporate office in Johannesburg, we operate an employee wellness programme, which includes access to free psychological counselling and life management support services.

### Brazil

In Brazil, we provide a partially funded employee health insurance plan (which includes cover for COVID-19 treatment), as well as fully funded dental care, for all employees and their families. In 2021, we expanded the scope of our health insurance plan to include free gym memberships, nutritional guidance, online counselling and financial management advice.

## Emergency preparedness

Emergency preparedness plans have been rolled out across our operations in Kazakhstan. We conduct regular emergency scenario exercises in line with these plans, as well as periodic risk assessments. This helps support the competencies of our emergency response teams, identify additional training needs and ensure our response equipment is fit for purpose.

In Africa, we maintain an emergency management system procedure which forms part of our integrated SHS management system.

At our BAMIN iron ore operation in Brazil, we have implemented an Emergency Response Programme. Under the programme, we have established an emergency response team who conduct emergency scenario and crisis response planning, as well as related employee training.

## HOW WE MANAGE COMMUNITY DEVELOPMENT AND WELL-BEING

See 'Community development and well-being' on p. 44

### Our commitments

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

- Healthcare
- Safety and environmental programmes
- Infrastructure and social welfare
- Education and support for youth initiatives
- Sports and the promotion of healthy lifestyles
- Preservation of cultural heritage
- Economic development, as well as community training and development programmes

- Support for our Human Rights Policy (e.g. external programmes focused on the elimination of child labour)

This is underpinned by close, ongoing community engagement to help us align our programmes with community concerns, needs and aspirations (p. 46-49).

We are equally committed to minimising our negative impacts on host communities. In line with our 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
- Respecting the rights of Indigenous Peoples, as defined by applicable national and emerging international standards

### Implementation of our commitments

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 CSI spending.

#### Kazakhstan

In Kazakhstan, our CSI takes place through two channels:

- **Direct social investment:** Targeted at maximising our positive impacts and minimising our negative impacts on local communities
- **Regional memoranda of understanding (Regional MoUs):** Negotiated strategic partnerships with regional authorities targeted at the

broader socio-economic development of local communities (some of which are undertaken as part of our licensing obligations)

Our regional development programme (p. 50) helps identify and address a range of socio-economic priorities (which are funded via our Regional MoUs).

Finally, we implement a range of feedback mechanisms to help local communities in our mining towns (including our employees and their families) to define their own development priorities. In doing so, we also help ensure that our CSI approach remains responsive to the views of local stakeholders. Most notably, this includes our Tugan Qala ('Home Town') and School of Active Citizens programmes (p. 51).

#### Africa

In Africa, our integrated SHS management system provides a structured framework to (amongst other things):

- 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

In addition, we apply site-based community grievance procedures across our Africa operations. Local communities are made aware of our site-based grievance mechanisms through our engagement processes. We provide multiple channels to raise grievances, including through our community liaison officers and via community-based 'drop off points'.

### Participatory Rural Appraisals in Africa

In 2017, we successfully completed Participatory Rural Appraisals (PRAs) with 19 local communities in the DRC. The PRA process helps local communities to identify their own development priorities – and supports them in the delivery of Community Action Plans (CAPs) to address these needs. The identified priorities established through the PRAs – as well as those established through our Environmental and Social Impact Assessments (ESIAs) – have been integrated into the Commitments Register process (see ‘Community social investment’ on p. 50).

We also manage ASM activity at our Metalkol RTR operation in the DRC<sup>1</sup> through our dedicated ASM procedures and ASM management plans. This includes related ASM procedures, such as those concerning the responsible management of ASM activities on our concessions (where it takes place), to ensure our operations do not purchase or profit from ASM-sourced ore.

Any potential grievances relating to ASM activities are managed through our above-mentioned community grievance procedures. In support of this, we maintain ongoing and constructive dialogue with local communities (including those engaged in ASM), the Government and other mining companies. At Metalkol RTR, we have also set up a cross-departmental Joint ASM Working Group. This group meets regularly and is responsible for reviewing and assessing ASM-related information, risks and incidents – and developing recommendations for remediation and/or mitigation measures.

During the year, we reviewed and revised our SHS, ASM and human rights policies and procedures at Metalkol RTR to ensure they remain fit for purpose as the operation transitions to the full production phase.

#### HOW WE MANAGE ENVIRONMENTAL STEWARDSHIP

See ‘Environmental stewardship’ on p. 58

#### 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 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 considered in business planning and decision-making

In Kazakhstan, all of our operations (other than 3-Energoortalyk and ERG Service) are certified to the ISO 14001 environmental management system standard. In addition, our Environmental Strategy in Kazakhstan (p. 60) is bringing our environmental practices in line with international best practice and is supporting our compliance with Kazakhstan’s new Environmental Code.

Our Group HSE policy is supplemented by ERG Africa’s SHS Policy, under which we have committed 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 the degradation of ecosystems
- Comply with and, where appropriate, exceed applicable laws and regulations in the countries in which we operate. This includes working towards full compliance with applicable international good practice guidelines, such as the IFC Performance Standards and the relevant SHS components of the OECD Guidelines for Multinational Enterprises

In 2021, BAMIN continued to implement an Environmental Management System. The system supports the proactive management of all environmental license requirements, as well as relevant environmental and social management plans. The system also integrates an improved Geographic Information Systems platform, which enhances BAMIN’s management effectiveness by visualising spatial data. We are integrating additional environmental specialists into the BAMIN team (and engaging specialist consultants) to facilitate BAMIN’s development and planned expansion.

#### Implementation of our commitments

All of our operations in Kazakhstan (other than 3-Energoortalyk and ERG Service) are certified to the ISO 14001 environmental management system standard.<sup>2</sup>

In 2021, we enhanced our management systems in Kazakhstan by initiating the development of:

- A new internal framework to support our compliance with the new Environmental Code, with a focus on integrated audits and guidance around best available technologies
- Processes and guidance regarding site closure, remediation and land-return

In addition, we established environmental criteria to be applied to supplier and contractor evaluation/selection.

In Africa, we are committed to striving to continuously improve our environmental performance and to work towards compliance with relevant international standards. Our existing SHS management system (embodied in our SHS Management Manual and associated procedures) is informed by the ISO 14001 environmental management system standard, with plans to achieve certification.<sup>3</sup>

Our active sites in the DRC are subject to legally mandated, third-party ESIs and associated management plans. These require regular monitoring of our emissions to air (such as particulates, SO<sub>x</sub><sup>4</sup> and NO<sub>x</sub><sup>5</sup>) and water (such as suspended solids, dissolved solids and heavy metals).

#### 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.

In Kazakhstan, for example, this included:

- Live, public disclosure of air quality performance data from Aluminium of Kazakhstan’s Pavlodar Aluminium Plant and Power Station
- Participation in high profile public events, including COP26 (where we sponsored the Central Asian pavilion), the first ECOJER<sup>6</sup> international climate congress and the Seymartec Ecology International Forum
- Meetings with environmental NGOs in both Aktobe and Pavlodar to present our Environmental Strategy and answer queries – as well as multiple community engagement events in Pavlodar, which included a focus on biodiversity, conservation, tree planting and awareness-raising with respect to our environmental management programmes
- Broader community engagement initiatives in Pavlodar, including those focused on environmental competitions for university students, educational initiatives for kindergartens, the publishing of environmental data (including through the Pavlodar Aarhus Centre), tree planting, ecological training and other related activities

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

#### Management of large-scale waste storage facilities

Our waste rock, tailing, sludge and ash deposits are managed in line with our established environmental management systems and local regulations. Particular focus is placed on preventing groundwater and surface water pollution, managing fly ash/dust and ensuring the physical integrity of our large-scale waste storage facilities. We maintain liquidation funds to ensure the safe closure and rehabilitation of facilities when they reach their end of life.

For further information, see p. 68.

#### Waste management

In accordance with the Environmental Code, industrial waste generated by our operations in Kazakhstan is divided into hazardous and non-hazardous waste (a previous “green”, “amber” and “red” waste classification system ceased to operate in 2021). The collection, transportation, processing and/or disposal of hazardous waste is usually carried out by specialist third-party organisations. We check that contractors have the necessary production sites, equipment, transportation, qualified personnel and environmental permits. In addition, a procedure is defined for the processing or recycling of the waste, as well as the use and disposal of waste by contractors.

In Africa, Metalkol RTR maintains a Solid Waste Management Plan, which includes the responsible collection and disposal of hydrocarbon wastes by a contractor, and the safe incineration of hazardous wastes. We are planning to establish a comprehensive waste management programme across all of ERG Africa.

In Brazil, we maintain a Solid Waste Management Plan. Key areas of focus include:

- Waste identification, generation reduction, segregation and conditioning
- Waste storage, collection, transportation and disposal by the operation and/or with the involvement of third-party organisations (where required)

#### HOW WE MANAGE OUR BROADER ROLE IN SOCIETY

See ‘Our broader role in society’ on p. 70

#### Compliance policies

Our policy framework is based on our Values, Code of Conduct, policies and procedures, and is subject to regular review.

Relevant Group policies include, but are not limited to:

- **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 our behalf to comply with applicable laws and regulations, as well as our policies and Code of Conduct

- **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. For further information on how we manage human rights and responsible value chains, see p. 84 and p. 86
- **Competition Compliance Policy:** This commits us to not engaging in or tolerating any form of conduct that fails to comply with applicable competition laws
- **CSR Projects and Sponsorship Policy:** This sets out the process, criteria and approvals necessary for ERG to commit to and manage CSR projects or sponsorship arrangements
- **International Economic Sanctions Compliance Policy:** This commits us to avoiding breaching international economic sanctions imposed by relevant governments, as well as supranational or international organisations
- **Data Protection Policy:** This commits us to complying with all data protection and privacy legislation and regulations applicable to the jurisdictions in which we operate
- **Group Tax Policy:** This sets out our commitments with respect to our approach to tax compliance

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
- Fair employment practices
- Health, safety and environment
- International trade, export controls, and financial and political sanctions
- Human rights
- Political and non-political contributions, donations and sponsorships by ERG

Similarly, our Group Supplier Code of Conduct sets out our expectations in relation to our suppliers and contractors (for further details, see p. 86).

1 ASM activity is not present in the vicinity of our Frontier operation due to the geological nature of the deposit.

2 Note that 3-Energoortalyk was purchased in 2018. ERG Service provides repair and maintenance services to ERG’s sites in Kazakhstan.

3 We had planned to certify Metalkol RTR to the standard in 2021, but this process was delayed as a result of COVID-19 induced disruptions.

4 Sulphur oxides.

5 Nitrogen oxides.

6 Supported by the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan.

Compliance risks

COMPLIANCE RISKS IN 2021

International sanctions (national and extraterritorial)

In 2021 and into 2022, we saw elevated levels of external risk, primarily relating to the conflict between Russia and Ukraine, as well as sanctions in relation to Belarus. There have also been ongoing, Sino-American tensions, international scrutiny of China's domestic affairs and the use of international human rights sanctions.

Data protection

This includes compliance with the EU General Data Protection Regulation (GDPR), as well as related regulations in Brazil, Kazakhstan, Russia, South Africa and, most recently, China (where a Personal Information Protection Law has been introduced).

Anti-money laundering (AML)

Some jurisdictions in which we operate pose (according to the Basel Institute on Governance) relatively high AML risks. In addition, some activities we are involved in (including digital activities) are closely regulated.

Furthermore, we are subject to EU Directive 2018/843 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing (AML 5).

Human rights

Potential areas of risk in this regard relate mainly to ERG's responsible mining commitments, downstream demand for assurance and the presence of ASM on or near its sites in Africa (particularly with respect to cobalt and copper mining in the DRC).

Anti-Bribery and Corruption (ABC)

A number of jurisdictions in which we operate are assessed by Transparency International as posing relatively high levels of exposure to corruption.

Areas that are more exposed to such risks include procurement, interaction with government officials, interaction with agents, CSI activities, giving/receiving gifts, business travel and entertainment.

Compliance governance structure

Our compliance efforts are driven by the Board of Managers' Compliance Committee, which is responsible for:

- Oversight and approval of our Group Compliance Programme, policies, systems and controls
- Monitoring of the effectiveness of our Compliance function

They are supported in this role by our executive-level Risk and Compliance Management Committee, which analyses compliance trends, risks and specific cases, and links compliance issues and activities to the Group's 2025 Strategy. The Group Head of Compliance reports to the CEO and the Board of Managers' Compliance Committee (p. 94). Our senior managers are kept informed of key risk areas on a frequent basis.

The Chair of the Compliance Committee continues to participate in the Partnering Against Corruption Initiative's (PACI) 'The Future of Trust and Integrity' project.

Tax and payment transparency

Our Group Tax Policy commits us to (amongst other things) complying not only with the letter but also the spirit of all local laws. In terms of transfer pricing, we conduct all internal transactions on an arm's length basis and determine pricing in line with the nature of the economic functions performed by each company (including capital use). Furthermore, we follow the methods and principles set out in the OECD Transfer Pricing Guidelines and retain relevant documentation relating to our intercompany transactions to demonstrate compliance with the same. The Board of Managers has approved the Group Tax Policy. The Group Tax Department reviews the Tax Policy on an annual basis and re-approves it with the Board of Managers, if necessary.

Our Group Tax Code of Conduct includes detailed guidance with respect to tax reporting, transfer pricing, tax dispute resolution and tax risk management (amongst other issues) – as well as our tax assurance process. The internal audit function will report non-compliance to the Tax Code of Conduct to the Audit Committee and Board of Managers. In case of such findings, the Group CFO should be notified with non-compliance and designate appropriate course of remedial action.

We submit Extractive Industries Transparency Initiative (EITI) reports in Kazakhstan, DRC and Zambia as required.<sup>1</sup> Furthermore, we file the following with the Luxembourg authorities:

- Report on Payments to Governments under the EU Accounting Directive (2013/34/EU)<sup>2</sup>
- OECD Country-by-Country Report under OECD BEPS Action 13

EXTRACTIVE INDUSTRIES TRANSPARENCY INITIATIVE (EITI) STATUS OF HOST COUNTRIES

Actual/potential mining locations	EITI status (assessment)
Brazil	Non-participant
DRC	Participant (meaningful progress)
Kazakhstan	Participant (meaningful progress)
Mali	Participant (meaningful progress)
Mozambique	Participant (meaningful progress)
South Africa	Non-participant
Zambia	Participant (high progress)
Zimbabwe	Non-participant

<sup>1</sup> For more information of EITI status in our other countries of presence, see <https://eiti.org/countries>.  
<sup>2</sup> EU, Directive 2013/34/EU: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013L0034>.

# What are ERG's most material issues and why?

## OVERVIEW OF 2021/2022 MATERIALITY ASSESSMENT PROCESS



Material issue	Relevance to ERG	Relevance to stakeholders	Relevant UN SDGs <sup>1</sup>
<b>Preparing our business for the future</b> <b>Growth and asset maintenance</b> Relevant 2025 strategy goal Balanced portfolio growth	• Replenishment and growth of Mineral Resources and Ore Reserves, maintenance/renewal of existing projects and access to new commercial opportunities	• Establishment of new projects (with all attendant positive and/or negative impacts), the continued commercial viability of existing projects and the maintenance of long-term value generation and distribution	8 DECENT WORK AND ECONOMIC GROWTH, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
<b>Technology, efficiency and digitalisation</b> Relevant 2025 strategy goal Efficiency in all that we do	• Support of short-, medium- and long-term business sustainability – including through reduced costs, enhanced competitiveness and higher levels of productivity	• Impact on returns, the protection of shareholder/finance provider value and the sustainability of economic value distribution (see below)	8 DECENT WORK AND ECONOMIC GROWTH, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
<b>Market conditions and financial performance</b> Relevant 2025 strategy goal Financial stability	• Ongoing ability of the business to successfully navigate external shocks and continue as a successful going concern	• Continued ability to generate and distribute value, as well as the settlement of debts and payment of other financial liabilities and commitments	N/A
<b>Helping our people thrive</b> <b>Health &amp; safety, including COVID-19</b> Relevant 2025 strategy goal Happy and professional team	• The right thing to do – as well as supporting the maintenance of our operational continuity and efficiency, and the motivation of our employees	• Protection of employees and contractors from occupational injuries, as well as occupational illnesses	3 GOOD HEALTH AND WELL-BEING, 8 DECENT WORK AND ECONOMIC GROWTH
<b>Talent attraction, development and retention</b> Relevant 2025 strategy goal Happy and professional team	• Maintenance of our ability to generate value and to transform our business by attracting, developing, motivating and retaining high quality, skilled employees	• The professional advancement of employees – and their ability to reach their full socio-economic, technical and personal potential	4 QUALITY EDUCATION, 8 DECENT WORK AND ECONOMIC GROWTH
<b>Employee relations</b> Relevant 2025 strategy goal Happy and professional team	• Nurturing of a productive, positive workplace culture that directly supports our productivity, efficiency and profitability	• Delivery of positive working conditions, fair pay and benefits, and a responsive management culture – as well as the meeting of the social needs and living standards of our employees and their families (many of whom reside in remote communities in Kazakhstan that are highly reliant on ERG's activities)	8 DECENT WORK AND ECONOMIC GROWTH, 11 AFFORDABLE AND CLEAN ENERGY

<sup>1</sup> For details on relevant UN Targets, see 109-110.

Material issue	Relevance to ERG	Relevance to stakeholders	Relevant UN SDGs <sup>1</sup>
<b>Community development and well-being</b>			
<b>Community impacts</b> Relevant 2025 strategy goal Sustainable development of our host regions	<ul style="list-style-type: none"> <li>Responsible management of ERG's impacts, as well as the maintenance of constructive stakeholder relations</li> </ul>	<ul style="list-style-type: none"> <li>The delivery of positive impacts by ERG's operations, as well as the need to ensure mining does not undermine the interests of local people</li> </ul>	
<b>Community social investment</b> Relevant 2025 strategy goal Sustainable development of our host regions	<ul style="list-style-type: none"> <li>Maintenance of our social licence to operate and the delivery of positive living standards for our workers and local community members in our local towns – many of which have historically grown around our operations. This is in addition to the fulfilment of legal obligations relating to mandatory socio-economic development contributions required under our operating licenses</li> </ul>	<ul style="list-style-type: none"> <li>The addressing of socio-economic challenges in local communities in Kazakhstan (which are remote, economically undiversified and rely on ERG for employment and public services), as well as in Africa and Brazil (where many local communities live in conditions of poverty, with limited access to formal employment opportunities)</li> <li>The improvement of socio-economic conditions for artisanal and small-scale mining communities and the transitioning of children out of artisanal mining activity</li> </ul>	
<b>Environmental stewardship</b>			
<b>Managing impacts on air and water</b> Relevant 2025 strategy goal Sustainable development of our host regions	<ul style="list-style-type: none"> <li>Legal compliance and the maintenance of our social licence to operate through the avoidance/minimisation of our negative environmental impacts</li> </ul>	<ul style="list-style-type: none"> <li>The potential for ERG activities (including mining, smelting, refining, power generation and the operation of railway systems) to result in discharges to the environment that result in possible human and ecological harm</li> </ul>	
<b>Energy and climate change</b> Relevant 2025 strategy goal Sustainable development of our host regions	<ul style="list-style-type: none"> <li>Compliance with current and/or future emissions regulations, minimisation of future carbon tax liabilities, reduced costs (associated with energy consumption) and the maintenance of our broader social licence to operate</li> </ul>	<ul style="list-style-type: none"> <li>The potential for ERG activities to contribute (over the long-term) to climate change and related negative environmental and socio-economic impacts</li> </ul>	
<b>Waste recycling and management, including tailings</b> Relevant 2025 strategy goal Sustainable development of our host regions	<ul style="list-style-type: none"> <li>Compliance and operational requirements around the management of large volumes of waste (including waste rock, tailings, sludges and industrial waste) – plus potential commercial opportunities around waste processing</li> </ul>	<ul style="list-style-type: none"> <li>The need to responsibly manage waste that could otherwise result in ground, water or air contamination – and/or serious physical impacts with human and/or environmental consequences</li> </ul>	
<b>Our broader role in society</b>			
<b>Value generation and distribution</b> Relevant 2025 strategy goal Sustainable development of our host regions	<ul style="list-style-type: none"> <li>The need to generate revenue and profits in order to sustain ERG as a going concern – and achieve future growth</li> </ul>	<ul style="list-style-type: none"> <li>The positive impact of direct payments to suppliers, employees, capital providers, government and communities – including indirect and induced economic impacts</li> </ul>	
<b>Ethics and compliance</b> Relevant 2025 strategy goal Compliance is a cross-cutting issue that is relevant to all aspects of our 2025 Strategy	<ul style="list-style-type: none"> <li>Compliance with relevant laws, the maintenance of the trust of our partners and the protection of our reputation – as well as the enhancement of our operating environments</li> </ul>	<ul style="list-style-type: none"> <li>Preventing the potential undermining of legitimate economic, social, political and business interests, as well as the undermining of the broader governance environment – plus the avoidance of association with such behaviour and related reputational harm</li> </ul>	
<b>Responsible value chains</b> Relevant 2025 strategy goal Sustainable development of our host regions	<ul style="list-style-type: none"> <li>The avoidance of reputational harm as a result of any indirect negative impacts that may take place in ERG's supply chain – plus the delivery of assurance to customers and other downstream actors that ERG's products are responsibly sourced</li> </ul>	<ul style="list-style-type: none"> <li>The need to ensure workers and other value chain stakeholders are not negatively impacted – plus the need to avoid reputational harm as a result of any indirect negative impacts (including those relating to human rights) that may take place as a result of company activities and/or relationships</li> </ul>	
<b>Government relations and policy</b> Relevant 2025 strategy goal Government relations and policy is a cross-cutting issue that is relevant to all aspects of our 2025 Strategy	<ul style="list-style-type: none"> <li>The potential impact of governments on ERG's revenue generation and profitability via public policy, taxation legislation and regulation – as well as the awarding of new licences. In addition, the status of the Government of the Republic of Kazakhstan as a 40% shareholder in ERG – as well as the DRC Government's interests in a number of ERG subsidiaries</li> </ul>	<ul style="list-style-type: none"> <li>The need for transparent and constructive interactions between business and government to avoid the undermining of the legitimate interests of other stakeholders – and to support balanced, well-informed public policy</li> </ul>	

1 For details on relevant UN Targets, see 109-110.

# Stakeholder engagement overview

We select stakeholders for engagement on the basis of:

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

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

- Understand the impact we have on others

- 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 these are influenced by our own activities and impacts
- Identify and support partnerships
- Improve site-level conditions

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)

Key examples of our stakeholder engagement activities are provided in the table below.

## STAKEHOLDER DETAILS

Category and stakeholder group	Engagement channel	Issues of interest	Relevant report section
<b>Commercial</b>			
<b>Customers</b>	<ul style="list-style-type: none"> <li>• Interaction relating to product development and quality assurance</li> <li>• Responding to customer surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Supply stability/predictability, including COVID-19-related disruption</li> <li>• Product specifications and/or delivery terms, including packaging</li> <li>• Accuracy of assays and weights, as well as the dispute/claims process</li> <li>• Product quality/pricing</li> <li>• Responsible production</li> <li>• Broader ESG assurance</li> <li>• Sanctions compliance/prompt and transparent response to KYC enquiries</li> </ul>	Introduction, 1, 5
<b>Suppliers, business partners and contractors</b>	<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> <li>• Group Supplier Code of Conduct</li> </ul>	<ul style="list-style-type: none"> <li>• Contract stability</li> <li>• Legal/regulatory compliance, KYC and onboarding process</li> <li>• Transaction efficiency</li> <li>• Health and safety, anti-bribery and corruption, human rights and labour standards</li> <li>• Local content opportunities and local supplier capabilities</li> <li>• Responsible production</li> <li>• Broader ESG assurance</li> </ul>	Introduction, 5
<b>Financial</b>			
<b>Shareholders</b>	<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, including financial resilience and ESG integration</li> <li>• Government of Kazakhstan policy and development priorities</li> <li>• Dividend policy</li> <li>• Corporate reputation</li> <li>• Capital spending</li> <li>• Geopolitical risk</li> </ul>	Introduction, 1, 5
<b>Lenders</b>		<ul style="list-style-type: none"> <li>• Successful project execution</li> <li>• Borrower risks, including geopolitical risk</li> <li>• Legal compliance</li> <li>• Credit and debt arrangements</li> <li>• Climate change and ESG performance</li> <li>• Sanctions compliance</li> </ul>	Introduction, 1, 4, 5

APPENDIX CONTINUED

Category and stakeholder group	Engagement channel	Issues of interest	Relevant report section
<b>Government</b>			
<b>National governments</b>	<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. Regional memoranda of understanding in Kazakhstan)</li> <li>Implementation of projects for socio-economic development</li> </ul>	<ul style="list-style-type: none"> <li>National socio-economic development</li> <li>Kazakhstan's new Environmental Code and integrated permitting</li> <li>Climate change</li> <li>Development of domestic skills and capabilities</li> <li>Legal/fiscal regime for mining in the DRC</li> <li>COVID-19 response coordination</li> <li>Tax and royalty payments</li> </ul>	1, 2, 3, 4, 5
<b>Regional governments</b>		<ul style="list-style-type: none"> <li>Regional socio-economic development, including regional development programme in Kazakhstan</li> </ul>	3
<b>Regulatory bodies</b>		<ul style="list-style-type: none"> <li>Environmental impacts, including emissions to air</li> <li>Workplace fatalities and injuries</li> </ul>	2, 4
<b>Society</b>			
<b>Local communities</b>	<ul style="list-style-type: none"> <li>Public hearings and meetings</li> <li>Socio-economic surveys (including Community Town and ERG Town)</li> <li>CSI projects</li> <li>Information in local media</li> <li>Participatory Rural Appraisals</li> <li>Educational institutions</li> </ul>	<ul style="list-style-type: none"> <li>Employment opportunities and job creation</li> <li>Local living conditions and infrastructure</li> <li>Local procurement and enterprise promotion</li> <li>Emissions to air and access to water</li> <li>Site-related traffic and noise</li> <li>Security and ASM in the DRC</li> <li>Investment in educational institutions and capacity building for teachers and students, as well as the meeting of market needs</li> </ul>	2, 3, 4, 5
<b>NGOs, civil society organisations and media</b>	<ul style="list-style-type: none"> <li>Membership in industry sector initiatives</li> <li>Multi-stakeholder initiatives and partnerships</li> <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>Climate change</li> <li>National and regional socio-economic development</li> <li>Conservation, biodiversity and environmental education</li> <li>Information access and transparency</li> <li>Business ethics</li> </ul>	3, 4, 5
<b>Broader society</b>		<ul style="list-style-type: none"> <li>Climate change and the energy transition</li> <li>Responsible cobalt value chains</li> <li>Circular economy</li> <li>Environmental impacts</li> <li>Employment generation</li> </ul>	Introduction, 1, 4, 5
<b>Workforce</b>			
<b>Employees and their representatives</b>	<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> </ul>	<ul style="list-style-type: none"> <li>Occupational health and safety</li> <li>Implementation of COVID-19 measures</li> <li>Psychological health and well-being</li> <li>Training and development</li> <li>Remuneration and career opportunities</li> <li>External living conditions for employees and families</li> <li>Organisational change</li> <li>Union member interests</li> </ul>	2, 3
<b>Senior managers</b>	<ul style="list-style-type: none"> <li>Collective bargaining agreements and union engagement</li> <li>Accident investigations</li> </ul>	<ul style="list-style-type: none"> <li>Skills development</li> <li>Professional development</li> </ul>	2

# UN SDG mapping

Report content		UN SDG mapping	
Chapter	Section	Relevant UN SDGs	Relevant UN Targets <sup>1</sup>
<b>Business</b>	Growth and asset maintenance		8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation
			9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable
	Technology, efficiency and digitalisation		8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation
			9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries
<b>People</b>	Health and safety, including COVID-19		3.8 Achieve universal health coverage
			8.8 Protect labour rights and promote safe and secure working environments for all workers
	Talent attraction, development and retention		4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
			8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training
	Employee relations		8.8 Protect labour rights and promote safe and secure working environments for all workers
			11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
<b>Community</b>	Community impacts		3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
			6.3 By 2020, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials
			12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle
	Community social investment		1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty
			2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers
			4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
			6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all 6.8 Support and strengthen the participation of local communities in improving water and sanitation management
			8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises
			11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

<sup>1</sup> Note that all references to associated UN targets are for the contextualisation of our impacts, risks, opportunities and performance only – and do not represent formal corporate targets.



Report content		UN SDG mapping	
Chapter	Section	Relevant UN SDGs	Relevant UN Targets <sup>1</sup>
Environment	Managing impacts on air and water		3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
			6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials
			8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation
			9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable
			12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle
	Energy and climate change		7.2 By 2030, increase substantially the share of renewable energy in the global energy mix 7.3 By 2030, double the global rate of improvement in energy efficiency
			8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation
			9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable
			12.2 Achieve the sustainable management and efficient use of natural resources
			13.2 Integrate climate change measures into national policies, strategies and planning
Waste recycling and management, including tailings		12.2 Achieve the sustainable management and efficient use of natural resources 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	
		9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product	
		8.7 Eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour	
Society	Value generation and distribution		16.5 Substantially reduce corruption and bribery in all their forms
			8.7 Eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour
	Ethics and compliance		8.8 Protect labour rights and promote safe and secure working environments for all workers
			16.5 Substantially reduce corruption and bribery in all their forms
	Responsible value chains		17.16 Enhance the global partnership for sustainable development
		8.7 Eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour	
		16.5 Substantially reduce corruption and bribery in all their forms	
Government relations and policy		16.5 Substantially reduce corruption and bribery in all their forms	
		17.16 Enhance the global partnership for sustainable development 17.17 Encourage and promote effective public, public-private and civil society partnerships	

<sup>1</sup> Note that all references to associated UN targets are for the contextualisation of our impacts, risks, opportunities and performance only – and do not represent formal corporate targets.

## Key examples of participation in external initiatives

Level of engagement	Organisation
<b>Group</b>	<p>ERG participates in the following external initiatives:</p> <ul style="list-style-type: none"> <li>Global Battery Alliance (founding member and chair of supervisory council and board of directors) and its related initiatives, the Cobalt Action Partnership<sup>2</sup> (participant on steering committee) and the Battery Passport (participant on steering committee)</li> <li>World Economic Forum (Strategic Partner Associate), including: <ul style="list-style-type: none"> <li>Partnering Against Corruption Initiative</li> <li>Mining and Metals Governors</li> <li>Mission Possible Platform: Aluminium for Climate</li> <li>Accelerating Clean Hydrogen Initiative</li> <li>Coal to Renewables Initiative</li> </ul> </li> <li>Responsible Minerals Initiative (RMI) (In August 2022, RMI determined that Metalkol RTR was in conformance with the RMAP Standards for Cobalt Due Diligence Standard (2018) and Joint Due Diligence Standard for Copper, Lead, Nickel and Zinc (2021))</li> <li>Cobalt Institute (member)</li> <li>Re Source project (founding member)</li> <li>Fund for the Prevention of Child Labour in Mining Communities (co-founder and contributor)</li> <li>International Chromium Development Association (member)</li> <li>UN Global Compact (participant)</li> <li>Sustainable Markets Initiative (task force champion), as well as the related Terra Carta (signatory)</li> </ul> <p>In addition, ERG is committed to adherence with the principles of the following external initiatives:</p> <ul style="list-style-type: none"> <li><b>Extractive Industries Transparency Initiative (EITI):</b> We continue to engage with the EITI processes in our main countries of operation (DRC, Kazakhstan and Zambia)</li> <li><b>UN Guiding Principles on Business and Human Rights:</b> The Principles are embedded within our Human Rights Policy, Code of Conduct and Supplier Code of Conduct</li> <li><b>OECD Due Diligence Guidance on Responsible Supply Chains of Minerals:</b> Our Clean Cobalt and Copper Framework aims to ensure our compliance with the Guidance, which is also embedded within our Code of Conduct and Supplier Code of Conduct</li> <li><b>Voluntary Principles on Security and Human Rights:</b> The Principles are embedded within our Code of Conduct and Supplier Code of Conduct</li> </ul>
<b>Kazakhstan</b>	<ul style="list-style-type: none"> <li>Eurasian Industrial Association</li> <li>Association of Mining and Metallurgical Enterprises</li> <li>National Chamber of Entrepreneurs of Kazakhstan 'Atameken'</li> <li>Association of Taxpayers of Kazakhstan</li> <li>Kazakhstan Foreign Investors' Council</li> <li>Kazakhstan Business Council for Sustainable Development</li> <li>Kazakhstan Association of Regional Environmental Initiatives 'ECOJER'</li> </ul>
<b>DRC and Zambia</b>	<ul style="list-style-type: none"> <li>Cobalt Institute (UK – Board representation)</li> <li>Chamber of Mines of the DRC</li> <li>Zambia Chamber of Mines</li> <li>Zambia Institute of Human Resource Management</li> </ul>
<b>Brazil</b>	<ul style="list-style-type: none"> <li>Brazilian Mining Institute</li> <li>Bahia Ports User Association</li> <li>Federation of Industries of the State of Bahia</li> <li>Agency for Technological Development of the Brazilian Mining Industry</li> <li>Brazilian Center for International Relations</li> <li>National Association of Railway Transporters (ANTF)</li> <li>Women in Mining Brazil</li> <li>Syndicate of Extractive Industries for Metals, Precious and Noble Metals, Precious and Semiprecious Stones, and Magnesite in the State of Bahia</li> <li>Brazilian Association of Business Communication (ABERJE)</li> </ul>

<sup>2</sup> The Cobalt Action Partnership concluded in December 2021.

## Key operating assets

Commodity/division	Number of key operating assets	Name of key operating asset	Principal activity	Country of operation
<b>Ferroalloys</b>	4	Aksu Ferroalloys Plant (TNC Kazchrome JSC)	Metals Processing	Kazakhstan
		Aktobe Ferroalloys Plant (TNC Kazchrome JSC)	Metals Processing	Kazakhstan
		Donskoy Gornoobogatitely plant <sup>1</sup> (TNC Kazchrome JSC)	Mining and processing	Kazakhstan
		Kazmarganets (TNC Kazchrome JSC)	Mining and processing	Kazakhstan
<b>Iron ore</b>	3	Sokolovsko Sarbaiskoye Ore Mining and Processing Association JSC <sup>2</sup>	Mining and processing	Kazakhstan
		Kachary Ruda JSC	Mining and processing	Kazakhstan
		Bahia Mineração S/A <sup>3</sup>	Mining and processing	Brazil
<b>Alumina and Aluminium</b>	4	Torgayskoye Mining Unit (Aluminium of Kazakhstan JSC)	Mining and processing	Kazakhstan
		Krasno-Oktyabrskoye Mining Unit (Aluminium of Kazakhstan JSC)	Mining and processing	Kazakhstan
		Pavlodar Aluminium Plant (Aluminium of Kazakhstan JSC)	Metals Processing	Kazakhstan
		Kazakhstan Aluminium Smelter JSC <sup>4</sup>	Metals Processing	Kazakhstan
<b>Cobalt, Copper and Other Non-ferrous<sup>5</sup></b>	6	Metalkol SA <sup>6</sup>	Mining and processing	DRC
		Frontier SA	Mining and processing	DRC
		Chambishi Metals PLC <sup>7</sup>	Metals Processing	Zambia
		Boss Mining SAS	Mining and processing	DRC
		Todal Mining (Pvt) Limited	Mineral exploration	Zimbabwe
Sabot Management Limited	Transportation	Central and Southern Africa <sup>8</sup>		
<b>Energy</b>	4	Vostochny Open Pit Coal Mine (EEC JCS <sup>9</sup> )	Mining	Kazakhstan
		Aksu Power Plant (EEC JSC)	Power generation	Kazakhstan
		Shubarkol Komir JSC	Mining and processing	Kazakhstan
		3-Energoortalyk JSC	Power generation	Kazakhstan
<b>Logistics</b>	1	TransCom LLP	Transportation	Kazakhstan

<sup>1</sup> Referred to as 'Donskoy GOK' throughout the report.

<sup>2</sup> Referred to as 'SSGPO' throughout the report.

<sup>3</sup> Referred to as 'BAMIN' throughout the report.

<sup>4</sup> Referred to as 'KAS' throughout the report.

<sup>5</sup> Our logistics entity Sabot is included in Other non-ferrous as it primarily acts in a supporting capacity for our operations in Africa.

<sup>6</sup> Referred to as 'Metalkol RTR' throughout the report.

<sup>7</sup> Our Chambishi Metals operation in Zambia is currently on care and maintenance.

<sup>8</sup> There are several companies headed by Sabot and present across the various countries in Africa.

<sup>9</sup> Referred to as 'EEC' throughout the report.

## GRI content index

The following table presents the GRI Standards Disclosures and the GRI G4 Mining and Metals Sector Supplement Disclosures that were used to guide the contents of ERG's 2021 Sustainable Development Report.

### GRI Standards 102: General disclosures

Disclosure No.	Disclosure description	Page(s)	Comment
<b>Organisational profile</b>			
102-1	Name of the organisation		Front and back cover; throughout the report.
102-2	Activities, brands, products and services	2-3, 6-7	
102-3	Location of headquarters		ERG's headquarters are in Luxembourg.
102-4	Location of operations	2-3	
102-5	Ownership and legal form	92, 94-95	
102-6	Markets served	2-3	
102-7	Scale of the organization	Inside front cover, 2-3, 6-7, 10-11, 18-21, 112	
102-8	Information on employees and other workers	Inside front cover, 40	
102-9	Supply chain	6-7, 86-89, 98	
102-10	Significant changes to the organization and its supply chain	86-89	
102-11	Precautionary Principle or approach	8-9, 58, 60-63, 64, 68, 97, 99, 102	
102-12	External initiatives	38-39, 50-57, 87-89, 99, 111	
102-13	Membership of associations	111	
<b>Strategy</b>			
102-14	Statement from senior decision-maker	4-5	
102-15	Key impacts, risks and opportunities	6-9, 12-13, 14-15, 46-49, 96-98, 105-106	
<b>Ethics and integrity</b>			
102-16	Values, principles, standards, and norms of behaviour	99-104	
102-17	Mechanisms for advice and concerns about ethics	80-84, 97	
<b>Governance</b>			
102-18	Governance structure	94-95	
102-19	Delegating authority	94-95	
102-20	Executive-level responsibility for economic, environmental, and social topics	16, 95	
102-21	Consulting stakeholders on economic, environmental and social topics	14-15, 16, 94-95, 107-108	
102-26	Role of highest governance body in setting purpose, values, and strategy	16, 95	
102-29	Identifying and managing economic, environmental, and social impacts	14-15, 95, 105-106	
102-30	Effectiveness of risk management processes	95-98	
102-31	Review of economic, environmental, and social topics	14-15, 16, 95, 105-106	
102-40	List of stakeholder groups	9, 107-108	
102-41	Collective bargaining agreements	40, 99	
102-42	Identifying and selecting stakeholders	107-108	
102-43	Approach to stakeholder engagement	14, 46-49, 50-53, 103, 107-108	
102-44	Key topics and concerns raised	14, 40-41, 46-50, 107-108	

## APPENDIX CONTINUED

Disclosure No.	Disclosure description	Page(s)	Comment
<b>Reporting practice</b>			
102-46	Defining report content and topic boundaries		Inside front cover
102-47	List of material topics	15, 105-106	
102-48	Restatements of information	57, 68	
102-49	Changes in reporting	14-15	
102-50	Reporting period		1 Jan 2021 – 31 Dec 2021
102-51	Date of most recent report		November 2021
102-52	Reporting cycle		Annual
102-53	Contact point for questions regarding the report		sd.report@erg.net
102-54	Claims of reporting in accordance with the GRI Standards		This report is guided by the GRI Standards and the GRI G4 Mining and Metals Sector Disclosures. It does not make a 'GRI-referenced' claim nor an 'in accordance' claim.
102-55	GRI content index	113-117	
102-56	External assurance	Inside front cover	This report has not been subject to third party assurance.
<b>GRI Standards 200: Economic Disclosures</b>			
<b>Management approach</b>			
103-1	Explanation of the material topic and its boundary	14-15, 105-106	
103-2	The management approach and its components	8-11, 16, 72-73, 76-79, 87, 94-98, 100-102	
103-3	Evaluation of the management approach	46, 50, 52-53, 72-73, 76-77, 80-85, 87, 94, 96-98, 107-108	
<b>Economic performance</b>			
201-1	Direct economic value generated and distributed	78	
<b>Indirect economic impacts</b>			
203-1	Infrastructure investments and services supported	41, 43, 50-57, 92	
203-2	Significant indirect economic impacts	41-43, 46-49, 50-57	
<b>Procurement practices</b>			
204-1	Proportion of spending on local suppliers	72-73, 76-78	
<b>Anti-corruption</b>			
205-1	Operations assessed for risks related to corruption		During the year, we assessed 100% of our processes and transactions subject to relevant compliance procedures requirements in Africa, Brazil and Kazakhstan for corruption-related risks as part of the regional and Group-level application of our Group-wide risk management system (2020: 100%).
205-2	Communication and training about anti-corruption policies and procedures	81-85	
205-3	Confirmed incidents of corruption and actions taken	85	None
<b>Anti-competitive behaviour</b>			
206-1	Legal actions for anti-competitive behaviour, antitrust, and monopoly practices		None
<b>Tax</b>			
207-1	Approach to tax	61, 78-79, 103-104	
207-2	Tax governance, control, and risk management	72, 98, 103-104	
207-3	Stakeholder engagement and management of concerns related to tax	72-73, 76-77, 111	
207-4	Country-by-country reporting	79	

Disclosure No.	Disclosure description	Page(s)	Comment
<b>GRI Standards 300: Environmental Disclosures</b>			
<b>Management approach</b>			
103-1	Explanation of the material topic and its boundary	14-15, 105-106	
103-2	The management approach and its components	8-9, 16, 46-49, 58, 60-69, 87, 95, 97, 99, 102	
103-3	Evaluation of the management approach	46-49, 60-61, 62, 64, 68, 87, 88, 95, 97, 102-103, 107-108	
<b>Energy</b>			
302-1	Energy consumption within the organization	67	
302-4	Reduction of energy consumption	13, 65-66	
<b>Water and effluents</b>			
303-1	Interactions with water as a shared resource	46-49, 55	
303-2	Management of water discharge-related impacts	9, 60-63	
303-3	Water withdrawal	7	
<b>Emissions</b>			
305-1	Direct (Scope 1) GHG emissions	67	
305-2	Energy indirect (Scope 2) GHG emissions	67	
<b>Waste</b>			
306-1	Waste generation and significant waste-related impacts	68-69	
306-2	Management of significant waste-related impacts	68-69	
<b>Supplier environmental assessment</b>			
308-1	New suppliers that were screened using environmental criteria	86-87, 89	
<b>GRI Standards 400: Social Disclosures</b>			
<b>Management approach</b>			
103-1	Explanation of the material topic and its boundary	14-15, 105-106	
103-2	The management approach and its components	8-9, 30, 32, 35, 36, 39, 40, 44, 46-48, 52-53, 55, 57, 84, 86-87, 89, 92-93, 94-95, 99-102, 103	
103-3	Evaluation of the management approach	27, 33, 34, 35, 40, 41, 46-49, 50, 52-53, 84, 86-87, 89, 96, 96-98, 107-108	
<b>Employment</b>			
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	100	
<b>Labour/management relations</b>			
402-1	Minimum notice periods regarding operational changes		Minimum notice periods vary across the Group. In Kazakhstan, minimum notice periods of one month or more are specified in collective bargaining agreements (in excess of the 15 calendar days' notice required under local labour laws). In the DRC, the collective bargaining agreement at Metalkol RTR specifies a minimum notice period of one month. Minimum notice periods are not specified in either local labour laws or collective bargaining agreements at our other operations in Africa or at our BAMIN iron ore project in Brazil.

## APPENDIX CONTINUED

Disclosure No.	Disclosure description	Page(s)	Comment
<b>Occupational health and safety</b>			
403-1	Occupational health and safety management system	32, 33, 34, 35, 96, 100	
403-2	Hazard identification, risk assessment, and incident investigation	32, 33, 34, 35, 95, 96	
403-3	Occupational health services	33, 34-35, 99, 100	
403-4	Worker participation, consultation, and communication on occupational health and safety	27, 33, 34, 95, 107-108	
403-5	Worker training on occupational health and safety	27, 32-35	
403-6	Promotion of worker health	33, 34-35, 41, 43, 100	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	32, 34-35	
403-9	Work-related injuries	32, 33	
403-10	Work-related ill health	33, 34-35	
<b>Training and education</b>			
404-2	Programs for upgrading employee skills and transition assistance programs	25-27, 36-39	
404-3	Percentage of employees receiving regular performance and career development reviews	37, 39	
<b>Non-discrimination</b>			
406-1	Incidents of discrimination and corrective actions taken	43	None
<b>Freedom of association and collective bargaining</b>			
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	43	None
<b>Child labour</b>			
408-1	Operations and suppliers at significant risk for incidents of child labour	84	
<b>Forced or compulsory labour</b>			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	23, 84	
<b>Security practices</b>			
410-1	Security personnel trained in human rights policies or procedures	46, 49	
<b>Human rights assessment</b>			
412-1	Operations that have been subject to human rights reviews or impact assessments	23, 84, 85	
412-2	Employee training on human rights policies or procedures	84	
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	84, 86, 88	
<b>Local communities</b>			
413-1	Operations with local community engagement, impact assessments, and development programs	46-49, 50-57	
413-2	Operations with significant actual and potential negative impacts on local communities	46-49	

Disclosure No.	Disclosure description	Page(s)	Comment
<b>Supplier social assessment</b>			
414-1	New suppliers that were screened using social criteria	89	
<b>Public policy</b>			
415-1	Political contributions	93	None
<b>Socio-economic compliance</b>			
419-1	Non-compliance with laws and regulations in the social and economic area	85	None

### GRI G4 Mining and Metals Sector Supplement Disclosures

Indicator	Indicator description	Page(s)	Comment
<b>Labour/management relations</b>			
MM4	Number of strikes and lock-outs exceeding one week's duration, by country		None
<b>Local communities</b>			
MM6	Number and description of significant disputes relating to land use, customary rights of local communities and indigenous peoples		None (for details on the 2013 legacy complaint made against ENRC and how we are addressing the subsequent recommendations of the UK National Contact Point for the OECD Guidelines for Multinational Enterprises, see p. 46).
MM7	The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and indigenous peoples, and the outcomes	46, 48, 49	
<b>Emergency preparedness*</b>			
DMA	Report on the existence of emergency plans, how they are prepared (consultation, rehearsal, regular review and modification), and their content (arrangements for the management of crises should they arise)	68, 101	
<b>Artisanal and small-scale mining*</b>			
MM8	Number and percentage of company operating sites where artisanal and small-scale mining (ASM) take place on, or adjacent to, the site; the associated risks and the actions taken to manage and mitigate these risks	46-47, 55-56, 90-91	
<b>Resettlement*</b>			
MM9	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process	23, 47, 48	
<b>Materials stewardship*</b>			
DMA	Report on programs and progress relating to materials stewardship	28, 86-89, 90-91	

\* Represents sector-specific aspects, which may or may not contain indicators.

# UN Global Compact reference table

Category	Principle	Page(s)
Human rights	1: Businesses should support and respect the protection of internationally proclaimed human rights	84, 99, 101, 103, 111
Human rights	2: Businesses should make sure that they are not complicit in human rights abuses	46-49, 80-85, 86-91, 95
Labour	3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	40, 43, 99
Labour	4: Businesses should uphold the elimination of all forms of forced and compulsory labour	84, 86-91, 99-101
Labour	5: Businesses should uphold the effective abolition of child labour	56, 84, 86-91, 99-101
Labour	6: Businesses should uphold the elimination of discrimination in respect of employment and occupation	40, 43, 99
Environment	7: Businesses should support a precautionary approach to environmental challenges	8-9, 58-63, 64, 68, 97, 99, 102
Environment	8: Businesses should undertake initiatives to promote greater environmental responsibility	8-9, 60-63, 64-67, 68-69, 97, 102, 111
Environment	9: Businesses should encourage the development and diffusion of environmentally friendly technologies	18, 21, 60-63, 64-67, 68-69
Anti-corruption	10: Businesses should work against corruption in all its forms, including extortion and bribery	80-85, 86-87, 97, 103

## FORWARD LOOKING STATEMENTS

This Sustainable Development Report contains certain forward-looking statements. Forward-looking statements are not based on historical facts and are inherently prospective in nature. Forward-looking statements may be identified by the use of terminology including, but not limited to, 'intend', 'aim', 'project', 'anticipate', 'estimate', 'plan', 'believes', 'expect', 'may', 'should', 'will', 'potential', 'possible', 'investigate', 'explore', or similar terms.

Forward-looking statements involve known and unknown risks, uncertainties and other variables that may cause actual performance, events and outcomes to vary significantly from any future performance, events or outcomes expressly or implicitly anticipated by such forward-looking statements. Such variables may include, but are not limited to, actual operational performance, market conditions, exchange rate fluctuations, operational disruption, macro-economic dynamics, political uncertainty, government regulation and other related factors. As such, undue reliance should not be placed on such forward-looking statements.

Forward-looking statements contained in this report are only made with respect to the situation at the date of publishing. ERG will not be under any obligation and will not undertake to update or revise any forward-looking statements contained in this report after this date.

# Units of measurement

US\$	US Dollars
M	Million
kt	Thousand tonnes
ktpa	Thousand tonnes per annum
Mt	Million tonnes
mtpa	Million tonnes per annum
GWh	Gigawatt-hour
MW	Megawatt
km	Kilometre
m <sup>3</sup>	Cubic metre
nm	Nanometre
ha	Hectare





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